

DIESEL ELECTRIC LOCOMOTIVE CRANES

Trucks, Travel Gearing

Two, 4-wheel swiveling trucks, with 56 $\frac{1}{2}$ " gauge, support and transport the Ohio Locomotive Crane. Each truck is equipped with 33 inch multiple wear rolled steel car wheels pressed on forged steel axles. Rubber load suspension packs eliminate potential spring breakage problems while minimizing longitudinal pitching and traverse rocking action. Two 7 x 8 inch cylinders per truck provide the Ohio Crane with more than adequate braking power. In addition a manually applied hand brake is furnished on one truck.

Flange-mounted to all welded steel gear cases, 115 H.P, traction motors provide the Ohio crane with smooth yet powerful traction performance. Standard equipped cranes are capable of obtained a truck speed up to 15 mph. An optional Field Shunting and 4-motor travel is also available should higher speeds be required. Ohio's standard quick travel gearing disengagement feature minimizes time required for preparing the Ohio crane for intrain transit





Carbody

Rugged all-welded extra heavy construction carbody's give Ohio's rock solid stability with no racking or twisting even under the heaviest of loads. Standard built-in features include: removable Outrigger Plates, manually extended Heavy Beam Outriggers, Anti-Skid Deck Plates, A.A.R. approved Hand grabs and Footsteps and A.A.R. Type "E" Top Operated Couplers.





Cab Design

Ohio's forward cab design provides the operator with the ultimate in operator convenience, comfort and efficiency. Full-vision cab is positioned well forward and the carefully designed control console and all activators arranged in related positions. All within easy grasp, assure maximum operator efficiency . . . even after long hours of continuous operation. Large safety glass windows allow for excellent vision in all directions. The cab and machinery housing are fabricated of heavy-gauge steel. Engineered arrangement of all components permit exceptional accessibility and freedom of movement within. A convenient walk through door to the machinery compartment insulates the operators from both heat and noise, in addition to the operators cab being completely insulated with acoustical foam. Built-in steps and hand grabs add to operator safety.



Main Drive

Functioning as the heart of the operating mechanism, the main disconnect clutch shaft receives its power via a smooth running Cog Belt. An efficient 20" external air controlled, self-adjusting clutch band provides positive engagement or disengagement of the operating machinery. Turning on anti-friction bearings assures smooth trouble-free operation.



Main Hoist

Safety . . .Sensitivity . . . Smooth Operation. These features distinguish the dependable hoisting mechanism of the Ohio Locomotive Crane. Absolute and smooth control of the main hoist operation is assured by dual, contracting clutch bands.



Boom Hoist Drum

This durable cast drum features a machine-cut worm gear which mates with the separator's worm shaft to provide the Ohio crane with accurate and positive control of the boom hoisting operation. This shaft,... as all Ohio shafting,... turns in anti-friction bearings to assure the utmost in smoothness and reduces the maintenance to a minimum.



This design with an air cylinder for each half band provides for easy adjustment and automatic equalization – eliminates drag – and gives the operator the sense of "feel" for each specific load.



Rotate Gearing

To achieve the strongest, most efficient and trouble free rotating mechanism available today, the Ohio crane has its own rotating worm and pinion drive (20:1 ratio) and combined it to a special anti-friction bearing rotating ring. Results in a lower center of gravity, positive centering, direct power, a simplified operating mechanism and faster, a smooth, more efficient performance.

Separator

The Ohio's boom hoist mechanism is equipped with self adjusting, function disc type clutches. Actuated by a double acting control valve. Precise boom positioning either up or down is achieved by means of a high worm gear drive ratio 46 to 1. For maximum safety in boom hoisting operations, an automatic spring set/air released braking mechanism instantaneously engages when the self-centering control valve is returned to neutral or when a pre-set hoisting limit is achieved.

Rotate Base

Advanced engineering in the all-welded steel design affords easy accessibility to all components . . . a must for fast and easy maintenance. Carefully engineered placement of machinery, complimented by large access doors and panel in the machinery house substantially reduce the time and effort required to perform normal

-







ROTATE BASE LAYOUT



Specifications

Standard Trucks:

Fabricated to AAR standards
Cast steel side frames and bolsters
Two,- four-wheel, swivel-type
56-1/2" - standard wheel gauge
33" multiple wear Steel carwheels
Forged steel axles
6-1/2" x 12 anti-friction roller bearing journals
7" x 12" Anti-friction roller bearing journals
(DE-600 & DE-650 only)
Bolster springs or rubber load suspension
Sliding wedges on top of side frames
Four, 7' x 8" brake cylinders for 8-wheel braking
One, manual handbrake for 4 - wheel braking

Standard Traction Equipment:

Two, 115 horsepower traction motors Enclosed travel gearing in oil bath lubrication Quick disengaging travel arrangement Gear ratios:

15.1:1 – Models DE 300S & DE 400 14.98:1 – Models DE 600 & DE 650 One traction generator coupled to engine flywheel Clearance – top rail to bottom of gear case 4-3/4" – Models DE 300S & DE 400 4-1/16" – Models DE 600 & DE 650

Standard Carbody:

All welded, extra heavy-duty, steel construction Anti-friction bearing rotating ring AR approved hand grabs and foot steps Anti-skid deck plates Manual sliding beam type outriggers Top operated type "E" couplers Removable outrigger pockets

Standard Rotating Deck:

All welded, heavy-duty, steel construction Fully counterweighted at factory (option) 200 gallon fuel tank with gauges Functionally designed shafting Arrangement for easy access to all shafting and operating mechanism

Standard Cab:

Heavy gauge sheet metal panel-type construction Interconnecting walkway between machine house

and operators cab with insulated door Operators cab is insulated with acoustical foam Safety glass furnished throughout Functionally located control equipment Air operated horn Windshield wiper and cab heater 20 lb Ansul fire extinguisher Sliding front and side cab windows

Standard Cab:

24 volt, 115 ampere alternator Two, - 150 watt flood lights on cab front One, - 150 watt flood lights in boom One, - 25 watt red tail light One, - 50 watt light in operator cab Four, - 50 watt lights in machinery house One, - 24 volt receptacle in operator cab Batteries: Two, heavy duty 12 volt connected in series providing necessary power
Standard Boom and Rigging:
50 ft. standard two piece Bolt connected boom. 5 ft. and 10 ft. center section available
Welded lattice-type construction of high strength low

alloy chord angles with heavy duty pipe lacing Anti-friction boom point sheaves: Two - 30" sheaves: Model DE-300S

Three - 30 sheaves: Model DE-400 Five - 30 sheaves: Model DE-600 & DE-650 Single, 7/8" Boom Hoist Cable:

8 parts: Models DE-300S & DE-400 12 parts: Models DE-600 Spring cushioned telescopic boom stops Automatic / adjustable boom hoist limit switch

Main hoist cable: 7/8" Auxiliary hoist cable: 7/8"

Standard Machinery:

Power Unit

Detroit Diesel: Series 60 is standard Cummins and Caterpillar are optional Indicator light for low oil pressure & high water temperature

& Accessories

Rotating Mechanism:

Graduated, electric powered rotate system Belt Drive System Worm gear drive: 20:1 ratio Spring set / Air release brake All welded steel gear case

Boom Hoisting Mechanism:

Worm gear drive: 46:1 ratio Belt Drive System Power boom, raising and lowering Graduated air control boom hoist lever Self adjusting disc clutches Automatic spring set / Air release brake

Hoisting Mechanism:

Double hoisting drums Independent operation 18 inch split lagging Split, external band type clutches - self adjusting Graduated air controls

Hoisting Brake Mechanism:

External contracting type brake bands Air assist treadle brakes

Independent parking brake valves on operator console.

Spring set / Air release braking – via a mechanical linkage insures positive braking in the event of an air failure

Weights:

Model:	Average Est. Working Wt.
DE-300S	221,000 lbs.
DE-400	241,400 lbs.
DE-600	300,000 lbs.
DE-650	310,000 lbs. (4- Motor Drive)

Performance Data:

15 mph
8%
approx. 220 fpm
22,000 lbs.
1880 rpm
2.0 to 2.5 rpm

Draw Bar Pull - 2 Motor Travel Drive

Starting	<u>@ 2 mph</u>
24,677 lbs.	16,892 lbs.
24,384lbs.	16,795 lbs.
23,215 lbs.	16,405 lbs.
23,215 lbs.	16,405 lbs.
	<u>Starting</u> 24,677 lbs. 24,384lbs. 23,215 lbs. 23,215 lbs.

Draw Bar Pull - 4 Motor Travel Drive

<u>Model</u>	Starting	<u>@ 2 mph</u>
DE-600	32,750 lbs.	25,250 lbs.
DE-650	32,750lbs.	25,250 lbs.

Accessories:

To Meet Your Every Need

Dual Mode Load Hoisting & Lowering System Magnet Control System Travel Plugging System Field Shunting System Travel Overload Alarm **Travel Warning Bell Elevated Operators Cab** Straight and Automatic Air Brakes (Class III) **Boom Center Sections** Integral Jib Section Fairlead Assembly **Engine Starting Aids** Load Indicating Systems Two Blocking Systems Hydraulic Elevated Gantry **Track Sanders Pile Driving Attachment** Hook Blocks, Magnets & Buckets Air Conditioning System 24 Volt to 12 Volt Converters Additional Lighting **Remote Control Flood Light** 4-Motor High Speed Travel

OHIO LOCOMOTIVE CRANE LOAD CAPACITIES *

* CAPACITIES BASED ON LOW GANTRY * WHEN USING 5 FT. INTEGRAL JIB, DEDUCT 500 LBS. FROM EACH RATING

DE-300S: 37 / 40 TON CRANE WITHOUT OUTRIGGERS

Radiu	IS					
Ft.	50' Boom	55' Boom	60' Boom	65' Boom	70' Boom	75, Boom
12	74,000	-	-	-	-	-
13	67,000	66,700	-	-	-	-
14	61,000	60,700	60,000	-	-	-
15	55,800	55,400	55,000	54,600	-	-
17	47,500	47,300	47,000	46,700	46,400	46,000
20	38,800	38,400	38,000	37,600	37,300	37,000
25	29,200	29,000	28,700	28,400	28,100	27,800
30	23,200	22,900	22,600	22,300	22,000	21,700
35	19,000	18,700	18,400	18,100	17,800	17,500
40	15,900	15,700	15,500	15,300	15,100	14,900
45	13,500	13,200	12,900	12,600	12,400	12,200
50	11,600	11,300	11,000	10,800	10,600	10,400
55	-	9,900	9,700	9,500	9,200	8,900
60	-	-	8,400	8,100	7,900	7,600
65	-	-	-	7,000	6,800	6,600
70	-	-	-	-	6,000	5,700
75	-	-	-	-	-	5,000

WITH OUTRIGGERS

Radi	us					
Ft.	50' Boom	55' Boom	60' Boom	65' Boom	70' Boom	75' Boom
12	80,000	-	-	-	-	-
13	75,200	74,700	-	-	-	-
14	71,000	74,500	70,100	-	-	-
15	67,000	66,500	66,200	65,600	-	-
16	63,400	62,900	62,600	62,000	61,600	-
17	60,200	59,700	59,400	59,000	58,500	58,000
20	52,200	51,700	51,400	51,000	50,500	50,000
25	42,600	41,100	40,800	40,400	40,000	39,500
30	35,700	35,200	34,900	34,500	34,000	33,500
35	30,600	30,100	29,800	29,400	29,000	28,500
40	24,800	24,300	24,000	23,600	23,000	22,500
45	19,800	19,300	19,000	18,600	18,000	17,500
50	13,600	13,100	12,800	12,400	11,800	11,300
55	-	11,600	11,100	10,800	10,400	9,900
60	-	-	9,800	9,500	9,100	8,600
65	-	-	-	8,400	8,100	7,700
70	-	-	-	-	7,000	6,000
75	-	-	-	-	-	5,000

DE-400: 40 / 50 TON CRANE WITHOUT OUTRIGGERS

Radius Ft.	50' Boom	55' Boom	60' Boom	65' Boom	70' Boom	75. Boom
12	80,000	-	-	-	-	-
13	71,800	71,400	-	-	-	-
14	65,300	64,800	64,500	-	-	-
15	60,000	59,200	58,700	58,400	-	-
16	55,000	54,500	54,000	53,700	53,400	-
17	50,800	50,300	49,800	49,500	49,200	49,000
20	41,400	41,000	40,500	40,200	39,900	39,600
25	31,300	30,900	30,400	30,100	29,800	29,500
30	25,000	24,400	24,000	23,700	23,400	23,100
35	20,300	19,900	19,500	19,200	18,900	18,600
40	17,000	16,600	16,200	15,900	15,600	15,300
45	14,500	14,100	13,700	13,400	13,100	12,800
50	13,000	12,100	11,800	11,500	11,200	10,900
55	-	10,600	10,200	9,800	9,500	9,200
60	-	-	8,900	8,600	8,300	8,000
65	-	-	-	7,400	7,200	6,900
70	-	-	-	-	6,200	5,900
75	-	-	-	-	-	5,100

WITH OUTRIGGERS Radius 50' Boom 55' Boom 60' Boom 65' Boom 70' Boom Ft. 12 100,000 -_ _ 92,800 13 93,300 ---87,800 86,800 14 87,300 --

15	83 000	82 300	81 800	81,300	-	-
16	78,600	78,100	77,600	77,000	76,500	-
17	74,400	73,900	73,400	73,000	72,500	72,000
18	70,800	70,300	69,800	69,300	68,900	68,400
19	67,600	67,100	66,600	66,000	65,500	65,000
20	65,000	64,100	63,600	63,000	62,500	62,000
25	52,500	52,000	51,500	51,000	50,500	50,000
30	44,000	43,500	43,000	42,500	42,000	41,500
35	37,700	37,200	36,700	36,200	35,700	35,200
40	33,000	32,300	31,800	31,300	30,800	30,300
45	29,000	28,500	28,000	27,500	27,000	26,500
50	21,000	20,500	20,000	19,500	19,000	18,500
55	-	18,500	18,500	17,500	17,000	16,500
60	-	-	15,000	14,500	14,000	13,500
65	-	-	-	13,500	13,000	12,500
70	-	-	-	-	11,000	10,500
75	_	_	_	_		10 000

75' Boom

_

-

-

OHIO LOCOMOTIVE CRANE LOAD CAPACITIES *

* CAPACITIES BASED ON LOW GANTRY * WHEN USING 5 FT. INTEGRAL JIB, DEDUCT 500 LBS. FROM EACH RATING

DE-600: 55 / 80 TON CRANE WITHOUT OUTRIGGERS

50' Boom	55' Boom				
	55 B00m	60' Boom	65' Boom	70' Boom	75, Boom
115,000	-	-	-	-	-
103,500	102,000	-	-	-	-
93,800	93,500	93,200	-	-	-
86,100	85,800	85,400	85,100	-	-
79,000	78,800	78,700	78,600	78,500	-
73,400	73,000	72,900	72,600	72,200	72,100
59,800	59,600	59,400	59,200	59,000	58,800
45,000	44,800	44,700	44,600	44,500	44,400
35,600	35,400	35,300	35,200	35,100	35,000
29,300	29,200	29,100	28,900	28,800	28,700
24,500	24,400	24,300	24,200	24,100	24,000
20,800	20,700	20,600	20,500	20,400	20,300
18,000	17,800	17,700	17,600	17,500	17,400
-	15,500	15,400	15,200	15,100	15,000
-	-	13,800	13,600	13,500	13,300
-	-	-	11,900	11,800	11,700
-	-	-	-	10,500	10,400
-	-	-	-	-	9,200
	115,000 103,500 93,800 86,100 79,000 73,400 59,800 45,000 35,600 29,300 24,500 20,800 18,000 - - - -	115,000 - 103,500 102,000 93,800 93,500 86,100 85,800 79,000 78,800 73,400 73,000 59,800 59,600 45,000 44,800 35,600 35,400 29,300 29,200 24,500 24,400 20,800 20,700 18,000 17,800 - - - - - - - -	115,000 - - 103,500 102,000 - 93,800 93,500 93,200 86,100 85,800 85,400 79,000 78,800 78,700 73,400 73,000 72,900 59,800 59,600 59,400 45,000 44,800 44,700 35,600 35,400 35,300 29,300 29,200 29,100 24,500 24,400 24,300 20,800 20,700 20,600 18,000 17,800 17,700 - 13,800 - - - -	115,000 - - - 103,500 102,000 - - 93,800 93,500 93,200 - 86,100 85,800 85,400 85,100 79,000 78,800 78,700 78,600 73,400 73,000 72,900 72,600 59,800 59,600 59,400 59,200 45,000 44,800 44,700 44,600 35,600 35,400 35,300 35,200 29,300 29,200 29,100 28,900 24,500 24,400 24,300 24,200 20,800 20,700 20,600 20,500 18,000 17,800 17,700 17,600 - - 13,800 13,600 - - 11,900 - -	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$

WITH OUTRIGGERS

70' Boom	75' Boom - - - - - -
- - - 12,4700 11,8300	
- - 12,4700 11 8300	-
- - 12,4700 11 8300	-
- 12,4700 11 8300	-
12,4700	-
11 8300	
11,0000	117,800
10,2700	102,100
8,3700	83,100
7,0200	69,700
6,0200	59,800
5,2700	52,100
4,5100	44,500
3,2900	32,400
2,8600	28,100
2,4300	23,800
2,2200	21,600
2,0500	19,900
	17,500
	4,5100 3,2900 2,8600 2,4300 2,2200 2,0500

DE-650: 55 / 115 TON CRANE WITHOUT OUTRIGGERS

Radi	us					
Ft.	50' Boom	55' Boom	60' Boom	65' Boom	70' Boom	75, Boom
12	115,000	-	-	-	-	-
13	103,500	102,000	-	-	-	-
14	93,800	93,500	93,200	-	-	-
15	86,100	85,800	85,400	85,100	-	-
16	79,000	78,800	78,700	78,600	78,500	-
17	73,400	73,000	72,900	72,600	72,200	72,100
20	59,800	59,600	59,400	59,200	59,000	58,800
25	45,000	44,800	44,700	44,600	44,500	44,400
30	35,600	35,400	35,300	35,200	35,100	35,000
35	29,300	29,200	29,100	28,900	28,800	28,700
40	24,500	24,400	24,300	24,200	24,100	24,000
45	20,800	20,700	20,600	20,500	20,400	20,300
50	18,000	17,800	17,700	17,600	17,500	17,400
55	-	15,500	15,400	15,200	15,100	15,000
60	-	-	13,800	13,600	13,500	13,300
65	-	-	-	11,900	11,800	11,700
70	-	-	-	-	10,500	10,400
75	-	-	-	-	-	9,200

WITH OUTRIGGERS

Radiu	IS					
Ft.	50' Boom	55' Boom	60' Boom	65' Boom	70' Boom	75' Boom
12	230,000	-	-	-	-	-
13	224,000	216,000	-	-	-	-
14	216,000	210,000	204,000	-	-	-
15	210,000	204,000	198,000	192,000	-	-
16	200,000	194,000	188,000	182,000	176,000	-
17	185,000	180,000	175,000	170,000	165,000	160,000
20	145,000	144,000	143,000	141,000	140,000	139,000
25	110,000	109,000	108,000	106,000	105,000	104,000
30	89,000	88,000	87,000	86,000	84,000	83,000
35	75,000	74,000	73,000	72,000	71,000	70,000
40	62,000	61,000	60,000	59,000	58,000	57,000
45	49,000	48,000	47,000	46,000	45,000	44,000
50	36,000	35,000	34,000	33,000	32,000	31,000
55	-	32,000	31,000	30,000	29,000	28,000
60	-	-	28,000	27,000	26,000	26,000
65	-	-	-	26,000	25,000	24,000
70	-	-	-	-	24,000	23,000
75	-	-	-	-	-	22,000

DIMENSIONS

DIMENSIONS	Α	В	С	D	Е	F		G	н		J	K	L		М	N	0
DE-300S	2'-11"	2'-10"	5'-8"	11'-6"	24'-10 1/2"	14'-2 5/8"	28'	'-5 1/4"	4'-1 1/8"	1'-2 7/8"	0'-5 1/4	" 5'-4"	1'-2 7	/8" 1'-4	11/16"	2'-10 1/2"	6'-8 11/16"
DE-400	5'-5"	2'-10"	5'-8"	14'-0"	28'-2 1/2"	15'-10 5/8"	31'	'-9 1/4"	4'-2 1/2"	1'-3"	2'-0	" 5'-4"	1'	-3" 1'-	-4 1/2"	2'-9 1/2"	6'- 10"
DE-600	6'-8"	3'-2" 6'-4"		15'-11"	30'-3 1/4"	17'-0 1/8"	34	'-0 1/4"	4'-4 1/2"	0'-7 1/16"	2'-3 7/8	5'-4"	1'-3 1/1	16" 1'-	-6 1/2"	2'-9 7/8"	7'-1 1/16"
DE-650	68.	3-2"	6'-4"	15-11"	30'-3 1/4"	17-0 1/8"	34	-0 1/4"	4'-4 1/2"	0'-7 1/16"	2-37/8	5'-4"	1-3 1/1	16 1-6	1/2"	2'-9 7/8"	7-1 1/16"
DIMENSIONS	Р	P R		S	Т	U	V	W	Х	Y		Z	AA	BB	CC	DD	EE
DE-300S	8'-9 7/8"	/8" 12'-0"		1'-9 3/8"	7'-7 3/16"	7'-7 3/16" 3'-0 5/8"		2'-6"	5'-1 3/16" 14		8 3/8" 4'-8 1/2"		7'-11"	3'-2 1/2"	9'-5"	0'- 4 3/4"	10'-7 3/16"
DE-400	8'-9 7/8"	12	'-0"	1'-9 3/8"	7'-7 3/16"	3'-0 5/8"	2'-9"	2'-6"	5'-1 3/16"	14'-9	9 3/4"	4'-8 1/2"	7'-8"	2'-10"	9-'8"	0'- 4 3/4"	10'-7 3/16"
DE-600	8'-9 7/8"	12'-8 1	/4"	1'-10 1/2"	7'-7 3/16"	3'-0 5/8"	2'-9"	2'-6"	5'-1 3/16"	14'-10 1	1/16"	4'-8 1/2"	7'-6"	3'-7"	9'-10"	0'- 4 1/16"	10'-7 3/16"
DE-650	8'-9 7/8"	12-81	1/4"	1'-10 1/2"	7'-7'3/16"	3'-0 5/8"	2'-9"	2'-6"	5'-1 3/16"	14'-10 1'	1/16"	4'-8 1/2"	7'-6"	3'-7"	9'-10"	0'- 4 1/16"	10'-7'3/16"
					0								~	<u> </u>	EE	 1	
- - - - - - - - - - - - - - - - - - -								÷	-WI1								

NO OTHER CRANE IS ENGINEERED LIKE AN





Over 70 years of engineering excellence and proven performance surround today's Ohio Locomotive Cranes. All major features reflect the rugged testing of time in the heavy duty crane industry. Each machines flexible design provides the durable product safety of operation and ease of maintenance. Dedicated engineering has proven itself.

1 CAB DESIGN

Ohio's full-vision cab is positioned well forward with large safety glass windows to provide the operator with excellent vision in all directions. The arrangement of all components have been engineered to provide accessibility, ease of operation, and comfort.

2 MAIN DRIVE

At the center of the operating mechanism is the main disconnect clutch shaft powered by a Cog type Drive Belt that is engaged by a 20" air controlled, self-adjusting clutch band. Trouble-free operation is assured by the anti-friction bearing design.



3 MAIN DRIVE

The main hoisting mechanism provides a safe, and smooth operation with the aid of dual, contracting clutch bands. Each has its own separate air cylinder for automatic equalization which provides the operator with a "feel" for each specific load





A durable cast drum featuring a precision machine-cut worm gear meshes with the separator shaft all of which rotate in anti-friction bearings to provide the Ohio Crane with accurate and positive control of boom hoisting operations.



LOCOMOTIVE CRANE CO.

5 MAIN DRIVE

Innovative engineering has led to Ohio's own rotating worm and pinion drive combined with a special antifriction bearing rotating ring. This 20:1 ratio results in more direct power, a lower center of gravity. Positive centering, and smoother operating performance which makes it the most efficient trouble-free rotating mechanism available today.



These and other engineering developments are how the Ohio Crane has proven itself as a workhorse champion for over three-quarters of a century. Why not let us show you how Ohio's proven past can make your future successful in the area of heavyduty diesel electric locomotive cranes!





AMERICAN & OHIO LOCOMOTIVE CRANE CO. ~ a Division of ERS Industries, Inc. ~

811 Hopley Ave. Bucyrus, Ohio 44820 Phone: 800-993-6446 419-562-6010 Fax: 419-562-2186 www.aolcrane.com



MANUFACTURERS OF DIESEL ELECTRIC CRANES