



## features

- **22 Ton (20 mton) Capacity**
- **4-Section 101' (30,8 m) Proportional Boom**
- **3-Section 77' (23,5m) Proportional Boom**
- **29' (8,8 m) Fixed Jib**
- **29' (8,8 m) to 52' (15,9) Telescopic Jib**
- **139' 10" (42,6 m) Maximum Tip Height**
- **Self-Lubricating Slider Pads**
- **Continuous Rotation**
- **Retracted, Intermediate and Fully Extended Outrigger Charts are Standard**
- **Pilot Operated Controls**
- **2-Speed Planetary Hoist with Grooved Drum and Negative Draft Flange**
- **Load Moment Indicator features Digital Display, CAN Bus Interface and Internal Boom Length Cable (101' boom only)**
- **Hydraulic Capacity Alert System (77' Boom only)**
- **Overload Shutdown**
- **Radio ATB**
- **Radio Load Cell Option**
- **Rugged Weatherproof Electrical**
- **System with Circuit Status LEDs**
- **System Pressure Gauge**
- **Optional Cab; Heater and Air Conditioner options**
- **Clamp-On Mounting**
- **Manitex UPTIME Comprehensive Support**

# series 2202

## BOOM TRUCKS



product guide

# series 2202

## GENERAL SPECIFICATIONS

### BOOM

Inverted T-cross section, 3 or 4-section telescoping type, extended and retracted proportionally by a double-acting hydraulic cylinder and cable-crowd system. Equipped with easily replaceable teflon-plugged nylatron wear pads for smooth operation.

**22101S** – 4-section 29'6" (9m) to 101' -6" (30,9m). 1-Section, 29' (8,8 m) jib

**2277S** – 3-section 29' (8.8 m) to 77' (23,5 m). 1-Section, 29' (8,8 m) or 2-Section 29' (8,8 m) -52' (15,9 m) jib options

**Quick Reeve Boom Point** – Three high-density nylon load sheaves mounted on heavy-duty roller bearings. Two removable pin-type rope guards.

**Boom Elevation** – Double-acting hydraulic cylinder. Working range from 9.5° below horizontal to 80.5° above.

**Load Hook** – 5-ton (4,5 mton) capacity hook with heavy-duty swivel and weight is provided for single-line operation.

### HOIST

Maximum theoretical line speed 300 fpm (91 mpm). Maximum theoretical bottom-layer line pull 11,500 lb (5 216 kg). Two-speed planetary reducer with wet multi-disc spring applied, pressure-released internal brake and grooved drum.

**Wire Rope** – 300' (91,4 m) of 9/16" (14,3 mm) diameter 6 X 25 EIPS IWRC.

### SWING SYSTEM

Externally mounted, double-reduction planetary gearbox driven by hydraulic motor. Maximum swing speed 1.5 rpm. Spring-applied hydraulically-released Parking Brake. Ball-bearing swing circle with external gear. Continuous rotation is standard. Manitex ACCUSwing control allows operator to adjust crane swing speed up to a maximum of 1.5 rpm (nominal).

### OUTRIGGERS

Out-and-down style outriggers, operated independently for precise leveling. Fully extended, intermediate extension and fully retracted positions. 12" (305 mm) diameter floats. Bubble level located near outrigger controls.

### MOUNTING

Lower frame is mounted to chassis by threaded rods and clamp plates. No welding, drilling, or bolting to truck frame is required.

**Rear Underride Protection** – Supplied on factory mounted cranes. Fabricated structure mounted at rear of carrier. Complies with Bureau of Motor Carrier Safety Standard 393.86.

**Lower Frame** – Torsion resistant, rigid 4-plate design with integrated outrigger and pedestal.

**Boom Rest** – Heavy-duty fabrication, removable.

### CONTROL SYSTEM

Single operator platform and seat mounted to turret. Four "pilot operated" single-axis crane controls provide precise metering and multifunction capability. Swing is further refined using Manitex ACCUSwing control to allow setting to individual operator preference. Controls are arranged in accordance with ANSI B30.5 standards. The operator station also includes engine start/stop, air foot throttle, signal horn, load moment indicator display, boom angle indicator, load chart and range diagram. Enclosed cab optional, heater and air conditioner options also available.

### HYDRAULICS

**Hydraulic System** – A 3-section pump direct-mounted to power take-off on truck transmission provides 32 gpm (123 lpm) to the hoist, 21 gpm (78 lpm) to the boom hoist and telescope circuit, and 10 gpm (38 lpm) to the swing and outrigger circuit. 70-gallon (265 liter) baffled hydraulic reservoir with strainer and 25-micron filter in the return line. Ball-type shutoff valve and strainer are provided in suction line. Use of SAE O-ring and face seal O-ring hydraulic fittings throughout system.

**Hydraulic Cylinders** – All load-holding cylinders are equipped with integral holding valves.

### WARNING SYSTEMS

**Hydraulic Capacity Alert System (HYCAS)** – For model 2277S; hydraulically senses boom hoist cylinder pressure, audio warning indicates overload condition and overload shutoff feature prevents continuing overload.

**Load Moment Indicator (LMI)** – For model 22101S; CAN bus system maximize expansion capabilities. Senses boom hoist cylinder pressure, boom length and boom angle. Audio-visual warning indicates overload conditions and overload shutoff feature prevents continuing overload. Operator can access all load conditions via display at the operator station. Internal boom length cable.

**Radio Anti-Two-Block System** – Audible warning and shutoff functions prevent hook from contacting boom point.

**Radio Load Cell** – Required option on HYCAS machines for jib operations, includes wireless transmitter and receiver/display. Screen displays weight of load on crane hook; intended as an operator aid, helps prevent against jib overloads.

**Back-Up Alarm** – Electronic audible motion alarm activated when truck transmission is in reverse gear.

### GENERAL

**Electrical** – State-of-the-art, weather-resistant components throughout. Hermetically sealed power in relays. Enclosure includes power in relays and circuit status LEDs. Designed to withstand high pressure washing and varying climates.

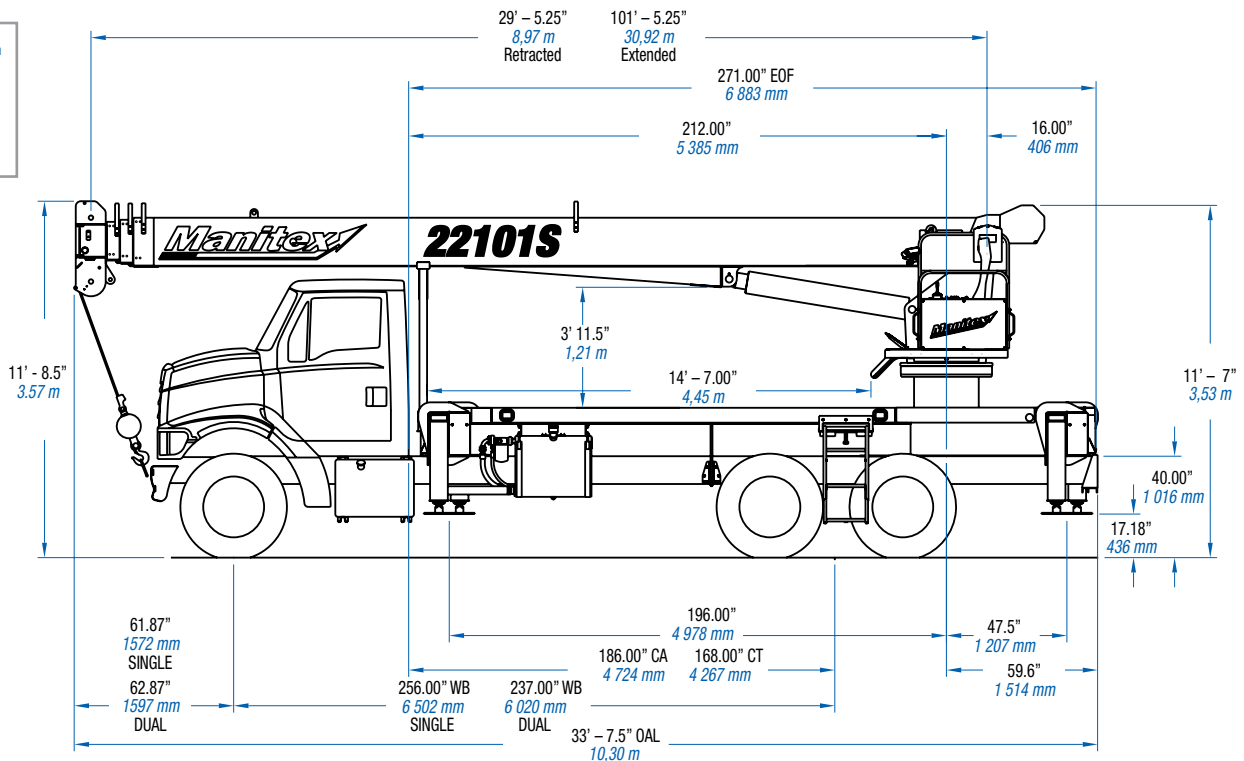
**Design/Welding** – Design conforms to ANSI B30.5. Welding conforms to AWS D1.1. Tested to SAE 1063 and SAE 765.

**Manuals** – Operator / maintenance and parts manuals depict correct crane operation, maintenance procedures and parts listing.

**Warranty** – 12-month warranty covers parts and labor resulting from defects in material and workmanship.

\* In order to ensure continuous improvement, specifications may change without notice.

OAH	Overall Height
CT	Cab to Tandem
CA	Cab to Axle
WB	Wheel Base
OAL	Overall Length
BBC	Bumper to Back of Cab
AF	Afterframe
EOF	End of Frame

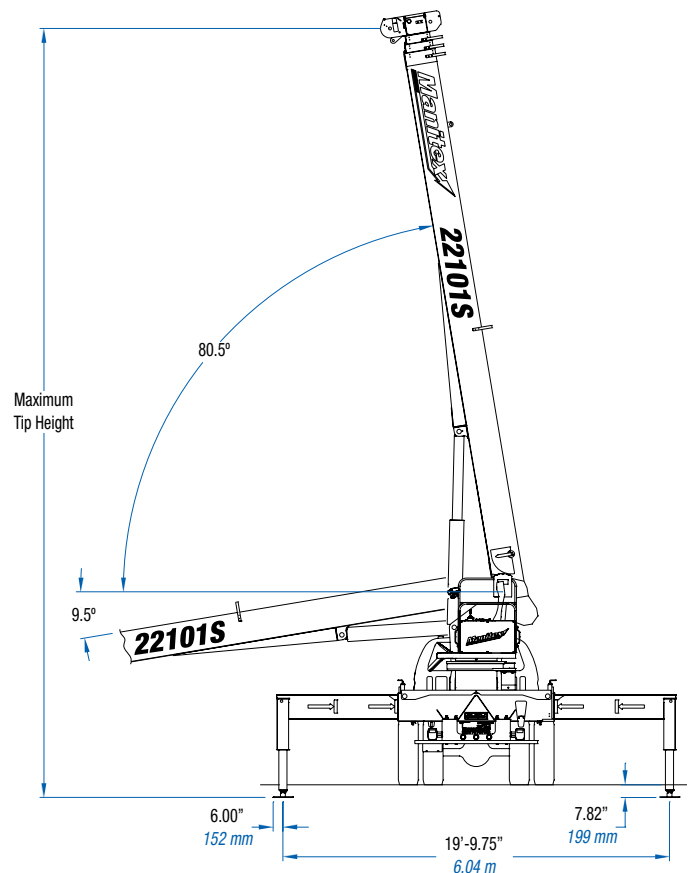


CHASSIS DATA	22101S SINGLE AXLE	22101S TANDEM AXLE	2277S TANDEM AXLE
Wheelbase (WB)	<b>256"</b> 6 502 mm	<b>237"</b> 6 020 mm	<b>237"</b> 6 020 mm
Cab to Axle (CA)	<b>186"</b> 4 724 mm	-	-
Cab to Tandem (CT)	-	<b>168"</b> 4 267 mm	<b>168"</b> 4 267 mm
Cab to End of Frame (EOF)	<b>271"</b> 6 883 mm	<b>271"</b> 6 883 mm	<b>271"</b> 6 883 mm
Frame Section Modulus at 180° Area of Operation	<b>15.9 in3</b> 110,000 psi 758 422 kPa	<b>15.9 in3</b> 110,000 psi 758 422 kPa	<b>15.9 in3</b> 110,000 psi 758 422 kPa
Frame Section Modulus * at 360° of Operation	<b>18.0 in3</b> 50,000 psi 344 750 kPa	<b>18.0 in3</b> 50,000 psi 344 750 kPa	<b>18.0 in3</b> 50,000 psi 344 750 kPa
Front Axle Gross Weight Rating	<b>CONSULT</b> <b>FACTORY</b>	<b>12,000 lb</b> 5 443 kg	<b>12,000 lb</b> 5 443 kg
Rear Axle Gross Weight Rating		<b>34,000 lb</b> 15 422 kg	<b>34,000 lb</b> 15 422 kg
Minimum Truck Axle Weight - Front**		<b>6,800 lb</b> 3 084 kg	<b>5,750 lb</b> 2 608 kg
Minimum Truck Axle Weight - Back**		<b>7,400 lb</b> 3 357 kg	<b>6,750 lb</b> 3 062 kg
Nominal Frame Width	<b>34"</b> 864 mm	<b>34"</b> 864 mm	<b>34"</b> 864 mm

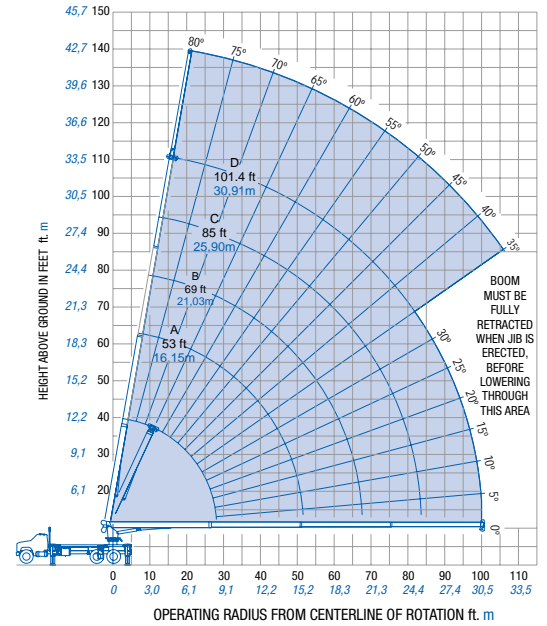
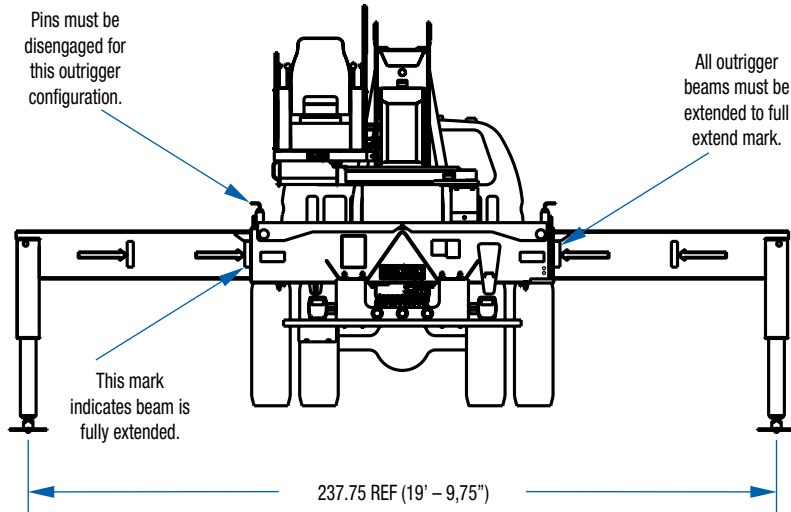
\*Frame section modulus at 360° area of operation requires front bumper stabilizer.  
\*\*Minimum chassis weight is required to meet 85% stability requirements.  
Chassis data is general - not for engineering. Some dimensions depend on truck selection.

MAXIMUM TIP HEIGHT (A)	22101S	2277S
Configuration	<b>Boom 101'</b> 30,8 m	<b>Boom 77'</b> 23,5 m
Extended Boom	<b>110' 8"</b> 33,7 m	<b>86' 4"</b> 26,3 m
Fixed Jib	<b>139' 10"</b> 42,6 m	<b>115' 6"</b> 35,2 m
Extended Telescopic Jib	-	<b>138'</b> 42,1 m

WEIGHTS	22101S	2277S
Crane Without Cab	<b>18,903 lb</b> 8 574 kg	<b>17,579 lb</b> 7 973 kg
Cab Alone	<b>575 lb</b> 261 kg	<b>575 lb</b> 261 kg
13' (4,0 m) Flat Bed	<b>1,200 lb</b> 544 kg	<b>1,200 lb</b> 544 kg
29' (8,8 m) Fixed Length Jib	<b>660 lb</b> 299 kg	<b>820 lb</b> 372 kg
29'-52' (8,8 m-15,9 m) Telescopic Jib	-	<b>1,285 lb</b> 583 kg



Use this chart only when ALL outriggers are fully extended.



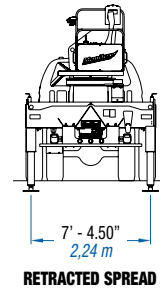
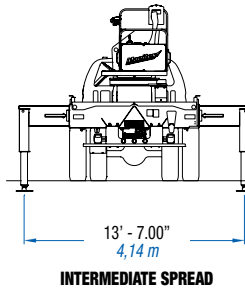
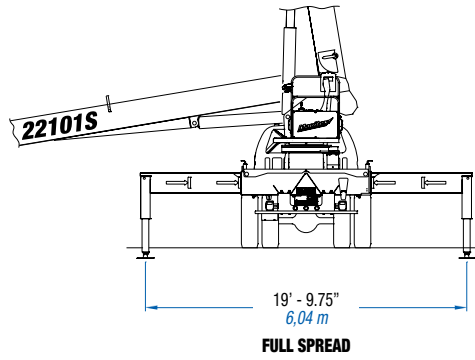
### FULLY EXTENDED OUTRIGGER SPREAD: MODEL 22101S

#### MAIN BOOM LOAD RATINGS

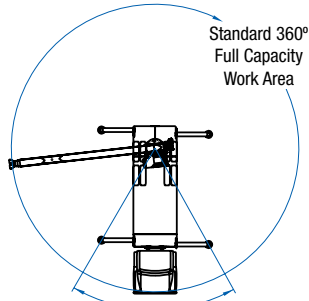
#### JIB

Operating Radius		Boom Length		A		B		C		D		Fixed Jib				
		29.4 Feet 8,96 Meters		53 Feet 16,15 Meters		69 Feet 21,03 Meters		85 Feet 25,90 Meters		101.4 Feet 30,91 Meters		29.4 Feet 8,96 Meters				
Feet	Meters	°	lb.	kg.	°	lb.	kg.	°	lb.	kg.	°	lb.	kg.	°	lb.	kg.
5	1,52	80	44,000	19 958												
8	2,44	74	33,540	15 213												
10	3,05	70	28,140	12 764												
12	3,66	66	24,230	10 991	78	14,000	6 350									
14	4,27	61	20,460	9 280	76	14,000	6 350	80	14,000	6 350						
17	5,18	54	16,400	7 439	72	14,000	6 350	78	12,880	5 842						
20	6,10	46	13,520	6 133	69	13,700	6 214	75	11,430	5 185	79	8,920	4 046			
25	7,62	29	10,210	4 631	63	10,600	4 808	71	9,460	4 291	75	8,000	3 629	79	6,000	2 722
30	9,14				56	8,390	3 806	66	8,210	3 724	72	7,070	3 207	76	5,500	2 495
35	10,66				49	6,790	3 080	61	6,890	3 125	68	6,130	2 781	73	4,980	2 259
40	12,19				41	5,590	2 536	56	5,700	2 585	65	5,320	2 413	70	4,490	2 037
45	13,71				31	4,640	2 105	51	4,760	2 159	61	4,640	2 105	67	4,000	1 814
50	15,24				17	3,880	1 760	45	4,000	1 814	57	4,070	1 846	64	3,580	1 624
55	16,76							38	3,380	1 533	52	3,450	1 565	61	3,200	1 451
60	18,28							30	2,860	1 297	47	2,930	1 329	57	2,850	1 293
65	19,81							19	2,410	1 093	42	2,490	1 129	54	2,520	1 143
70	21,33										36	2,090	948	50	2,130	966
75	22,86										29	1,740	789	45	1,790	812
80	24,38										20	1,440	653	41	1,500	680
85	25,90													36	1,240	562
90	27,43													30	1,020	463
95	28,96													22	820	372
100	30,48															
105	32,00															
110	33,53															
		340 lbs 154 kg		190 lbs 86 kg		150 lbs 68 kg		120 lbs 54 kg		100 lbs 45 kg		DEDUCTIONS FOR STOWED JIB				

Meets ANSI B30.5 Requirements - Do not operate crane or accessories within 10' (3,05m) of live power lines.  
 NOTICE: This chart is for reference only and must not be used for lifting purposes. Consult factory for other boom options.



### AREA OF OPERATION



#### WARNING

The front tires must be in contact with the ground and the machine level when operating in this area.

### DEDUCTIONS

Auxiliary Block	<b>50 lb</b> <b>22,72 kg</b>
Load Block	<b>See block manufacturer nameplate</b>
Overhaul Ball	<b>See overhaul ball manufacturer nameplate</b>
Hose Reel	<b>160 lb</b> <b>72,57 kg</b>
Swing Around Jib (Stowed)	<b>See load rating chart</b>

### ALLOWABLE LINE PULL

1 Part Line	2 Part Line	3 Part Line	4 Part Line	5 Part Line	6 Part Line	<b>WARNING</b>	
							Anti-two-block system must be in good operating condition before operating crane.
<b>8,500 lb</b> <b>3 856 kg</b>	<b>17,000 lb</b> <b>7 711 kg</b>	<b>25,500 lb</b> <b>11 567 kg</b>	<b>34,000 lb</b> <b>15 422 kg</b>	<b>42,500 lb</b> <b>19 278 kg</b>	<b>44,000 lb</b> <b>19 958 kg</b>		Refer to the owner's manual.
<b>7,400 lb</b> <b>3 357 kg</b>	<b>14,800 lb</b> <b>6 713 kg</b>	<b>22,200 lb</b> <b>10 070 kg</b>	<b>29,600 lb</b> <b>13 426 kg</b>	<b>37,000 lb</b> <b>16 783 kg</b>	<b>44,000 lb</b> <b>19 958 kg</b>	Keep at least three wraps of load line on the drum at all times.	
						.5625" 6 x 25 IWRC (3.5:1 SF) - 29750 lb minimum breaking strength	
						.5625" rotation resistant (5.0:1 SF) - 37000 lb minimum breaking strength	

### BOOM AND JIB COMBINATIONS

2277S	77'	3 Section Boom	29' - 52'	2 - Section Jib
22101S	101'	4 Section Boom	29'	1 - Section Jib

**UPTime is the Manitex commitment to complete support of thousands of units working every day.**

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- Includes 24-7-365 parts and service assistance.
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- Relies on Manitex's UPTrak support tracking system for performance analysis and resource allocation.
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- Mandates training; at our facility and yours. It includes coordinated support from all component suppliers.
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Manitex  
3000 South Austin Avenue  
Georgetown, TX, USA 78626  
Telephone 512-942-3000  
Facsimile 512-863-3776  
[www.manitex.com](http://www.manitex.com)



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