

## Optional Equipment

Work lights: 2 spotlights on boom cradle, 3 floodlights on cab, 1 floodlight on right front shrouding.

Vandalism protection kit including window covers.

Intake air pre-cleaner.

Exhaust spark arrestor.

Strobe light.

Block heater.

Additional battery.

Air conditioning, either cab.

Tilt steering column.

AM/FM radio installation, either cab.

Auxiliary Hydraulics - Inside hose trough with additional hosing and piping for hydraulic powered attachments. [Maximum pressure 4100 psi (28,268 kPa) Maximum flow 30 GPM (114 L/min)]

## Attachments

Quick change and reversible buckets fabricated of steel plate, with high strength, low alloy cutting edges and wear strips. Standard attachments available for wide range of applications. Capacities shown are in heaped cu. yd.

*It is Gradall Policy to continually improve its products. Therefore designs, materials and specifications are subject to change without notice and without incurring any liability on units already sold. Units shown may have optional equipment.*

# GRADALL®

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Certified ISO 9001



8035-6014 24" (610mm)  
Excavating bucket

Cu.  
yd. m<sup>3</sup>

.38 .29

8035-6006 30" (762mm)  
Excavating bucket

.57 .43

8035-6002 36" (914mm)  
Excavating bucket

.68 .52



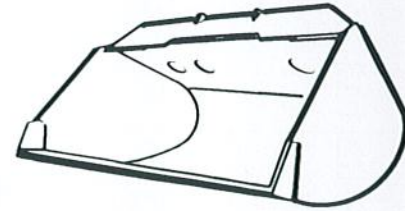
8035-6003 30" (760mm)  
Pavement removal bucket



8035-5001 4' (1.2m)  
Boom extension



8035-6016 Single-tooth ripper



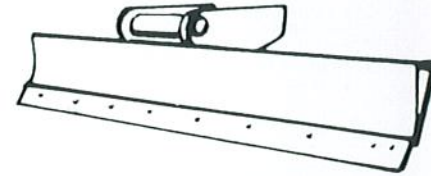
8035-6004 60" (1.5m)  
Constant radius  
ditching bucket

Cu.  
yd. m<sup>3</sup>

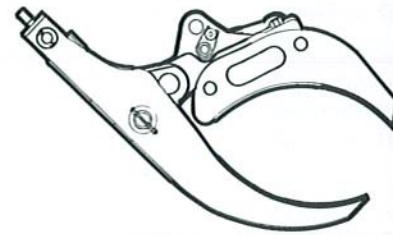
.80 .61

8035-6019 66" (1.7m)  
Constant radius  
ditching bucket

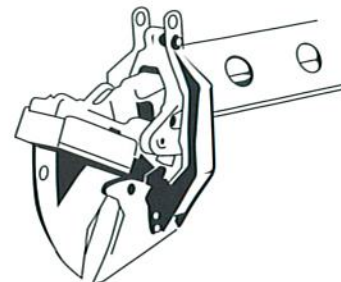
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8035-6015 8' (2.4m) Grading blade with  
bolt on edge



8035-5003  
Fixed thumb grapple



8035-5015 Tree Limb Shear Attachment

# GRADALL®

## XL 3100

### HYDRAULIC EXCAVATOR

## SPECIFICATIONS

### Undercarriage

4 x 2 or 4 x 4  
Wheelbase: 156" (3.96m)  
Width 102" (2.6m)

**Frame:**  
48" (1.2m) wide, welded plate design  
50 ksi material

**Gross vehicle axle weight rating:**  
4 x 2 37,600 lb (17,055 kg)  
4 x 4 42,000 lb (19,051 kg)

**Front axles:**  
4 x 2: Meritor Model FG-941, 14,600 lb (6,623 kg) rating  
4 x 4: Meritor Model MX-19-145, 19,000 lb (8,618 kg) rating, 7.17 ratio

**Rear axle:**  
Meritor Model RS23-160, 23,000 lb (10,433 kg) rating, 7.17 ratio, single reduction with driver controlled differential lock.

**Suspension:**  
Front: 8 leaf spring with automatic lock-out cylinders  
Rear: Solid mount

**Brakes:**  
4 x 2 Front: Meritor "Q" Series Cam-Master Size: 16.5" x 5" (419 mm x 152 mm) Automatic Slack Adjusters

4 x 4 Front: Meritor "Q" Series Cam-Master Size: 16.5" x 6" (419 mm x 127 mm) Automatic Slack Adjusters

4 x 4 Rear and 4 x 2 Rear: Meritor "P" Series Cam-Master Size: 16.5" x 7" (419 mm x 178 mm) Automatic Slack Adjusters

Spring brake system incorporates emergency and parking brakes on the rear axle.

**Wheels:**  
Hub piloted disc 10-stud, 11.25" (286 mm) bolt circle.

**Tires:**  
4 x 2 and 4 x 4 front: 385/65R22.5 18-ply on/off highway tread  
4 x 2 and 4 x 4 rear: 11R22.5 16-ply highway deep tread  
4 x 4 optional front and rear: 44.5/65R22.5 20-ply on/off highway tread. (Note: 44.5/65R22.5 tires are not intended for prolonged highway use at speeds above 50 mph.)



**Steering:**  
Ross, integral hydraulic power steering. Gear type power steering pump. 4-quart power steering reservoir with filter.

**Standard chassis equipment:**  
Halogen headlights, tail lights, back-up lights and alarm, stoplights, identification lights front and rear, directional lights, 4-way hazard lights, and instrument panel lights. Windshield wiper/washer, West Coast style mirror system with plane and convex mirrors, front and rear tow hooks, desiccant type air dryer with automatic purge valve and thermostatically controlled heater.

### Hydraulic System

**PUMPS**  
Two load-sensing axial piston pumps; 0-65 GPM (9-246 L/min) total.

### SYSTEM SPECIFICATIONS

**Four double acting cylinders**

- 2 boom hoist: 4.25" ID, 3.0" rod (108mm x 76mm), 23.4" (594mm) stroke
- 1 tool: 4.75" ID, 3.0" rod (121mm x 76mm), 18.9" (480mm) stroke
- 1 telescope: 3.5" ID, 2.559" rod (89mm x 65mm), 11' (3.34 m) stroke

**Four hydraulic motors**  
Swing, 45 Hp (34kW); tilt, 18 Hp (13kW); two remote drive, 65 Hp (48kW) total.

**Operating pressures**

Hoist	.....	4,100 psi (28,268 kPa)
Tilt	.....	2,050 psi (14,138 kPa)
Swing	.....	3,300 psi (22,759 kPa)
Tool	.....	4,100 psi (28,268 kPa)
Telescope	.....	4,100 psi (28,268 kPa)
Remote Propel	.....	3,500 psi (24,130 kPa)
Pilot system	.....	.500 psi (3,448 kPa)

**Oil capacity**  
Reservoir 50 gallons (189 L), system 65 gallons (246 L). Pressurized reservoir with visual oil level gauges.

**Filtration system**  
10 micron return filter with magnet and 100 mesh suction strainer in reservoir.

Fin and tube-type oil cooler with thermostatically controlled cooling fan.

Pressure-compensated, load-sensing valves with circuit reliefs in all circuits.

### Chassis Cab

One-person cab, left-hand mount, isolated from frame on rubber mounts. Acoustical lining. Sun visor. Gauges for oil pressure, coolant temperature, air tank pressures, fuel level, voltmeter, speedometer with odometer, tachometer with hour meter. Engine monitor lights. Engine shutdown controlled by engine electronics. Indicator lights and controls for front axle engagement (4 x 4 only) and rear axle differential lock. Park brake control. Tinted safety glass. Sliding side windows. Fresh air heater and defroster. Dome light. Air suspension seat with seat belt.

### Upperstructure Cab

All-weather cab isolated from frame on rubber mounts. Tinted safety glass windows, skylight, acoustical lining, four-way adjustable operator's seat, dome light, filtered air heater and defroster.

The heat source is provided by a fast response, closed circuit hydraulic heater with 20,000 BTU/Hr. capacity.

Front window slides to overhead storage. Rearview mirrors on right and left sides of the machine. Windshield wiper and washer.

### Hydraulic Remote Control

Undercarriage powered by upperstructure hydraulics through hydraulic motors and PTOs on transmission. Travel and steering pedals in upperstructure cab. Digging brakes and front axle lockout cylinders set automatically with travel pedal in neutral. Parking brakes controlled by toggle.

Electrically operated alarms mounted on undercarriage signal remote control movement in either direction, reverse movement when driven from undercarriage cab.

## Engine

Detroit Diesel OM906 diesel with EGR. 4 cycle, inline 6 cylinder, liquid cooled. Turbo/Charge air aftercooled. Automotive Certified, 2004 EPA/CARB Regulations. Electronic controlled. Vertical canister style lube filter and centrifugal lube filter attached to engine. Vertical canister style fuel filters, (main and pre-filter) attached to engine. Remote mount primary fuel/water separator. Gross Rating: 190HP @ 2300 RPM. 520 ft.lb. Torque @ 1200 RPM. Net Rating: 173 HP @ 2300 RPM.

**Air Filter:** 2-stage dry type with safety element, ejector valve and service indicator.

**Electrical System:** 12 volt, 100 amp alternator with integral voltage regulator. 2 SAE #C31-S 810 CCA batteries.

**Cooling System:** Fin and tube radiator with fan shroud. 8 blade, 28" diameter fan. Engine charge air cooler mounted in front of radiator. Transmission oil cooler mounted in front of radiator below charge air cooler.

**Fuel Tank Capacity:** 70 gal (265 L)

**Transmission:** Eaton Roadranger RTX-14609B, 9-speed FWD, 2-speed reverse. Internal oil pump with external spin-on filter. Transmission oil cooler. Neutral start switch. Input shaft clutch brake. 8-bolt air shifted PTO for hydraulic pump drive. Dual rear countershaft, air shifted PTO's for remote propel motors.

**Gear Speeds:** (with 11R22.5 tires)

Gear	Lo	1	2	3	4	5	6	7	8*
MPH	3.1	5.2	7.4	10.2	14.0	20.0	28.3	39.0	53.4
Km/hr	(4.9)	(8.4)	(11.9)	(16.4)	(22.5)	(32.2)	(45.3)	(62.7)	(85.9)

Gear	Rev Lo	Rev Hi
MPH	3.4	13.1
Km/hr	(5.5)	(21.1)

\* Limit speed to 50 mph with 445/65R22.5 tires.

**Clutch:** Hydraulic actuated. Spicer Model 107, pull type. 14" dia, 2-plate, organic disc.

**Drivelines:** Spicer 1760 Series with "Half Round" yokes.

**Transfer Case:** (4 x 4 only) Meritor Model T-211HD, 1/1 ratio, 3 shaft single speed. With air operated front axle disconnect.

## GRADALL Model XL 3100 Lift Capacity Over Side or Rear - LB. (KG.)

4x4 LOAD POINT HEIGHT	LOAD RADIUS			
	10' (3m)	15' (4.6m)	20' (6.1m)	MAXIMUM RADIUS
Above Ground Level	20' (6.1m)			3375 @ 19' 10" (1530 @ 6.1m)
	15' (4.6m)	5870 (2660)	3965 (1800)	3275 @ 22' 7" (1485 @ 6.9m)
	10' (3m)	6885 (3125)	4465 (2025)	3270 @ 24' 0" (1485 @ 7.3m)
	5' (1.5m)	7100 (3220)	4615 (2090)	3315 @ 24' 4" (1505 @ 7.4m)
At Ground Level		6255 (2835)	4325 (1960)	3375 @ 23' 6" (1530 @ 7.2m)
Below Ground Level	5' (1.5m)	5630 (2555)	4900 (2220)	3410 @ 21' 6" (1545 @ 6.5m)
	10' (3m)	3490 (1585)	3615 (1640)	3315 @ 17' 9" (1505 @ 5.4m)
	15' (4.6m)	2085 (945)		2185 @ 10' 1" (990 @ 3.1m)

**NOTE:** The above loads are in compliance with SAE standard J1097 NOV 88. They do not exceed 87% of the hydraulic lifting capacity or 75% of the tipping capacity.

All loads shown are limited by hydraulic lift capacity rather than stability.

The rated lift capacity is based on the machine being equipped with 5,500 lb (2495 kg) counterweight, standard boom and no bucket. Adjust the listed rated capacities according to each bucket as follows:

8035-6019 66" ditching - subtract 775 lb (352 kg)  
 8035-6004 60" ditching - subtract 757 lb (343 kg)  
 8035-6002 36" excavating - subtract 696 lb (316 kg)  
 8035-6006 30" excavating - subtract 639 lb (290 kg)  
 8035-6014 24" excavating - subtract 579 lb (263 kg)  
 8035-6003 30" pavement removal - subtract 992 lb (451 kg)

## Upperstructure Controls

Two hydraulic joysticks (hoist & bucket, telescope & swing), one rocker switch (tilt) control upperstructure. Hydraulic joysticks are mounted on arm pods that are adjustable for individual operator comfort and convenience. Quick change joystick pattern with decals is standard.

Two foot pedals for remote control of undercarriage steering, travel and digging brakes. Rocker switch on control panel selects low speed or high speed remote travel.

Joysticks and pedals are self-centering; when controls are released, power for movement disengages and swing and travel brakes set automatically.

### Engine Controls

Key ignition switch with neutral start and indicator lights for low air, engine status, park brake, travel status, hydraulic filter condition and hydraulic fluid temperature and level.

Automatic engine shut down occurs with low oil pressure or high coolant temperature.

## Swing

Priority swing circuit with axial piston motor. Planetary transmission. Swing speed: 8 rpm.

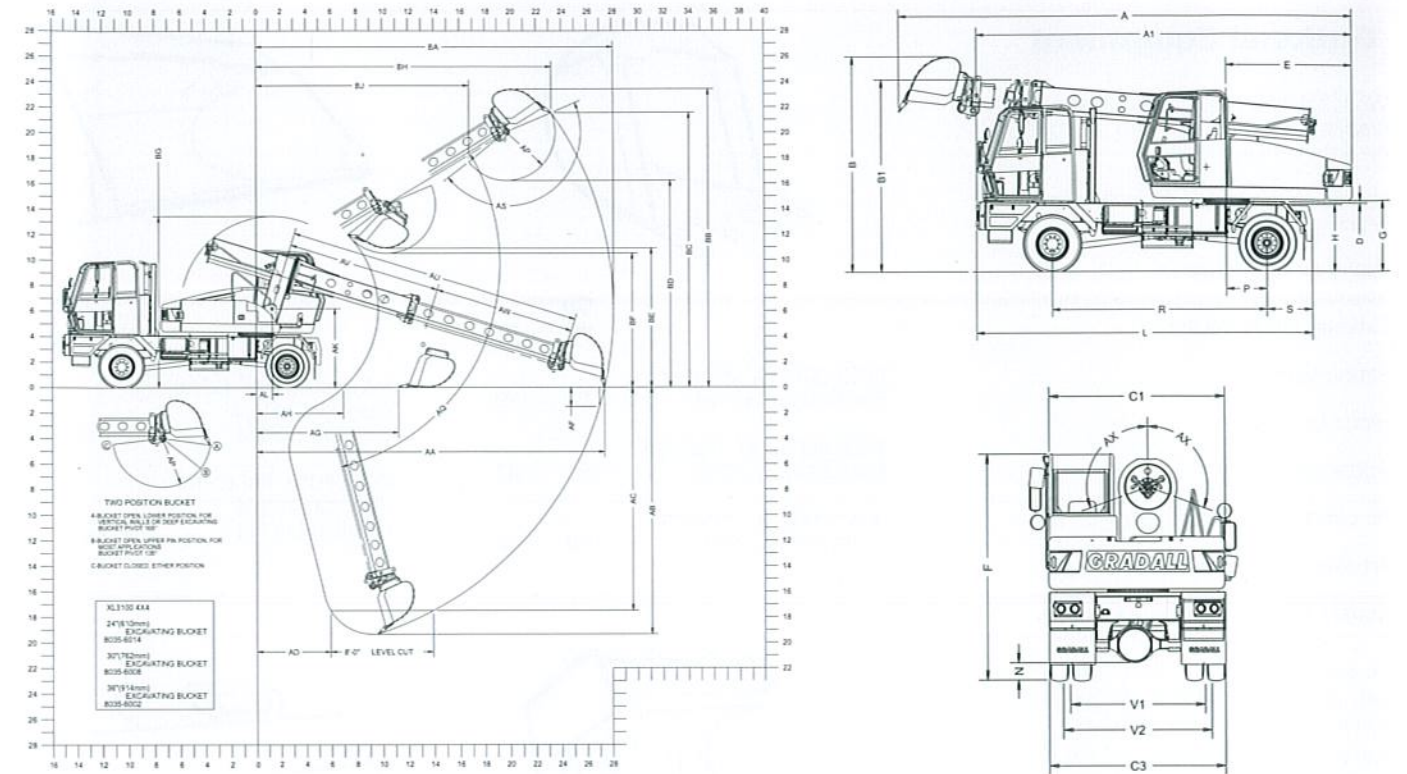
**Swing brake:** Automatic spring-set/hydraulic release wet disc parking brake. Dynamic braking is provided by the hydraulic system.

The load point is located on the bucket pivot point, including load listed for maximum radius.

Do not attempt to lift or hold any load greater than these rated values at specified load radii and heights. The weight of slings and any auxiliary devices must be deducted from the rated load to determine the net load that may be lifted.

**ATTENTION:** All rated loads are based on the machine being stationary and level on a firm supporting surface. For safe working loads, the user must make allowance for his particular job conditions such as soft or uneven ground, out of level conditions, side loads, hazardous conditions, experience of personnel, etc. The operator and other personnel must fully acquaint themselves with the Operator's Manual furnished by the manufacturer before operating this machine. Rules for safe operation of equipment must be adhered to at all times.

**NOTE:** Bucket adjustment values are 87% of the actual bucket weights.



### Shown with 8035-6008 30" (762mm) excavating bucket

	4 x 4	4 x 2		4 x 4	4 x 2	
A	27'3" (8.3m)	27'3" (8.3m)	Overall length (boom in rack) with bucket	AU 23'0" (7.0m)	23'0" (7.0m)	Maximum telescoping boom length (boom pivot to bucket pivot)
A1	22'7" (6.9m)	22'8" (6.9m)	Overall length (boom in rack) without bucket	AV 12'0" (3.6m)	12'0" (3.6m)	Minimum telescoping boom length (boom pivot to bucket pivot)
B	12'11" (3.9m)	12'8" (3.9m)	Overall height (boom in rack) with bucket	AW 11'0" (3.3m)	11'0" (3.3m)	Telescoping boom travel
B1	11'6" (3.5m)	11'3" (3.4m)	Overall height (boom in rack) without bucket	AX 110°	110°	Bucket tilt angle (both sides of center)
C1	8'6" (2.6m)	8'6" (2.6m)	Width of upper structure	BA 28'1" (8.6m)	28'1" (8.6m)	Maximum radius of working equipment (165° pivot)
C3	8'6" (2.6m)	8'6" (2.6m)	Width of undercarriage	BB 23'5" (7.1m)	23'1" (7.0m)	Minimum clearance of bucket teeth, with bucket pivot at maximum height
D	2" (50mm)	2" (50mm)	Minimum clearance, upperstructure to undercarriage	BC 21'7" (6.6m)	21'3" (6.5m)	Maximum bucket tooth height
E	7'6" (2.3m)	7'6" (2.3m)	Swing clearance, rear of upperstructure	BD 16'3" (5.0m)	15'11" (4.8m)	Minimum clearance of bucket teeth, with bucket pivot at maximum height
F	10'10" (3.3m)	10'6" (3.2m)	Top of cab to ground line	BE 10'11" (3.3m)	10'7" (3.2m)	Minimum clearance of fully curled bucket at maximum boom height (165°)
G	51" (1.3m)	47" (1.2m)	Clearance, upperstructure to ground line	BF 10'6" (3.2m)	10'3" (3.1m)	Minimum clearance of bucket teeth at maximum boom height
H	48" (1.2m)	44" (1.1m)	Top of wheel mounted undercarriage frame to ground line	BG 13'5" (4.1m)	13'2" (4.0m)	Maximum height of working equipment with bucket below ground line
L	20'3" (6.2m)	20'3" (6.2m)	Overall length of undercarriage	BH 23'3" (7.1m)	23'3" (7.1m)	Radius of bucket teeth at maximum height (165° pivot)
N	10" (250mm)	10" (250mm)	Ground clearance (per SAE J1234)	BJ 16'9" (5.1m)	16'9" (5.1m)	Minimum radius of bucket teeth at maximum bucket pivot height (165° pivot)
P	30" (760mm)	30" (760mm)	Center of rear axle to axis of rotation			
R	130" (4.0)	130" (4.0)	Wheel base			
S	32" (810mm)	32" (810mm)	Center of rear axle to rear of frame (step)			
V1	6'5" (2.0m)	6'5" (2.0m)	Tread, rear axles 4x4 (10.00 x 20 tires), 4x2 (Spoke Wheels)			
V2	7'1" (2.2m)	6'10" (2.1m)	Tread, front axle 4x4 (15.00 x 22.5 tires), 4x2 (Spoke Wheels)			
AA	27'5" (8.4m)	27'5" (8.4m)	Maximum radius at ground line (165° pivot)			
AB	19'4" (5.9m)	19'8" (6.0m)	Maximum digging depth (165° pivot)			
AC	17'6" (5.3m)	17'10" (5.4m)	Maximum depth for 8' level cut			
AD	5'11" (1.8m)	5'11" (1.8m)	Maximum radius of 8' level cut at depth "AC"			
AF	18" (460mm)	18" (460mm)	Maximum depth of vertical wall which can be excavated			
AG	11'3" (3.4m)	11'4" (3.5m)	Minimum level cut radius with bucket flat on ground line			
AH	6'11" (2.1m)	7'3" (2.2m)	Minimum radius at ground line			
AK	6'2" (1.9m)	5'11" (1.8m)	Boom pivot to ground line			
AL	15.3" (390mm)	15.3" (390mm)	Boom pivot to axis of rotation			
AP	46" (1.2m)	46" (1.2m)	Bucket tooth radius			
AQ	32° Up & 75° Down	32° Up & 75° Down	Boom pivot angle			
AS	135° & 165°	135° & 165°	Bucket pivot angle			

**Rated boom force:**  
18,360 lb (82kN)

**Rated bucket breakout force:**  
16,100 lb (72kN)

**Weight:**  
Approximate working weight, including 30" (762mm) bucket, fuel tank half full.  
4x2: 36,734 lb (16,662 kg)  
4x4: 38,424 lb (17,429 kg)

Specifications subject to change without notice.