

# ROUGH TERRAIN CRANE 50 TONS

LINK-BELT HSP-8050

BOOM LENGTHS:  
35 TO 110 FT

JIB LENGTHS:  
33 TO 58 FT

JIB OFFSETS:  
5 - 17.5 - 30



# NOTES:

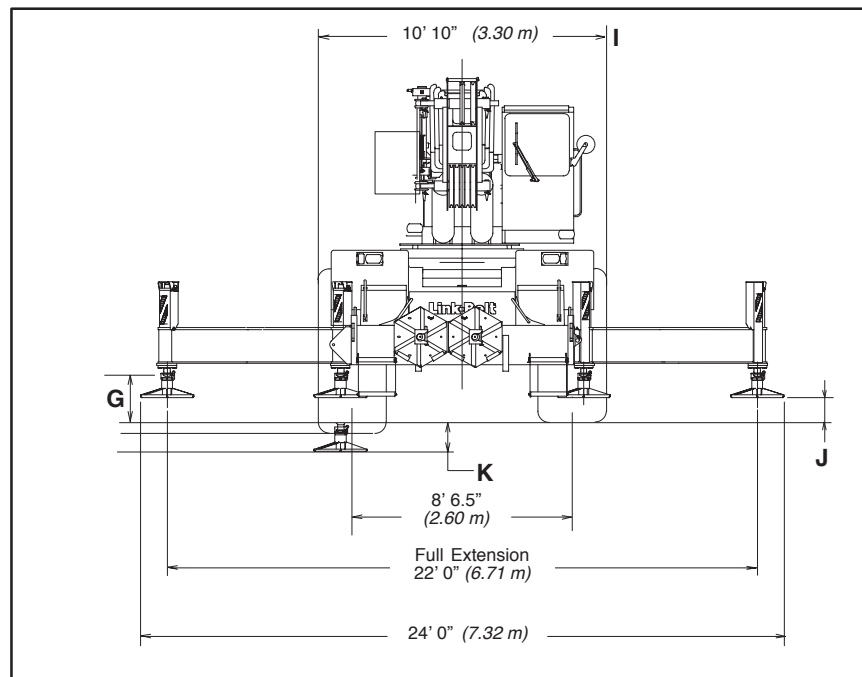
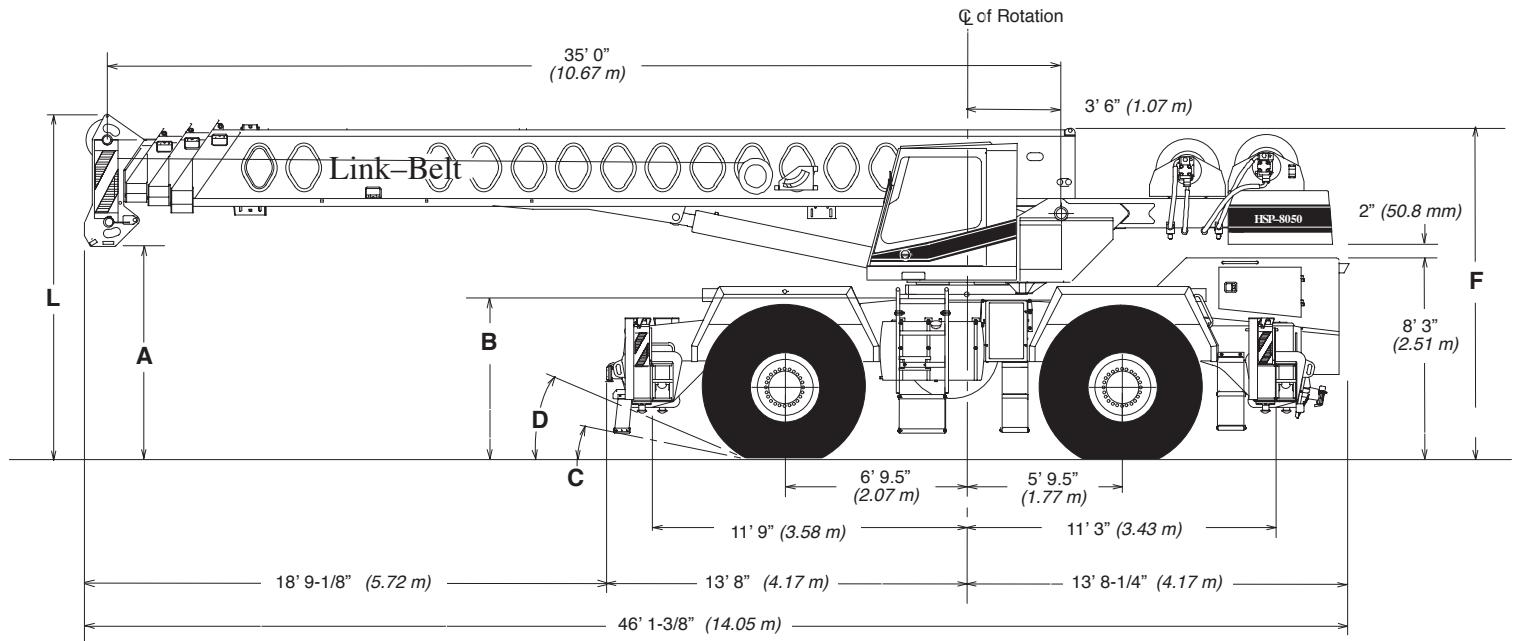
# Specifications

**Link-Belt**  
CONSTRUCTION EQUIPMENT

Telescopic Boom Rough Terrain Crane

*Eighty Series*

## HSP-8050 50-ton (45.36 metric tons)



General Dimensions	feet	meters
Turning radius (4-wheel steer) $\varnothing$ tire	25'	7.62
Tailswing of counterweight	13' 8-5/8"	4.18

Dimension	Tire Size	
	26.5 x 25 (24-PR)	29.5 x 25 (22-PR)
A	7' 9-1/4" (2.37 m)	7' 10-3/4" (2.41 m)
B	5' 9-1/2" (1.77 m)	5' 11" (1.80 m)
C	9°	10.9°
D	22°	24.5°
E	2' 6-3/8" (0.77 m)	2' 8" (0.81 m)
F	12' 2-1/2" (3.72 m)	12' 4" (3.76 m)
G	1' 7-3/4" (0.50 m)	1' 9-5/16" (0.54 m)
H	8' 6-1/2" (2.60 m)	8' 2-1/2" (2.50 m)
I	10' 10" (3.30 m)	10' 9-1/2" (3.28 m)
J	9-3/4" (0.25 m)	11-5/16" (0.29 m)
K	10" (0.25 m)	7-9/32" (0.18 m)
L	12' 6-3/4" (3.83 m)	12' 8-1/4" (3.86 m)

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CRANE + RIGGING

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**BOOM -**

Patent design. Boom side plates have diamond shaped impressions for superior strength to weight ratio and 100,000 psi (689.5 MPa) steel angle chord for lateral stiffness. Boom sections are supported by wear shoes both vertically and horizontally. Anti-two block, electronic boom length / angle indicator and function kickout.

Load Moment Indicator. Audio-visual warning system with anti-two block and function kickouts. Constant display of boom length and angle, tip height, radius of load, machine configuration, allowed load, actual load and % of allowed load. Presettable alarms for maximum and minimum boom angles, maximum tip height and maximum boom length.

Standard Boom. 35' 0" - 85' 0" (10.67m - 25.91m) 3-section full power boom.

Optional Boom. 35' 0" - 110' 0" (10.67m - 33.53m) 4-section boom includes base section, two power sections, and manual fourth section. Fourth section is power pinned by manually activating a cylinder locking system.

Boom Head - Standard. Four 16-3/8" (0.42m) root diameter head sheaves with five 16-3/8" (0.42m) available to handle up to 10 parts of wire rope. Two easily removable wire rope guards; rope dead end lugs provided on each side of boom head.

Auxiliary Lifting Sheave. Optional; single 16-3/8" (0.42m) root diameter head sheave with removable wire rope guard, mounted to boom, for use with one or two parts of line off the optional auxiliary winch. Does not affect erection of fly or jib, or use of main head sheave for multiple reeving.

Boom Elevation. Two hydraulic cylinders with holding valves. Self aligning steel bushings. Hand and optional foot controls for controlling the boom elevation from -3° to 78°.

**FLY -**

Optional - 33' 0" (10.06m) stowable one-piece lattice type.

**JIB -**

Optional - 25' 0" (7.62m) stowable A-frame which can be offset 5°, 17.5°, and 30°. Attaches to fly only.

**CAB AND CONTROLS -**

Environmental cab; isolated from sound and vibration by a neoprene seal. All windows are tinted and tempered safety glass. Sliding rear and right side windows and swing up roof window for maximum visibility and ventilation. Slide-by-door opens to 3' 0" (0.91m) width. 6-way adjustable operator's seat. 4-way adjustable tilt/telescoping steering wheel. Control levers for swing, boom telescope, winch and boom hoist with foot control swing brake. Outrigger controls, sight level bubble. Optional foot control for boom hoist.

Cab Instrumentation. Dash mounted gauges for hydraulic oil temperature, converter temperature, oil pressure, water pressure, fuel and volt-meter.

**SWING -**

Bi-directional hydraulic swing motor mounted to a planetary reducer for 360° continuous smooth swing at 2.45 r.p.m.

Swing Brake - Standard. Foot operated; spring released disc brake mounted on the speed reducer.

Swing Lock - Standard. 360° position pin type and two position travel lock operated from the operator's cab.

Counterweight. Pinned to upperstructure frame.

**HYDRAULIC SYSTEM -**

Main Pump. Triple gear-type pump. Combined pump capacity 161 gpm (609.4 lpm). Powered by torque converter through a pump disconnect. Pump disconnect is a jaw-type clutch engaged/disengaged from carrier. Maximum system pressure at 2900 p.s.i. (199.94 bars).

Steering/Outrigger Pump. Single gear-type pump, 28 gpm (106 lpm) maximum. Powered by torque converter through a straight mechanical drive. Pump operates at 2700 p.s.i. (186.25 bars).

Reservoir. 140 gallon (530.0 L) capacity. Diffusers for deaeration.

Filtration. One six-micron filter located inside the hydraulic reservoir. Accessible for easy replacement.

Control Valves. Six separate control valves allow simultaneous operation of all crane functions.

**LOAD HOIST SYSTEM -**

Standard. Model 2M main winch with two-speed motor and automatic brake; power up/power down mode of operation. Bi-directional gear type hydraulic motor.

Optional. Model 2M auxiliary winch with two-speed motor and automatic brake, power up/power down mode of operation. Bi-directional, gear-type hydraulic motor.

Optional. Model 3M winch with power up/power down, two-speed motor and exclusive controlled true gravity free fall. Available on main winch only.

Line Pulls and Speeds. **Maximum line pull 15,870 lbs.** (7,199 kg) and maximum line speed 548 f.p.m. (167.03 m/min.) on 17" (0.43 m) root diameter smooth drum.

**ADDITIONAL EQUIPMENT -**

Standard. Rear view mirrors, seatbelt, fire extinguisher, backup alarm, travel lights and sound suppressed cab.

**ADDITIONAL UPPERSTRUCTURE EQUIPMENT -**

Optional. Propane heater, diesel heater, air conditioning, drum rotation indicators, 60-ton (54.43 metric ton) hook block, 8-1/2 ton (7.71 metric ton) hook ball and swivel, rear steer indicator, boom mounted working light, engine monitoring system, top hatch wiper, windshield washer, hand throttle, lifting lugs, tachometer, amber rotating beacon, cab spotlight and boomhoist foot control.

## CARRIER

### TYPE -

10' 10" (3.30 m) wide, 151" (3.84 m) wheelbase.

4x4x4 (4-wheel steer, 4-wheel drive) Standard; for rough terrain with limited turning area.

4x4x4 (4-wheel steer, 4-wheel drive) Optional; no spin differential on front axle; for rough terrain with limited turning area.

Frame. 100,000 p.s.i. (689.5 MPa) steel, double walled construction with integral 100,000 p.s.i. (689.5 MPa) steel outrigger boxes.

### AXLES -

Front Standard. Heavy duty planetary drive/steer type.

Rear Standard. Heavy duty planetary drive/steer type.

Front Optional. Heavy duty no-spin high traction differential, planetary drive/steer type.

### SUSPENSION -

Front Axle. Rigid mounted to frame.

Rear Axle. Pin-mounted on bronze bushings, automatic hydraulic rear axle oscillation lock-out cylinders engage when upperstructure rotates past 2-1/2° of centerline.

### TIRES -

Front and Rear Standard. 26.5 x 25 (24-PR Earthmover type).

Optional. 29.5 x 25 (22-PR Earthmover type).

### BRAKES -

Service. Air over hydraulic, drum-type brakes at each wheel end. Drum diameter 20-1/4" (0.51 m). Shoe width 4" (101.6 mm).

Parking/Emergency. Disc caliper type spring applied, air released, fade resistant; cab controlled, mounted on front axle.

### STEERING -

Hydraulic two wheel, four wheel and "crab" steering.

### TRANSMISSION -

3-speed, 2-range power shift transmission. Six speeds available forward and 2 reverse. Front axle disconnect for two or four-wheel drive.

## LINK-BELT HSP-8050

### OUTRIGGERS -

Four hydraulic, beam and jack outriggers. Vertical jack cylinders equipped with integral holding valve. Beams extend to 22'0" (6.71 m) centerline-to-centerline and retract within 10' 10" (3.30 m) overall width with floats stored. Equipped with stowable, lightweight 24" (0.61 m) diameter floats. Controls and sight level bubble located in upperstructure cab.

### ADDITIONAL EQUIPMENT -

Standard. Cab steps, 2 front carrier steps, skid resistant finish on carrier deck, storage compartment and fenders.

Optional. Towing shackles, ether injection, no-spin differential on front axle, spare tires and rims, pintle hook, jack cylinder hose covers, propane fired engine block heater, air dryer and emergency steering system.



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**TRAVEL SPEEDS AND GRADEABILITY**

Engine	Tires	Max. Speed		Gradeability at stall	Max. Tractive Effort at Stall		Gradeability at 1.0 mph	Max. Tractive Effort at 1.0 mph	
		mph	km/h		lbs.	kg.		lbs.	kg.
GM	26.5 x 25	21	33.79	168%	79,145	35 900	55%	45,499	20 638
6v-53N	*29.5 x 25	21	33.79	147%	76,177	34 554	52%	43,793	19 865
Cummins	26.5 x 25	21	33.79	254%	85,551	38 806	62%	49,304	22 364
6CT 8.3'	*29.5 x 25	21	33.79	200%	82,343	37 351	59%	47,455	21 526

\* Optional Equipment

Engine	GM 6V-53N	Cummins 6CT 8.3*
Cylinders - cycle	6 - 2	6 - 4
Bore	3-7/8" (98.43 mm)	4.49" (114.05 mm)
Stroke	4-1/2" (114.30 mm)	5.32" (135.13 mm)
Displacement	318 cu. In. (5 211 cm <sup>3</sup> )	504 cu. In. (8 259 cm <sup>3</sup> )
Compression ratio	21 : 1	17.3 : 1
Maximum brake h.p.	205 at 2700 r.p.m.	215 at 2700 r.p.m.
Idle speed	500 r.p.m.	600 r.p.m.
Peak torque	445 lbs.	567 ft. lbs at 1500 r.p.m.
Electrical system	12 volt negative ground	12 volt negative ground
Fuel capacity	100 gallons (378.5 L)	100 gallons (378.5 L)
Alternator	80 amp Delco	80 amp Delco
Crankcase capacity	18.4 quarts (17.41 L)	18.9 quarts (17.89 L)
Air compressor	12 c.f.m. (0.34 m <sup>3</sup> /min)	13.2 c.f.m. (0.37 m <sup>3</sup> /min)

\* Optional Equipment



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**AXLE LOADS**

**LINK-BELT HSP-8050**

Base machine with standard 35' - 85' (10.67m - 25.91m) 3-section boom, main winch with 2-speed hoisting and power up/down, 600' (182.88m) 3/4" (19mm) wire rope, 4x4x4 carrier with GM 6V-53N engine, 26.5 x 25 tires, full fuel, rear counterweight, 4-sheave head machinery.	GVW		Upper Facing Front				Upper Facing Rear			
			Front Axle		Rear Axle		Front Axle		Rear Axle	
	lbs.	kg	lbs.	kg	lbs.	kg	lbs.	kg	lbs.	kg
	77,988	34 044	34,690	15 732	40,378	18 312	28,292	12 831	46,776	21 214
35' - 110' (10.67m - 33.52m) 4-section boom	1,952	885	1,808	820	-1,057	-479	-1,212	-550	3,164	1435
33' (10.06m) lattice fly stowed	1,040	472	1,660	753	-620	-281	-703	-319	1,743	790
25' (7.62m) A-frame jib stowed	1,128	512	1,438	652	-310	-141	-402	-182	1,530	694
Hook block at bumper	1,070	485	1,730	785	-660	-293	-	-	-	-
Headache ball at bumper	325	147	525	238	-200	-91	-	-	-	-
Auxiliary lifting sheave	150	68	468	212	-318	-144	-330	-150	480	218
Fly and jib stowage brackets	230	104	343	156	-113	-51	-132	-60	362	164
29.5 x 25 tires	160	72	80	36	80	36	-	-	-	-

Adjust gross vehicle weight and axle loading according to components weight.

Note: All weights are ± 3%

Tire	Maximum Axle Load @ 20 mph (32.7 km/hr)
26.5 x 25 (24-PR)	44,200 lbs. (20 047 kg)
29.5 x 25 (22-PR)	49,500 lbs. (22 451 kg)



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**CAPACITIES ON OUTRIGGERS - MANUAL SECTION RETRACTED**

**35' - 110' (10.67 - 33.53M) 4-SECTION BOOM**

Load Radius	35' (10.67m)		40' (12.19m)		48' (14.63m)		56' (17.07m)		62' (18.90m)		72' (21.95m)		85' (25.91m)	
	Front	360°	Front	360°	Front	360°	Front	360°	Front	360°	Front	360°	Front	360°
10' 3.05m	100,000 45 360	100,000 45 360	72,100 32 705	72,100 32 705	70,800 32 115	70,800 32 115	68,100 30 890	68,100 30 890						
12' 3.66m	98,300 44 589	98,300 44 589	72,100 32 705	72,100 32 705	70,800 32 115	70,800 32 115	68,100 30 890	68,100 30 890	67,600 30 663	67,600 30 663				
15' 4.57m	84,000 38 102	84,000 38 102	71,500 32 432	71,500 32 432	70,800 32 114	70,800 32 114	68,100 30 890	68,100 30 890	59,400 26 944	59,400 26 944	51,800 23 496	51,800 23 496		
20' 6.10m	64,300 29 166	64,300 29 166	64,300 29 166	64,300 29 166	64,300 29 166	64,300 29 166	57,200 25 946	57,200 25 947	48,900 22 180	48,900 22 180	43,200 19 596	43,200 19 596	36,600 16 602	36,600 16 602
25' 7.62m	49,800 22 589	49,800 22 589	49,800 22 589	49,800 22 589	49,800 22 589	49,800 22 589	48,100 21 818	48,100 21 819	41,300 18 734	41,300 18 734	36,800 16 692	36,800 16 692	30,500 13 835	30,500 13 835
30' 9.14m			40,300 18 279	36,800 16 692	40,300 18 279	36,800 16 692	40,300 18 279	36,800 16 692	35,500 16 103	35,500 16 103	31,800 14 242	31,800 14 242	25,800 11 703	25,800 11 703
35' 10.67m					32,400 14 696	27,500 12 474	32,400 14 696	27,500 12 474	32,400 14 696	27,500 12 474	27,800 12 602	27,500 12 474	22,200 10 069	22,200 10 069
40' 12.19m					25,200 11 430	21,300 9 661	25,300 11 476	21,300 9 661	25,400 11 521	21,300 9 661	24,500 11 113	21,300 9 661	19,400 8 800	19,400 8 800
45' 13.72m							20,400 9 253	17,100 7 757	20,400 9 253	17,100 7 757	20,400 9 253	17,100 7 757	17,100 7 757	17,100 7 757
50' 15.24m							16,600 7 529	13,900 6 305	16,600 7 529	13,900 6 305	16,600 7 529	13,900 6 305	15,400 6 985	13,900 6 305
55' 16.76m									13,900 6 305	11,500 5 216	13,900 6 305	11,500 5 216	13,800 6 260	11,500 5 216
60' 18.29m											11,700 5 307	9,600 4 354	11,700 5 307	9,600 4 354
65' 19.81m											9,900 4 490	7,900 3 583	9,900 4 490	7,900 3 583
70' 21.34m													8,400 3 810	6,700 3 039
80' 24.38m													6,000 2 721	4,500 2 041
90' 27.43m														
100' 30.48m														
110' 33.58m														

**LINK-BELT HSP-8050**

Wire Rope Application	Size and Type Used	Wire Rope Description
Main winch Auxiliary winch	3/4" (19mm) diameter, Type "N" 3/4" (19mm) diameter, Type "N"	Type "N" - 6x25 (6x19 class) filler wire, extra improved plow steel, performed, independent wire rope core, right lay, regular lay.



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## CAPACITIES ON OUTRIGGERS

77' - 85' (23.47m - 25.91m) 4-SECTION BOOM PLUS ATTACHABLE 33' (10.06m) FLY

Load Radius	Boom Angle	77' boom (23.47m) plus 33' fly (10.06m)		Boom Angle	85' boom (25.91m) plus 33' fly (10.06m)	
		Front	360°		Front	360°
10' 3.05m		See Note ②		See Note ②		
12' 3.66m						
15' 4.57m						
20' 6.10m						
25' 7.62m	76°	22,200 10 070	22,200 10 070	77°	18,500 8 392	18,500 8 392
30' 9.14m	74°	22,200 10 070	22,200 10 070	75°	17,500 7 938	17,500 7 938
35' 10.67m	71°	22,200 10 070	20,000 10 070	72°	15,500 7 031	15,500 7 031
40' 12.19m	68°	18,900 8 573	18,900 8 573	70°	13,900 6 305	13,900 6 305
45' 13.72m	66°	17,300 7 847	17,300 7 847	67°	12,400 5 625	12,400 5 625
50' 15.24m	63°	15,400 6 985	15,400 6 985	64°	10,900 4 944	10,900 4 944
55' 16.76m	60°	14,300 6 486	13,600 6 214	62°	9,600 4 355	9,600 4 355
60' 18.29m	56°	13,200 5 988	11,600 5 261	59°	8,600 3 901	8,600 3 901
65' 19.81m	53°	11,900 5 397	9,900 4 490	56°	7,700 3 493	7,700 3 493
70' 21.34m	50°	10,400 4 717	8,600 3 901	53°	6,900 3 130	6,900 3 130
80' 24.38m	42°	8,000 3 628	6,500 2 948	46°	5,600 2 540	5,600 2 540
90' 27.43m	33°	6,200 2 812	4,900 2 044	39°	4,600 2 087	4,400 1 996
100' 30.48m	21°	4,600 2 086	3,400 1 542	30°	3,900 1 769	3,400 1 542
110' 33.58m				17°	3,400 1 542	2,500 1 133

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# CAPACITIES ON TIRES

## 35' - 56' (10.67 - 17.07 m) 4-SECTION BOOM

Load Radius	Max. Boom Length	Pick & Carry ③	Stationary	
		Over Front	360°	Over Front
<b>10'</b> 3.05m	<b>35'</b> 10.67m	58,000 26 309	42,100 19 097	57,300 25 991
<b>12'</b> 3.66m	<b>35'</b> 10.67m	50,600 22 952	33,700 15 286	50,500 22 907
<b>15'</b> 4.57m	<b>35'</b> 10.67m	42,100 19 097	23,100 10 478	42,700 19 369
<b>20'</b> 6.10m	<b>35'</b> 10.67m	32,200 14 606	14,000 6 350	32,700 14 833
<b>25'</b> 7.62m	<b>35'</b> 10.67m	22,400 10 160	9,100 4 127	22,600 10 251
<b>30'</b> 9.14m	<b>40'</b> 12.19m	15,900 7 212	6,000 2 721	15,900 7 212
<b>35'</b> 10.67m	<b>40'</b> 12.19m	11,900 5 398	3,800 1 723	11,900 5 398
<b>40'</b> 12.19m	<b>48'</b> 14.63m	9,100 4 127	- -	9,100 4 127
<b>45'</b> 13.72m	<b>56'</b> 17.07m	7,000 3 175	- -	7,000 3 175
<b>50'</b> 15.24m	<b>56'</b> 17.07m	5,400 2 449	- -	5,400 2 449

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