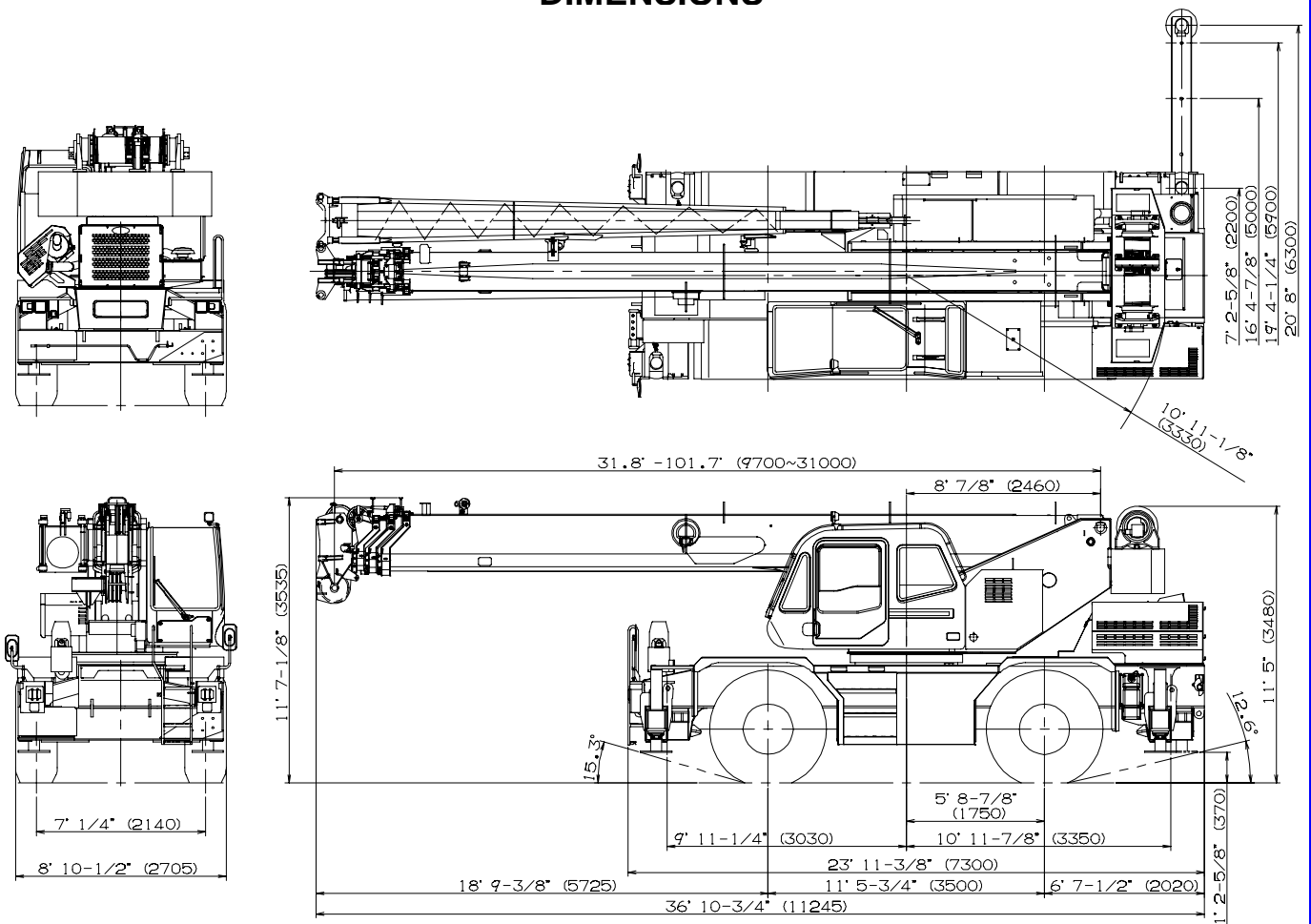


GR-350XL-3

35 Ton Capacity (31.8 Metric Tons)

HYDRAULIC ROUGH TERRAIN CRANE

DIMENSIONS



GR-350-3-00311 (2M2D)

Note : Dimension is with boom angle at 0 degree.
() Reference dimensions in mm.

GENERAL DIMENSIONS (20.5 - 25 Tires)

| | Feet | Meters |
|----------------|--------|--------|
| Turning radius | | |
| 4 wheel steer | 21' 4" | 6.5 |
| 2 wheel steer | 37' 5" | 11.4 |

CRANE SPECIFICATIONS

BOOM

Four section full power synchronized telescoping boom, 31.8' ~ 101.7' (9.7 m ~ 31.0 m), of round hexagonal box construction with 3 sheaves, 13-1 / 4" (0.336 m) root diameter, at boom head. The synchronization system consists of two telescope cylinders, an extension cable and retraction cable. Hydraulic cylinder fitted with holding valve. Two easily removable wire rope guards, rope dead end provided on both sides of boom head. Boom telescope sections are supported by wear pads both vertically and horizontally. Extension speed 69.9' in 91 seconds.

BOOM ELEVATION - By a double acting hydraulic cylinder with holding valve. Elevation 0° ~ 81°, combination controls for hand or foot operation. Boom angle indicator. Automatic speed reduction and slow stop function. Elevation speed 20° ~ 60° in 22 seconds.

JIB - Two stage lattice type with 5°, 25° or 45° offset (tilt type). Single sheave, 13-7 / 8" (0.352 m) root diameter, at jib head. Box type top section telescopes from lattice type base section which stows alongside base boom section. Jib length is 23.6' (7.2 m) or 42' (12.8 m).

AUXILIARY LIFTING SHEAVE (SINGLE TOP)
Single sheave, 13-1 / 4" (0.336 m) root diameter. Mounted to main boom head for single line work (stowable).

ANTI-TWO BLOCK - Pendant type over-winding cut out device with audio-visual (FAILURE lamp / BUZZER) warning system.

SLEWING

Hydraulic axial piston motor through planetary slewing speed reducer. Continuous 360° full circle slewing on ball bearing turn table at 3.2 min⁻¹{rpm}. Equipped with manually locked / released slewing brake. A 360° positive slewing lock for pick and carry and travel modes, manually engaged in cab. Twin slewing system: Free slewing or lock slewing controlled by selector switch on front console.

HOIST

MAIN HOIST - Variable speed type with grooved drum driven by hydraulic axial piston motor through speed reducer. Power load lowering and raising. Equipped with automatic brake (neutral brake) and counterbalance valve. Controlled independently of auxiliary hoist. Equipped with cable follower and drum rotation indicator.

DRUM - Grooved 12-5 / 8" (0.32 m) root diameter x 19-1 / 16" (0.484 m) wide. Wire rope: 558' of 5 / 8" diameter rope (170 m of 16 mm). Drum capacity: 720' (219.5 m) 6 layers. Maximum single line pull: 1st layer 12,600 lbs (5,710 kg). Maximum permissible line pull wire strength: 11,100 lbs. (5,030 kg).

AUXILIARY HOIST - (GR-350-3-00311 (2M2D)) Variable speed type with grooved drum driven by hydraulic axial piston motor through speed reducer. Power load lowering and raising. Equipped with automatic brake (neutral brake) and counterbalance valve. Controlled independently of main hoist. Equipped with cable follower and drum rotation indicator.

DRUM - Grooved 12-5 / 8" (0.32 m) root diameter x 10-3 / 8" (0.263 m) wide. Wire rope: 322' of 5 / 8" diameter rope (98m of 16 mm). Drum capacity: 392' (119.4 m) 6 layers. Maximum single line pull: 1st layer 12,600 lbs (5,710 kg). Maximum permissible line pull wire strength: 13,100 lbs. (5,940 kg).

WIRE ROPE - Filler or warrington seal wire, extra improved plow steel, preformed, independent wire rope core, right regular lay. Main : 5 / 8" (16 mm) 6 X 29 class
Auxiliary (GR-350-3-00311) : 5 / 8" (16 mm) 6 X 36 class

HOOK BLOCKS

35 ton (31.8 metric ton) - 4 sheaves with swivel hook and safety latch, for 5 / 8" (16 mm) wire rope (OPTIONAL).
4.4 ton (4.0 metric ton) - Weighted hook with swivel and safety latch, for 5 / 8" (16 mm) wire rope.

HYDRAULIC SYSTEM

PUMPS - Two variable piston pumps for crane functions. Tandem gear pump for steering, slewing and optional equipment. Powered by carrier engine. Pump disconnect for crane is engaged/ disengaged by rotary switch from operator's cab.

CONTROL VALVES - Multiple valves actuated by pilot pressure with integral pressure relief valves.

RESERVOIR - 100 gallon (380 lit.) capacity. External sight level gauge.

FILTRATION - BETA10=10 return filter, full flow with bypass protection, located inside of hydraulic reservoir. Accessible for easy replacement.

OIL COOLER - Air cooled fan type.

CAB AND CONTROLS

Both crane and drive operations can be performed from one cab mounted on rotating superstructure.

Left side, 1 man type, steel construction with sliding door access and safety glass windows opening at side. Door window is powered control. Windshield glass window and roof glass window are shatter-resistant. Tilt-telescoping steering wheel. Adjustable control lever stands for slewing, boom elevating, boom telescoping, auxiliary hoist and main hoist. Control lever stands can change neutral positions and tilt for easy access to cab. 3 way adjustable operator's seat with high back, headrest and armrest. Engine throttle knob. Foot operated controls: boom elevating, boom telescoping, service brake and engine throttle. Air conditioner (Hot water heater and cooler).

Dash-mounted engine start / stop, monitor lamps, cigarette lighter, drive selector switch, parking brake switch, steering mode select switch, power window switch, pump engaged / disengaged switch, slewing brake switch, telescoping / auxiliary hoist select switch, outrigger controls, free slewing / lock slewing selector switch, eco mode switch, and ashtray.

Instruments - Torque converter oil temperature, engine water temperature, air pressure, fuel, speedometer, tachometer, hour meter and odometer / tripmeter. Hydraulic oil pressure is monitored and displayed on the AML-C display panel.

Tadano electronic LOAD MOMENT INDICATOR system (AML-C) including:

- Control lever lockout function with audible and visual pre-warning
- Boom position indicator
- Outrigger state indicator
- Boom angle / boom length / jib offset angle / jib length / load radius / rated lifting capacities / actual loads read out
- Ratio of actual load moment to rated load moment indication
- Automatic Speed Reduction and Slow Stop function on boom elevation and slewing
- Working condition register switch
- Load radius / boom angle / tip height / slewing range preset function
- External warning lamp
- Tare function
- Fuel consumption monitor
- Main hoist / auxiliary hoist select (GR-350-3-00311 [2M2D])
- Drum rotation indicator (audible and visible type) main and auxiliary hoist

TADANO AML-C monitors outrigger extended length and automatically programs the corresponding "RATED LIFTING CAPACITIES" table

Operator's right hand console includes transmission gear selector, sight level bubble and slewing lock lever . Upper console includes working light switch, roof washer and wiper switch, emergency outrigger set up key switch, jib equipped / removed select switch, eco mode switch, and air conditioning control switch.

NOTE: Each crane motion speed is based on unladen conditions.

CARRIER SPECIFICATIONS

TYPE - Rear engine, left hand steering, driving axle 2-way selected type by manual switch, 4 x 2 front drive, 4 x 4 front and rear drive.

FRAME - High tensile steel, all welded mono-box construction.

TRANSMISSION - Electronically controlled full automatic transmission. Torque converter driving full powershift with driving axle selector. 6 forward and 2 reverse speeds, constant mesh.

- 4 speeds - high range - 2 wheel drive; 4 wheel drive
- 4 speeds - low range - 4 wheel drive

TRAVEL SPEED - 31 mph (50 km/h)

AXLE - Front: Full floating type, steering and driving axle with planetary reduction. Rear: Full floating type, steering and driving axle with planetary reduction and non-spin rear differential.

STEERING- Hydraulic power steering controlled by steering wheel. Three steering modes available: 2 wheel front, 4 wheel coordinated and 4 wheel crab .

SUSPENSION - Front: Semi-elliptic leaf springs with hydraulic lockout device. Rear: Semi-elliptic leaf springs with hydraulic lockout device.

BRAKE SYSTEMS - Service: Air over hydraulic disc brakes on all 4 wheels. Parking / Emergency: Spring applied-air released brake acting on input shaft of front axle. Auxiliary: Electro-pneumatic operated exhaust brake.

TIRES - 20.5-25(OR) Air pressure: 76 psi (525 kPa)

OUTRIGGERS - Four hydraulic, beam and jack outriggers. Vertical jack cylinders equipped with integral holding valve. Each outrigger beam and jack is controlled independently from cab. Beams extend to 20' 8" (6.3 m) center-line and retract to within 8' 10-1 / 2" (2.705 m) overall width with floats. Outrigger jack floats are attached thus eliminating the need of manually attaching and detaching them. Controls and sight bubble located in superstructure cab. Four outrigger extension lengths are provided with corresponding "RATED LIFTING CAPACITIES" for crane duty in confined areas.

- Min. Extension 7' 2-5 / 8" (2.2 m) center to center
- Mid. Extension 16' 4-7 / 8" (5.0 m) center to center
- Mid. Extension 19' 4-1 / 4" (5.9 m) center to center
- Max. Extension 20' 8" (6.3 m) center to center

Float size(Diameter) 1' 3-3 / 4" (0.4 m)

ENGINE

| | |
|-------------------------------|---|
| Model | Cummins QSB6.7 EPA)Tier4 Final |
| Type | Direct injection diesel |
| No. of cylinders | 6 |
| Combustion | 4 cycle, turbo charged and after cooled |
| BoreXStroke, in.(mm) | 4.212 X 4.882 (107 X 124) |
| Displacement, cu. in (liters) | 409 (6.700) |
| Air inlet heater | 24 volt preheat |
| Air cleaner | Dry type, replaceable element |
| Oil filter | Full flow with replaceable element |
| Fuel filter | Full flow with replaceable element |
| Fuel tank, gal.(liters) | 79.2 (300), right side of carrier |
| Cooling | Liquid pressurized, recirculating by-pass |

| | |
|------------------------------|--|
| Radiator | Fin and tube core, thermostat controlled |
| Fan, in.(mm) | Suction type, 9-blade, 28 (711) dia. |
| Starting | 24 volt |
| Charging | 24 volt system, negative ground |
| Battery | 2-120 amp. Hour |
| Compressor, air, CFM(l /min) | 17.0 CFM (481) at 2,400 rpm |
| Output, Max. HP (kW) | Gross 235 (175) at 2,300 rpm |
| Torque, Max. ft-lb (Nm) | 655 (888) at 1,500 rpm |
| Capacity, gal.(liters) | |
| Cooling water | 2.7 (10) |
| Lubrication | 4.0 (15) |
| Fuel | 79.2 (300) |
| DEF/AdBlue | 10.0(38) |

STANDARD EQUIPMENT

- Four section full power partially synchronized boom
31.8' ~ 101.7' (9.7 m ~ 31.0 m)
- 23.6' or 42' (7.2 m or 12.8 m) lattice jib (tilt type)
with 5°, 25° or 45° pinned offsets and self storing pins.
- Quick reeving type bi-fold jib
- Anti-Two block device
- Mirror for main and auxiliary hoists
- Work lights
- Variable speed main hoist with grooved drum, cable follower,
drum rotation indicator (audible, visible and thumper type)
and 558' of 5 / 8" cable.
- Variable speed auxiliary hoist with grooved drum, cable follower,
drum rotation indicator (audible, visible and thumper type)
and 322' of 5 / 8" cable.(GR-350-3-00311 (2M2D))
- Auxiliary lifting sheave (single top) stowable
- 4.4 ton (4.0 metric ton) hook with swivel
- Tadano twin slewing system and 360o positive slewing lock
- Positive control
- Hydraulic oil cooler
- 3 way adjustable cloth seat with armrests, high back
and seat belt
- Tilt-telescoping steering wheel
- Tinted safety glass and sun visor
- Front windshield wiper and washer
- Roof window wiper and washer
- Power window (cab door)
- Cigarette lighter and ashtray
- Cab floor mat
- Pump disconnect in operator's cab
- Air conditioner (Hot water heater and cooler)
- Full instrumentation package
- Self centering finger control levers with pilot control
- Control pedals for boom elevating and boom telescoping
- Low oil pressure / high water temp. warning device (visual)
- Rear steer centering light
- Air cleaner dust indicator
- Fuel consumption monitor
- Eco mode system
- Tadano electronic load moment indicator system (AML-C)
- Boom angle indicator
- Outrigger extension length detector
- Electronic crane monitoring system
- Rear view mirrors (right and left side)
- Fenders
- Air dryer
- Complete highway light package
- Towing hooks-Front and rear
- Hook block tie down (front bumper)
- Weighted hook storage compartment
- Halogen head lamp
- Independently controlled outriggers
- Four outrigger extension positions
- Self-storing outrigger pads
- Electronic controlled automatic transmission driven
by torque converter
- 4 X 4 X 4 drive / steer
- Non-spin rear differential
- Semi-elliptic leaf springs suspension with hydraulic lockout
device (front and rear)
- 20.5-25 (OR) tires
- Disc brakes
- Water separator with filter(high filtration)
- Back-up alarm
- 24 volt electric system
- Tool storage compartment
- Tire inflation kit
- Cummins QSB6.7 turbo charged
after cooled engine(225 HP) with exhaust brake
- Engine over-run alarm
- Lifting eyes
- Telematics (machine data logging and monitoring system)
with - HELLO-NET via internet
(availability depends on countries)
- Radiator cover

OPTIONAL EQUIPMENT

- 35 ton (31.8 metric ton) - 4 sheave with swivel hook and
safety latch for 5 / 8"(16 mm) wire rope
- Wind speed indicator
- Emergency steering system
- Over unwinding prevention
- Engine oil pan heater
- Engine coolant heater

HOISTING PERFORMANCE

LINE SPEEDS AND PULLS

| Layer | Main or auxiliary hoist - 12-5 / 8" (0.32 m) drum | | | |
|------------------|---|---------|-----------------------------------|-------|
| | Line speeds ¹ | | Line pulls Available ² | |
| | F.P.M | m / min | Lbs. | kgf |
| 1st | 328 | 100 | 12,600 | 5,710 |
| 2nd | 354 | 108 | 11,500 | 5,210 |
| 3rd | 384 | 117 | 10,500 | 4,760 |
| 4th | 410 | 125 | 9,700 | 4,400 |
| 5th | 436 | 133 | 9,000 | 4,080 |
| 6th ³ | 466 | 142 | 8,400 | 3,800 |

DRUM WIRE ROPE CAPACITIES

| Wire rope layer | Main drum grooved lagging | | | | auxiliary drum grooved lagging | | | |
|-----------------|---------------------------|--------|-----------------|--------|--------------------------------|--------|-----------------|--------|
| | 5 / 8" (16 mm) wire rope | | | | | | | |
| | Rope per layer | | Total wire rope | | Rope per layer | | Total wire rope | |
| | Feet | Meters | Feet | Meters | Feet | Meters | Feet | Meters |
| 1 | 98.8 | 30.1 | 98.8 | 30.1 | 53.8 | 16.4 | 53.8 | 16.4 |
| 2 | 107.6 | 32.8 | 206.4 | 62.9 | 58.4 | 17.8 | 112.2 | 34.2 |
| 3 | 115.8 | 35.3 | 322.2 | 98.2 | 63.0 | 19.2 | 175.2 | 53.4 |
| 4 | 124.0 | 37.8 | 446.2 | 136.0 | 67.6 | 20.6 | 242.8 | 74.0 |
| 5 | 132.9 | 40.5 | 579.1 | 176.5 | 72.2 | 22.0 | 315.0 | 96.0 |
| 6 | 141.0 | 43.0 | 720.1 | 219.5 | 76.7 | 23.4 | 391.7 | 119.4 |

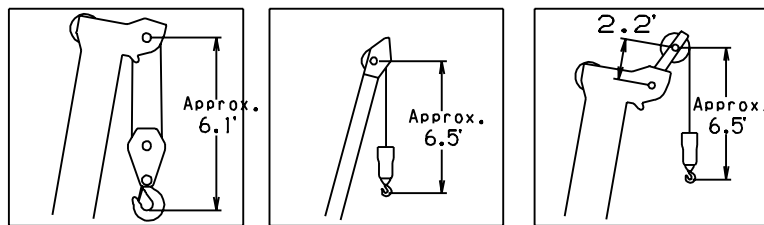
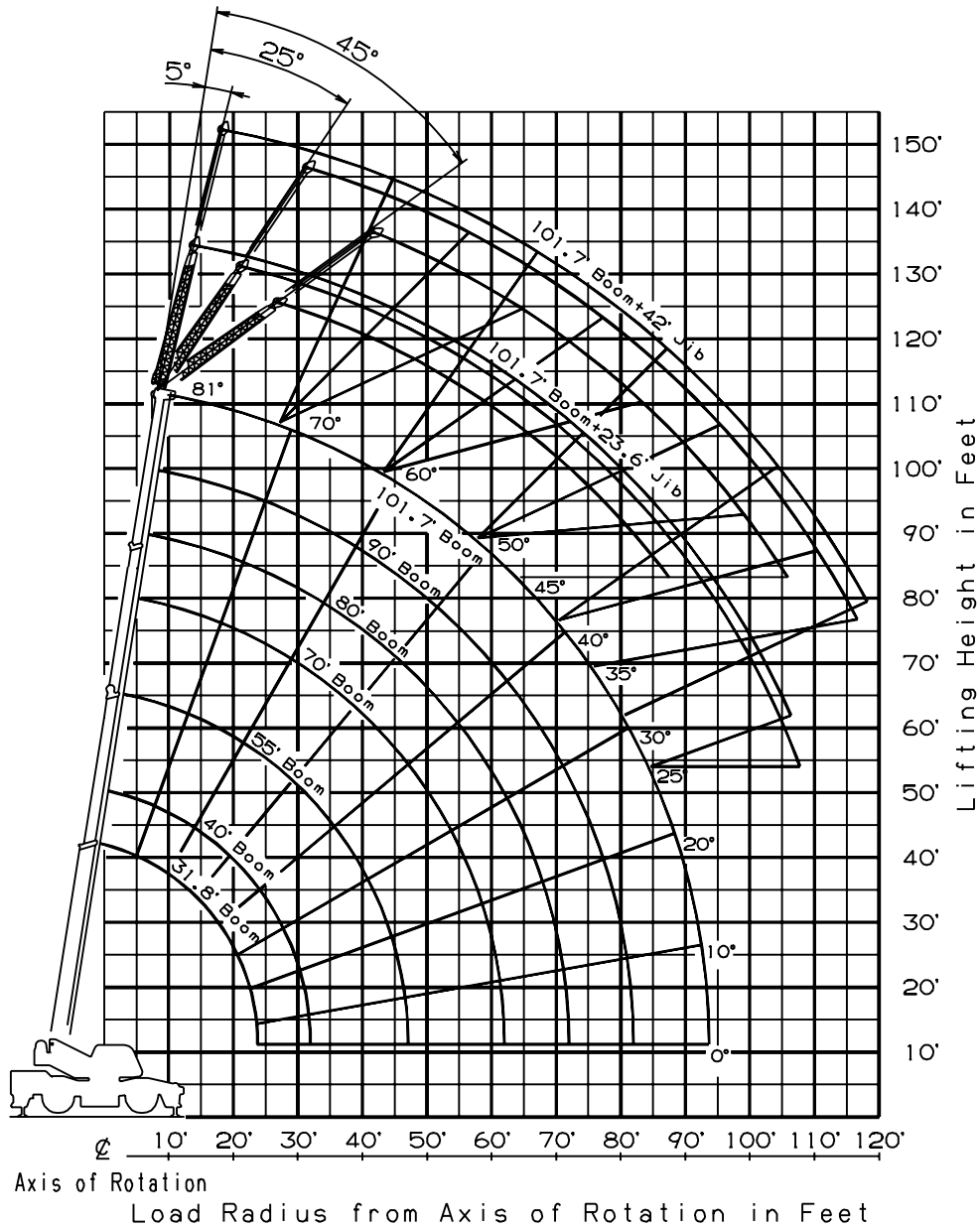
- Maximum permissible line pull wire strength
Main : 11,100 lbs(5,030 kg) with 6 X 29 class rope.
Auxiliary : 13,100 lbs(5,940 kg) with 6 X 36 class rope.

¹ Line speeds based only on hook block, not loaded.
² Developed by machinery with each layer of wire rope, but not based on rope strength or other limitation in machinery or equipment.
³ Seventh layer of wire rope are not recommended for hoisting operations.

DRUM DIMENSIONS

| | Inch | mm |
|-----------------|-----------|------------|
| Root diameter | 12-5 / 8" | 320 |
| Length | Main | 19-1 / 16" |
| | Auxiliary | 10-3 / 8" |
| Flange diameter | 20-7 / 8" | 530 |

GR-350XL WORKING RANGE CHART



NOTE: 1. Boom 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.

| Boom Length in Feet | |
|---------------------|----------|
| 31.8' | (9.7m) |
| 40' | (12.19m) |
| 55' | (16.8m) |
| 70' | (21.34m) |
| 80' | (24.38m) |
| 90' | (27.43m) |
| 101.7' | (31m) |

GR-350XL RATED LIFTING CAPACITIES (IN POUNDS)

| ON OUTRIGGERS FULLY EXTENDED 20' 8" (6.3 m) SPREAD 360° ROTATION | | | | | | | | | | | | | | |
|---|------|---------|------|-----------|------|----------|------|-----------|------|-----------|------|-----------|-------|--------|
| A B | 31.8 | | 40 | | 55 | | 70 | | 80 | | 90 | | 101.7 | |
| | C | (9.7 m) | C | (12.19 m) | C | (16.8 m) | C | (21.34 m) | C | (24.38 m) | C | (27.43 m) | C | (31 m) |
| 8 | 64.9 | 70,000 | | | | | | | | | | | | |
| 10 | 60.2 | 60,000 | 67.1 | 49,600 | 74.1 | 42,300 | 77.8 | 27,500 | | | | | | |
| 12 | 55.6 | 56,500 | 63.8 | 49,600 | 71.9 | 42,300 | 76.1 | 27,500 | 78.2 | 27,500 | | | | |
| 15 | 48.7 | 46,500 | 58.8 | 46,000 | 68.7 | 40,000 | 73.6 | 27,500 | 76.0 | 27,500 | 78.3 | 25,300 | | |
| 20 | 33.8 | 36,000 | 49.6 | 35,500 | 62.8 | 32,000 | 69.4 | 27,500 | 72.4 | 27,200 | 75.2 | 23,500 | 77.3 | 18,500 |
| 25 | | | 38.4 | 28,500 | 56.5 | 25,900 | 64.8 | 24,200 | 68.7 | 22,700 | 71.8 | 20,400 | 74.5 | 18,100 |
| 30 | | | 22.4 | 20,500 | 49.7 | 20,100 | 60.1 | 20,100 | 64.7 | 19,400 | 68.4 | 17,800 | 71.6 | 16,300 |
| 35 | | | | | 42.0 | 15,800 | 55.0 | 16,700 | 60.4 | 16,000 | 64.9 | 15,300 | 68.4 | 14,400 |
| 40 | | | | | 32.7 | 12,200 | 49.7 | 13,100 | 56.0 | 13,250 | 61.1 | 13,050 | 65.2 | 12,600 |
| 45 | | | | | 19.2 | 9,250 | 43.6 | 10,300 | 51.2 | 10,600 | 57.2 | 11,000 | 62.1 | 11,000 |
| 50 | | | | | | | 36.8 | 8,400 | 46.1 | 8,700 | 53.0 | 8,900 | 58.6 | 9,300 |
| 55 | | | | | | | 28.6 | 6,650 | 40.7 | 7,100 | 48.6 | 7,300 | 55.0 | 7,800 |
| 60 | | | | | | | 16.3 | 5,400 | 34.3 | 5,900 | 43.8 | 6,200 | 51.1 | 6,450 |
| 65 | | | | | | | | | 26.6 | 4,800 | 38.6 | 5,100 | 47.3 | 5,300 |
| 70 | | | | | | | | | 14.9 | 3,700 | 32.7 | 4,300 | 42.8 | 4,400 |
| 75 | | | | | | | | | | | 25.4 | 3,650 | 38.1 | 3,800 |
| 80 | | | | | | | | | | | 14.9 | 3,000 | 32.9 | 3,200 |
| 85 | | | | | | | | | | | | | 26.5 | 2,600 |
| 90 | | | | | | | | | | | | | 18.3 | 2,200 |
| D | | | | | | | | | | | | | | 0 |

| LIFTING CAPACITIES AT ZERO DEGREE BOOM ANGLE ON OUTRIGGERS FULLY EXTENDED 20' 8" (6.3 m) SPREAD 360° ROTATION | | | | | | | | | | | | | | |
|--|------|---------|------|-----------|------|----------|------|-----------|------|-----------|------|-----------|-------|--------|
| A C | 31.8 | | 40 | | 55 | | 70 | | 80 | | 90 | | 101.7 | |
| | B | (9.7 m) | B | (12.19 m) | B | (16.8 m) | B | (21.34 m) | B | (24.38 m) | B | (27.43 m) | B | (31 m) |
| 0 | 23.7 | 30,400 | 31.9 | 18,700 | 46.9 | 8,600 | 61.9 | 5,000 | 71.9 | 3,400 | 81.9 | 2,800 | 93.6 | 1,900 |

| ON OUTRIGGERS MID EXTENDED 19' 4-1/4" (5.9m) SPREAD 360° ROTATION | | | | | | | | | | | | | | |
|--|------|---------|------|-----------|------|----------|------|-----------|------|-----------|------|-----------|-------|--------|
| A B | 31.8 | | 40 | | 55 | | 70 | | 80 | | 90 | | 101.7 | |
| | C | (9.7 m) | C | (12.19 m) | C | (16.8 m) | C | (21.34 m) | C | (24.38 m) | C | (27.43 m) | C | (31 m) |
| 8 | 64.9 | 70,000 | | | | | | | | | | | | |
| 10 | 60.2 | 60,000 | 67.1 | 49,600 | 74.1 | 42,300 | 77.8 | 27,500 | | | | | | |
| 12 | 55.6 | 56,500 | 63.8 | 49,600 | 71.9 | 42,300 | 76.1 | 27,500 | 78.2 | 27,500 | | | | |
| 15 | 48.7 | 46,500 | 58.8 | 46,000 | 68.7 | 40,000 | 73.6 | 27,500 | 76.0 | 27,500 | 78.3 | 25,300 | | |
| 20 | 33.8 | 34,700 | 49.6 | 35,500 | 62.8 | 32,000 | 69.4 | 27,500 | 72.4 | 27,200 | 75.2 | 23,500 | 77.3 | 18,500 |
| 25 | | | 38.4 | 24,000 | 56.5 | 23,700 | 64.8 | 24,200 | 68.7 | 22,700 | 71.8 | 20,400 | 74.5 | 18,100 |
| 30 | | | 22.4 | 16,700 | 49.6 | 16,500 | 60.1 | 17,900 | 64.7 | 18,300 | 68.4 | 17,300 | 71.6 | 16,300 |
| 35 | | | | | 41.9 | 12,250 | 55.0 | 13,400 | 60.3 | 13,850 | 64.7 | 14,150 | 68.4 | 13,250 |
| 40 | | | | | 32.7 | 9,050 | 49.4 | 10,300 | 55.9 | 10,700 | 60.9 | 11,200 | 65.2 | 11,200 |
| 45 | | | | | 19.2 | 6,750 | 43.4 | 8,000 | 51.2 | 8,350 | 57.0 | 8,800 | 61.8 | 9,100 |
| 50 | | | | | | | 36.7 | 6,300 | 46.1 | 6,700 | 52.7 | 7,050 | 58.3 | 7,300 |
| 55 | | | | | | | 28.5 | 4,850 | 40.5 | 5,300 | 48.3 | 5,700 | 54.7 | 6,000 |
| 60 | | | | | | | 16.2 | 3,800 | 34.2 | 4,200 | 43.5 | 4,600 | 50.9 | 4,800 |
| 65 | | | | | | | | | 26.6 | 3,300 | 38.3 | 3,700 | 46.9 | 4,000 |
| 70 | | | | | | | | | 15.0 | 2,600 | 32.5 | 2,900 | 42.6 | 3,200 |
| 75 | | | | | | | | | | | 25.2 | 2,300 | 37.8 | 2,600 |
| 80 | | | | | | | | | | | 14.6 | 1,700 | 32.5 | 2,000 |
| 85 | | | | | | | | | | | | | 26.3 | 1,400 |
| 90 | | | | | | | | | | | | | 17.9 | 800 |
| D | | | | | | | | | | | | | | 0 |

| LIFTING CAPACITIES AT ZERO DEGREE BOOM ANGLE ON OUTRIGGERS MID EXTENDED 19' 4-1 / 4" (5.9 m) SPREAD 360° ROTATION | | | | | | | | | | | | | | |
|--|------|---------|------|-----------|------|----------|------|-----------|------|-----------|------|-----------|-------|--------|
| A C | 31.8 | | 40 | | 55 | | 70 | | 80 | | 90 | | 101.7 | |
| | B | (9.7 m) | B | (12.19 m) | B | (16.8 m) | B | (21.34 m) | B | (24.38 m) | B | (27.43 m) | B | (31 m) |
| 0 | 23.7 | 26,500 | 31.9 | 15,000 | 46.9 | 6,000 | 61.9 | 3,400 | 71.9 | 2,300 | 81.9 | 1,450 | 93.6 | 500 |

- A :Boom length in feet
- B :Load radius in feet
- C :Loaded boom angle (°)
- D :Minimum boom angle (°) for indicated length (no load)

GR-350XL RATED LIFTING CAPACITIES (IN POUNDS)

| ON OUTRIGGERS MID EXTENDED 16' 4-7 / 8" (5.0 m) SPREAD 360° ROTATION | | | | | | | | | | | | | | |
|---|------|---------|------|-----------|------|----------|------|-----------|------|-----------|------|-----------|-------|--------|
| A B | 31.8 | | 40 | | 55 | | 70 | | 80 | | 90 | | 101.7 | |
| | C | (9.7 m) | C | (12.19 m) | C | (16.8 m) | C | (21.34 m) | C | (24.38 m) | C | (27.43 m) | C | (31 m) |
| 8 | 64.9 | 70,000 | | | | | | | | | | | | |
| 10 | 60.2 | 60,000 | 67.1 | 49,600 | 74.1 | 42,300 | 77.8 | 27,500 | | | | | | |
| 12 | 55.6 | 56,500 | 63.8 | 49,600 | 71.9 | 42,300 | 76.1 | 27,500 | 78.2 | 27,500 | | | | |
| 15 | 48.7 | 46,500 | 58.8 | 46,000 | 68.7 | 40,000 | 73.6 | 27,500 | 76.0 | 27,500 | 78.3 | 25,300 | | |
| 20 | 33.8 | 28,300 | 49.6 | 27,600 | 62.7 | 27,000 | 69.4 | 27,500 | 72.6 | 27,200 | 75.2 | 23,500 | 77.3 | 18,500 |
| 25 | | | 38.4 | 18,300 | 56.3 | 17,800 | 64.7 | 19,200 | 68.5 | 19,600 | 71.9 | 19,900 | 74.5 | 18,100 |
| 30 | | | 22.2 | 12,700 | 49.5 | 12,700 | 59.9 | 13,800 | 64.4 | 14,200 | 68.2 | 14,750 | 71.5 | 15,000 |
| 35 | | | | | 41.8 | 9,000 | 54.8 | 10,000 | 60.1 | 10,500 | 64.4 | 11,000 | 68.1 | 11,300 |
| 40 | | | | | 32.4 | 6,500 | 49.3 | 7,500 | 55.7 | 8,000 | 60.6 | 8,400 | 64.9 | 8,700 |
| 45 | | | | | 18.7 | 4,700 | 43.4 | 5,700 | 51.0 | 6,200 | 56.7 | 6,500 | 61.5 | 6,800 |
| 50 | | | | | | | 36.5 | 4,300 | 45.9 | 4,700 | 52.5 | 5,100 | 58.0 | 5,400 |
| 55 | | | | | | | 28.3 | 3,200 | 40.3 | 3,600 | 48.1 | 4,000 | 54.5 | 4,300 |
| 60 | | | | | | | 16.4 | 2,300 | 33.9 | 2,700 | 43.4 | 3,100 | 50.7 | 3,400 |
| 65 | | | | | | | | | 26.2 | 2,000 | 38.2 | 2,400 | 46.7 | 2,600 |
| 70 | | | | | | | | | 15.0 | 1,300 | 32.2 | 1,700 | 42.4 | 2,000 |
| 75 | | | | | | | | | | | 25.0 | 1,200 | 37.6 | 1,400 |
| 80 | | | | | | | | | | | | | 32.2 | 1,000 |
| D | | | | | | | 0 | | | | | | | 20 |

| LIFTING CAPACITIES AT ZERO DEGREE BOOM ANGLE ON OUTRIGGERS MID EXTENDED 16' 4-7 / 8" (5.0 m) SPREAD 360° ROTATION | | | | | | | | | | | | | | |
|--|------|---------|------|-----------|------|----------|------|-----------|------|-----------|------|-----------|--|--|
| A C | 31.8 | | 40 | | 55 | | 70 | | 80 | | 90 | | | |
| | B | (9.7 m) | B | (12.19 m) | B | (16.8 m) | B | (21.34 m) | B | (24.38 m) | B | (27.43 m) | | |
| 0 | 23.7 | 20,700 | 31.9 | 11,300 | 46.9 | 4,100 | 61.9 | 2,100 | 71.9 | 1,100 | 81.9 | 500 | | |

| ON OUTRIGGERS MIN EXTENDED 7' 2-5 / 8" (2.2 m) SPREAD 360° ROTATION | | | | | | | | | | | | | | |
|--|------|---------|------|-----------|------|----------|------|-----------|------|-----------|------|-----------|-------|--------|
| A B | 31.8 | | 40 | | 55 | | 70 | | 80 | | 90 | | 101.7 | |
| | C | (9.7 m) | C | (12.19 m) | C | (16.8 m) | C | (21.34 m) | C | (24.38 m) | C | (27.43 m) | C | (31m) |
| 8 | 64.8 | 44,400 | | | | | | | | | | | | |
| 10 | 60.2 | 28,600 | 67.0 | 27,500 | 73.8 | 27,900 | 77.8 | 27,500 | | | | | | |
| 12 | 55.9 | 20,900 | 63.6 | 20,800 | 71.6 | 20,300 | 76.0 | 21,600 | 78.2 | 22,700 | | | | |
| 15 | 48.6 | 14,600 | 58.7 | 14,100 | 68.3 | 13,800 | 73.4 | 15,000 | 75.7 | 15,600 | 77.8 | 16,500 | | |
| 20 | 33.2 | 7,900 | 49.4 | 8,200 | 62.2 | 7,700 | 68.9 | 8,900 | 71.8 | 9,400 | 74.4 | 10,000 | 76.6 | 10,300 |
| 25 | | | 38.3 | 4,900 | 56.0 | 4,500 | 64.2 | 5,600 | 67.9 | 6,000 | 70.9 | 6,500 | 73.5 | 6,700 |
| 30 | | | 22.2 | 2,600 | 49.1 | 2,300 | 59.4 | 3,400 | 63.8 | 3,800 | 67.4 | 4,200 | 70.4 | 4,400 |
| 35 | | | | | 41.5 | 1,000 | 54.4 | 1,900 | 59.6 | 2,300 | 63.7 | 2,600 | 67.2 | 2,900 |
| 40 | | | | | | | | | 55.2 | 1,200 | 59.9 | 1,500 | 64.1 | 1,800 |
| D | | | 0 | | | 36 | | 45 | | 51 | | 54 | | 58 |

| LIFTING CAPACITIES AT ZERO DEGREE BOOM ANGLE ON OUTRIGGERS MIN EXTENDED 7' 2-5 / 8" (2.2 m) SPREAD 360° ROTATION | | | | | | | | | | | | | | |
|---|------|---------|------|-----------|--|--|--|--|--|--|--|--|--|--|
| A C | 31.8 | | 40 | | | | | | | | | | | |
| | B | (9.7 m) | B | (12.19 m) | | | | | | | | | | |
| 0 | 23.7 | 5,600 | 31.9 | 2,000 | | | | | | | | | | |

- A :Boom length in feet
- B :Load radius in feet
- C :Loaded boom angle (°)
- D :Minimum boom angle (°) for indicated length (no load)

| | | | | |
|---------------------------------|------------------|-----------------------------------|-----------------------------------|-------------------|
| Boom Length in Feet (meters) | 31.8' (9.7 m) | 31.8' to 55' (9.7 m to 16.8 m) | 55' to 101.7' (16.8 m to 31.0) | Single top Jib |
| Number of parts of line | 8 | 6 | 4 | 1 |

GR-350XL RATED LIFTING CAPACITIES (IN POUNDS)

| ON OUTRIGGERS FULLY EXTENDED 20' 8" (6.3 m) SPREAD 360° ROTATION | | | | | | | | | | | | | |
|---|--|-------|----------|-------|----------|-------|------|--------------------------------------|-------|----------|-------|----------|-------|
| C | 101.7' (31 m) Boom + 23.6' (7.2 m) Jib | | | | | | C | 101.7' (31m) Boom + 42' (12.8 m) Jib | | | | | |
| | 5° Tilt | | 25° Tilt | | 45° Tilt | | | 5° Tilt | | 25° Tilt | | 45° Tilt | |
| | R | W | R | W | R | W | | R | W | R | W | R | W |
| 80 | 19.3 | 7,700 | 26.7 | 5,200 | 32.1 | 3,700 | 80 | 25.6 | 4,800 | 38.0 | 2,600 | 47.8 | 1,700 |
| 77.5 | 25.2 | 7,700 | 32.0 | 5,000 | 37.2 | 3,600 | 77.5 | 32.2 | 4,800 | 44.3 | 2,600 | 53.4 | 1,700 |
| 75 | 30.8 | 7,700 | 37.5 | 4,800 | 42.4 | 3,500 | 75 | 38.8 | 4,800 | 50.4 | 2,600 | 58.6 | 1,700 |
| 72.5 | 36.4 | 7,350 | 42.7 | 4,600 | 47.1 | 3,400 | 72.5 | 44.9 | 4,400 | 56.1 | 2,450 | 63.9 | 1,700 |
| 70 | 41.8 | 7,000 | 47.7 | 4,400 | 52.1 | 3,300 | 70 | 50.9 | 4,000 | 61.6 | 2,300 | 68.9 | 1,650 |
| 67.5 | 47.0 | 6,600 | 52.9 | 4,250 | 56.6 | 3,200 | 67.5 | 56.8 | 3,700 | 67.1 | 2,200 | 73.9 | 1,600 |
| 65 | 52.0 | 6,200 | 57.5 | 4,100 | 61.0 | 3,150 | 65 | 62.3 | 3,400 | 72.2 | 2,050 | 78.5 | 1,600 |
| 62.5 | 56.8 | 5,700 | 62.4 | 3,950 | 65.2 | 3,100 | 62.5 | 67.9 | 3,150 | 77.4 | 1,950 | 83.0 | 1,550 |
| 60 | 61.4 | 5,200 | 66.8 | 3,800 | 69.5 | 3,050 | 60 | 73.1 | 2,900 | 82.1 | 1,850 | 87.3 | 1,500 |
| 57.5 | 65.8 | 4,700 | 71.2 | 3,650 | 73.4 | 3,000 | 57.5 | 78.6 | 2,750 | 86.7 | 1,800 | 91.4 | 1,450 |
| 55 | 70.3 | 4,200 | 75.3 | 3,500 | 77.4 | 2,900 | 55 | 83.5 | 2,600 | 91.4 | 1,750 | 95.4 | 1,400 |
| 52.5 | 74.3 | 3,700 | 79.2 | 3,300 | 81.0 | 2,800 | 52.5 | 88.3 | 2,450 | 95.9 | 1,700 | 99.0 | 1,400 |
| 50 | 78.4 | 3,200 | 82.9 | 3,100 | 84.5 | 2,650 | 50 | 93.0 | 2,300 | 99.8 | 1,600 | 102.0 | 1,350 |
| 47.5 | 82.2 | 2,900 | 86.2 | 2,750 | 87.9 | 2,500 | 47.5 | 97.4 | 2,100 | 104.0 | 1,550 | 106.0 | 1,350 |
| 45 | 85.8 | 2,600 | 89.6 | 2,400 | 90.9 | 2,400 | 45 | 102.0 | 1,900 | 107.0 | 1,500 | 110.0 | 1,350 |
| 42.5 | 89.3 | 2,300 | 92.8 | 2,150 | | | 42.5 | 105.0 | 1,700 | 111.0 | 1,400 | | |
| 40 | 92.6 | 2,000 | 95.7 | 1,900 | | | 40 | 109.0 | 1,500 | 114.0 | 1,300 | | |
| 37.5 | 95.7 | 1,750 | 98.6 | 1,650 | | | 37.5 | 113.0 | 1,350 | 117.0 | 1,150 | | |
| 35 | 98.6 | 1,500 | 101.0 | 1,400 | | | 35 | 116.0 | 1,200 | 120.0 | 1,000 | | |
| 32.5 | 101.0 | 1,350 | 104.0 | 1,250 | | | 32.5 | 119.0 | 1,050 | | | | |
| 30 | 104.0 | 1,200 | 106.0 | 1,100 | | | 30 | 122.0 | 900 | | | | |
| 27.5 | 106.0 | 1,050 | 108.0 | 1,000 | | | | | | | | | |
| 25 | 108.0 | 900 | 110.0 | 900 | | | | | | | | | |

C :Loaded boom angle (°)
R :Load radius in feet
W :Rated lifting capacity in pounds

GR-350XL RATED LIFTING CAPACITIES (IN POUNDS)

| ON OUTRIGGERS MID EXTENDED 19' 4-1/4" (5.9m) SPREAD 360° ROTATION | | | | | | | | | | | | | |
|--|--|-------|----------|-------|----------|-------|------|---------------------------------------|-------|----------|-------|----------|-------|
| C | 101.7' (31 m) Boom + 23.6' (7.2 m) Jib | | | | | | C | 101.7' (31 m) Boom + 42' (12.8 m) Jib | | | | | |
| | 5° Tilt | | 25° Tilt | | 45° Tilt | | | 5° Tilt | | 25° Tilt | | 45° Tilt | |
| | R | W | R | W | R | W | | R | W | R | W | R | W |
| 80 | 19.3 | 7,700 | 26.7 | 5,200 | 32.1 | 3,700 | 80 | 25.6 | 4,800 | 38.0 | 2,600 | 47.8 | 1,700 |
| 77.5 | 25.2 | 7,700 | 32.0 | 5,000 | 37.2 | 3,600 | 77.5 | 32.2 | 4,800 | 44.3 | 2,600 | 53.4 | 1,700 |
| 75 | 30.8 | 7,700 | 37.5 | 4,800 | 42.4 | 3,500 | 75 | 38.8 | 4,800 | 50.4 | 2,600 | 58.6 | 1,700 |
| 72.5 | 36.4 | 7,350 | 42.7 | 4,600 | 47.1 | 3,400 | 72.5 | 44.9 | 4,400 | 56.1 | 2,450 | 63.9 | 1,700 |
| 70 | 41.8 | 7,000 | 47.7 | 4,400 | 52.1 | 3,300 | 70 | 50.9 | 4,000 | 61.6 | 2,300 | 68.9 | 1,650 |
| 67.5 | 47.1 | 6,600 | 52.9 | 4,250 | 56.6 | 3,200 | 67.5 | 56.8 | 3,700 | 67.1 | 2,200 | 73.9 | 1,600 |
| 65 | 52.1 | 6,200 | 57.5 | 4,100 | 61.0 | 3,150 | 65 | 62.3 | 3,400 | 72.2 | 2,050 | 78.5 | 1,600 |
| 62.5 | 56.7 | 5,700 | 62.3 | 3,950 | 65.4 | 3,100 | 62.5 | 67.9 | 3,150 | 77.4 | 1,950 | 83.0 | 1,550 |
| 60 | 61.1 | 5,200 | 66.6 | 3,800 | 69.5 | 3,050 | 60 | 73.1 | 2,900 | 82.1 | 1,850 | 87.3 | 1,500 |
| 57.5 | 65.6 | 4,350 | 70.7 | 3,500 | 73.5 | 2,950 | 57.5 | 78.2 | 2,700 | 86.9 | 1,800 | 91.4 | 1,450 |
| 55 | 69.9 | 3,500 | 74.8 | 3,200 | 77.2 | 2,850 | 55 | 82.9 | 2,500 | 91.2 | 1,750 | 95.4 | 1,400 |
| 52.5 | 74.0 | 2,950 | 78.6 | 2,750 | 80.9 | 2,550 | 52.5 | 87.7 | 2,150 | 95.7 | 1,650 | 99.0 | 1,350 |
| 50 | 78.0 | 2,400 | 82.4 | 2,300 | 84.2 | 2,200 | 50 | 92.1 | 1,850 | 99.8 | 1,500 | 103.0 | 1,300 |
| 47.5 | 81.8 | 2,050 | 86.0 | 1,950 | 87.6 | 1,900 | 47.5 | 96.5 | 1,550 | 104.0 | 1,350 | 106.0 | 1,200 |
| 45 | 85.3 | 1,750 | 89.5 | 1,650 | 90.7 | 1,650 | 45 | 101.0 | 1,300 | 107.0 | 1,200 | 109.0 | 1,100 |
| 42.5 | 88.9 | 1,500 | 92.6 | 1,350 | | | | | | | | | |
| 40 | 92.2 | 1,200 | 95.6 | 1,100 | | | | | | | | | |

| ON OUTRIGGERS MID EXTENDED 16' 4-7 / 8" (5.0 m) SPREAD 360° ROTATION | | | | | | | | | | | | | |
|---|--|-------|----------|-------|----------|-------|------|---------------------------------------|-------|----------|-------|----------|-------|
| C | 101.7' (31 m) Boom + 23.6' (7.2 m) Jib | | | | | | C | 101.7' (31 m) Boom + 42' (12.8 m) Jib | | | | | |
| | 5° Tilt | | 25° Tilt | | 45° Tilt | | | 5° Tilt | | 25° Tilt | | 45° Tilt | |
| | R | W | R | W | R | W | | R | W | R | W | R | W |
| 80 | 19.3 | 7,700 | 26.7 | 5,200 | 32.1 | 3,700 | 80 | 25.6 | 4,800 | 38.0 | 2,600 | 47.8 | 1,700 |
| 77.5 | 25.2 | 7,700 | 32.0 | 5,000 | 37.2 | 3,600 | 77.5 | 32.2 | 4,800 | 44.3 | 2,600 | 53.4 | 1,700 |
| 75 | 30.8 | 7,700 | 37.5 | 4,800 | 42.4 | 3,500 | 75 | 38.8 | 4,800 | 50.4 | 2,600 | 58.6 | 1,700 |
| 72.5 | 36.4 | 7,100 | 42.7 | 4,600 | 47.1 | 3,400 | 72.5 | 44.9 | 4,400 | 56.1 | 2,450 | 63.9 | 1,700 |
| 70 | 41.5 | 6,500 | 47.7 | 4,400 | 52.1 | 3,300 | 70 | 50.9 | 4,000 | 61.6 | 2,300 | 68.9 | 1,650 |
| 67.5 | 46.7 | 5,950 | 52.7 | 4,350 | 56.6 | 3,200 | 67.5 | 56.8 | 3,700 | 67.1 | 2,200 | 73.9 | 1,600 |
| 65 | 51.5 | 5,400 | 57.5 | 4,100 | 61.0 | 3,100 | 65 | 62.3 | 3,400 | 72.2 | 2,050 | 78.5 | 1,600 |
| 62.5 | 56.1 | 4,500 | 61.8 | 3,650 | 65.2 | 3,000 | 62.5 | 67.5 | 3,050 | 77.4 | 1,950 | 83.0 | 1,500 |
| 60 | 60.5 | 3,600 | 66.2 | 3,200 | 69.3 | 2,950 | 60 | 72.7 | 2,750 | 82.1 | 1,850 | 87.1 | 1,400 |
| 57.5 | 64.8 | 3,000 | 70.5 | 2,700 | 73.1 | 2,500 | 57.5 | 77.6 | 2,250 | 86.6 | 1,600 | 91.3 | 1,400 |
| 55 | 69.2 | 2,400 | 74.4 | 2,200 | 76.9 | 2,100 | 55 | 82.4 | 1,750 | 90.9 | 1,400 | 95.0 | 1,400 |
| 52.5 | 73.4 | 2,050 | 78.3 | 1,750 | 80.3 | 1,750 | 52.5 | 86.8 | 1,400 | 95.1 | 1,200 | 99.1 | 1,200 |
| 50 | 77.2 | 1,650 | 81.9 | 1,400 | 83.8 | 1,400 | 50 | 91.2 | 1,100 | 99.4 | 1,000 | 102.4 | 1,000 |
| 47.5 | 81.4 | 1,350 | | | | | | | | | | | |
| 45 | 85.0 | 1,000 | | | | | | | | | | | |

C :Loaded boom angle (°)
R :Load radius in feet
W :Rated lifting capacity in pounds

WARNING AND OPERATING INSTRUCTIONS FOR LIFTING CAPACITIES

GENERAL

1. RATED LIFTING CAPACITIES apply only to the machine as originally manufactured and normally equipped by TADANO LTD. Modifications to the machine or use of optional equipment other than that specified can result in a reduction of capacity.
2. Hydraulic cranes can be hazardous if improperly operated or maintained. Operation and maintenance of this machine must be in compliance with information in the **Operation and Maintenance Manual** supplied with the crane. If this manual is missing, order a replacement through the distributor.
3. The operator and other personnel associated with this machine shall fully acquaint themselves with the latest American National Standards Institute (ANSI) safety standards for cranes.

SET UP

1. Rated lifting capacities on the chart are the maximum allowable crane capacities and are based on the machine standing level on firm supporting surface under ideal job conditions. Depending on the nature of the supporting surface, it may be necessary to have structural supports under the outrigger floats or tires to spread the loads to a larger bearing surface.
2. For outrigger operation, outriggers shall be properly extended with tires free of supporting surface before operating crane.

OPERATION

1. Rated lifting capacities have been tested to and meet minimum requirements of SAE J1063-Cantilevered Boom Crane Structures Method of Test.
2. Rated lifting capacities do not exceed 85 % of the tipping load on outriggers fully extended as determined by SAE J765-Crane Stability Test Code.
Rated lifting capacities for partially extended outriggers are determined from the formula, Rated Lifting Capacities = (Tipping Load - 0.1 x Tip Reaction) / 1.25.
3. Rated lifting capacities above thick lines in the chart are based on crane strength and those below, on its stability. They are based on actual load radius increased by boom deflection.
4. The weight of handling device such as hook blocks, slings, etc., must be considered as part of the load and must be deducted from the lifting capacities.
5. Rated lifting 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, operating speeds, side loads, etc. Side pull on the boom or jib is extremely dangerous. Such action can damage the boom, jib or slewing mechanism, and lead to overturning of the crane.
6. Rated lifting capacities do not account for wind on lifted load or boom. We recommend against working under the condition that the load is out of control due to a strong wind. During boom lift, consider that the rated lifting capacity is reduced by 50 % when the wind speed is 20 mph (9 m/s) to 27 mph (12m/s) ; reduced by 70 % when the wind speed is 27 mph (12m/s) to 31 mph (14 m/s). If the wind speed is 31 mph (14 m/s) or over, stop operation. During jib lift, stop operation if the wind speed is 20 mph (9 m/s) or over.
7. Rated lifting capacities at load radius shall not be exceeded. Do not tip the crane to determine allowable loads.
8. Do not operate at boom lengths, radii, or boom angle, where no capacities are shown. Crane may overturn without any load on the hook.

9. When boom length is between values listed, refer to the rated lifting capacities of the next longer and next shorter booms for the same radius. The lesser of the two rated lifting capacities shall be used.
10. When making lifts at a load radius not shown, use the next longer radius to determine allowable capacity.
11. Load per line should not exceed 8,820 lbs. (4,000 kg) for main winch and auxiliary winch.
12. Check the actual number of parts of line with LOAD MOMENT INDICATOR (AML-C) before operation. Maximum lifting capacity is restricted by the number of parts of line of LOAD MOMENT INDICATOR (AML-C). Limited capacity is as determined from the formula, Single line pull for main winch 8,820 lbs. (4,000 kg) x number of parts of line.
13. The boom angle before loading should be greater to account for deflection. For rated lifting capacities, the loaded boom angle and the load radius is for reference only.
14. The 31.8' (9.7 m) boom length capacities are based on boom fully retracted. If not fully retracted [less than 40'(12.19 m) boom length], use the rated lifting capacities for the 40' (12.19 m) boom length.
15. Extension or retraction of the boom with loads may be attempted within the limits of the RATED LIFTING CAPACITIES. The ability to telescope loads is limited by hydraulic pressure, boom angle, boom length, crane maintenance, etc.
16. For lifting capacity of single top, deduct the weight of the load handling equipment from the rated lifting capacity of the boom. For the lifting capacity of single top, the net capacity shall not exceed 8,820 lbs. (4,000 kg) including the main boom hook mass attached to the boom.
17. When a jib is removed, set the jib state switch to the REMOVED position.
18. When erecting and stowing jib, be sure to retain it by hand or by other means to prevent its free movement.
19. Use "ANTI-TWO BLOCK" disable switch when erecting and stowing jib and when stowing hook block. While the switch is pushed, the hoist does not stop, even when overwind condition occurs.
20. For boom length with 23.6' (7.2 m) jib, rated lifting capacities are determined by loaded boom angle only in the column headed "101.7' (31.0 m) boom + 23.6' (7.2 m) jib".
For boom length with 42' (12.8 m) jib, rated lifting capacities are determined by loaded boom angle only in the column headed "101.7' (31.0 m) boom + 42' (12.8 m) jib".
For angles not shown, use the next lower loaded boom angle to determine allowable capacity.
21. When lifting a load by using jib (aux. winch) and boom (main winch) simultaneously, do the following:
 - Enter the operation status as jib operation, not as boom operation.
 - Before starting operation, make sure that mass of load is within rated lifting capacity for jib.

DEFINITIONS

1. Load Radius: Horizontal distance from a projection of the axis of rotation to supporting surface before loading to the center of the vertical hoist line or tackle with load applied.
2. Loaded Boom Angle: The angle between the boom base section and the horizontal, after lifting the rated lifting capacity at the load radius.
3. Working Area: Area measured in a circular arc about the centerline of rotation.
4. Freely Suspended Load: Load hanging free with no direct external force applied except by the hoist line.
5. Side Load: Horizontal side force applied to the lifted load either on the ground or in the air.

GR-350XL RATED LIFTING CAPACITIES (IN POUNDS)

| ON RUBBER STATIONARY | | | | | | | | | | | | | | | | |
|----------------------|------------|---------|------|-----------|------|----------|------|-----------|---------------|---------|------|-----------|------|----------|------|-----------|
| A | Over Front | | | | | | | | 360° Rotation | | | | | | | |
| | 31.8 | | 40 | | 55 | | 70 | | 31.8 | | 40 | | 55 | | 70 | |
| | C | (9.7 m) | C | (12.19 m) | C | (16.8 m) | C | (21.34 m) | C | (9.7 m) | C | (12.19 m) | C | (16.8 m) | C | (21.34 m) |
| 10 | 60.3 | 41,400 | 67.0 | 32,700 | | | | | 60.2 | 24,400 | 66.9 | 22,700 | | | | |
| 12 | 55.7 | 37,900 | 63.8 | 32,700 | | | | | 55.9 | 18,200 | 63.6 | 17,400 | | | | |
| 15 | 48.5 | 27,000 | 58.8 | 26,200 | 68.4 | 24,500 | | | 48.5 | 12,400 | 58.6 | 12,000 | 68.1 | 13,200 | | |
| 20 | 33.5 | 16,800 | 49.5 | 16,500 | 62.4 | 15,700 | 69.1 | 16,450 | 33.2 | 7,200 | 49.4 | 6,900 | 62.3 | 7,850 | 68.8 | 7,900 |
| 25 | | | 38.4 | 11,200 | 56.1 | 10,700 | 64.4 | 11,700 | | | 38.1 | 4,200 | 56.0 | 4,700 | 64.1 | 4,750 |
| 30 | | | 22.1 | 7,950 | 49.3 | 7,500 | 59.6 | 8,450 | | | 22.2 | 2,200 | 49.1 | 2,900 | 59.4 | 2,900 |
| 35 | | | | | 41.6 | 5,100 | 54.5 | 6,200 | | | | | | | 54.3 | 1,700 |
| 40 | | | | | 32.3 | 3,650 | 49.2 | 4,500 | | | | | | | | |
| 45 | | | | | 18.7 | 2,400 | 43.1 | 3,300 | | | | | | | | |
| 50 | | | | | | | 36.4 | 2,400 | | | | | | | | |
| 55 | | | | | | | 28.1 | 1,600 | | | | | | | | |
| 60 | | | | | | | 16.0 | 1,200 | | | | | | | | |
| D | | | | | | | 0 | | | | | | | 38 | | 49 |

| LIFTING CAPACITIES AT ZERO DEGREE BOOM ANGLE ON RUBBER STATIONARY | | | | | | | | | | | | | | |
|---|------------|---------|------|-----------|------|----------|------|-----------|---------------|---------|------|-----------|--|--|
| A | Over Front | | | | | | | | 360° Rotation | | | | | |
| | 31.8 | | 40 | | 55 | | 70 | | 31.8 | | 40 | | | |
| | C | (9.7 m) | B | (12.19 m) | B | (16.8 m) | B | (21.34 m) | C | (9.7 m) | C | (12.19 m) | | |
| 0 | 23.7 | 11,900 | 31.9 | 6,800 | 46.9 | 2,300 | 61.9 | 1,000 | 23.7 | 4,800 | 31.9 | 1,600 | | |

| ON RUBBER CREEP | | | | | | | | | | | | | | |
|-----------------|------------|---------|------|-----------|------|----------|------|-----------|--|--|--|--|--|--|
| A | Over Front | | | | | | | | | | | | | |
| | 31.8 | | 40 | | 55 | | 70 | | | | | | | |
| | B | (9.7 m) | C | (12.19 m) | C | (16.8 m) | C | (21.34 m) | | | | | | |
| 10 | 60.3 | 32,000 | 66.9 | 29,200 | | | | | | | | | | |
| 12 | 55.7 | 27,800 | 63.6 | 27,500 | | | | | | | | | | |
| 15 | 48.5 | 22,800 | 58.7 | 22,600 | 68.2 | 21,900 | | | | | | | | |
| 20 | 33.6 | 16,800 | 49.5 | 16,500 | 62.5 | 15,700 | 69.1 | 16,450 | | | | | | |
| 25 | | | 38.2 | 11,200 | 56.1 | 10,700 | 64.4 | 11,700 | | | | | | |
| 30 | | | 22.2 | 7,950 | 49.3 | 7,500 | 59.6 | 8,450 | | | | | | |
| 35 | | | | | 41.6 | 5,100 | 54.5 | 6,200 | | | | | | |
| 40 | | | | | 32.3 | 3,650 | 49.2 | 4,500 | | | | | | |
| 45 | | | | | 18.7 | 2,400 | 43.1 | 3,300 | | | | | | |
| 50 | | | | | | | 36.4 | 2,400 | | | | | | |
| 55 | | | | | | | 28.1 | 1,600 | | | | | | |
| 60 | | | | | | | 16.0 | 1,200 | | | | | | |
| D | | | | | | | 0 | | | | | | | |

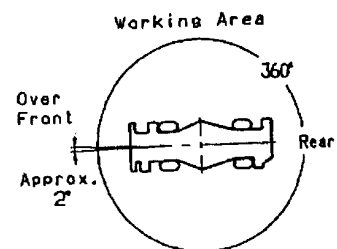
NOTE:

The lifting capacity data stored in the LOAD MOMENT INDICATOR (AML-C) is based on the standard number of parts of line listed in the chart. Standard number of parts of line for on rubber operation should be according to the following table.

| Boom Length in Feet (meters) | 31.8' (9.7 m) | 31.8' to 70' (9.7 m to 21.34 m) | Single top |
|------------------------------|---------------|---------------------------------|------------|
| Number of parts of line | 6 | 4 | 1 |

| LIFTING CAPACITIES AT ZERO DEGREE BOOM ANGLE ON RUBBER CREEP | | | | | | | | | | | | | | |
|--|------------|---------|------|-----------|------|----------|------|-----------|--|--|--|--|--|--|
| A | Over Front | | | | | | | | | | | | | |
| | 31.8 | | 40 | | 55 | | 70 | | | | | | | |
| | C | (9.7 m) | B | (12.19 m) | B | (16.8 m) | B | (21.34 m) | | | | | | |
| 0 | 23.7 | 12,100 | 31.9 | 6,800 | 46.9 | 2,300 | 61.9 | 1,000 | | | | | | |

- A** : Boom length in feet
- B** : Load radius in feet
- C** : Loaded boom angle (°)
- D** : Minimum boom angle (°) for indicated length (no load)



WARNING AND OPERATING INSTRUCTIONS FOR ON RUBBER LIFTING CAPACITIES

- Rated lifting capacities on rubber are in pounds and do not exceed 75 % of tipping loads as determined by SAE J765- Crane Stability Test Code.
- Rated lifting capacities shown in the chart are based on condition that crane is set on firm level surfaces with suspension lock applied. Those above thick lines are based on tire capacity and those below, on crane stability. They are based on actual load radius increased by tire deformation and boom deflection.
- If the suspension lock cylinders contain air, the axle will not be locked completely and rated lifting capacities may not be obtainable. Bleed the cylinders according to the operation safety and maintenance manual.
- Rated lifting capacities are based on proper tire inflation, capacity and condition. Damaged tires are hazardous to safe operation of crane.
- Tires shall be inflated to correct air pressure.
- Over front operation shall be performed within 2 degrees in front of chassis.
- On rubber lifting with "jib" is not permitted. Maximum permissible boom length is 70' (21.34 m).
- When making lift on rubber stationary, set parking brake.
- For creep operation, boom must be centered over front of machine, slewing lock engaged, and load restrained from slewing. Travel slowly and keep the lifted load as close to the ground as possible, and especially avoid any abrupt steering, accelerating or braking.
- Do not operate the crane while carrying the load.
- Creep is motion for crane not to travel more than 200' (60 m) in any 30 minute period and to travel at the speed of less than 1 mph (1.6 km/h).
- For creep operation, choose the drive mode and proper gear according to the road or working condition.

| Tires | Air Pressure |
|---------|------------------|
| 20.5-25 | 94 psi (650 kPa) |

WARNING AND OPERATING INSTRUCTIONS FOR USING THE LOAD MOMENT INDICATOR (AML-C)

- Set AML select keys in accordance with the actually operating crane conditions and don't fail to make sure, before crane operation, that the displays on front panel are correct.
- When operating crane on outriggers:
 - Set P.T.O. switch to "ON".
 - Press the outrigger state select key to register for the outrigger operation. If the display agrees with the actual state, press the set key to register. After the completion of the registration, the pop-up window closes.
 - Press the lift state select key to register the lift state to be used (single top / jib / boom).
 - Each time the lift state select key is pressed, the display changes. If the display agrees with the actual state, press the set key to register. After the completion of the registration, the pop-up window closes.
 - When erecting and stowing jib, select the status of jib set (Jib lift indicative symbol flickers).
- When operating crane on rubber:
 - Set P.T.O. switch to "ON".
 - Press the outrigger state select key to register for the on rubber operation. Each time the outrigger state select key is pressed, the display changes. Select the creep operation, the on rubber state indicative symbol flickers.
 - Press the lift state select key to register the lift state.

However, pay attention to the following.

 - For stationary operation.
 - The front capacities are attainable only when the over front position symbol comes on. When the boom is more than 2 degrees from centered over front of chassis, 360° capacities are in effect.
 - When a load is lifted in the front position and then slewed to the side area, make sure the value of the LOAD MOMENT INDICATOR(AML-C) is below the 360° lifting capacity.
 - For creep operation.
 - The creep capacities are attainable only when boom is in the straight forward position of chassis and the over front position symbol is on. If boom is not in the straight forward position of chassis , never lift load.
- This machine is equipped with an automatic slewing stop device. (For the details, see Operation and Maintenance Manual.) But, operate very carefully because the automatic slewing stop does not work in the following cases.
 - During on rubber operation.
 - When the "P.T.O." switch is set to "OVERRIDE" and the "OVERRIDE" key switch outside the cab is on.
- During crane operation, make sure that the displays on front panel are in accordance with actual operating conditions.
- The displayed values of LOAD MOMENT INDICATOR (AML-C) 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 tire, operating speed, side loads, etc. For safe operation, it is recommended when extending and lowering boom or slewing, lifting loads shall be appropriately reduced.
- LOAD MOMENT INDICATOR (AML-C) is intended as an aid to the operator. Under no condition should it be relied upon to replace use of capacity charts and operating instruction. Sole reliance upon LOAD MOMENT INDICATOR (AML-C) aids in place of good operating practice can cause an accident. The operator must exercise caution to assure safety.

GR-350XL Axle weight distribution chart

| | Pounds | | | Kilograms | | |
|--|--------|--------|--------|-----------|--------|--------|
| | GVW | Front | Rear | GVW | Front | Rear |
| Base machine | 60,830 | 30,380 | 30,450 | 27,590 | 13,780 | 13,810 |
| Remove: 1. 4.4 ton (4.0 metric ton) hook block | -220 | -310 | 90 | -100 | -140 | 40 |
| 2. 35 ton (31.8 metric ton) hook block | -620 | -1,100 | 480 | -280 | -500 | 220 |
| 3. 2-stage jib (7.2 m,12.8 m) | -1,390 | -2,390 | 1,000 | -630 | -1,085 | 455 |
| 4. Auxiliary lifting sheave | -110 | -270 | 160 | -50 | -122 | 72 |

