

GRADALL®

XL 3100 V

HYDRAULIC EXCAVATOR



SPECIFICATIONS

Undercarriage

4 x 2 or 4 x 4
Wheelbase: 160" (4.06 m)
Width 102" (2.6 m)

Frame:
48" (1.2 m) wide, welded plate design
65 ksi material.

Gross Vehicle Axle Weight Rating:
4 x 2 41,250 lb (18,711 kg)
4 x 4 44,250 lb (20,071 kg)

Front Axles:
4 x 2: Meritor Model MFS-16-122A, 16,000 lb (7,257 kg) rating.

4 x 4: Meritor Model MX19-145, 19,000 lb (8,618 kg) rating, 7.17 ratio.

Rear Axle:
Meritor Model RS25-160, 25,250 lb (11,453 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 4 front: 425/65R22.5 LR (L) on/off highway traction tread

4 x 2 front: 385/65R22.5 LR (J) on/off highway tread

4 x 2 and 4 x 4 rear: 11R24.5 LR (H) on/off highway traction tread

Steering:

Ross, integral hydraulic power steering. Gear type power steering pump. 4-quart power steering reservoir with filter and 10 Micron pre-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, work 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

One load-sensing axial piston pump; 8-55 GPM (30-208 L/min) total.

One gear pump (pilot and steering) 15gpm (57 L/min.)

SYSTEM SPECIFICATIONS

Four Double Acting Cylinders:

- 2 hoist cylinders: 3.5" x 2.56" rod x 31" stroke (89 mm x 65 mm x 787 mm)
- 1 tool cylinder: 4.25" bore x 3.0" rod x 25.9" stroke (108 mm x 76 mm x 658 mm)
- 1 telescope: 3.5" ID x 2.559" rod x 11" stroke (89 mm x 65 mm x 3.34 m)

Three Hydraulic Motors:

Swing, 51 Hp (38kW); tilt, 21 Hp (16kW); remote drive, 110 Hp (82kW) total.

Operating Pressures:

Hoist.....	4,800 psi (331 BAR)
Tilt.....	2,500 psi (172 BAR)
Swing.....	3,000 psi (206 BAR)
Tool.....	4,800 psi (331 BAR)
Telescope.....	4,800 psi (331 BAR)
Remote Propel.....	4,800 psi (331 BAR)
Pilot system.....	550 psi (38 BAR)

Oil Capacity:

Reservoir 50 gallons (189 L), system 65 gallons (246 L). Pressurized reservoir with visual oil level gauge.

Filtration System:

5 micron return filter with magnet. 10 micron pilot filter.

Plate - Fin/Fin 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, DEF level, voltmeter, speedometer with odometer, tachometer, hour meter. Engine and transmission 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. Vent in door.

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. AM/FM Radio, air conditioning, work light package.

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

Upperstructure powered by chassis hydraulics through hydraulic motor and transfer case. 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 alarm mounted on undercarriage signal remote control movement in either direction, reverse movement when driven from undercarriage cab.

Engine

Volvo TAD572VE Tier 4f 5.1L diesel with Selective Catalytic Reduction and cooled EGR technology. 4 cycle, inline 4 cylinder, liquid cooled. Turbo charge air aftercooled. Off-road certified, electronically controlled, Grid heater. Vertical canister style lube filter attached to engine. Vertical canister style main fuel filter attached to engine. Volvo remote mount vertical style fuel/water separator with water in fuel indicator, alarm and manual feed pump.

Gross Rating: 215 hp @ 2300 RPM. 660 ft lb torque @ 1200-1700 RPM.

Net Rating: 198 hp @ 2300 RPM.

Air Filter: 2-stage Donaldson PSD PowerCore with high efficiency pre-cleaner, vacuator valve and remote service indicator.

Electrical System: 24 volt, 110 amp alternator with integral voltage regulator. 2 SAE #C31-S 1000 CCA batteries.

Chassis Cooling Package: Consists of three aluminum bar-plate type coolers stacked vertically: an air-air charge air cooler, radiator and a transmission cooler. All three coolers are backed by a molded fan shroud, engine mounted fan ring and 26.8" nine-blade fan driven by a Volvo electronically controlled variable speed fan drive.

Fuel Tank Capacity: 100 gal (378 L)

Urea Tank Capacity: 11.9 gal (45L)

Transmission: Allison 3500 RDS 6-speed automatic.

Gear Speeds: (with 11R24.5 tires)

Gear	1	2	3	4	5	6
MPH	6.5	15.5	22.7	34.9	46.6	60.0
Km/hr	(10.4)	(25.0)	(36.5)	(56.1)	(75.0)	(96.6)

Gear	REV
MPH	6.3
Km/hr	(10.1)

Drivelines: Spicer 1710 Series with "Half Round" yokes.

Transfer Case: (4 x 2) Cushman Model 479-1, 1:1 Ratio, Pneumatic engage for Remote Propel.

(4 x 4) Cushman Model 479A-1, 1:1 Ratio, Pneumatic engage for Remote Propel and Front Drive.

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.

Upperstructure Controls

Two electronic joysticks (hoist and bucket, telescope and swing), one rocker switch (tilt) control. Joysticks are mounted on arm pods that are adjustable for individual operator comfort and convenience. Quick change joystick pattern switch located on instrument panel.

Two foot pedals for remote control of undercarriage steering, travel and digging brakes.

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 fluid temperature and level.

Automatic engine shutdown occurs with low oil pressure, derate/shutdown for oil temperature, coolant temperature, coolant level, ERD temperature, change air temperature, change air pressure and derate for SCR temperature.

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

LOAD POINT HEIGHT		LOAD RADIUS										
		10' 0" (3.0 m)		15' 0" (4.6 m)		20' 0" (6.1 m)		25' 0" (7.6 m)		Maximum radius		
		Over End	Over Side	Over End	Over Side	Over End	Over Side	Over End	Over Side		Over End	Over Side
ABOVE GROUND LEVEL	20' 0" (6.1 m)									20' 2" (6.1 m)	3625 (1645)	3625 (1645)
	15' 0" (4.6 m)			6475 (2935)	6475 (2935)	4320 (1960)	4320 (1960)			22' 8" (6.9 m)	3545 (1610)	3545 (1610)
	10' 0" (3.0 m)			7655 (3470)	7655 (3470)	4890 (2220)	4890 (2220)			24' 0" (7.3 m)	3560 (1615)	3560 (1615)
	BOOM LEVEL 8' 6" (2.6 m)			7840 (3555)	7840 (3555)	4975 (2255)	4975 (2255)			24' 2" (7.4 m)	3575 (1620)	3575 (1620)
	5' 0" (1.5 m)			7870 (3570)	7870 (3570)	5050 (2290)	5050 (2290)			24' 2" (7.4 m)	3625 (1645)	3625 (1645)
AT GROUND LEVEL				6840 (3105)	6840 (3105)	4710 (2135)	4710 (2135)			23' 3" (7.1 m)	3720 (1685)	3720 (1685)
BELOW GROUND LEVEL	5' 0" (1.5 m)	5920 (2685)	5920 (2685)	5920 (2685)	5920 (2685)	4030 (1830)	4030 (1830)			21' 0" (6.4 m)	3785 (1715)	3785 (1715)
	15' 0" (4.6 m)	3590 (1630)	3590 (1630)	3860 (1750)	3860 (1750)					16' 11" (5.1 m)	3665 (1660)	3665 (1660)
	10' 0" (3.0 m)									9' 9" (3 m)	2155 (975)	2155 (975)

NOTE: The above loads are in compliance with the SAE standard J1097 DEC2005. They do not exceed 87% of hydraulic lifting capacity or 75% of tipping capacity.

The rated lift capacity is based on the machine being equipped with 6,000 lb (2720 kg) counterweight, standard boom, standard tires, no auxiliary hydraulics and no bucket.

Adjust the listed rated capacities by subtracting the value listed for bucket/attachment used:

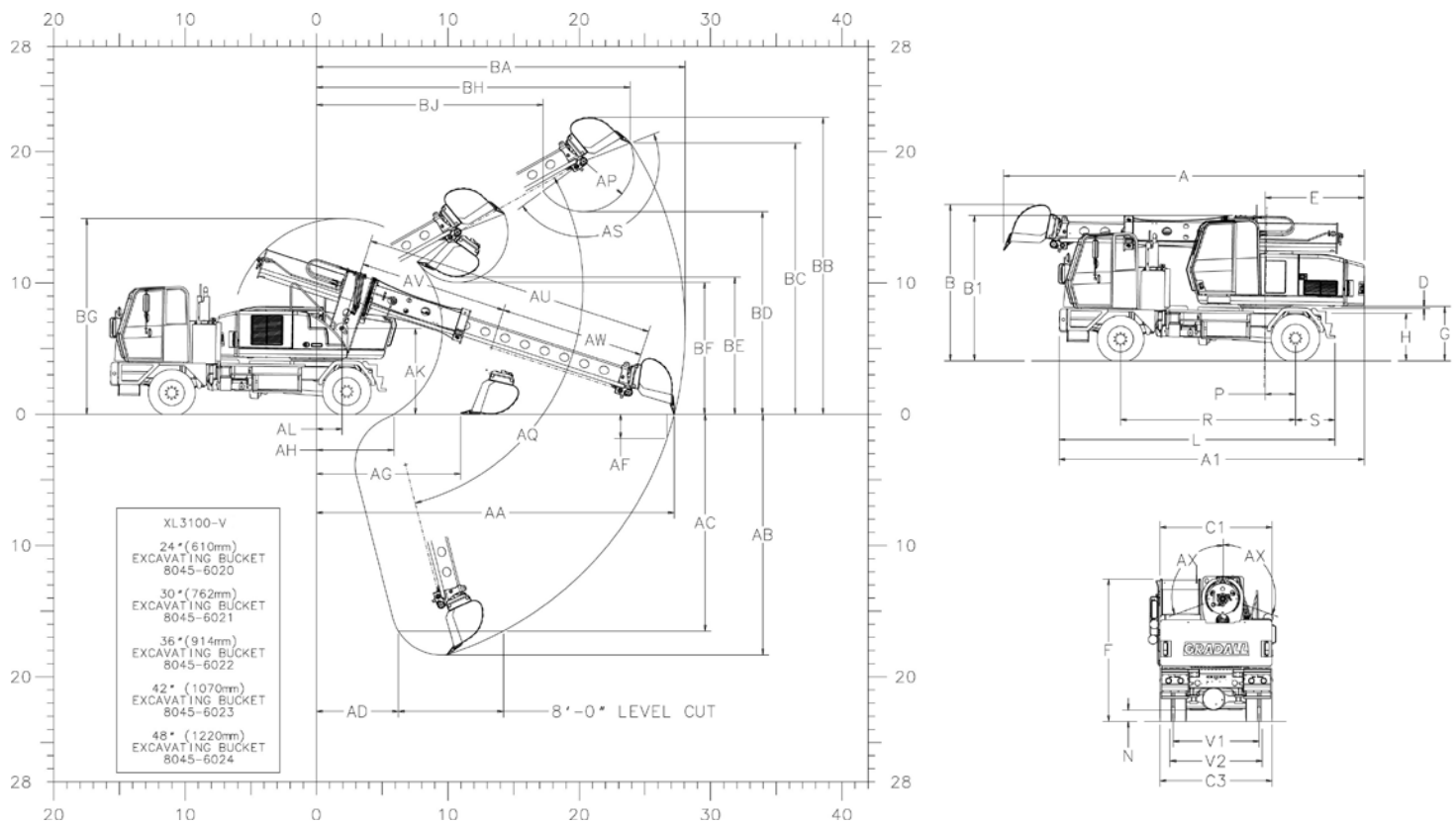
8065-6007 60" (1.5 m)	Ditching-	807 lbs (366 kg)
8065-6006 66" (1.7 m)	Ditching-	892 lbs (405 kg)
8065-6002 72" (1.8 m)	Ditching-	944 lbs (428 kg)
8045-6020 24" (610 mm)	Excavating-	603 lbs (274 kg)
8045-6021 30" (762 mm)	Excavating-	660 lbs (300 kg)
8045-6022 36" (914 mm)	Excavating-	741 lbs (336 kg)
8045-6023 42" (1.1 m)	Excavating-	841 lbs (382 kg)
8045-6024 48" (1.2 m)	Excavating-	957 lbs (434 kg)
8065-6013 72" (1.8 m)	Dredging-	1114 lbs (505 kg)
8065-6102 40" (1.0 m)	Pavement-	1262 lbs (573 kg)
8065-6024 8" (2.4 m)	Blade-	630 lbs (285 kg)
8065-6009 Single Tooth	Ripper-	557 lbs (253 kg)

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

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.



Shown with 8035-6006 48" (1.2 m) excavating bucket

	4 x 2	4 x 4		4 x 2	4 x 4	
A	27' 6" (8.4)	27' 6" (8.4)	Overall length (boom in rack) with bucket	AL	23" (596 mm)	23" (596 mm) Boom pivot to axis of rotation
A1	23' 3" (7.1)	23' 3" (7.1)	Overall length (boom in rack) without bucket	AP	46" (1.2)	46" (1.2) Bucket tooth radius
B	11' 11" (3.6)	12' 3" (3.7)	Overall height (boom in rack) with bucket	AQ	30° Up & 75° Down	30° Up & 75° Down Boom pivot angle
B1	11' 1" (3.4)	11' 5" (3.5)	Overall height (boom in rack) without bucket	AS	165°	165° Bucket pivot angle
C1	8' 6" (2.6)	8' 6" (2.6)	Width of upper structure	AU	22' 3" (6.8)	22' 3" (6.8) Maximum telescoping boom length (boom pivot to bucket pivot)
C3	8' 6" (2.6)	8' 6" (2.6)	Width of undercarriage	AV	11' 3" (3.4)	11' 3" (3.4) Minimum telescoping boom length (boom pivot to bucket pivot)
D	2" (45 mm)	2" (45 mm)	Minimum clearance, upperstructure to undercarriage	AW	11' 0" (3.4)	11' 0" (3.4) Telescoping boom travel
E	7' 6" (2.3)	7' 6" (2.3)	Swing clearance, rear of upperstructure	AX	110°	110° Bucket tilt angle (both sides of center)
F	10' 10" (3.3)	11' 1" (3.4)	Top of cab to ground line	BA	28' 1" (8.6)	28' 1" (8.6) Maximum radius of working equipment
G	50" (1.3)	54" (1.4)	Clearance, upperstructure to ground line	BB	22' 7" (6.9)	22' 11" (7.0) Minimum clearance of bucket teeth, with bucket pivot at maximum height
H	44" (1.1)	47" (1.2)	Top of wheel mounted undercarriage frame to ground line	BC	20' 8" (6.3)	21' 0" (6.4) Maximum bucket tooth height
L	21' 0" (6.4)	21' 0" (6.4)	Overall length of undercarriage	BD	15' 5" (4.7)	15' 9" (4.8) Minimum clearance of bucket teeth, with bucket pivot at maximum height
N	10" (254 mm)	10" (254 mm)	Ground clearance (per SAE J1234)	BE	10' 5" (3.2)	10' 9" (3.3) Minimum clearance of fully curled bucket at maximum boom height
P	28" (701 mm)	28" (701 mm)	Center of rear axle to axis of rotation	BF	10' 1" (3.1)	10' 4" (3.2) Minimum clearance of bucket teeth at maximum boom height
R	13' 4" (4.1)	13' 4" (4.1)	Wheel base	BG	14' 11" (4.5)	15' 2" (4.6) Maximum height of working equipment with bucket below ground line
S	36" (916 mm)	36" (916 mm)	Center of rear axle to rear of frame (step)	BH	23' 11" (7.3)	23' 11" (7.3) Radius of bucket teeth at maximum height
V1	6' 6" (2.0)	6' 6" (2.0)	Tread, rear axles 4 x 4 (10:00 x 20 tires), 4 x 2 (Spoke Wheels)	BJ	17' 3" (5.3)	17' 3" (5.3) Minimum radius of bucket teeth at maximum bucket pivot height
V2	7' 0" (2.1)	7' 0" (2.1)	Tread, front axle 4 x 4 (15:00 x 22.5 tires), 4 x 2 (Spoke Wheels)			
AA	27' 3" (8.3)	27' 2" (8.3)	Maximum radius at ground line (165° pivot)			
AB	18' 4" (5.6)	18' 1" (5.5)	Maximum digging depth (165° pivot)			
AC	16' 6" (5.0)	16' 3" (4.9)	Maximum depth for 8' level cut			
AD	6' 3" (1.9)	6' 3" (1.9)	Maximum radius of 8' level cut at depth "AC"			
AF	1' 10" (0.6)	1' 10" (0.6)	Maximum depth of vertical wall which can be excavated			
AG	11' 0" (3.3)	10' 11" (3.3)	Minimum level cut radius with bucket flat on ground line			
AH	5' 11" (1.8)	5' 4" (1.6)	Minimum radius at ground line			
AK	6' 6" (2.0)	6' 10" (2.1)	Boom pivot to ground line			

Rated boom force: 21,940 lb (97.6kN)
Rated bucket breakout force: 17,990 lb (80kN)
Weight: Approximate working weight, including 30" (762 mm) bucket, fuel tank half full.
 4 x 2: 40,930 lb (18,566 kg)
 4 x 4: 41,720 lb (18,924 kg)

Specifications subject to change without notice.
 Metric units are meters (m) unless noted.
 Machines shown may have optional equipment.

Optional Equipment

Vandalism protection kit including window covers.

Strobe light.

ROPS protective cab (upper cab only)

Auxiliary Hydraulics - Additional hoses and piping for hydraulic powered attachments. [Maximum pressure 4800 psi (33,095 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.



8045-6020 24" (610 mm)
Excavating bucket

Cu. yd. m³
3/8 0.31

8045-6021 30" (762 mm)
Excavating bucket

1/2 0.41

8045-6022 36" (914 mm)
Excavating bucket

5/8 0.54

8045-6023 42" (1.07 m)
Excavating bucket

3/4 0.64

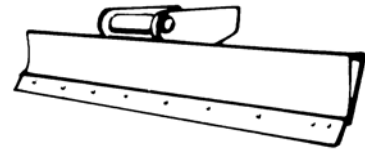
8045-6024 48" (1.22 m)
Excavating bucket

1 0.76

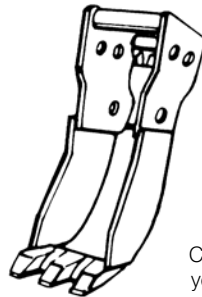


8065-6013 72" (1.83 m)
Dredging bucket

Cu. yd. m³
1 1/8 0.87



8065-6024 8' (2.4 m) Grading blade

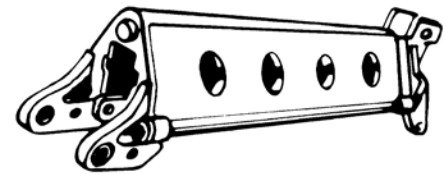


8065-6104 15" (381 mm)
Trenching bucket

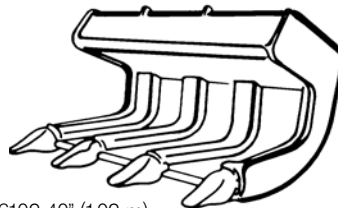
Cu. yd. m³
1/5 0.15

8065-6012 21" (533 mm)
Trenching bucket

1/4 0.19



8065-5028 4' (1.2 m) Boom extension

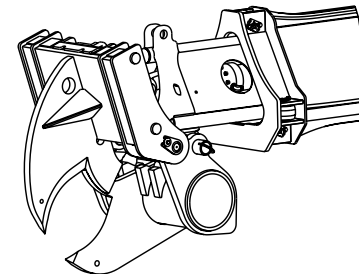


8065-6102 40" (1.02 m)
Pavement removal bucket

8065-6115 18" (0.457 m)
Pavement removal bucket

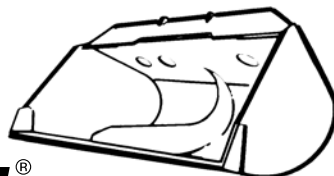
8065-6116 24" (0.610 m)
Pavement removal bucket

8065-611 28" (0.711 m)
Pavement removal bucket



8045-5052 Tree limb shear attachment

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.



8065-6040 30" (0.762 m)
Ditching bucket

Cu. yd. m³
3/8 0.3

8065-600 60" (1.52 m)
Ditching bucket

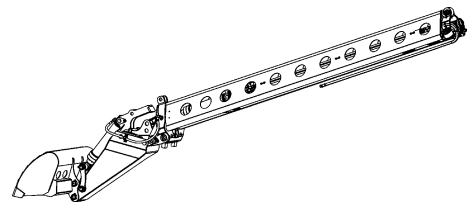
7/8 0.73

8065-6006 66" (1.68 m)
Ditching bucket

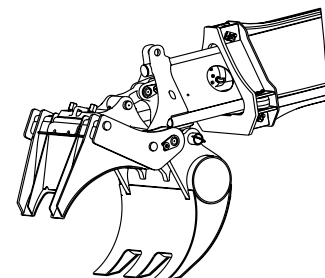
1 0.76

8065-6002 72" (1.83 m)
Ditching bucket

1 1/8 0.87



8045-5009 6' (1.8 m) Live boom



8075-5023 Fixed thumb grapple

GRADALL®

406 Mill Ave. SW, New Philadelphia, Ohio 44663
Phone: 330-339-2211 Fax: 330-339-8468
www.Gradall.com

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