

Lifting Capacities

PCSA Class 10-72

Link-Belt®

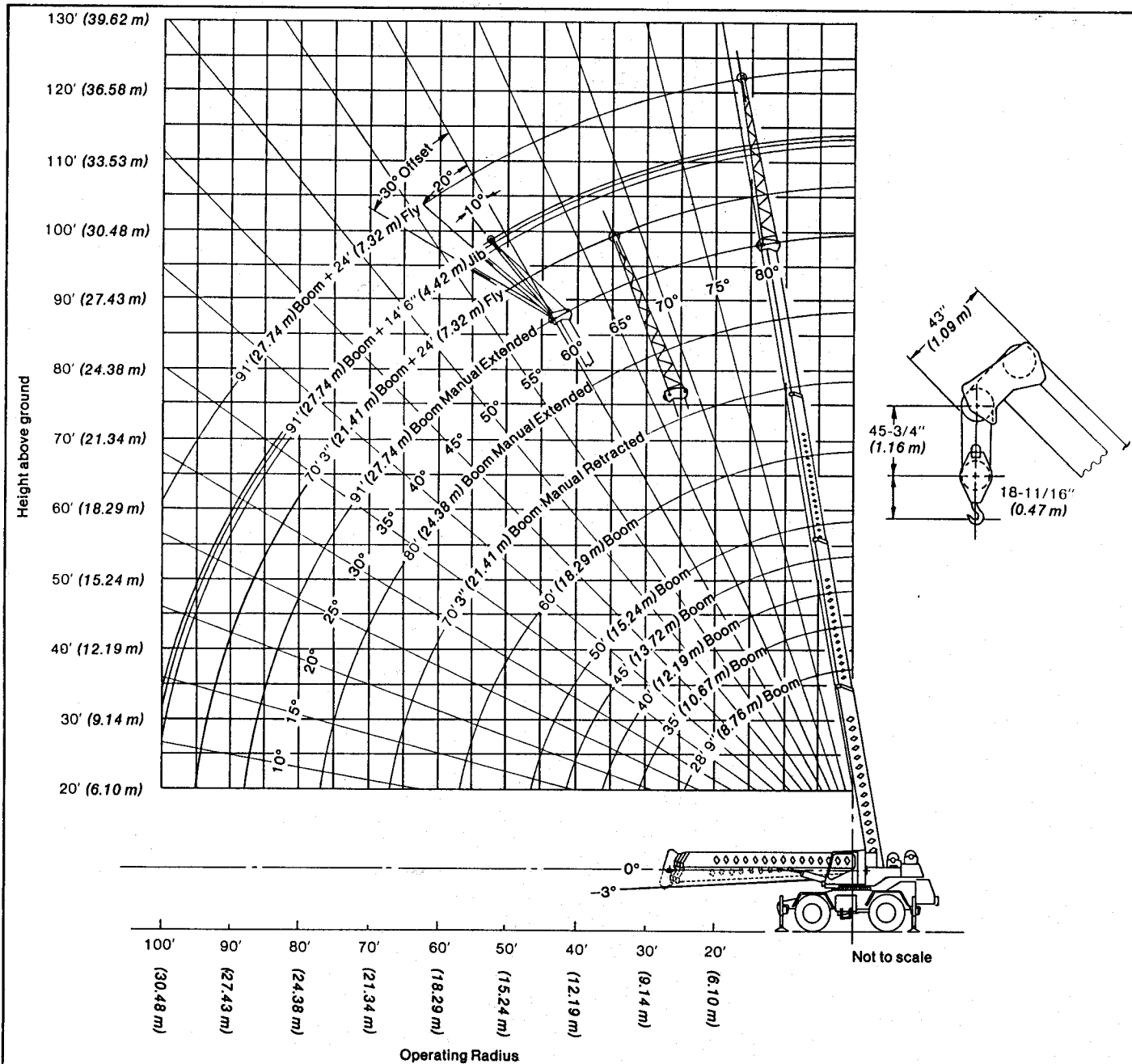
GENERAL INFORMATION ONLY

Eighty Series

Hydraulic Rough Terrain Cranes

HSP-8022 22-ton (20.00 metric ton)

4-Section Boom



Note: Boom and fly and jib geometry shown are for unloaded condition and machine standing level on firm supporting surface. Boom deflection and subsequent radius and boom angle change must be accounted for when applying load to hook.

HSP-8022 Lifting Capacities

Refer to Operating Instructions page 4

79' 9" (8.76 m) - 91' 0" (27.74 m) 4-section boom

Capacities ① On Outriggers-Manual Section Retracted														70' 3" (21.41 m) boom plus 24' (7.32 m) fly ②		
Load radius	28' 9" (8.76 m)		35' (10.67 m)		40' (12.19 m)		45' (13.72 m)		50' (15.24 m)		60' (18.29 m)		70' 3" (21.41 m)		Boom angle	360°
	Front	360°	Front	360°	Front	360°	Front	360°	Front	360°	Front	360°	Front	360°		
10' 3.05 m	44,100 20,000	44,100 20,000	42,900 19,459	42,900 19,459	42,300 19,187	42,300 19,187	41,900 19,006	41,900 19,006	41,500 18,824	41,500 18,824						
12' 3.66 m	44,100 20,000	43,300 19,641	42,900 19,459	42,900 19,459	42,300 19,187	42,300 19,187	41,300 18,734	41,300 18,734	39,900 18,099	39,900 18,099	31,600 14,334	31,600 14,334				
15' 4.57 m	35,000 15,876	35,000 15,876	35,000 15,876	35,000 15,876	34,900 15,831	34,900 15,831	34,500 15,649	34,500 15,649	33,500 15,196	33,500 15,196	27,800 12,610	27,800 12,610	20,800 9,435	20,800 9,435		
20' 6.10 m	25,300 11,476	25,300 11,476	25,300 11,476	25,300 11,476	25,300 11,476	25,300 11,476	25,300 11,476	25,300 11,476	25,300 11,476	25,300 11,476	22,400 10,161	22,400 10,161	20,000 9,072	20,000 9,072	78.5°	14,400 6,532
25' 7.62 m	19,000 8,618	18,100 8,210	19,000 8,618	18,100 8,210	19,000 8,618	18,100 8,210	19,000 8,618	18,100 8,210	19,000 8,618	18,100 8,210	18,200 8,256	18,100 8,210	17,100 7,757	17,100 7,757	75.5°	12,800 5,086
30' 9.14 m			15,100 6,849	12,700 5,761	15,100 6,849	12,700 5,761	15,100 6,849	12,700 5,761	15,100 6,849	12,700 5,761	15,100 6,849	12,700 5,761	14,000 6,350	12,700 5,761	72.5°	11,300 5,126
35' 10.67 m					11,900 5,398	9,400 4,264	11,900 5,398	9,400 4,264	11,900 5,398	9,400 4,264	11,900 5,398	9,400 4,264	11,900 5,398	9,400 4,264	69.0°	9,900 4,491
40' 12.19 m							9,300 4,218	7,200 3,266	9,300 4,218	7,200 3,266	9,300 4,218	7,200 3,266	9,300 4,218	7,200 3,266	65.5°	8,400 3,810
45' 13.72 m									7,400 3,357	5,500 2,495	7,400 3,357	5,500 2,495	7,400 3,357	5,500 2,495	62.0°	6,700 3,039
50' 15.24 m											6,000 2,722	4,300 1,950	6,000 2,722	4,300 1,950	58.5°	5,400 2,449
55' 16.76 m											4,800 2,177	3,300 1,497	4,800 2,177	3,300 1,497	55.0°	4,400 1,996
60' 18.29 m													3,900 1,769	2,600 1,179	51.0°	3,600 1,633
65' 19.81 m													3,100 1,406	1,900 862	46.5°	2,900 1,315
70' 21.34 m															42.0°	2,400 1,089
75' 22.86 m															37.0°	1,900 862
80' 24.38 m															31.0°	1,500 680

① Boom sections must be extended equal distance.

② Intermediate capacities for boom plus fly are permissible; See Operating Instructions Number 13.

Capacities ③ On Tires ④ 4-Section Boom			
Load Radius	20.5 x 25 (20-PR)		
	Pick & Carry ⑤	Stationary	
	Over Front	360°	Over Front
10' 3.05 m	29,800 13,517	22,400 10,161	29,800 13,517
12' 3.66 m	25,700 11,658	18,000 8,165	26,200 11,884
15' 4.57 m	21,100 9,571	13,500 6,124	21,400 9,707
20' 6.10 m	15,100 6,849	7,200 3,266	15,100 6,849
25' 7.62 m	10,000 4,536	4,300 1,950	10,000 4,536
30' 9.14 m	7,100 3,221	2,700 1,225	7,100 3,221
35' 10.67 m	5,100 2,313	1,600 726	5,100 2,313
40' 12.19 m	3,700 1,678	1,000 454	3,700 1,678
45' 13.72 m	2,700 1,225	—	2,700 1,225
50' 15.24 m	1,900 862	—	1,900 862
55' 16.76 m	1,300 590	—	1,300 590

- ③ Off main boom head only; boom sections must be equally extended.
- ④ For 'Pick & Carry' and stationary operation, tires must be inflated to 80 p.s.i. (5.52 Bars).
- ⑤ Limited to 1.0 m.p.h. (1.609 km/hr) travel speed, and swing lock must be engaged.

Wire rope size and type

Wire rope application	Size and type used	Wire rope description
Main winch	9/16" (14 mm) diameter, Type "N"	Type "N" - 6 x 25 (6 x 19 class) filler wire, extra improved plow steel, pre-formed, independent wire rope core, right lay, regular lay
Auxiliary winch	9/16" (14 mm) diameter, Type "N"	

Drum wire rope capacities

Wire rope layer	Main and auxiliary drum 12" (0.30 m) root diameter smooth lagging				Main and auxiliary drum 13-1/4" (0.34 m) root diameter grooved lagging*			
	9/16" (14 mm) wire rope				9/16" (14 mm) wire rope			
	Rope per layer		Total wire rope		Rope per layer		Total wire rope	
	Feet	meters	Feet	meters	Feet	meters	Feet	meters
1	82	24.99	82	24.99	94	28.65	94	28.65
2	93	28.35	175	53.34	105	32.00	199	60.66
3	101	30.78	276	84.12	109	33.22	308	93.88
4	108	32.92	384	117.04	116	35.36	424	129.24
5	112	34.14	496	151.18	124	37.80	548	167.03
6 ⑥	33	10.06	529	161.24	132	40.23	680	207.26

- ⑥ For storage purposes only - not a working layer.
- *Optional equipment-recommended for export use. 25:1 ratio.

HSP-8022 Lifting Capacities

28' 9" (8.76 m) - 91' 0" (27.74 m) 4-section boom

Refer to Operating Instructions page 4

Capacities ① On Outriggers-Manual Section Extended									
Load radius	80' (24.38 m) ②			91' (27.74 m) ②			91' (27.74 m) boom plus 24' (7.32 m) fly ③		
	Boom angle	Front	360°	Boom angle	Front	360°	Boom angle	Front	360°
15' 4.57 m	80.0°	22,600 10 251	22,600 10 251						
20' 6.10 m	76.5°	18,700 8 482	18,700 8 482	79.0°	16,600 7 530	16,600 7 530			
25' 7.62 m	73.0°	15,800 7 167	15,800 7 167	76.0°	14,400 6 532	14,400 6 532	79.0°	9,000 4 082	9,000 4 082
30' 9.14 m	69.0°	13,700 6 214	13,700 6 214	72.0°	12,300 5 579	12,300 5 579	77.0°	8,900 4 037	8,900 4 037
35' 10.67 m	65.0°	12,000 5 443	10,700 4 854	69.0°	10,600 4 808	10,500 4 763	74.0°	7,900 3 583	7,900 3 583
40' 12.19 m	61.0°	10,500 4 763	8,400 3 810	65.5°	9,200 4 173	8,200 3 720	72.0°	7,000 3 175	7,000 3 175
45' 13.72 m	56.5°	8,500 3 856	6,700 3 039	62.0°	8,300 3 765	6,600 2 994	69.5°	6,200 2 812	6,200 2 812
50' 15.24 m	52.0°	7,000 3 175	5,400 2 449	58.0°	6,900 3 130	5,300 2 404	66.0°	5,500 2 495	5,500 2 495
55' 16.76 m	47.0°	5,800 2 631	4,400 1 996	54.0°	5,700 2 586	4,300 1 950	63.5°	4,900 2 223	4,800 2 177
60' 18.29 m	41.5°	4,900 2 223	3,600 1 633	50.0°	4,800 2 177	3,500 1 588	61.0°	4,400 1 996	4,000 1 814
65' 19.81 m	35.0°	4,100 1 860	2,900 1 315	45.5°	4,000 1 814	2,800 1 270	58.0°	3,900 1 769	3,300 1 497
70' 21.34 m	27.5°	3,400 1 542	2,400 1 089	40.5°	3,300 1 497	2,300 1 043	54.5°	3,400 1 542	2,800 1 270
75' 22.86 m	17.5°	2,900 1 315	1,900 862	34.5°	2,800 1 270	1,800 816	51.5°	3,200 1 452	2,300 1 043
80' 24.38 m				28.0°	2,300 1 043	1,400 635	48.0°	2,800 1 270	1,900 862
90' 27.43 m							40.0°	2,000 907	1,200 544
100' 30.48 m							30.0°	1,400 635	—

Jib Capacities			
14' 6" (4.42 m) A-Frame Jib			
Boom angle	Jib Offset		
	10°	20°	30°
80°	10,000 4 536	8,500 3 856	2 676
75°	9,000 4 082	7,600 3 447	2 313
70°	7,000 3 175	6,500 2 948	2 087
65°	5,500 2 595	5,400 2 449	1 996
60°	4,400 1 996	4,200 1 905	1 769
55°	3,200 1 452	3,200 1 452	1 361
50°	2,100 953	2,100 953	953
45°	1,700 771	1,700 771	771
40°	1,300 590	1,300 590	590

- ① Boom sections must be extended equal distance.
- ② Intermediate capacities for boom with manual extended are permissible; See Operating Instructions Number 12.
- ③ Intermediate capacities for boom plus fly are permissible; See Operating Instructions Number 13.

Permissible line speed and line pull - Based on 9/16" (14 mm) Type "N" wire rope strength.

Layer	Speed	Main or auxiliary winch 12" (0.30 m) root diameter-smooth lagging				Main or auxiliary winch 13-1/4" (0.34 m) root diameter-grooved lagging			
		Line speed		Line pull		Line speed		Line pull	
		F.p.m.	m/min.	Pounds	kilograms	F.p.m.	m/min.	Pounds	kilograms
First	Standard High ④	161	49.07	9,000	4 082	177	53.95	8,195	3 717
		287	87.48	5,010	2 273	315	96.01	4,560	2 068
Sixth	Standard High ④	233	71.02	6,220	2 821	246	74.98	5,850	2 654
		416	126.80	3,460	1 569	443	135.03	3,260	1 479

Available line speed and line pull - Developed by machinery with first layer of wire rope, but not based on wire rope strength.

Layer	Speed	Main or auxiliary winch 12" (0.30 m) root diameter-smooth lagging				Main or auxiliary winch 13-1/4" (0.34 m) root diameter-grooved lagging			
		Line speed		Line pull		Line speed		Line pull	
		F.p.m.	m/min.	Pounds	kilograms	F.p.m.	m/min.	Pounds	kilograms
First	Standard High ④	161	49.07	9,900	4 491	177	53.95	9,015	4 089
		287	87.48	5,510	2 499	315	96.01	5,020	2 277
Sixth	Standard High ④	233	71.02	6,840	3 103	246	74.98	6,440	2 921
		416	126.80	3,810	1 728	443	135.03	3,590	1 628

④ Two-speed motor optional on main winch only.

HSP-8022 Operating Instructions

General:

- These capacities apply only to the machine as originally manufactured and normally equipped by FMC Corporation, Hydraulic Crane Division.
- Construction equipment can be dangerous if improperly operated or maintained. Operation and maintenance of this machine must be in compliance with the information in the operator's, parts and safety manuals supplied with the machine. If these manuals are missing, order replacements through the distributor.
- The operator and other personnel associated with this machine shall fully acquaint themselves with the latest applicable American National Standards Institute (ANSI) safety standards for cranes.
- All capacities are in pounds with metric equivalent in italic.

Set-Up:

- Capacities included in this chart are the maximum allowable crane capacities, and are based on machine standing level on firm supporting surface under ideal job conditions.
- When making lifts on outriggers, machine must be level and supported on fully extended outriggers with tires free of supporting surface.
- Five parts 9/16" (14 mm) diameter Type "N" wire rope required to lift maximum 44,100 lbs. (20 000 kg) rated load.
- Crane capacities on tires depend on tire capacity, condition of tires, and tire pressure. On tire picks require lifting from main boom head only on a smooth and level surface. 1.0 m.p.h. (1.60 km/h) maximum travel speed. Boom sections must be extended equally with swing lock engaged. 'Pick and Carry' operation with manual extended, fly or jib erected are prohibited.
- For on tire operation at a load radius of 15' (4.57 m) or less do not use boom lengths greater than 60' (18.29 m)

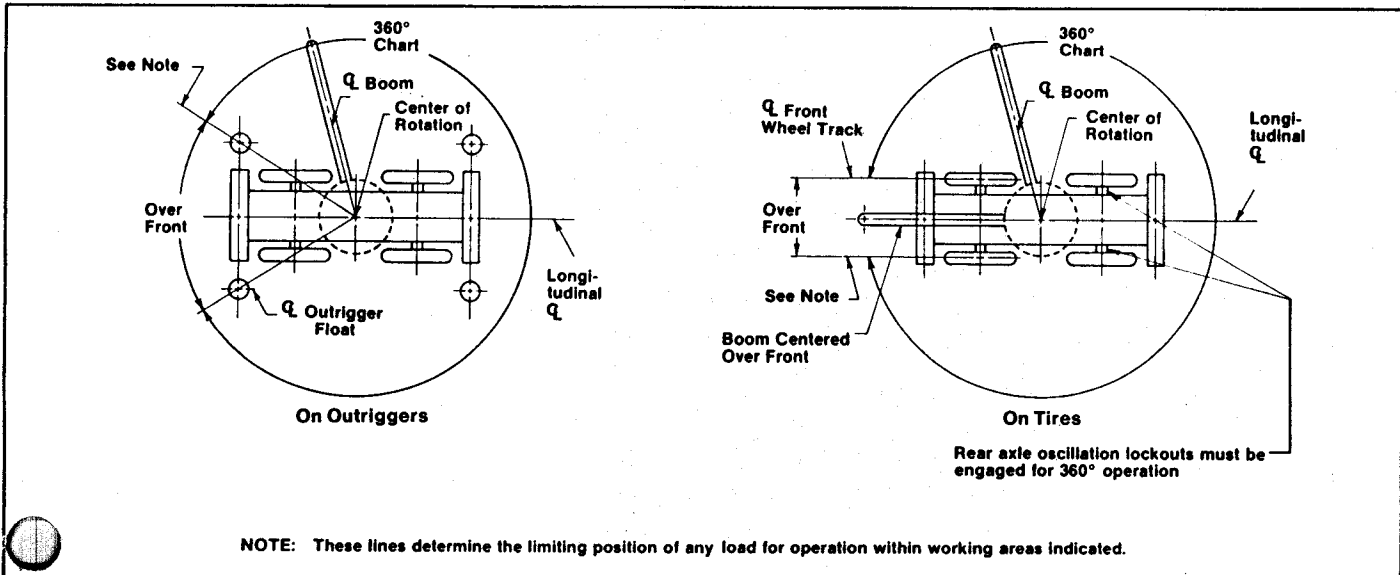
Operation:

- For the clamshell and concrete bucket operation weight of bucket and material must not exceed 80% of rated lifting capacity. Manual extended, fly or jib are not to be used for clamshell work.
- Those capacities above the heavy line indicate capacities based on factors other than those which would cause a tipping condition.
- Do not operate machine with boom or boom plus fly lengths at or beyond radii where no capacities are shown. Machine may overturn without any load on the hook.
- To determine capacities in-between those shown on charts, refer to the rated lifting capacity of the next longest boom for the same radius.
- When making lifts at a load radius not shown on charts, use next longer radius to determine allowable capacity.
- Crane capacities are based on freely suspended loads and make no allowance for such factors as the effect of wind, sudden stopping of loads, supporting surface conditions, inflation of tires, and operating speeds. Operator must reduce load ratings to take such conditions into account. Deduction from rated capacities must be made for weight of hook block, weighted ball/hook, sling, spreader bar, fly, or other suspended gear.
- The following deductions from rated main boom capacities must be made if machine is equipped with the following:
 - Auxiliary lifting sheave - 100 lbs. (45 kg)
 - 24' (7.32 m) one-piece fly stowed on boom - 300 lbs. (136 kg)
 - 24' (7.32 m) one-piece fly in working position - 800 lbs. (363 kg)
 - 14' 6" (4.42 m) one-piece A-frame - 500 lbs. (227 kg) stowed under boom.
 - 14' 6" (4.42 m) one-piece A-frame in working position - 800 lbs (363 kg).
- Powered boom length is from 28' 9" (8.76 m) to 70' 3" (21.41 m).
- Extension or retraction of the boom with loads within the limits of the applicable rating chart may be attempted. The ability to telescope load is limited by hydraulic pressure, boom angle, boom length, boom lubrication, etc.
- Do not move load to radii or boom lengths greater than those specified on applicable chart.
- Effective length of boom with auxiliary lifting sheave, is length shown on boom length indicator plus 2' (0.61 m).
- For boom length less than 80' (24.38 m) or between 80' (24.38 m) and 91' (27.74 m) with manual extended, the rated capacities are determined by boom angle only in their respective column. For angles not shown, use next lower boom angle to determine allowable capacity.
- For boom lengths with fly less than 94' 3" (28.73 m) with manual retracted or less than 115' (35.02 m) with manual extended, the rated loads are determined by boom angle only in their respective column. For angle not shown, use next lower boom angle to determine allowable capacity.
- Warning** - Do not lower 91' (27.74 m) boom length below 14°. Do not lower 70' 3" (21.41 m) boom with 14' 6" (4.42 m) jib or 24' (7.32 m) fly erected below 14°. Do not lower 91' (27.74 m) boom with 14' 6" (4.42 m) jib or 24' (7.32 m) fly erected below 30°.

Definitions:

- Operating Radius: Horizontal distance from a projection of the axis of rotation to the supporting surface before loading to the center of the vertical hoist line or tackle with load applied.
- Loaded Boom Angle: The angle between the boom base section and the horizontal, after lifting the rated load at the rated radius.
- Working Area: Areas measured in a circular arc about the center line of rotation as shown on the working area diagram.
- Freely Suspended Load: Load hanging free with no direct external force applied except by the lift cable.
- Side Load: Horizontal force applied to the lifted load either on the ground or in the air.

HSP-8022 Working Areas



NOTE: These lines determine the limiting position of any load for operation within working areas indicated.

We are constantly improving our products and therefore reserve the right to change designs and specifications.

FMC Corporation Hydraulic Crane Division Lexington Kentucky 40512

Link-Belt® cranes/excavators manufactured in: Cedar Rapids Iowa • Lexington & Bowling Green Kentucky • Ontario Canada • Milan Italy • Queretaro Mexico & Nagoya Japan (under license)

