

TECHNICAL SPECIFICATIONS

ENGINE

MAKE	Doosan
MODEL	D18
NUMBER OF CYLINDERS	3
RATED POWER GROSS (HP PER SAE J1995)	48.8 hp (36.4 kW) @ 2200 rpm
RATED POWER NET (HP PER SAE J1349)	–
MAXIMUM TORQUE (GROSS) (SAE J1995)	133 lbf.ft. (18.4 kfg-m) @ 1600 rpm
PISTON DISPLACEMENT	146.0 in. ³ (2.4 L)
BORE AND STROKE	3.5 in. x 3.7 in. (90 mm x 94 mm)
STARTER	12V, 3.6 hp (2.7 kW)
BATTERY	12V, 100AH
ALTERNATOR	12V, 90 amp
AIR CLEANER	Double Elements

HYDRAULICS

MAIN PUMPS	1 x 37 gpm (139 L/min)
PILOT PUMP (GEAR DESIGN)	–
RELIEF PRESURE	4206 psi (296 kg/cm ²)

MAXIMUM SYSTEM PRESSURE

BOOM/ARM/BUCKET (NORMAL MODE)	3553 PSI (250 kg/cm ²)
SWING (NORMAL MODE)	3191 PSI (224 kg/cm ²)

UNDERCARRIAGE

UPPER ROLLERS (EACH TRACK)	1
LOWER ROLLERS (EACH TRACK)	4
NUMBER OF SHOES (LINKS PER SIDE)	Single Assembly (Rubber)

SWING MECHANISM

SWING SPEED	9.8 rpm
SWING TORQUE	9982 lbf.ft. (1380 kfg-m)

DRIVE SYSTEM

TRAVEL SPEED [LOW - HIGH]	1.6 - 2.7 mph (2.6 - 4.4 km/h)
TRACTION FORCE, MAX (DRAWBAR PULL)	11,310 lbf. (5130 kgf)
MAXIMUM GRADE	70% (35°)



ENVIRONMENT

SOUND LEVEL (ISO 6395)	97 dB(A)
CABIN SOUND LEVEL (ISO 6396)	78 dB(A)

REFILL CAPACITIES

FUEL TANK	20.6 gal. (78 L)
COOLING SYSTEM (RADIATOR CAPACITY)	2.9 gal. (10.8 L)
ENGINE OIL	2.4 gal. (9.2 L)
FINAL DRIVE (EACH SIDE)	0.3 gal. (1.0 L)
HYDRAULIC SYSTEM	277 gal. (105 L)
HYDRAULIC TANK	12.7 gal. (48.0 L)

HYDRAULIC CYLINDERS

BOOM (1)	3.7 in. x 26.7 in. x 2.2 in. (95 mm x 678 mm x 55 mm)
ARM (1) ^{1,2}	3.1 in. x 28.6 in. x 2.2 in. (80 mm x 726 mm x 55 mm)
BUCKET (1) ¹	2.8 in. x 23.6 in. x 1.8 in. (70 mm x 600 mm x 45 mm)
SWING - BOOM (1) ¹	3.7 in. x 17.7 in. x 2.4 in. (95 mm x 449 mm x 60 mm)
BLADE (2) ¹	4.3 in. x 7.8 in. x 2.4 in. (110 mm x 197 mm x 60 mm)

1 Cushion on Rod End
2 Cushion on Base End

BORE x ROD DIAMETER x STROKE

The piston rods and cylinder bodies are made of high-strength steel. A shock absorbing mechanism is fitted in all cylinders to ensure shock-free operation and extend piston life.

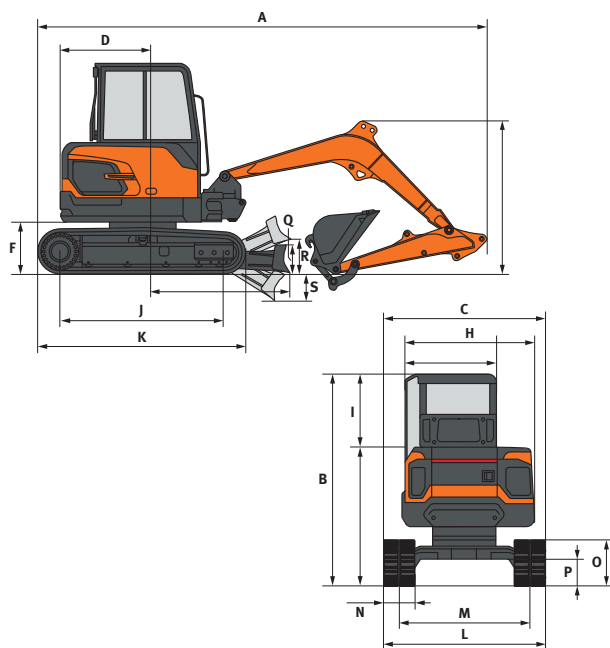
NOTE: Where applicable, dimensions are in accordance with Society of Automotive Engineers (SAE) and ISO standards. Specifications and design are subject to change without notice. Pictures of Doosan mini excavators may show other than standard equipment. All dimensions are shown in inches. Respective metric dimensions are enclosed by parentheses. Doosan Construction Equipment is manufactured with a Quality Management System that is in compliance with ISO 9001:2008. All dimensions are given for Doosan mini excavators equipped with standard rubber tracks.

DX 502

DIMENSIONS

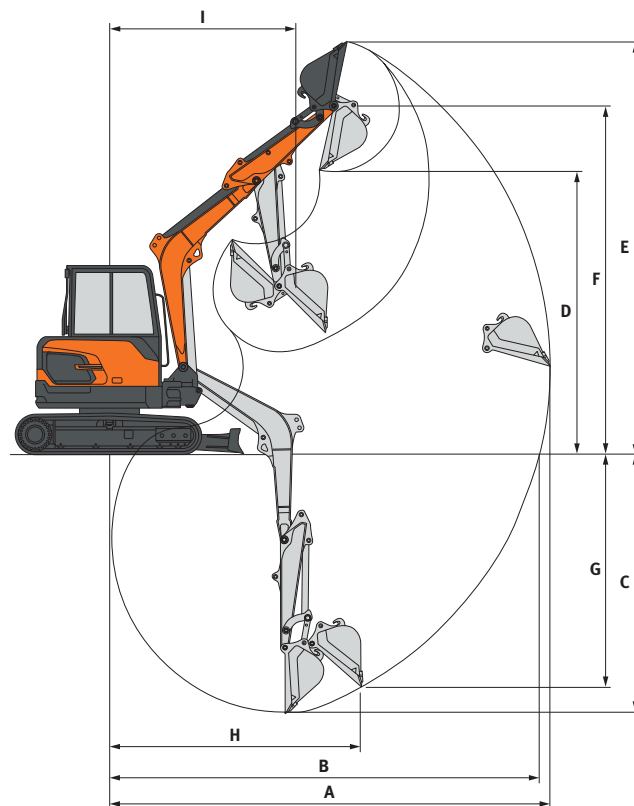
		STANDARD ARM CABIN (US20)	STANDARD ARM ROPS (US30)
BOOM TYPE		8' 10" (2700 mm)	
ARM TYPE		4' 9" (1450 mm)	
BUCKET TYPE (SAE)		5.7 ft³ (0.16m³)	
TRACK TYPE		FIXED (RUBBER)	
SHIPPING LENGTH	A	17' 8" (5386 mm)	
OVERALL HEIGHT	B	8' 5" (2575 mm)	
SHIPPING WIDTH	C	6' 6" (1980 mm)	
TAIL SWING RADIUS	D	3' 3" (1000 mm)	
TAIL SWING OVERHANG (REAR)	E1*	-	
TAIL SWING OVERHANG (SIDE)	E2*	0.4" (10 mm)	
COUNTERWEIGHT CLEARANCE	F	2' 1" (628 mm)	
UPPER STRUCTURE WIDTH	H	5' 9" (1750 mm)	
CABIN HEIGHT ABOVE HOUSE	I	3' 3" (987 mm)	
TUMBLER DISTANCE	J	6' 6" (1990 mm)	
OVERALL TRACK LENGTH	K	8' 2" (2497 mm)	
UNDERCARRIAGE WIDTH	L	6' 6" (1980 mm)	
TRACK GAUGE WIDTH	M	5' 2" (1580 mm)	
TRACK WIDTH	N	1' 4" (400 mm)	
TRACK HEIGHT	O	1' 10" (562 mm)	
CAR BODY CLEARANCE	P	2' 1" (628 mm)	
BLADE HEIGHT	Q	1' 2" (349 mm)	
BLADE CLEARANCE	R	1' 7" (470 mm)	
MAXIMUM BLADE CUT, BELOW GROUND	S	1' 6" (450 mm)	

* Not shown on diagram
Less than zero indicated as "-"



WORKING RANGE

		STANDARD ARM & HVAC CABIN (US20)	STANDARD ARM & CANOPY (US30)
BOOM LENGTH		8' 10" (2700 mm)	
ARM LENGTH		4' 9" (1450 mm)	
BUCKET CAPACITY (SAE)		5.7 ft³ (0.16m³)	
MAX. DIGGING REACH	A	19' 6" (5945 mm)	
MAX. DIGGING REACH (GROUND)	B	19' (5800 mm)	
MAX. DIGGING DEPTH	C	11' 5" (3480 mm)	
MAX. DUMPING HEIGHT	D	12' 6" (3820 mm)	
MAX. DIGGING HEIGHT	E	18' 3" (5575 mm)	
MAX. BUCKET PIN HEIGHT	F	15' 5" (4710 mm)	
MAX. VERTICAL WALL DEPTH	G	10' 4" (3140 mm)	
MAX. VERTICAL DIGGING RADIUS	H	11' 1" (3390 mm)	
MIN. SWING RADIUS	I	8' 3" (2520 mm)	
BOOM SWING - LEFT/RIGHT		60° / 53°	
DIGGING FORCE, BUCKET (PCSA)		7606 lbf. (3450 kgf)	
DIGGING FORCE, ARM		5181 lbf. (2350 kgf)	
COUNTERWEIGHT		595 lb. (270 kg)	
OPERATING WEIGHT		11,989 lb. (5438 kg)	-
GROUND PRESSURE		4.4 psi (0.31 kgf/cm²)	-





BUCKET TYPE	CAPACITY ¹ FT. ³ (M ³)	WIDTH IN. (MM)	WEIGHT LB. (KG)
HEAVY DUTY (PIN-ON) ^{2,3}	1.8 (0.052)	12 (305)	316 (143)
	3.2 (0.090)	18 (457)	358 (162)
	4.6 (0.130)	24 (610)	429 (195)
	6.0 (0.171)	30 (762)	478 (217)
DITCHING (PIN-ON) ⁴	7.5 (0.211)	36 (914)	310 (141)
	10.3 (0.292)	48 (1219)	475 (215)
HEAVY DUTY (QUICKHITCH) ^{2,3}	2.0 (0.056)	12 (305)	309 (140)
	3.4 (0.097)	18 (457)	390 (177)
	5.0 (0.141)	24 (610)	483 (219)

1 Capacity based on ISO 7451
 2 Equipped with Wear Shrouds
 3 Equipped with Bolt On Teeth
 4 Equipped with Bolt On Cutting Edge

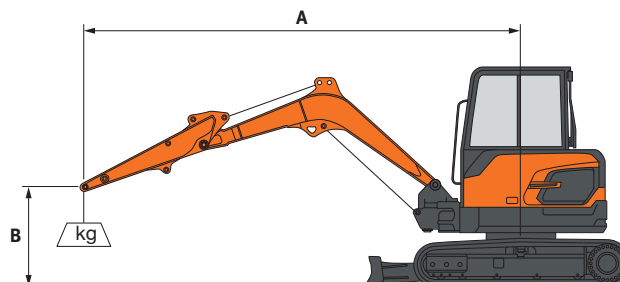
LIFTING CAPACITY

Rating over front
 Rating over side or 360°

DX502-7 US20/US21 BOOM: 8' 10" (2700 MM) ARM: 4' 9" (1450 MM) COUNTERWEIGHT: 322 LB. (146 KG) BUCKET: NONE UNIT LB (KG)																		
A (ft or m) B (ft or m)	3' 3" (1.0 m)			6' 7" (2.0 m)			9' 10" (3.0 m)			13' 1" (4.0 m)			16' 5" (5.0 m)			MAX REACH		
13' 1" (4.0 m)																* 1810 (* 820)	* 1810 (* 820)	* 1810 (* 820)
9' 10" (3.0 m)										* 2360 (* 1070)	2090 (950)	1900 (860)				* 1590 (* 720)	* 1590 (* 720)	1460 (660)
6' 7" (2.0 m)							* 3550 (* 1610)	3200 (14500)	2870 (1300)	* 2730 (* 1240)	2010 (910)	1830 (830)				* 1570 (* 710)	1390 (630)	1280 (580)
3' 3" (1.0 m)							* 4920 (* 2230)	2950 (1340)	2620 (1190)	* 3240 (* 1470)	1920 (870)	1740 (790)	* 2230 (* 1010)	1350 (610)	1240 (560)	* 1650 (* 750)	1320 (600)	1210 (550)
Ground Level							* 5450 (* 2470)	2820 (1280)	2510 (1140)	* 3550 (* 1610)	1850 (840)	1680 (760)				* 1900 (* 860)	1390 (630)	1260 (570)
-3' 3" (-1.0 m)	* 5160 (* 2340)	* 5160 (* 2340)	* 5160 (* 2340)	* 6530 (* 2960)	5890 (2670)	5000 (2270)	* 5140 (* 2330)	2820 (1280)	2510 (1140)	* 3400 (* 1540)	1830 (830)	1650 (750)				* 2430 (* 1100)	1610 (730)	1460 (660)
-6' 7" (-2.0 m)				* 6460 (* 2930)	6060 (2750)	5140 (2330)	* 3860 (* 1750)	2910 (1320)	2600 (1180)							* 2800 (* 1270)	2320 (1050)	2070 (940)

† Dozer blade in down position

Load point is the end of the arm.
 Capacities marked with an asterisk (*) are limited by hydraulic capacities.
 Lift capacities shown do not exceed 75% of minimum tipping loads or 87% of hydraulic capacities.
 The least stable position is over the side.
 The total mass of machine includes the mass of the boom, arm, counterweight, all operating fluids and a 75 kg operator.
 Lift capacities are in compliance with ISO 10567.
 Backfill blade in up position unless otherwise noted.





STANDARD & OPTIONAL EQUIPMENT

Standard Base Package, US10

● Standard Equipment
■ Optional Equipment
– N/A

ENGINE

EMISSIONS, T4 (EPA)	●
DIRECT FUEL INJECTED	●
FUEL FILTER WITH WATER SEPARATOR	●
COOLANT RECOVERY TANK	●
DUAL ELEMENT DRY-TYPE AIR FILTER	●
ELECTRONIC ENGINE CONTROL	●
AUTO PREHEAT COLD START ASSIST	●
AUTO-IDLE	●
OVERHEAT & LOW OIL PRESSURE ENGINE PROTECTION	●

HYDRAULIC

VARIABLE AXIAL PISTON MAIN PUMP	●
LOAD SENSING PUMP CONTROL	●
PILOT OPERATED CONTROL VALVES	●
PILOT GEAR PUMP (TANDEM)	●
AXIAL PISTON SWING MOTOR	●
SPRING APPLIED HYDRAULIC RELEASE BRAKE	●
AXIAL PISTON TRAVEL MOTOR (HIGH/LOW, AUTO)	●
AUXILIARY HYDRAULICS, TWO-WAY	●
ADJUSTABLE AUXILIARY FLOW	●

UNDERCARRIAGE

TRACK ROLLERS, UPPER (1 EACH SIDE)	●
TRACK ROLLERS, LOWER (4 EACH SIDE)	●
RUBBER TRACKS – 400 MM	●
SHOES, STEEL GROUSER – 400 MM (39 EACH SIDE)	■

ELECTRICAL

ALTERNATOR – 12V, 90 AMP	●
12V BATTERY, 725 CCA @ 0° F (-18° C)	●
LIGHT: CABIN (1), BOOM (1)	●
LIGHT: CABIN (1), BOOM (2)	■
ROTATING BEACON	■
HOUR METER	●
LAPTOP SERVICE PORT	●
SELF-DIAGNOSTICS SYSTEM	●

CABIN

STEEL, ALL-WEATHER & SOUND SUPPRESSED	●
ROPS / TOPS	●
FRONT WINDOW WITH WIPER/WASHER	●
TINTED SAFETY GLASS	●
SKYLIGHT	●
PULL UP TYPE FRONT WINDOW	●
LOCKABLE DOORS	●
SEAT - 2" (51 MM) SEAT BELT - ADJUSTABLE HEIGHT & RECLINE	●
ADJUSTABLE ARM RESTS	●
AIR CONDITIONER WITH HEATER	●
INSTRUMENTATION PANEL, DIGITAL	●
INSTRUMENTATION PANEL, ANALOG	■
AM/FM STEREO & MP3 PORT	●
SPEAKERS (2)	●
POWER SOCKET, 12 V	●
INTERIOR LIGHT	●
STORAGE FOR OPERATOR'S MANUALS	●

CONTROLS

JOYSTICK CONTROLS - TWO HYDRAULIC JOYSTICKS CONTROL BOOM, ARM, BUCKET & SLEW FUNCTIONS - THUMB BUTTONS CONTROL AUXILIARY HYDRAULICS & BOOM SWING	●
BLADE CONTROL LEVER - THUMB BUTTON CONTROLS: TRAVEL SPEED LOW/HIGH	●
PATTERN CONTROL CHANGE VALVE (SAE, ISO)	●
ENGINE SPEED CONTROL DIAL	●
TRAVEL PEDALS WITH HAND LEVERS	●
SWITCHES, CONSOLE MOUNTED - STARTER SWITCH (KEY) - HEATER/AC CONTROL PANEL - BOOM SWING SWITCH - ROTATING BEACON (IF EQUIPPED) - 12V POWER SOCKET & USB CHARGER - KEYPAD BUTTONS - OVERLOAD WARNING - TRAVEL/SWING ALARM - LIGHT - WORK LIGHTS - WIPER & WASHER - AUTO IDLE	●
SWITCHES, CONSOLE MOUNTED - STARTER SWITCH (KEY) - HEATER/AC CONTROL PANEL - BOOM SWING SWITCH - ROTATING BEACON (IF EQUIPPED) - 12V POWER SOCKET & USB CHARGER	●
KEYPAD BUTTONS - OVERLOAD WARNING - TRAVEL/SWING ALARM - LIGHT - WORK LIGHTS - WIPER & WASHER - AUTO IDLE	●
EMERGENCY STOP SWITCH	●

DISPLAY MONITOR & WARNINGS

BUZZER - ENGINE OIL PRESSURE - COOLANT TEMPERATURE	●
TOUCH SCREEN DISPLAY MONITOR - DIGITAL CLOCK - MENU SELECT BUTTON - BACK BUTTON - FUEL GAUGE - ENGINE COOLANT TEMPERATURE - HYDRAULIC OIL TEMPERATURE - MODE - TACHOMETER - OPERATING MODE/FLOW SETTING SELECTOR	●
INDICATOR LIGHTS - AIR FILTER RESTRICTION INDICATOR - ENGINE CHECK WARNING LIGHT - HYDRAULIC OIL WARNING - FUEL WARNING - AUTO-IDLE INDICATOR - AUXILIARY FLOW MODE INDICATOR - ENGINE OIL PRESSURE LIGHT WITH AUDIBLE ALARM - PRE-HEAT (COLD START ASSIST) INDICATOR - TWO SPEED TRAVEL INDICATOR LIGHT	●
TRAVEL ALARM	●
OTHER	
CENTRALIZED LUBRICATION - SWING PINION - SWING BEARING	●
DOZER BLADE	●
MANUALS - OPERATION - AEM SAFETY MANUAL	●
MANUALS - PARTS - SERVICE	●
VANDALISM PROTECTION - LOCKABLE PANELS - LOCKABLE FLUID FILL POINTS	●

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