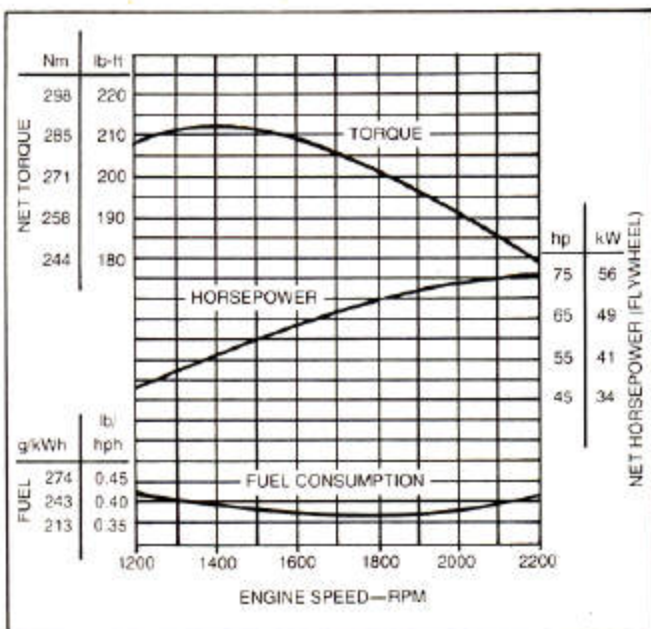




490 EXCAVATOR



ENGINE PERFORMANCE



FEATURES

75-*SAE-net-hp* (56 kW) turbocharged John Deere diesel

18-ft. (5.49 m) digging depth

26-ft. 9-in. (8.15 m) reach at ground level

High-efficiency variable-flow hydraulic system with fuel-saving features

Large cab for improved operator comfort and visibility

Centralized monitoring system

Two-lever, low-effort, control of boom, bucket, and 360-degree continuous swing

Straight propelling while swinging or working front-attachment functions

Excavator track-type undercarriage with sealed track chain

Hydraulic track adjustment

Heavy-duty planetary gear reduction with automatically engaged multiple wet-disk brakes

Vandal protection—lockable service doors

TED B. MILLER CO., Inc.
Hwy 92 East
P.O. Box 460
Gering, Nebr. 693-1

490 EXCAVATOR SPECIFICATIONS

(Specifications and design are subject to change without notice. Wherever applicable, specifications are in accordance with PCSA and SAE Standards. Except where otherwise noted, these specifications are based on a machine equipped with 40-in. (1016 mm) bucket, full fuel tank, 175 lb. (79 kg) operator and standard equipment.)

| Power (@ 2200 engine rpm): | SAE | DIN |
|----------------------------|----------------|-------|
| Gross | .79 hp (59 kW) | |
| Net | .75 hp (56 kW) | 56 kW |

Net engine power is with standard equipment including air cleaner, exhaust system, alternator and cooling fan. Gross power is without cooling fan. Power ratings are at standard conditions per SAE J1349 and DIN 6270. No derating is required up to 10,000 feet (3050 m) altitude.

| | |
|---|---|
| Engine: John Deere turbocharged diesel, 4-cylinder, 4-stroke cycle | |
| Bore and stroke | 4.19×4.33 in. (106.5×110 mm) |
| Piston displacement | 239 cu. in. (3.92 L) |
| Compression ratio | 16.8 to 1 |
| Maximum torque @ 1400 rpm | .212 lb-ft (287 Nm) (29.3 kg-m) |
| NACC or AMA (U.S. Tax) horsepower | 28 |
| Lubrication | Pressure system w/full-flow filter |
| Cooling | Pressurized w/thermostat and fixed bypass |
| Air cleaner w/restriction indicator | Dry w/safety element |
| Electrical system | 24-volt |
| Batteries (2) 12-volt | Reserve capacity: 100 minutes |

Hydraulic System: Open Center

Two variable-displacement axial-piston pumps and two control valves (5- and 4-spool) provide independent and combined operation of all functions. The 5-spool control valve has one spool for an auxiliary attachment function.

| | |
|--|--|
| Main pumps | 2 variable-displacement axial-piston |
| Pressure setting | 3560 psi (24 546 kPa) (250 kg/cm ²) |
| Max. oil flow | 2×31.7 gpm (2×120 L/min) |
| Pilot pump | Gear |
| Pressure setting | 435 psi (3000 kPa) (30.6 kg/cm ²) |
| Max. oil flow | .620 gpm (23.5 L/min) |
| System operating pressure | 3560 psi (24 546 kPa) (250 kg/cm ²) |
| Relief valves: | |
| Boom | .3770 psi (25 994 kPa) (265 kg/cm ²) |
| Arm | .3770 psi (25 994 kPa) (265 kg/cm ²) |
| Bucket | .3770 psi (25 994 kPa) (265 kg/cm ²) |
| Travel | .3560 psi (24 546 kPa) (250 kg/cm ²) |
| Oil filtration: | |
| One suction filter | |
| One 10-micron full-flow return filter w/bypass | |

| Cylinders: | Bore | Rod Diameter | Stroke |
|------------|---------------------|--------------------|-----------------------|
| Boom (2) | 4.3 in. (110 mm) | 3 in. (75 mm) | 41.5 in. (1055 mm) |
| Arm (1) | 4.7 in. (120 mm) | 3.1 in. (80 mm) | 46.9 in. (1190 mm) |
| Bucket (1) | 3.9 in. (100 mm) | 2.6 in. (65 mm) | 38.0 in. (965 mm) |

Arm cylinder has a built-in hydraulic cushion at each end of the stroke. All cylinder rods are ground, heat treated, chrome plated and polished.

Swing Mechanism:

| | |
|-------------------|---|
| Swing speed | 0-12.7 rpm (0-12.7 min.) |
| Swing lock | Manual for transporting |
| Turntable bearing | Single-row, shear-type ball bearing with induction-hardened, lubricated internal gear and pinion. 500-hour lube interval. |

Undercarriage:

Propel motors (one for each track) Axial-piston hydraulic motors with planetary drives. Multiple-disk brakes automatically release while propelling and apply when stationary. Independent drive to each track permits counterrotation. Excavator track-type undercarriage with heavy-duty frame and all-welded, stress-relieved structure. Side frames welded to track frame. Permanently lubricated track rollers, idlers and sprockets with floating seals.

Tracks:

| | |
|------------------|---|
| Track chain | Sealed |
| Track adjustment | Hydraulic with shock absorbing recoil springs |

Track Rollers and Shoes (each side):

One upper roller, seven lower rollers. Forty-three track shoes. Track shoes induction-hardened rolled alloy. Heat-treated connecting pins.

| Track Shoes: | Average Ground Contact | Average Ground Pressure | |
|----------------------------|------------------------|--|--|
| Width | | | |
| 20 in. (500 mm) (standard) | Triple grousers | 4670 sq. in. (30 130 cm ²) | 5.61 psi (38.7 kPa) (0.39 kg/cm ²) |
| 28 in. (710 mm) (optional) | Triple grousers | 6544 sq. in. (42 220 cm ²) | 4.21 psi (29.0 kPa) (0.30 kg/cm ²) |

Cab:

Steel, independent, shock mounted and soundproofed. Safety glass windows. Front window can be stored overhead. Rear window slides open for ventilation. Front window wiper. Left control lever can be locked in a position for easier entering and exiting of operator. Centralized monitoring with alarm system.

Seat:

Fully adjustable deluxe reclining seat with armrests.

Controls:

All hydraulic functions are controlled by low-effort mechanical linkage. Two short levers control swing, boom, arm and bucket functions. Right and left pedals control forward, reverse and counterrotation movements.

Boom and Arm:

Welded, low-stress, full box-section design. Centralized lubrication system.

Servicing and Vandal Protection:

Non-slip steps and handrails make for easier servicing and maintenance. Easily accessible engine and hydraulic system covers. Machine covers, fuel cap and cab door are lockable.

Additional Standard Equipment:

Cab:

- Heater
- Horn
- Windshield wiper
- Interior light
- Positive position hand throttle
- Monitor package with alarm system:
 - Alternator charge indicator light
 - Quartz hourmeter
 - Fuel gauge
 - Engine coolant temperature gauge
 - Engine oil pressure warning light w/alarm buzzer
 - Work light indicator
 - Air cleaner restriction warning light
 - Engine coolant temperature warning light w/alarm buzzer

Engine:

- Electric cold weather (ether) starting aid
- Single heavy-duty fuel filter
- Oil cooler
- Bypass oil filter
- Dual dry-type air filters

Frame:

- 4190 lb. (1900 kg) counterweight
- Vandal protection—lockable service doors and fuel filter cap
- Fully enclosed swing gears
- One work light

Front Attachment:

- Centralized lubrication system
- Bucket clearance adjusting mechanism
- w/3/4 cu. yd. (0.5 m³) bucket
- Dirt seals on all bucket pins
- One work light

Undercarriage:

- Propel motor and hydraulic line shields
- Single flange lower track rollers
- 20-in. (500 mm) triple-grouser shoes

Optional or Special Equipment:

Cab:

- Window covers

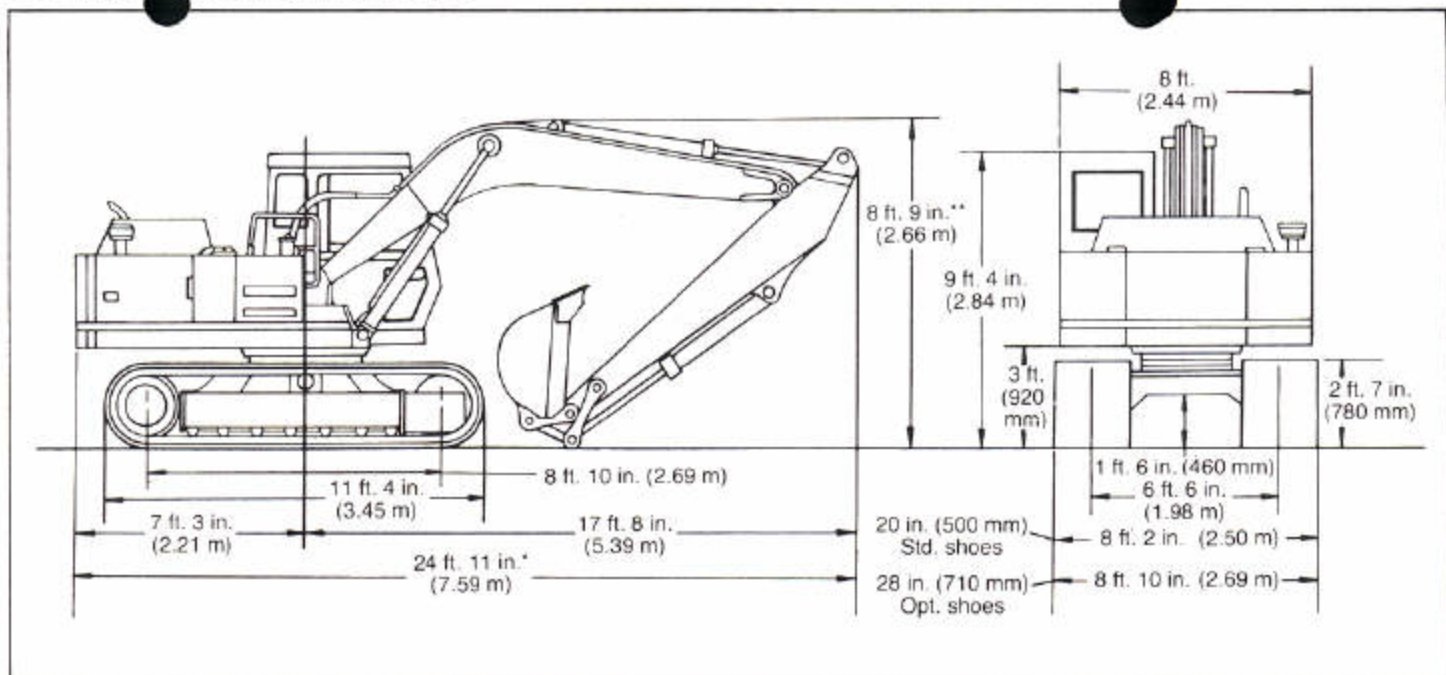
Front Attachment:

- 118-in. (3.0 m) arm

Undercarriage:

- 28-in. (710 mm) triple-grouser shoes

490 EXCAVATOR SPECIFICATIONS



*With 118-in. (3.0 m) arm, 24 ft. 7 in. (7.50 m)
 **With 118-in. (3.0 m) arm, 8 ft. 3 in. (2.50 m) in shipping pinning position; 10 ft. 1 in. (3.07 m) in operation pinning position. Consult Operator's Manual for proper shipping of machine with 118-in. (3.0 m) arm.

| Weights: | lb. | kg |
|--|--------|--------|
| Operating weight (w/full fuel tank, operator, less bucket) | 25,450 | 11 544 |
| Upper structure with (2) boom cylinders, undercarriage with 20 in. (500 mm) triple-grouser shoes, full fuel tank and counterweight | 22,050 | 10 002 |
| Undercarriage with 28-in. (710 mm) triple-grouser shoes (add) | 1210 | 549 |
| One-piece boom with arm cylinder | 2026 | 919 |
| Std. 98-in. (2.5 m) arm with bucket cylinder and linkage | 1199 | 544 |
| Optional 118-in. (3.0 m) arm with bucket cylinder and linkage | 1355 | 615 |
| Counterweight | 4190 | 1900 |

| Capacities: | U.S. | Liters |
|------------------------------------|-----------|--------|
| Fuel tank | 66 gal. | 250 |
| Cooling system | 32 qt. | 30.3 |
| Engine lubrication w/filter | 20 qt. | 18.9 |
| Engine lubrication w/o filter | 15 qt. | 14.2 |
| Hydraulic system | 42.2 gal. | 160 |
| Hydraulic reservoir | 21 gal. | 80 |
| Planetary propel drive (each side) | 6.9 qt. | 6.5 |
| Swing drive | 3.2 qt. | 3.0 |

| | Arm 98 in. (2.50 m) | Arm 118 in. (3.00 m) |
|---|------------------------------|------------------------------|
| Arm force | 11,200 lb. (50 kN) (5080 kg) | 10,400 lb. (46 kN) (4717 kg) |
| Lifting capacity over front or rear @ ground level 20 ft. (6.1 m) reach | 4610 lb. (2090 kg) | 4680 lb. (2120 kg) |
| Digging depth | 18 ft. 0 in. (5.49 m) | 19 ft. 7 in. (5.97 m) |
| Digging depth @ 8 ft. (2.44 m) flat bottom | 17 ft. 1 in. (5.21 m) | 18 ft. 8 in. (5.69 m) |
| Reach @ ground level | 26 ft. 9 in. (8.15 m) | 28 ft. 1 in. (8.55 m) |
| Dumping height | 17 ft. 11 in. (5.46 m) | 18 ft. 0 in. (5.49 m) |

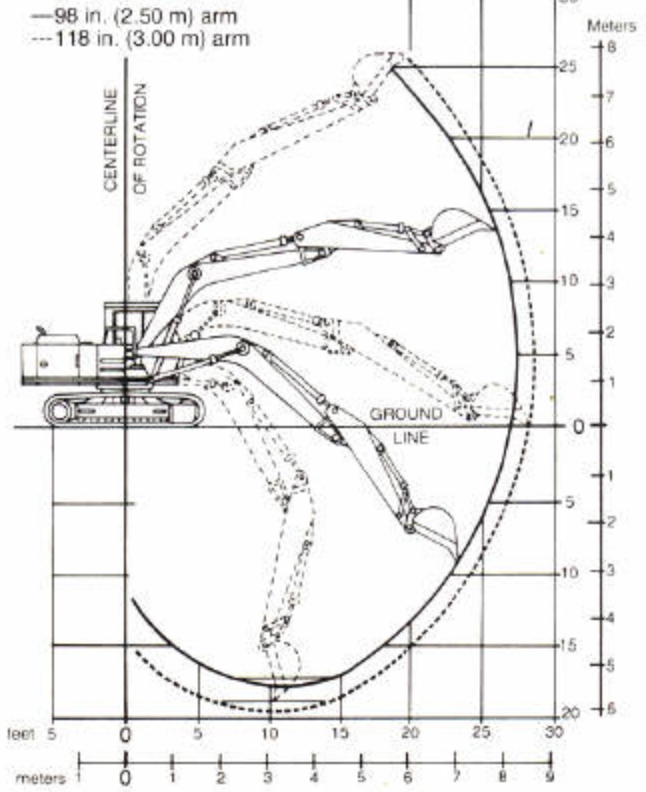
Operating Information:

| | |
|--|----------------------|
| Gradability | 70% (35°) |
| Swing speed | 12.7 rpm |
| Tail swing | 87 in. (2.21 m) |
| Infinitely variable travel speed, forward and reverse: | 0-2.2 mph (3.6 km/h) |

Bucket Digging Force: (Tangential Penetrating Force) SAE Heaped

| | |
|-----------------------------------|--------------------|
| Regular Duty | |
| 1/2 cu. yd. (0.4 m ³) | 15,200 lb. (68 kN) |
| 3/4 cu. yd. (0.5 m ³) | 15,200 lb. (68 kN) |

Digging Depth and Reach:



490 EXCAVATOR

| BUCKETS | Bite Width | | SAE (Heaped) | CECE (Heaped) | Weight | Recommendation | |
|-----------------|----------------------|-------------------|---------------------------------|-----------------------|------------------|--------------------|---------------------|
| | Without Side Cutters | With Side Cutters | | | | 98-in. (2.5 m) Arm | 118-in. (3.0 m) Arm |
| 28 in. (720 mm) | | 33 in. (840 mm) | ½ cu. yd. (0.4 m ³) | (.35 m ³) | 790 lb. (358 kg) | ○ | ○ |
| 35 in. (890 mm) | | 40 in. (1010 mm) | ¾ cu. yd. (0.5 m ³) | (.45 m ³) | 900 lb. (408 kg) | ○ | □ |

- : Suitable for materials with density of 3370 lb./cu. yd. (2000 kg/m³) or less
 □: Suitable for materials with density of 2700 lb./cu. yd. (1600 kg/m³) or less

490 EXCAVATOR LIFT CAPACITIES

98-in. (2.50 m) STANDARD ARM

Ratings at bucket lift hook, machine equipped with 20-in. (500 mm) shoes, ½ cu. yd. (0.5 m³) PCSA heaped bucket and standard counterweight, situated on firm, level, uniform supporting surface. Boldface type indicates hydraulic-limited capacities, lightface type indicates stability-limited capacities, in lb. (kg). Figures do not exceed 87 percent of hydraulic capacities or 75 percent of weight needed to tip machine.

LIFTING OVER FRONT OR REAR

| Horizontal distance from centerline of rotation: | 5 ft. (1.52 m) | 10 ft. (3.05 m) | 15 ft. (4.57 m) | 20 ft. (6.10 m) | 25 ft. (7.62 m) |
|--|--------------------|--------------------|--------------------|--------------------|--------------------|
| 15 ft. (4.57 m) | | | | 4950 (2250) | |
| 10 ft. (3.05 m) | | | 6230 (2830) | 5110 (2320) | |
| 5 ft. (1.52 m) | | | 7760 (3520) | 4840 (2200) | 2860 (1300) |
| Ground level | | | 7280 (3300) | 4610 (2090) | |
| -5 ft. (-1.52 m) | 5420 (2460) | 5980 (2710) | 7110 (3230) | 4490 (2040) | |
| -10 ft. (-3.05 m) | | 9340 (4240) | 7160 (3250) | 4570 (2070) | |

LIFTING OVER SIDE OR 360 DEGREES

| Horizontal distance from centerline of rotation: | 5 ft. (1.52 m) | 10 ft. (3.05 m) | 15 ft. (4.57 m) | 20 ft. (6.10 m) | 25 ft. (7.62 m) |
|--|--------------------|--------------------|--------------------|-----------------|-----------------|
| 15 ft. (4.57 m) | | | | 4090 (1860) | |
| 10 ft. (3.05 m) | | | 6230 (2830) | 3920 (1780) | |
| 5 ft. (1.52 m) | | | 5850 (2650) | 3670 (1660) | 2420 (1100) |
| Ground level | | | 5410 (2450) | 3450 (1560) | |
| -5 ft. (-1.52 m) | 5420 (2460) | 5980 (2710) | 5240 (2380) | 3340 (1510) | |
| -10 ft. (-3.05 m) | | 9340 (4240) | 5300 (2400) | 3420 (1550) | |

490 EXCAVATOR LIFT CAPACITIES

118-in. (3.00 m) OPTIONAL ARM

Ratings at bucket lift hook, machine equipped with 20-in. (500 mm) shoes, ½ cu. yd. (0.4 m³) PCSA heaped bucket and standard counterweight, situated on firm, level, uniform supporting surface. Boldface type indicates hydraulic-limited capacities, lightface type indicates stability-limited capacities, in lb. (kg). Figures do not exceed 87 percent of hydraulic capacities or 75 percent of weight needed to tip machine.

LIFTING OVER FRONT OR REAR

| Horizontal distance from centerline of rotation: | 5 ft. (1.52 m) | 10 ft. (3.05 m) | 15 ft. (4.57 m) | 20 ft. (6.10 m) | 25 ft. (7.62 m) |
|--|--------------------|----------------------|--------------------|--------------------|-----------------|
| 15 ft. (4.57 m) | | | | 4330 (1960) | |
| 10 ft. (3.05 m) | | | | 5040 (2290) | 3460 (1570) |
| 5 ft. (1.52 m) | | | 7850 (3560) | 4950 (2250) | 3350 (1520) |
| Ground level | | 7560 (3430) | 7390 (3350) | 4680 (2120) | 3230 (1470) |
| -5 ft. (-1.52 m) | 5950 (2700) | 7590 (3440) | 7130 (3230) | 4530 (2050) | |
| -10 ft. (-3.05 m) | 6730 (3050) | 10,100 (4580) | 7130 (3230) | 4540 (2060) | |
| -15 ft. (-4.57 m) | | 12,650 (5740) | 7390 (3350) | | |

LIFTING OVER SIDE OR 360 DEGREES

| Horizontal distance from centerline of rotation: | 5 ft. (1.52 m) | 10 ft. (3.05 m) | 15 ft. (4.57 m) | 20 ft. (6.10 m) | 25 ft. (7.62 m) |
|--|--------------------|----------------------|-----------------|-----------------|-----------------|
| 15 ft. (4.57 m) | | | | 4240 (1920) | |
| 10 ft. (3.05 m) | | | | 4050 (1840) | 2630 (1190) |
| 5 ft. (1.52 m) | | | 6040 (2740) | 3780 (1710) | 2520 (1140) |
| Ground level | | 7560 (3430) | 5520 (2500) | 3530 (1600) | 2410 (1090) |
| -5 ft. (-1.52 m) | 5950 (2700) | 7590 (3440) | 5280 (2390) | 3380 (1530) | |
| -10 ft. (-3.05 m) | 6730 (3050) | 10,100 (4580) | 5280 (2390) | 3390 (1540) | |
| -15 ft. (-4.57 m) | | 10,640 (4830) | 5520 (2500) | | |