

RT770E

**Cleveland Crane
& Shovel Sales, Inc.**

26781 CANNON ROAD
CLEVELAND, OHIO 44146
(440) 439-4749 Office
(440) 439-2177 Office Fax
www.craneandshovel.net

**70 US Ton Capacity
65 metric tonnes**

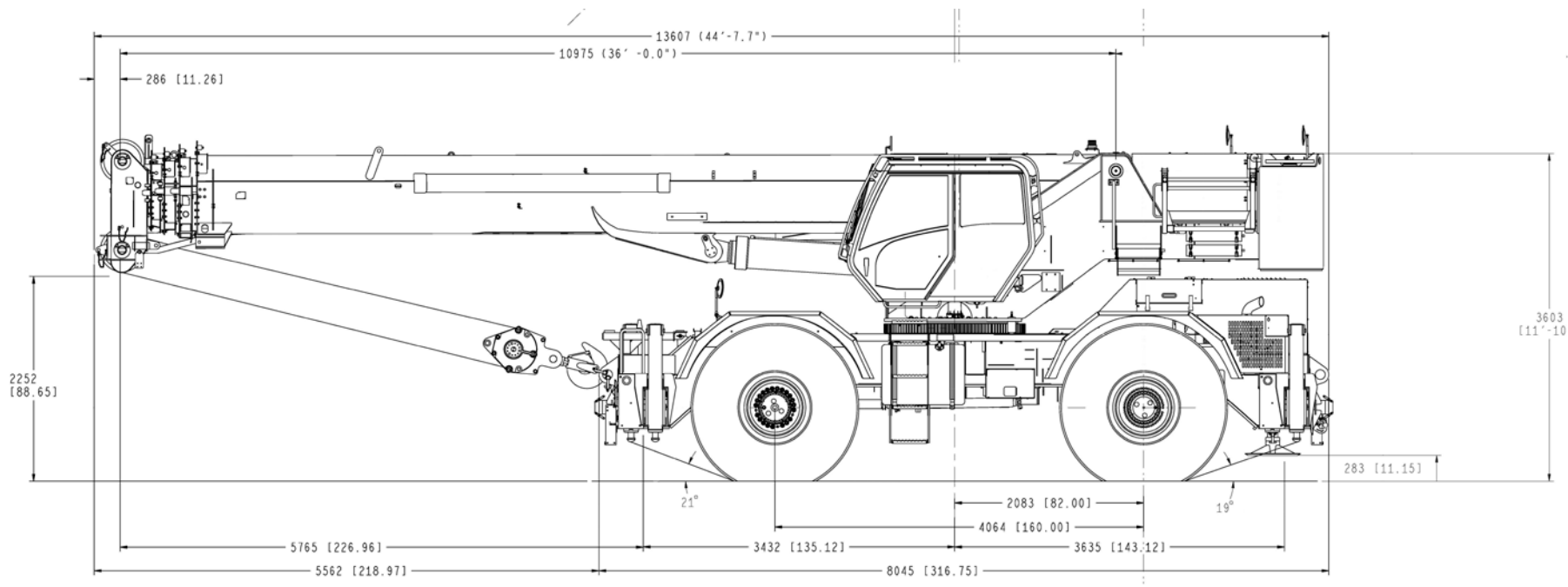


Grove Maniowoc National Crane Potain



RT770E

Dimensions



Height:	11 ft 10 in	(3.6 m)
Carrier Width:	11 ft	(3.4 m)
Overall Length:	44 ft 7.7 in	(13.6 m)
Wheelbase:	160 in	(4.0 m)

RT770E

Boom

**36 - 138 ft (11.0 m – 42.0 m) 5-Section
sequenced / synchronized full power
boom w/ A & B mode selection**

146 ft (44.5 m) Max. tip height

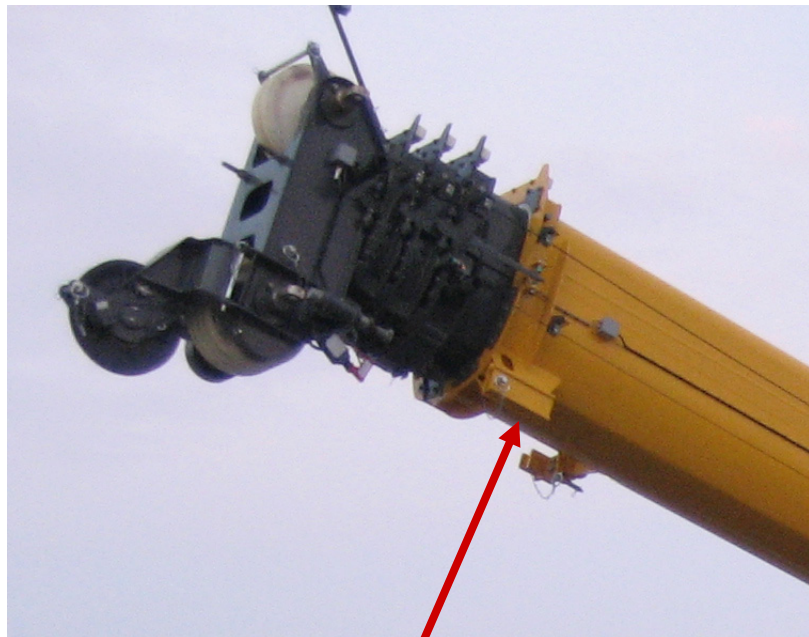
**130 ft (39.6 m) Max. working radius
w/ a capacity of 1,270 lb (576.0 kg.)**



RT770E

Boom Features

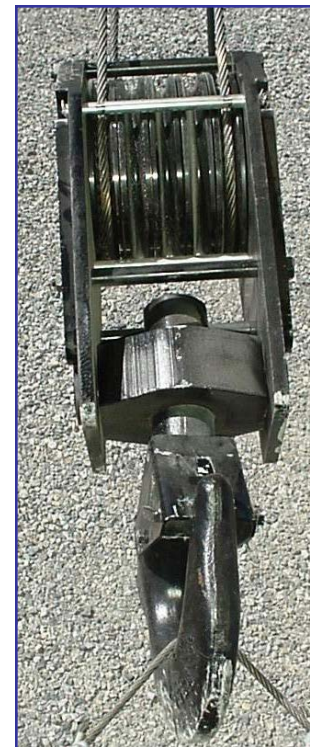
Quick-reeve Boom Nose
2 over 4 sheave for 65T (60mt)



Swingaway Alignment Device



**Easy-access
Wear Pads**



**Quick-reeve &
Low-profile
Hookblock**
5 sheave (65T / 60mt)

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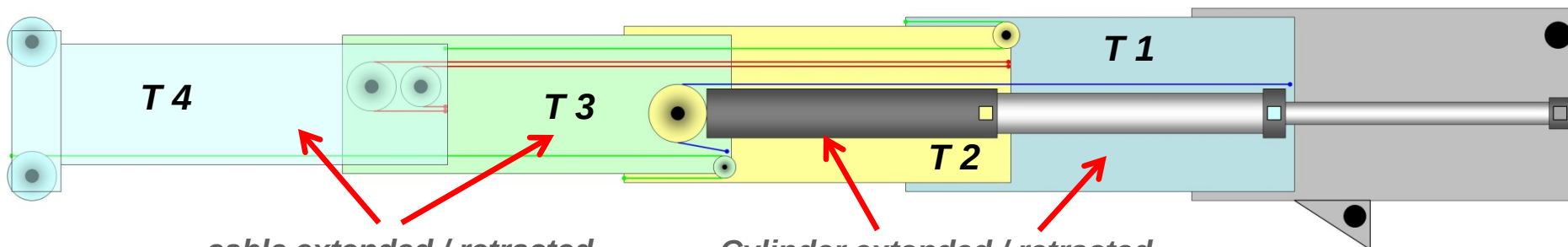
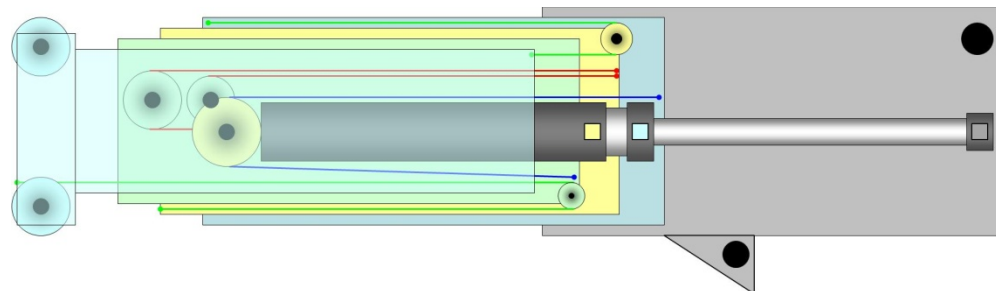
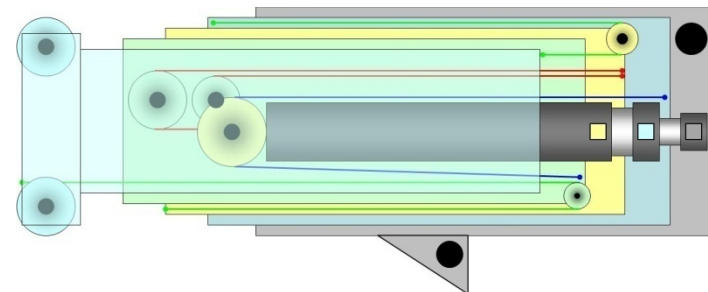
RT770E

Telescoping Technology

Two modes of operation

Mode B (default / automatic mode)

- Provides structural capacity chart advantages



cable extended / retracted

Cylinder extended / retracted

T4: 4 extend / 2 retract cables

T3: 6 extend / 3 retract cables

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RT770E

Telescoping Technology

Mode B

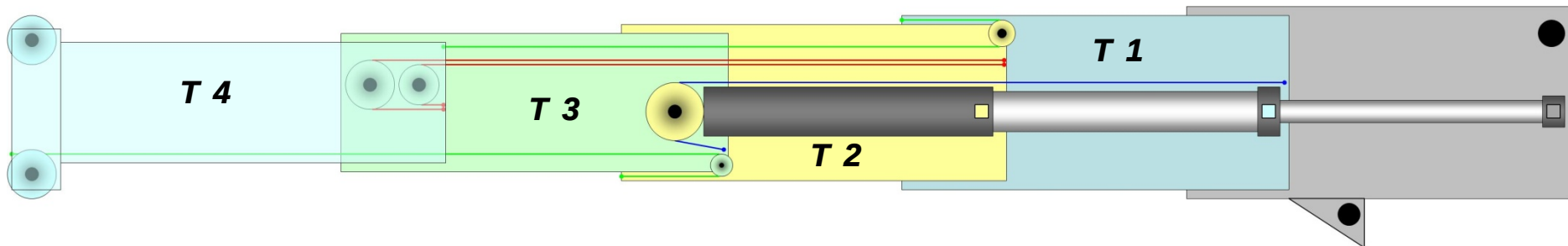
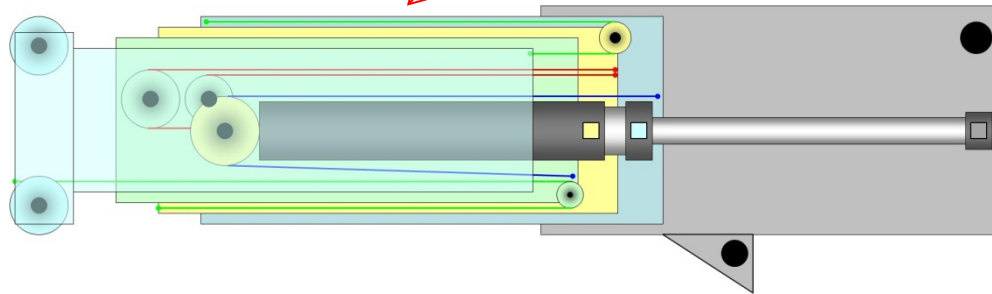
Default / automatic mode

Extending sequence:

- A. T1 fully out....all other sections stay retracted
- B. Once T1 is fully out....all other T sections extend in a synchronized (same amount) manner.

Retracting sequence:

- A. T4, T3, & T2 retract together (same amount) / same time. Once fully retracted, T1 then retracts.



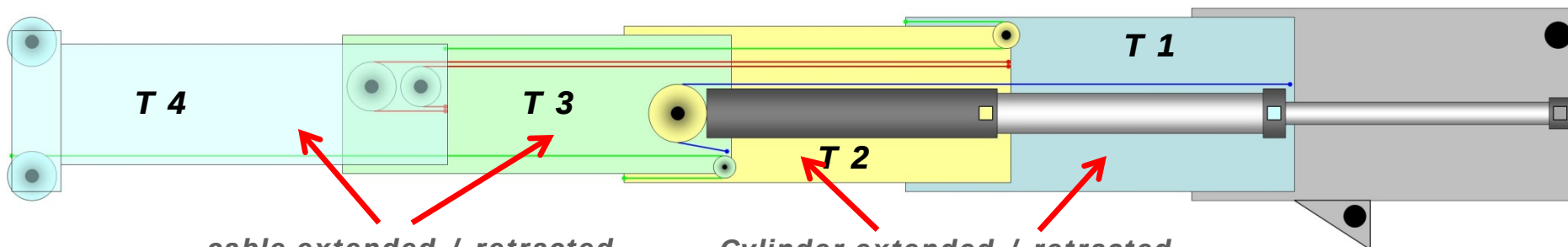
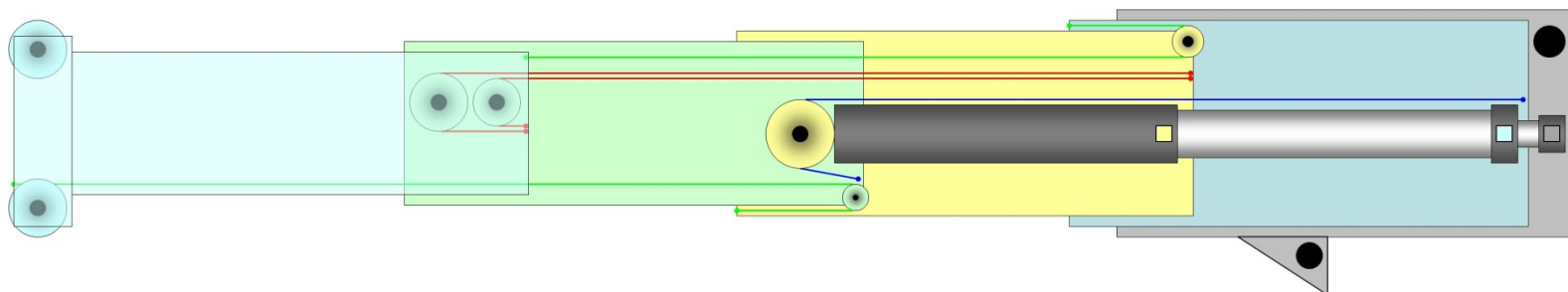
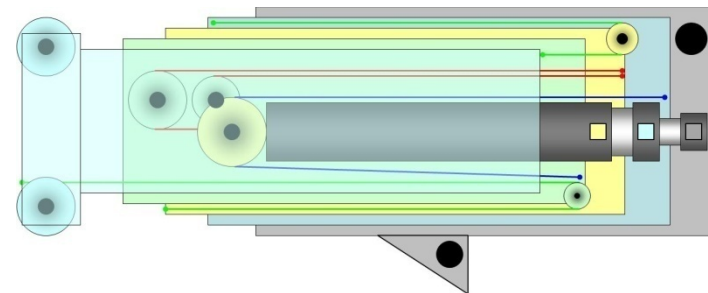
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Telescoping Technology

Two modes of operation

Mode A (operator Manual selection)

- Provides stability capacity chart advantages



cable extended / retracted

Cylinder extended / retracted

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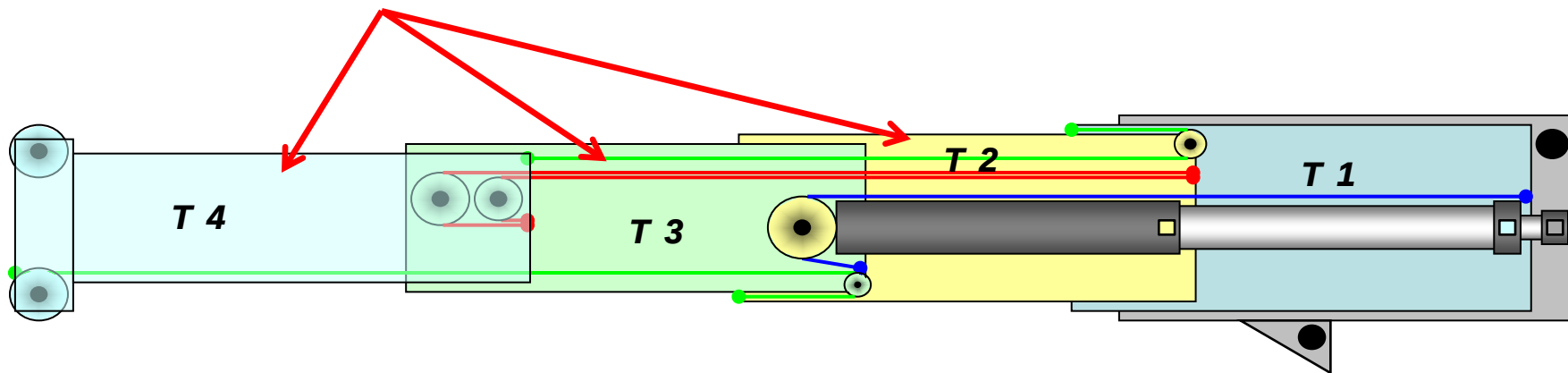


Mode A (operator Manual selection)

Provides stability capacity advantages

Extend sequence:

T4, T3, T2, extend first.....T1 extends last.



RATED LIFTING CAPACITIES IN POUNDS ON OUTRIGGERS FULLY EXTENDED - 360°

Radius in feet	Main boom length in feet - LMI code #0001															
	36.3	48.9	49.1	61.4	61.8	74.1	74.5	86.9	87.3	99.6	100.0	112.3	112.7	125.1	125.3	137.8
Tele 1	0%	50%	0%	100%	0%	100%	0%	100%	0%	100%	0%	100%	0%	100%	50%	100%
Tele 2	0%	0%	17%	0%	33%	17%	50%	33%	67%	50%	83%	67%	100%	83%	100%	100%
Tele 3	0%	0%	17%	0%	33%	17%	50%	33%	67%	50%	83%	67%	100%	83%	100%	100%
Tele 4	0%	0%	17%	0%	33%	17%	50%	33%	67%	50%	83%	67%	100%	83%	100%	100%
Mode	A, B	B	A	B	A	B	A	B	A	B	A	B	A	B	A	A, B
9	140,000 (71)															
10	130,000 (69.5)	91,650 (75.5)	50,000 (75)		*49,900 (78)											
12	112,500 (66)	91,650 (73)	50,000 (73)	72,350 (78)	49,900 (76.5)											
15	93,250 (60.5)	91,100 (69)	50,000 (69)	72,350 (74)	49,900 (73.5)	*50,000 (78)	41,650 (78)									
20	71,550 (50)	69,500 (62.5)	50,000 (62.5)	66,300 (69)	49,900 (68.5)	50,000 (73)	41,650 (73)	49,850 (78)	29,750 (75.5)	*39,250 (78)	*25,800 (78)					
25	56,650 (37.5)	54,900 (55.5)	50,000 (55.5)	54,350 (63.5)	49,750 (63.5)	50,000 (69)	41,650 (68.5)	44,250 (72.5)	29,750 (72.5)	39,250 (75.5)	25,800 (75)	*29,550 (78)	*21,900 (78)	*22,600 (78)		
30	43,700 (16)	42,650 (47.5)	45,550 (47.5)	41,900 (58)	44,950 (58)	43,300 (64.5)	36,550 (64.5)	38,100 (69)	28,050 (68.5)	34,400 (72.5)	24,850 (72)	29,550 (75)	21,900 (74.5)	22,600 (77)	*21,750 (78)	*18,600 (78)
35		33,700 (38)	36,600 (38)	32,250 (52)	37,800 (52)	33,700 (60)	32,450 (60)	33,150 (65.5)	24,950 (65)	30,050 (69)	22,150 (69)	27,600 (72.5)	19,950 (71.5)	22,600 (74.5)	20,900 (74)	18,600 (76)
40		26,050 (25)	28,700 (25.5)	24,950 (45.5)	29,750 (46)	26,250 (55.5)	29,150 (55.5)	27,200 (61.5)	22,450 (61.5)	26,450 (66)	19,900 (65.5)	24,400 (69.5)	17,950 (69)	22,350 (72)	19,000 (71.5)	18,300 (74)
45				19,650 (38)	24,050 (38.5)	20,750 (50.5)	24,900 (50.5)	21,850 (58)	20,350 (57.5)	22,800 (63)	18,050 (62.5)	21,700 (66.5)	16,300 (66)	20,300 (69.5)	17,350 (69)	18,050 (72)
50				15,500 (28.5)	19,800 (29)	16,700 (45)	20,700 (45)	17,900 (53.5)	18,500 (53.5)	18,750 (59.5)	16,350 (59)	19,400 (64)	14,800 (63.5)	18,200 (67)	15,950 (66.5)	16,700 (69.5)
55				12,200 (12)	16,450 (14)	13,600 (39.5)	17,400 (49.5)	14,850 (49.5)	16,800 (49.5)	15,600 (56)	14,800 (55.5)	16,300 (61)	13,350 (60.5)	16,350 (64.5)	14,650 (64)	15,500 (67.5)
60						11,100 (31)	14,800 (31.5)	12,450 (44.5)	15,350 (45)	13,100 (52)	13,450 (52)	13,750 (57.5)	12,150 (57.5)	14,200 (62)	13,400 (61.5)	14,000 (65)
65						9,070 (21)	12,650 (22)	10,500 (39)	13,550 (39.5)	11,050 (48.5)	12,300 (48.5)	11,650 (54.5)	11,050 (54.5)	12,150 (59)	12,250 (59)	12,600 (62.5)
70								8,870 (33)	11,750 (33.5)	9,420 (44)	11,300 (44.5)	9,950 (51)	10,100 (51)	10,400 (56.5)	11,250 (56)	10,850 (60.5)
75								7,450 (25.5)	10,250 (26)	8,010 (39.5)	10,350 (40)	8,500 (47.5)	9,270 (48)	8,940 (53.5)	10,000 (53.5)	9,390 (58)
80								6,190 (13)	8,950 (14.5)	6,800 (34)	9,130 (34.5)	7,250 (44)	8,530 (44)	7,690 (50.5)	8,760 (50.5)	8,130 (55.5)
85										5,720 (28)	8,050 (28.5)	6,180 (39.5)	7,860 (40)	6,610 (47)	7,690 (47)	7,050 (52.5)
90										4,760 (19.5)	7,100 (20.5)	5,240 (35)	7,250 (35.5)	5,670 (44)	6,750 (44)	6,100 (50)
95												4,400 (30)	6,530 (30.5)	4,840 (40)	5,930 (40.5)	5,270 (47)

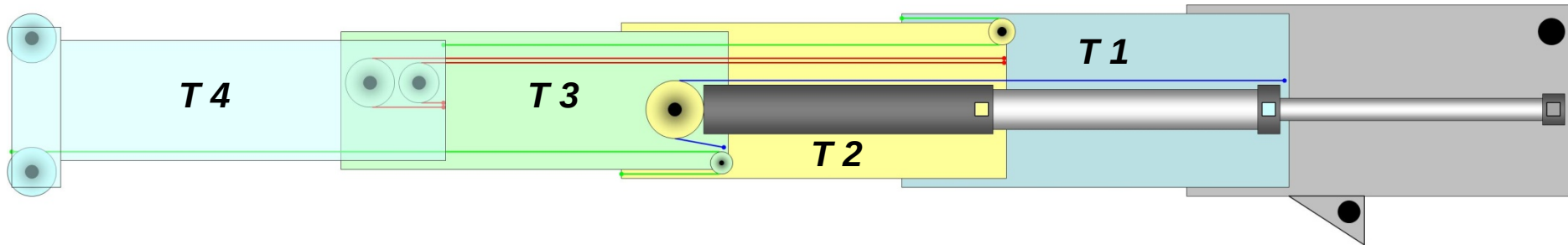
RT770E

Telescoping Technology

In addition:

RT770E will offer a manual mode selector switch in the cab to Allow the operator to re-sync the sections if an “out of sync” happens. (light will flash on L.M.I. to alert the operator).

3rd switch, in cab console, will be noted as “ recovery” which will allow some operation of the telescope if any of the boom sensor systems fail for some reason. This would allow the operator to get the load and the boom out of the air.



RT770E

Overhead Boom control layout



**A / B mode
&**

**Boom section
selection switches**

+

indicators

Recovery mode

❖ **A / B mode can be switched only when boom is fully out or in.**

❖ **Boom section selection switch is used only for maintenance or to re-synch the boom sections. (A / B switch MUST be in A mode (manual) to allow boom section selection.**

RT770E Telescope cylinder Reliability Life Testing Summary

Goal for long term reliability was 26,000 telescopic cycles

14 defined lift / telescopic sequence's were developed, each based on a specific boom angle, boom length, load radius, telescopic mode, load, & # of specific cycles per each sequence.

Cycles per sequence varied from 2,000 + up to 9,000 + cycles per each specific test sequence.

Key measurements taken and recorded thru-out entire test cycle.

Timeline from Nov. 2012 until May 2013.....

final achieved cycles of 25,219 cycles = 13.1 years.

Optional Bi-fold Swingaway Extension

- *33-56 ft (10-17.1 m) Bi-fold swingaway, offsets: 0° , 25° & 45°*
- *Maximum tip height: 202 ft (61.6 m)*

Optional Fixed Lattice

- *33 ft (10 m) Fixed swingaway, offsets: 0° , 25° & 45°*
- *Maximum tip height: 177 ft (54.0 m)*



NOTE:

*Extension is the same as and inter-changeable w/ extension used on **RT765E-2** & non-current **RT700E** models.*

RT770E

Optional Boom Extension Inserts



(1) 20 ft (6.0 m) Lattice inserts

Maximum tip height: 221 ft (67.4 m)

NOTE:

*Insert is the same as and inter-changeable w / insert's used on **RT765E-2**, **RT880E**, & non-current **RT700E** models.*

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RT770E

Operator's Cab

Common cab:

- **Armrest-mounted, hydraulic pilot single axis controls for crane functions**
- **Sliding skylight**
- **Full engine instrumentation**
- **Full acoustical lining**



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RT770E

Operator's Cab



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RT770E

Operator's Cab



Park Brake

Headlights

Drive selection

4 ways

Engine Diagnostics

Throttle increase

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RT770E

Operator's Cab



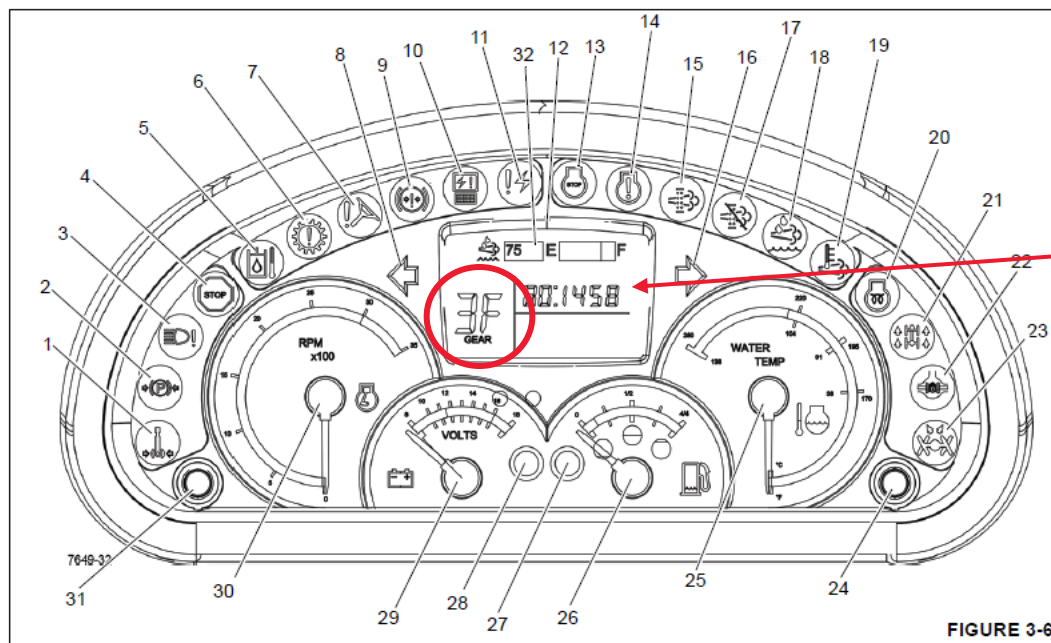


FIGURE 3-6

Figure 3-6 Item Numbers

Item	Description
1	Swing Brake Engaged
2	Parking Brake Engaged
3	Light Malfunction
4	Emergency Stop
5	Hydraulic Oil High Temperature
6	Transmission Warning
7	Low Steer Pressure
8	Left Turn Signal
9	Low Brake Pressure
10	Electronic Module Control
11	Electrical System Diagnostics
12	LCD Display

Item	Description
13	Engine Stop
14	Engine Warning
15	Exhaust System Cleaning Required
16	Right Turn Signal
17	Inhibit Exhaust System Cleaning
18	DEF Indicator
19	High Exhaust System Temperature
20	Engine Wait to Start
21	4 Wheel Drive Engaged
22	Axle Differential Locked
23	Rear Wheels Not Centered
24	Push Button Switch (not used)
25	Engine Coolant Temperature Gauge

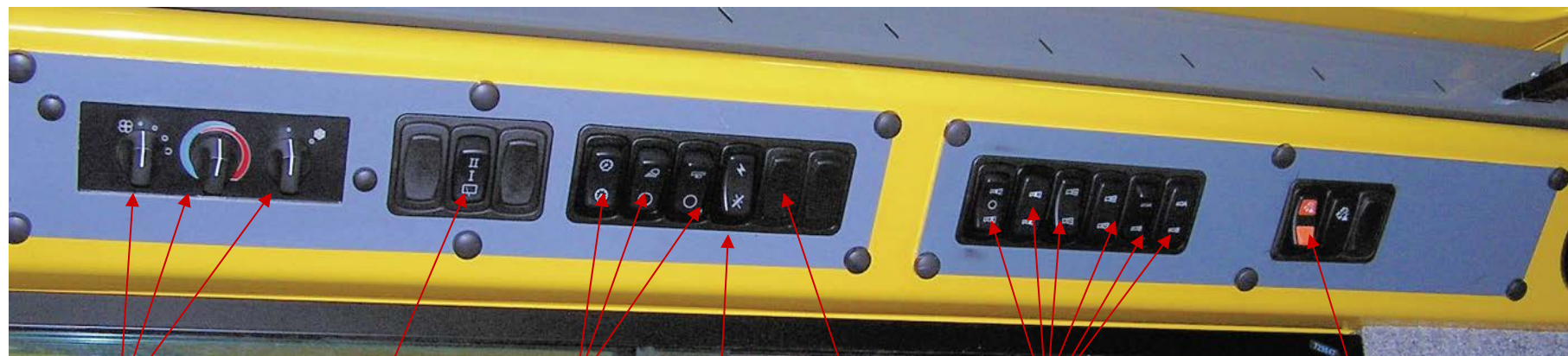
RT "E" Series Commonality

Grove Manitowoc National Crane Potain



RT770E

Operator's Cab



A/C & heater

**Skylight
wiper**

**Various optional
lights**

regen

Crane function

**A / B mode
&
Boom section
selection switches
+
indicators**

Recovery mode

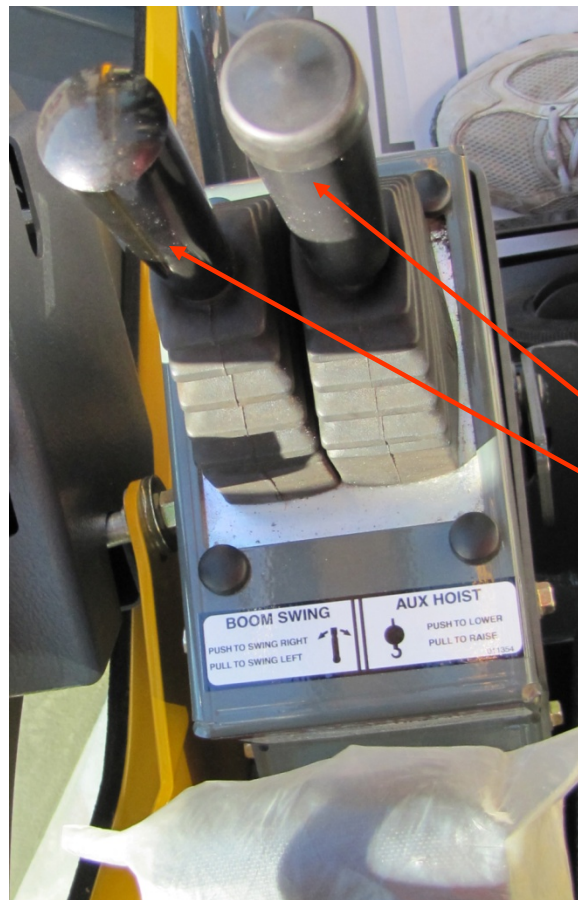
Overhead control layout

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RT770E

Operator's Cab



Left side controls

**Single Axis
Hydraulic joystick
Controllers for the -4-
Main functions.**

**Boom lift
Main Hoist**

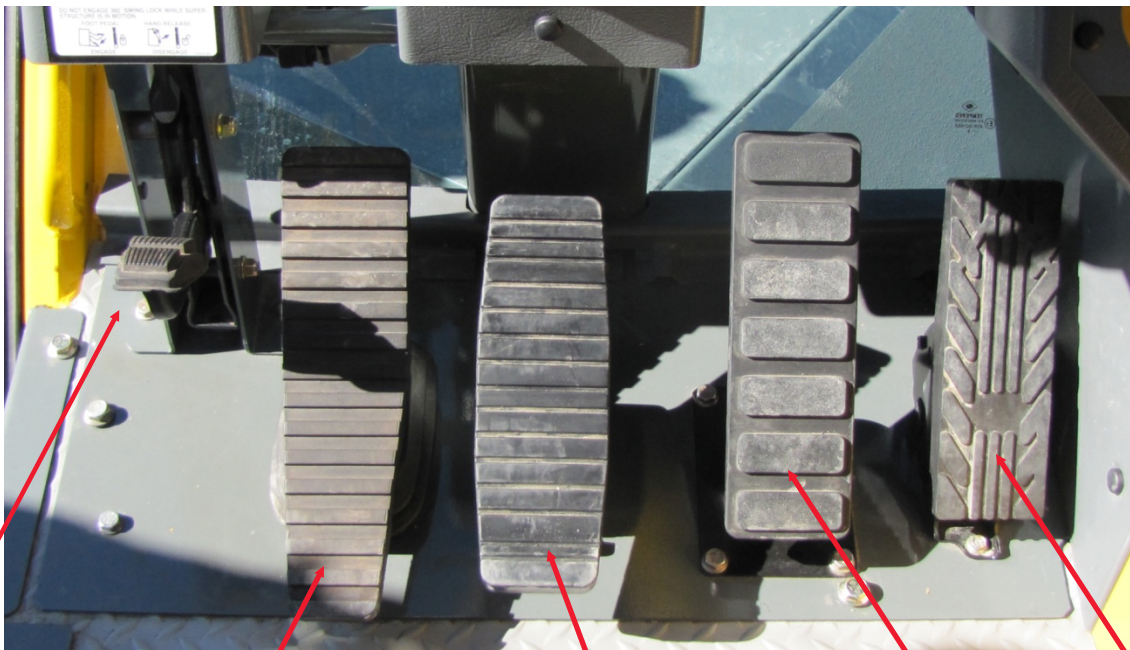
**Auxiliary Hoist
Superstructure Swing**



Right side controls

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Operator's Cab



360° swing lock

Swing brake pedal

Telescope pedal

Drive Brake pedal

Foot Throttle

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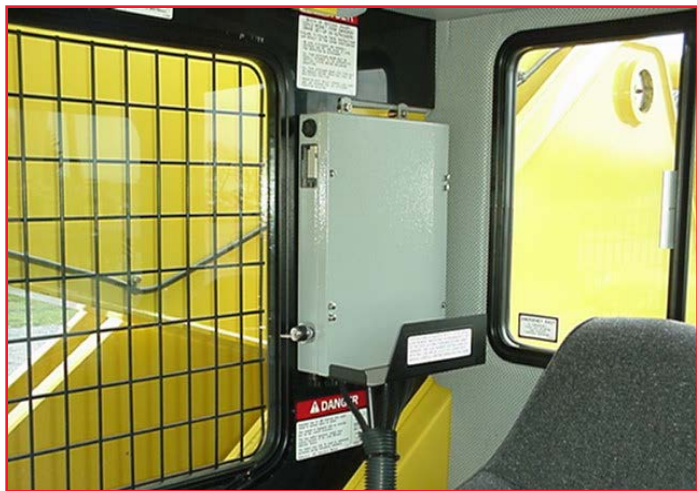


RT770E

LMI system

***In-dash
PAT I-Flex 2 Graphic Display LMI
with Work Area Definition System***

***Interior cab-mounted
central processing unit***



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RT770E

Hoists



Braden model HP 30A, grooved drums

- **Permissible line pull: 16,800 lbs (7 620 kg) 35x7 rotation-resistant wire rope (standard on both Main & Aux. hoist)**
- **Max single line speed: 588 FPM (179 m/m)**
- **Rope Length: Main Hoist: 650 ft (198 m)**
Aux. Hoist: 500 ft. (152.4m)
Optional: 650 ft (198 m)
- **Rotation indicator & cable follower STANDARD**

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Counterweight



- **Pinned-on counterweight:** 14,365 lbs (6 5156 kg)
- **Weight IPO auxiliary hoist & cable:** 568 lbs (258 kg)

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RT770E

Counterweight Option

**Optional:
Counterweight Removal System**

- **Rigging chart for installing and removing the counterweight with the unit on fully extended outriggers is included in LMI.**



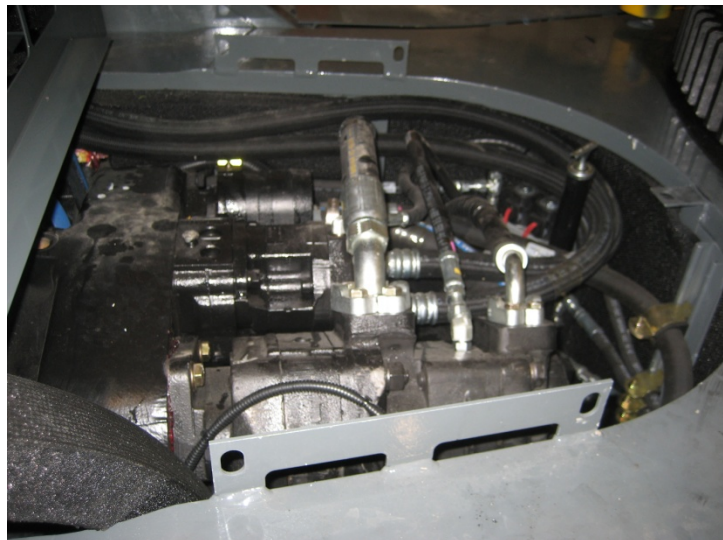
Note: Not available W/ C.E.

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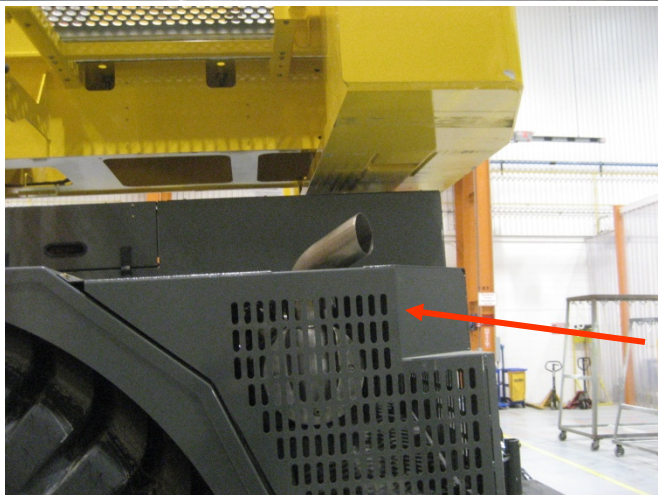
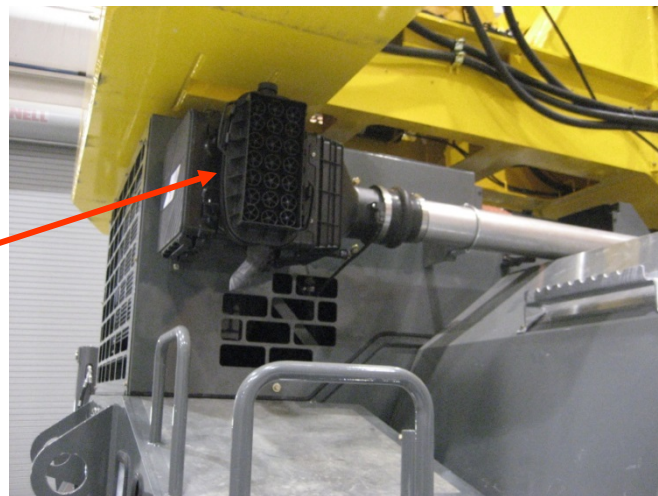
RT770E

Powertrain



- 260 bhp (194 kW) Cummins QSB 6.7L (tier 4F / Euro. IV)
- 728 lb-ft (987 Nm) Torque at 1500 RPM
- Rangeshift transmission 6 speeds forward & 6 reverse with front axle disconnect
- 72 Gallon (273 L) fuel tank
- 12-volt electrical system w/ (3) 12V batteries

**Cummins direct flow
Air cleaner system**



**Compact Catalyst (CCC)
& Selective Catalytic
Reduction (SCR) combo muffler
serialized to engine**

RT770E

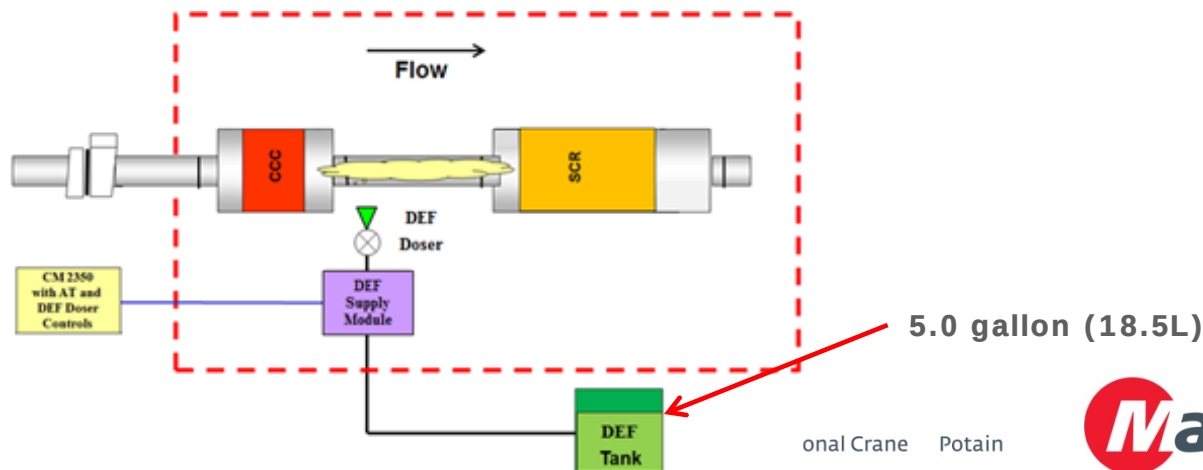
Powertrain



Cummins Air intake system to match E.P.A. requirements related to serialization Of engine / exhaust / air intake.



•Cummins Compact Catalyst (CCC) & Selective Catalytic Reduction (SCR) combo muffler, using Diesel Exhaust Fluid (DEF) injection to meet Tier IV FINAL emissions.



onal Crane Potain



RT770E

Chassis Features



Open stowage area



Battery disconnect switch



*Remote mounted
fuel/water separator
w/ shut-off*

RT770E

Other Features

Std. steel decking w/ anti-skid
Hoist access platform
Galvanized access steps

Std. -2- cab mounted
work lights

Grab handles on cab



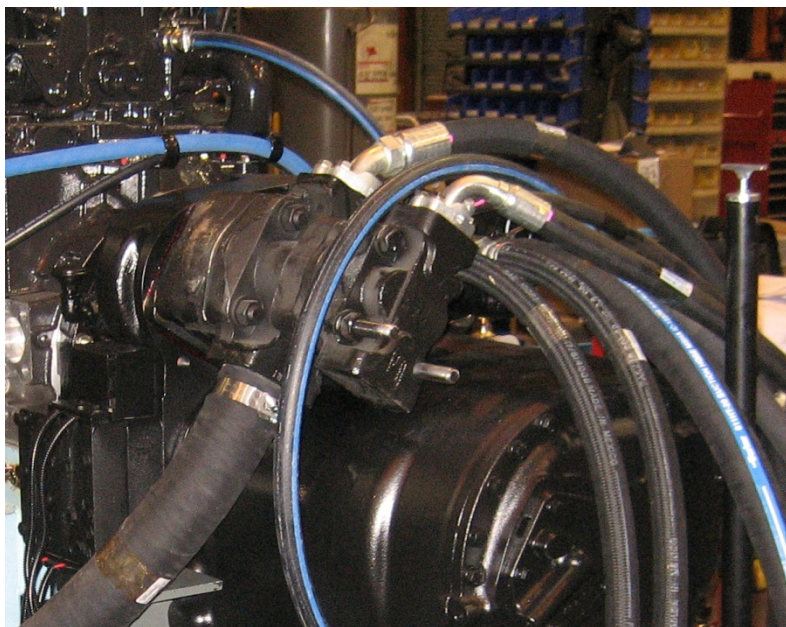
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RT770E

Hydraulic System

3 Main gear pumps, combined output of 123 gpm (465 L/m)



**Hydraulic reservoir capacity
169 gallons (640 L)**

Oil cooler standard

RT770E

Outriggers

- *Three position settings: 0 %, 50 % and 100 %*
- *Controls located on superstructure dash*



Inverted Outrigger Jacks

Grove Maniowoc National Crane Potain



RT770E

Tires / GVW



**STD: 29.5 x 25-28PR bias
tubeless**

GVW: 97,220 lb. (44 099 kg)

Grove Manitowoc National Crane Potain



RT770E

RT770E CAPACITY COMPARISON MAIN BOOM-ON OUTRIGGERS- 360° - 85% DOMESTIC

	GROVE RT770E 36'-138' 5-SEC. FP A / B mode	GROVE RT765E-2 35.6'-110' 4-SEC. FP	GROVE RT700E 35.6'-110' 4-SEC. FP	LINKBELT RTC-8065SII 38'-115' 4-SEC FP A / B mode	TEREX RT670 36' - 111' 4-SEC. FP	Tadano GR-750XL-2 36' - 141' 5-SEC. FP A / B mode	Sany SRC865XL 37' - 139' 5-SEC. FP	Zoomlion RT60XL 35' - 141' 4-SEC. FP	Grove RT880E 41 - 128 ft 4-SEC FP
Cwt. →	14,365 lb.	14,365 lb.	12,242 lb.	12,000 lb.	14,600 lbs	12,500 lb	12,000 lb.	15,430 lb.	18,000 lb
GVW	97,220 lb.	93,902 lb.	90,463 lb.	90,697 lb.	90,210 lb.	97,620 lb.	98,340 lb.	95,424 lb.	108,287 lb
O/R spread	23 ft. 4 in.	23 ft. 4 in.	23 ft. 4 in.	23 ft.	24 ft.	23 ft. 11.5 in.	23.6 ft.	22.6'	24 ft.
OAW	11 ft.	11 ft.	11 ft.	10 ft. 10 in.	11 ft. 4 in.	10 ft. 10 in.	10 ft. 10 in.	N/L	10 ft. 10 in.
AVG GREATER CAPACITIES (THROUGHOUT CHART)									
		8%	23%	8%	12%	1%	25%	14%	-17%



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