



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.

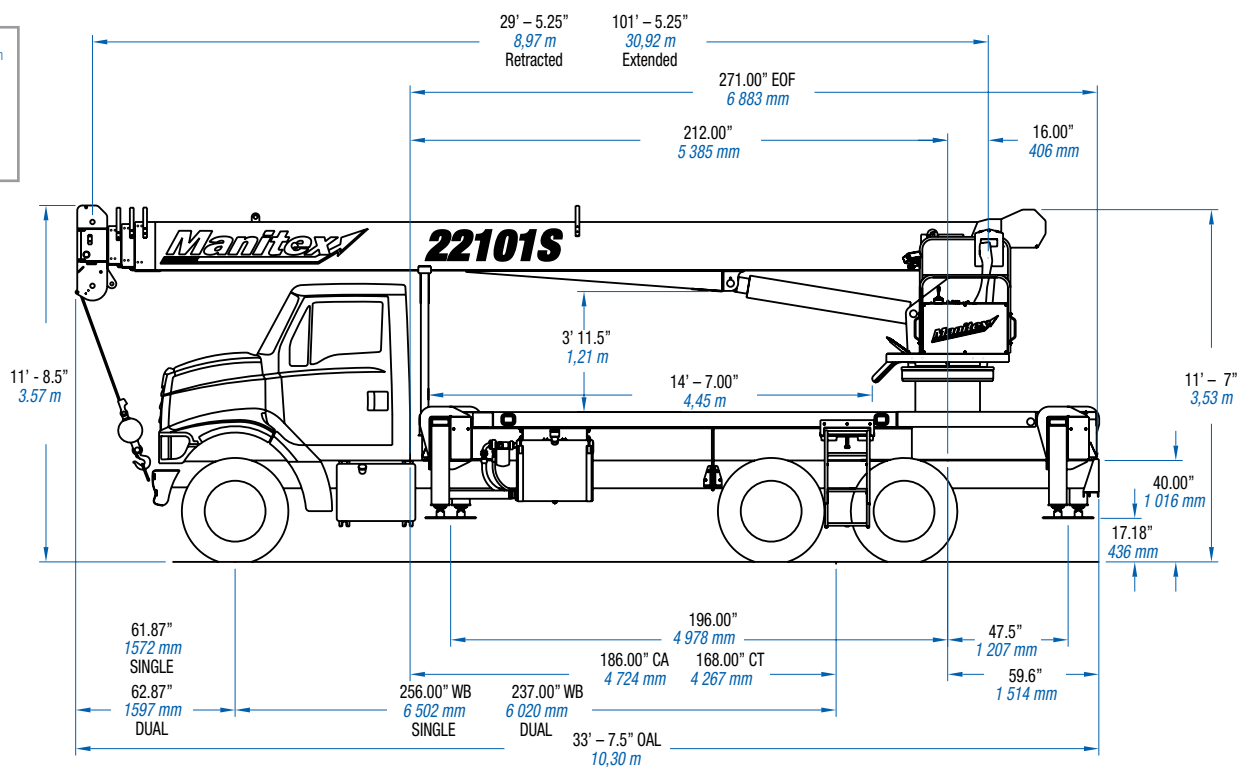
Manuals – Operator / maintenance and parts manuals depict correct crane operation, maintenance procedures and parts listing.

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

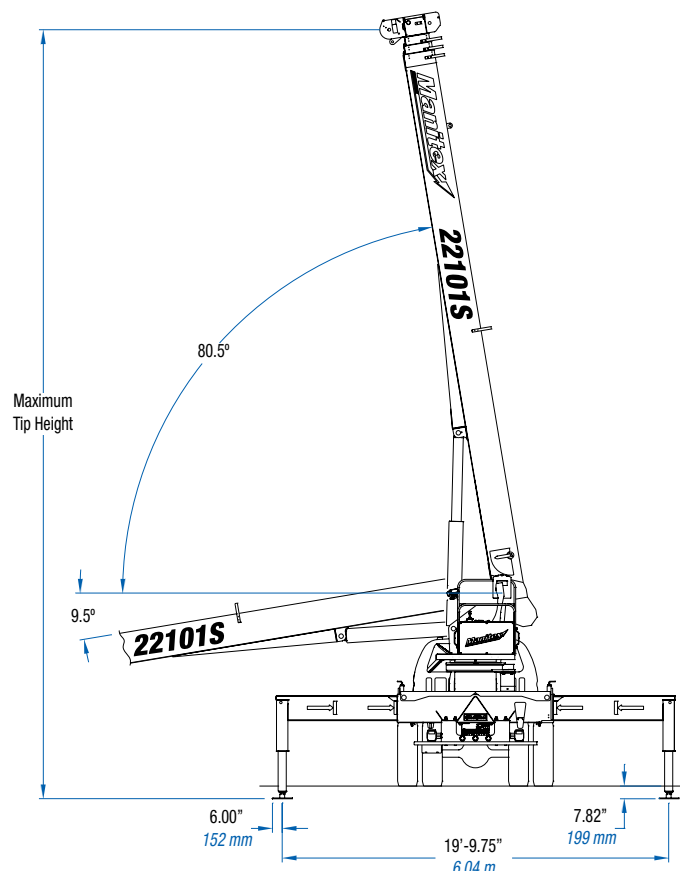


CHASSIS DATA	22101S SINGLE AXLE	22101S TANDEM AXLE	2277S TANDEM AXLE
Wheelbase (WB)	256" 6 502 mm	237" 6 020 mm	237" 6 020 mm
Cab to Axle (CA)	186" 4 724 mm	-	-
Cab to Tandem (CT)	-	168" 4 267 mm	168" 4 267 mm
Cab to End of Frame (EOF)	271" 6 883 mm	271" 6 883 mm	271" 6 883 mm
Frame Section Modulus at 180° Area of Operation	15.9 in3 110,000 psi 758 422 kPa	15.9 in3 110,000 psi 758 422 kPa	15.9 in3 110,000 psi 758 422 kPa
Frame Section Modulus * at 360° of Operation	18.0 in3 50,000 psi 344 750 kPa	18.0 in3 50,000 psi 344 750 kPa	18.0 in3 50,000 psi 344 750 kPa
Front Axle Gross Weight Rating	CONSULT FACTORY	12,000 lb 5 443 kg	12,000 lb 5 443 kg
Rear Axle Gross Weight Rating		34,000 lb 15 422 kg	34,000 lb 15 422 kg
Minimum Truck Axle Weight - Front**		6,800 lb 3 084 kg	5,750 lb 2 608 kg
Minimum Truck Axle Weight - Back**		7,400 lb 3 357 kg	6,750 lb 3 062 kg
Nominal Frame Width	34" 864 mm	34" 864 mm	34" 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	Boom 101' 30,8 m	Boom 77' 23,5 m
Extended Boom	110' 8" 33,7 m	86' 4" 26,3 m
Fixed Jib	139' 10" 42,6 m	115' 6" 35,2 m
Extended Telescopic Jib	-	138' 42,1 m

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





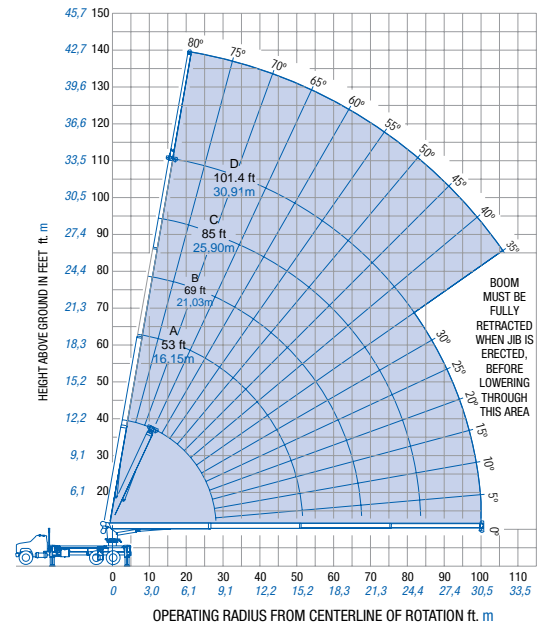
Use this chart only when ALL outriggers are fully extended.

Pins must be disengaged for this outrigger configuration.

All outrigger beams must be extended to full extend mark.

This mark indicates beam is fully extended.

237.75 REF (19' - 9,75")



FULLY EXTENDED OUTRIGGER SPREAD: MODEL 22101S

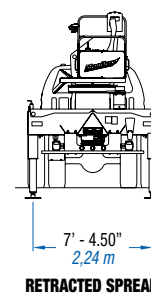
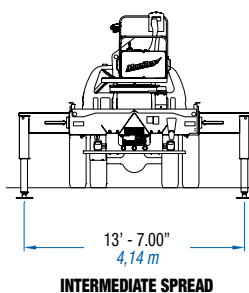
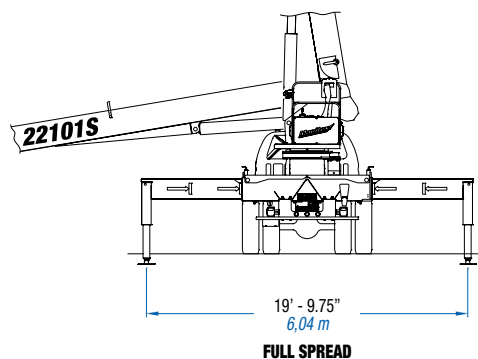
MAIN BOOM LOAD RATINGS

JIB

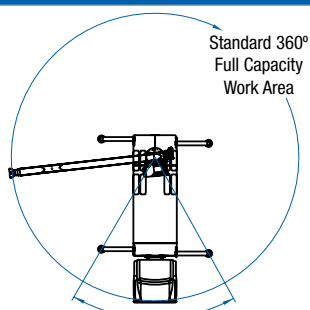
		Boom Length			A			B			C			D			Fixed Jib		
Operating Radius		29.4 Feet 8,96 Meters			53 Feet 16,15 Meters			69 Feet 21,03 Meters			85 Feet 25,90 Meters			101.4 Feet 30,91 Meters			29.4 Feet 8,96 Meters		
Feet	Meters	°	lb.	kg.	°	lb.	kg.	°	lb.	kg.	°	lb.	kg.	°	lb.	kg.	°	lb.	kg.
5	1,52	80	44,000	19 958															
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	80	3,000	1 361
35	10,66				49	6,790	3 080	61	6,890	3 125	68	6,130	2 781	73	4,980	2 259	78	2,840	1 288
40	12,19				41	5,590	2 536	56	5,700	2 585	65	5,320	2 413	70	4,490	2 037	76	2,620	1 188
45	13,71				31	4,640	2 105	51	4,760	2 159	61	4,640	2 105	67	4,000	1 814	73	2,420	1 098
50	15,24				17	3,880	1 760	45	4,000	1 814	57	4,070	1 846	64	3,580	1 624	71	2,230	1 012
55	16,76							38	3,380	1 533	52	3,450	1 565	61	3,200	1 451	69	2,020	916
60	18,28							30	2,860	1 297	47	2,930	1 329	57	2,850	1 293	67	1,840	835
65	19,81							19	2,410	1 093	42	2,490	1 129	54	2,520	1 143	64	1,670	757
70	21,33										36	2,090	948	50	2,130	966	62	1,520	689
75	22,86										29	1,740	789	45	1,790	812	59	1,380	626
80	24,38										20	1,440	653	41	1,500	680	56	1,230	558
85	25,90													36	1,240	562	53	1,080	490
90	27,43													30	1,020	463	50	950	431
95	28,96													22	820	372	47	830	376
100	30,48																44	720	327
105	32,00																40	570	259
110	33,53																36	430	195
		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	50 lb 22,72 kg
Load Block	See block manufacturer nameplate
Overhaul Ball	See overhaul ball manufacturer nameplate
Hose Reel	160 lb 72,57 kg
Swing Around Jib (Stowed)	See load rating chart

ALLOWABLE LINE PULL

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

UPTime

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- Mandates training; at our facility and yours. It includes coordinated support from all component suppliers.
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