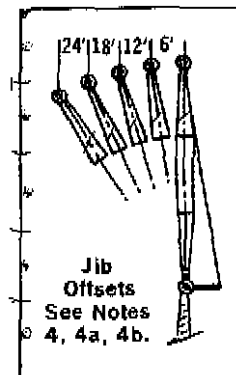


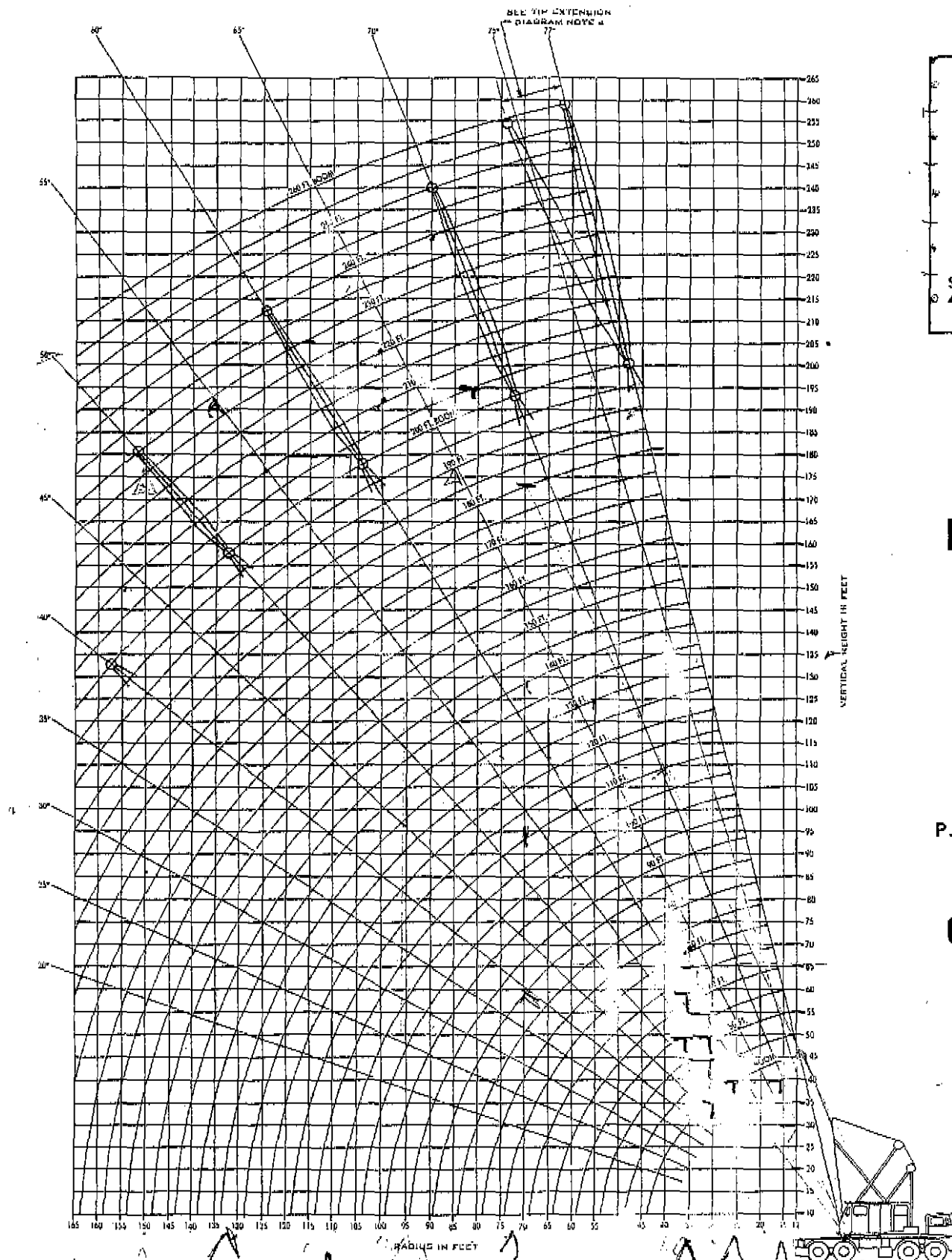
SEE TIP EXTENSION
DIAGRAM NOTE 4



D-17 BOOM WORKING RANGES MC-790 8X4

P.C.S.A. 12-454

**OFFSET BOOM
PEAK**



Koehring
Lorain Division
Chattanooga, Tennessee 37405

In accordance with our established policy of constant improvement, we reserve the right to amend these specifications at any time without notice. We make no warranty, expressed or implied, in this document and warrant only the material shown.

CRANE LIFTING CAPACITIES, POUNDS... D-17 BOOM, OFFSET BOOM PEAK... 8X4

LORAIN

strong on performance

MC-790

MOTO-CRANE

LIFTING CAPACITIES AND WORKING RANGES

NOTES

- The rated loads as determined by boom length, radius and weight of load pertain to this machine as originally manufactured and equipped as mounted on a Thew manufactured MC-790, 8x4 carrier. THEY ARE MAXIMUM lifting capacities. The rated loads are in accordance with standards Power Crane & Shovel Association as issued by the U.S. Department of Commerce and Standard C550-58 and the SAE Crane Load Stability Test Code J76.
- DO NOT TIP the machine to determine the allowable loads. Rated loads should not be exceeded. Rated loads are based on 85% of stability except where identified by bold face type in which case they are based on machinery structural strength.
- All rated loads are based on the machine being on a firm, level and uniform supporting surface. Before lifting at, or near, rated loads, the machine should be leveled with a commercial level in two directions. FOR SAFE WORKING LOAD THE USER is expected to make due allowances for his particular job conditions such as: Soft or uneven ground, out of level conditions, side loads, pendulum action, jerking or sudden stopping of loads, hazardous conditions, experience personnel, etc. Side pull on boom or jib is extremely dangerous. CAUTION: The operator and other personnel should fully read and acquaint themselves with Operators Manual furnished by the manufacturer BEFORE operating the machine, and Rules for Safe Operation of equipment should be adhered to all times. Operators and Supervisors should also acquaint themselves with Star and Safety Codes for Cranes, Derricks and Hoists, ASA-B 30.2-1943 (R-1952).
- Do not exceed the "over-the-rear" capacities when lifting over a corner.
- All lifting must be done with gantry erected. When working conditions will not permit erected gantry, consult Lorain for proper capacity chart.
- Boom over 170 ft. long requires mast in addition to erected gantry. Mast with erected gantry may also be used with boom lengths of 170 ft. and under.
- The total weight of bucket plus load must not exceed 80% of the rated "with out outriggers" lifting capacities up to a maximum of 13,500 lbs. for drag service and 15,000 lbs. for clamshell service.
- More than one part hoist line must be used on any boom when lifting radius is less than 20 ft.
- Load-handling devices are part of the load. For jibs, see notes 4, 4a and 4.
- Maximum length of main boom..... 200
- Jibs may be used straight or goosenecked. 30 ft. jib is two-piece and may be extended to 60 ft. with center sections. The following data apply:

Jib Lgh.	Radius	Max. Lgh. of Boom Incl. Jib	Maximum Lifting Capacity (Lbs.) Offset from Extended Centerline of Boom					Weight Jib as Rackstr.
30 ft.	Up thru 60' Over 60'	230 ft.	30000 20000	25000 17000	22000 15000	18000 10000	14000 8000	1700 lb
40 ft.	Up thru 60' Over 60'	240 ft.	21000 14000	18000 12000	16000 11000	10000 8000	8000 6000	2100 lb
50 ft.	Up thru 60' Over 60'	250 ft.	15000 10000	13000 9000	12000 8000	9000 7000	8000 6000	2350 lb
60 ft.	Up thru 60' Over 60'	260 ft.	12000 8000	11000 7500	10000 7000	8000 6000	7000 5000	2550 lb

- Capacities for jibs are the same as for the boom length which is equal to 1 length of main boom plus jib, but in no case may they exceed the capacity shown above.
- With jib installed, lifting capacities over main boom head must be reduced as follows:
1800 lbs. for 30 ft. jib
2400 lbs. for 40 ft. jib
- With gantry erected (21 ft. 7 in. overall height), the following maximum length may be carried over the back without outriggers:
150 ft. boom without jib
130 ft. boom and 30 ft. jib
120 ft. boom and 40 ft. jib
110 ft. boom and 60 ft. jib
*For straight back and forward movement. Remove 10 ft. of boom from the specified for conditions which require maneuverability.
- With gantry lowered or gantry lowered and mast pinned to the base section (12 ft. 9 in. overall height), the following maximum boom lengths may be carried over the back without outriggers:
110 ft. boom without jib
80 ft. boom and 30 ft. jib
70 ft. boom and 60 ft. jib
- With outriggers set, the following maximum boom lengths may be raised & assisted, from the horizontal over the rear. Mast and gantry must be erected:
210 ft. boom without jib
180 ft. boom plus 50 ft. jib
190 ft. boom plus 60 ft. jib
- For boom and jib combinations longer than shown in Note 6, and up to 210 boom and 60 ft. jib, rear-aux. outriggers and a 2000 lb. bumper counterweight are required.
- Minimum number of parts of hoist line to be determined by dividing the load to be lifted by 19,000 lbs. for 3/4 in. hoist cable with breaking strength of 34.6 tons. To handle rated lifting capacities, mast, gantry and hoisting harness require with 1 1/4 in. swaged pendants with breaking strength of 95 tons and 16 parts 5/8 in. derricking cable with breaking strength of 19.6 tons.
- Boom suspension cables must be used on booms over 200 ft. long.



Boom Length	Radius	Boom Angle	With Outriggers Over Rear And Side		Without Outriggers	
			Over Rear	Over Side	Over Rear	Over Side
40 ft.	12	78.1	180000	101500	92300	
	15	73.7	158500	73900	68000	
	20	66.0	120400	50400	44300	
	25	58.0	93200	37900	33000	
	30	49.1	69500	30200	26000	
	40	25.2	45600	21100	18000	
50 ft.	15	77.0	158100	73700	65800	
	20	71.1	120000	50200	44000	
	25	64.8	93000	37700	32700	
	30	58.4	69500	30000	25800	
	40	43.6	45400	20800	17800	
	50	22.5	33300	15700	13200	
60 ft.	15	79.1	157700	73400	65500	
	20	74.3	119600	49900	43800	
	25	68.3	92900	37500	32500	
	30	64.0	69200	29700	25600	
	40	52.9	45200	20600	17500	
	50	39.6	33200	15500	13000	
70 ft.	15	79.1	157700	73400	65500	
	20	74.3	119600	49900	43800	
	25	68.3	92900	37500	32500	
	30	64.0	69200	29700	25600	
	40	52.9	45200	20600	17500	
	50	39.6	33200	15500	13000	
80 ft.	15	79.1	157700	73400	65500	
	20	74.3	119600	49900	43800	
	25	68.3	92900	37500	32500	
	30	64.0	69200	29700	25600	
	40	52.9	45200	20600	17500	
	50	39.6	33200	15500	13000	
90 ft.	15	79.1	157700	73400	65500	
	20	74.3	119600	49900	43800	
	25	68.3	92900	37500	32500	
	30	64.0	69200	29700	25600	
	40	52.9	45200	20600	17500	
	50	39.6	33200	15500	13000	
100 ft.	15	79.1	157700	73400	65500	
	20	74.3	119600	49900	43800	
	25	68.3	92900	37500	32500	
	30	64.0	69200	29700	25600	
	40	52.9	45200	20600	17500	
	50	39.6	33200	15500	13000	
110 ft.	15	79.1	157700	73400	65500	
	20	74.3	119600	49900	43800	
	25	68.3	92900	37500	32500	
	30	64.0	69200	29700	25600	
	40	52.9	45200	20600	17500	
	50	39.6	33200	15500	13000	
120 ft.	15	79.1	157700	73400	65500	
	20	74.3	119600	49900	43800	
	25	68.3	92900	37500	32500	
	30	64.0	69200	29700	25600	
	40	52.9	45200	20600	17500	
	50	39.6	33200	15500	13000	
130 ft.	15	79.1	157700	73400	65500	
	20	74.3	119600	49900	43800	
	25	68.3	92900	37500	32500	
	30	64.0	69200	29700	25600	
	40	52.9	45200	20600	17500	
	50	39.6	33200	15500	13000	
140 ft.	15	79.1	157700	73400	65500	
	20	74.3	119600	49900	43800	
	25	68.3	92900	37500	32500	
	30	64.0	69200	29700	25600	
	40	52.9	45200	20600	17500	
	50	39.6	33200	15500	13000	
150 ft.	15	79.1	157700	73400	65500	
	20	74.3	119600	49900	43800	
	25	68.3	92900	37500	32500	
	30	64.0	69200	29700	25600	
	40	52.9	45200	20600	17500	
	50	39.6	33200	15500	13000	

CAPACITIES BELOW INCLUDE JIB (SEE NOTE 4a)

Boom Length	Radius	Boom Angle	With Outriggers Over Rear And Side		Without Outriggers	
			Over Rear	Over Side	Over Rear	Over Side
150 ft.	15	79.1	157700	73400	65500	
	20	74.3	119600	49900	43800	
	25	68.3	92900	37500	32500	
	30	64.0	69200	29700	25600	
	40	52.9	45200	20600	17500	
	50	39.6	33200	15500	13000	
160 ft.	15	79.1	157700	73400	65500	
	20	74.3	119600	49900	43800	
	25	68.3	92900	37500	32500	
	30	64.0	69200	29700	25600	
	40	52.9	45200	20600	17500	
	50	39.6	33200	15500	13000	
170 ft.	15	79.1	157700	73400	65500	
	20	74.3	119600	49900	43800	
	25	68.3	92900	37500	32500	
	30	64.0	69200	29700	25600	
	40	52.9	45200	20600	17500	
	50	39.6	33200	15500	13000	
180 ft.	15	79.1	157700	73400	65500	
	20	74.3	119600	49900	43800	
	25	68.3	92900	37500	32500	
	30	64.0	69200	29700	25600	
	40	52.9	45200	20600	17500	
	50	39.6	33200	15500	13000	
190 ft.	15	79.1	157700	73400	65500	
	20	74.3	119600	49900	43800	
	25	68.3	92900	37500	32500	
	30	64.0	69200	29700	25600	
	40	52.9	45200	20600	17500	
	50	39.6	33200	15500	13000	
200 ft.	15	79.1	157700	73400	65500	
	20	74.3	119600	49900	43800	
	25	68.3	92900	37500	32500	
	30	64.0	69200	29700	25600	
	40	52.9	45200	20600	17500	
	50	39.6	33200	15500	13000	
210 ft.	15	79.1	157700	73400	65500	
	20	74.3	119600	49900	43800	
	25	68.3	92900	37500	32500	
	30	64.0	69200	29700	25600	
	40	52.9	45200	20600	17500	
	50	39.6	33200	15500	13000	
220 ft.	15	79.1	157700	73400	65500	
	20	74.3	119600	49900	43800	
	25	68.3	92900	37500	32500	
	30	64.0	69200	29700	25600	
	40	52.9	45200	20600	17500	
	50	39.6	33200	15500	13000	
230 ft.	15	79.1	157700	73400	65500	
	20	74.3	119600	49900	43800	
	25	68.3	92900	37500	32500	
	30	64.0	69200	29700	25600	
	40	52.9	45200	20600	17500	
	50	39.6	33200	15500	13000	
240 ft.	15	79.1	157700	73400	65500	
	20	74.3	119600	49900	43800	
	25	68.3	92900	37500	32500	
	30	64.0	69200	29700	25600	
	40	52.9	45200	20600	17500	
	50	39.6	33200	15500	13000	
250 ft.	15	79.1	157700	73400	65500	
	20	74.3	119600	49900	43800	
	25	68.3	92900	37500	32500	
	30	64.0	69200	29700	25600	
	40	52.9	45200	20600	17500	
	50	39.6	33200	15500	13000	
260 ft.	15	79.1	157700	73400	65500	
	20	74.3	119600	49900	43800	
	25	68.3	92900	37500	32500	
	30	64.0	69200	29700	25600	
	40	52.9	45200	20600	17500	
	50	39.6	33200	15500	13000	

Technical drawing of a truck-mounted crane, showing side and rear views with dimensions in feet and inches.

Side View Dimensions:

- Overall length: 62'-6 1/4"
- Crane boom length (extended): 40'-9 3/4"
- Crane boom length (retracted): 25'-3 3/4"
- Crane boom height (retracted): 18'-10 1/2"
- Crane boom height (extended): 21'-7"
- Crane boom angle: 30°
- Crane boom width: 14'-8"
- Crane boom height (retracted): 12'-9"
- Crane boom height (extended): 11'-0"
- Crane boom width: 5'-1 1/2"
- Crane boom height (retracted): 6'-9 1/4"
- Crane boom height (extended): 5'-0"
- Crane boom width: 4'-5"
- Crane boom height (retracted): 5'-0"
- Crane boom height (extended): 14'-0 1/2"
- Crane boom height (extended): 15'-0 1/2"
- Crane boom height (extended): 8'-0 1/2"
- Crane boom height (extended): 34'-4"

Rear View Dimensions:

- Overall width: 10'-10"
- Crane boom width: 10'-6"
- Crane boom height: 10'-11 3/4"
- Crane boom width: 11'-0"
- Crane boom height: 11'-0"
- Crane boom width: 5'-0"
- Crane boom height: 10'-0"
- Crane boom width: 10'-11 3/4"
- Crane boom height: 11'-0"

Diesel	Cummins, N-855C-I-TC, 6 cyl.
Bore and Stroke	5 1/4 in. x 6 in.
Displacement	855 cu. in.
Horsepower	210 H.P.
Power Take-Off	Torque Converter
Fuel Tank	75 gals.

We Pulls and Line Speeds:		Hand Throttle		Foot Throttle	
Rear Drum 25" P.D. Lagging					
1st Layer	30,300#	@	157 F.P.M.	22,130#	@ 248 F.P.M.
3rd Layer	26,600#	@	179 F.P.M.	19,400#	@ 283 F.P.M.
Front Drum 25" P.D. Lagging					
1st Layer	29,700#	@	157 F.P.M.	21,680#	@ 248 F.P.M.
3rd Layer	26,050#	@	179 F.P.M.	19,000#	@ 283 F.P.M.
Swing Speed					to 4 R.P.M.

Hoist and Derricking Clutches	Metered Air
Swing	Independent Hydraulic
Power Equipment	
Boom Hoist	Dual Drum
Santry	Power Operated Back Hitch
Counterweight (with Hydraulic Kit for Removal)	20,000 lbs.
Rotatable Connection	Internal Gear Shear-Ball®

Fuel	Cummins, NTC-290, 6 cyl.
Bore and Stroke	5½ in. x 6 in.
Displacement	855 cu. in.
Horsepower	270 H.P.
Power Take-Off	Plate Clutch
Fuel Tank	75 gals.
Transmissions	
Train	5 Speeds
Auxiliary	4 Speeds
Speeds Forward	20
Speeds Reverse	4

Low.....	1.3 M.P.H.	High-high.....	42.5 M.P.H.
Standard.....	POWRSPAN Hydraulically Operated, Complete with Floats Optional Rear Auxiliary Outriggers with Floats. Required for Boom 180 ft. and over.		

Axles (Planetary).....	Double Reduction Gear Drive
First reduction thru hypoid gears; final reduction thru planetary wheel hubs; high-traction differentials. Interaxle differential with air lockout.	
Mounting.....	Two Axles in tandem, with "through-Drive," mounted on equalizer beams.
Front Tandem	Two non-driving axles on equalizer beams.
Steering	Centralized, Hydraulic Power Assist
Turning Radius (to Front Corner of Vehicle).....	57'-3"
Brakes (Spring-Set for Emergency and Parking).....	Air
Rear	4 Brakes; 20 1/4 in. dia. x 7 in. wide
Front	4 Brakes; 17 1/4 in. dia. x 4 in. wide
Tires (Tube).....	14-00 x 24, 18 P.R.

Crane Boom	
Design	Square Tubular Chord
Type of Connection	Pin-Connected
Basic Length—Offset Peak Boom.....	40 ft.; 25 ft. base, 15 ft. peak
Long Tapered Peak Boom.....	60 ft.; 25 ft. base, 35 ft. peak
Hammerhead Peak Boom.....	28 ft.; 25 ft. base, 3 ft. peak
Number of Hoist Line Sheaves at Boom Peak on Anti-Friction Bearings	
Offset Peak	6
Long Tapered Peak	5
Hammerhead Peak	5
(Additional Sheave Available for Hammerhead Peak Booms)	

Two-Piece* Pin-Connected Type.....30 ft.; 10 ft. base, 20 ft. peak
*Extendible with 10 ft. and 20 ft. Center Sections to 60 ft.

Laggings	Two, 25 in. P.D Full Width
Floating Harness	16 Parts of Line
Boom Stops	Telescopic Type
Swing Brake	Standard
Speed Retarder	Standard
Power Load Lowering (both hoist drums)	Available
Third Drum	Available
Harness Extending Cylinder	Available

Standard Equipped Machines with Basic Boun

Lifting Crane (Offset Peak Boom).....131,350 lbs.
*Total weight of unit may be reduced 20,000 lbs. by removing counterweight for road travel—(hydraulic removal kit included). Additional reductions may be made by removal of outrigger boxes and beams.



Koehring
Crane and Excavator Group
Lorain Products
Chattanooga, Tennessee 37415