

SAMSUNG

SE280LC-2

HYDRAULIC EXCAVATOR TECHNICAL DATA



Operating Weight66,020 lb. 29,945 kg
Flywheel HP178 hp/132 kW @ 1900 rpm
Bucket Capacity0.85 - 2.22 yd³ 0.65-1.70 m³

ENGINE

Model	Cummins C8.3-C
Type	4 cycle diesel, water-cooled, direct injection
Aspiration	Turbocharged
No. of cylinders	6
Piston displacement	505 cu. in. 8.3 liters
Bore and stroke	4.49" x 5.32" 114mm x 135mm
Net flywheel horsepower	
SAE J1349	178 HP @ 1900 rpm
DIN 6270 "B"	132 kW @ 1900 rpm
Maximum torque	550 lb-ft 76 kg.m @ 1500 rpm
Air cleaner	Heavy duty, 2-stage dry type with auto dust ejector and restriction indicator
Electrical system	24 volt 7.8 kW 50 amp alternator 780 cold cranking amps @ 0°F (32°C)

The engine can be quickly decelerated to idle speed with a simple push of the auto decel button on the computer keypad. This deceleration system helps to reduce fuel consumption and noise.

HYDRAULIC SYSTEM

Unique "CA-MAX" hydraulic system provides operating smoothness, enhanced controllability and perfect simultaneous operation with precise movement of the implement, swing and travel controls. This system increases machine productivity in pipelaying, trench digging and any jobs performed perpendicularly to the direction of travel.

Main pumps.....	2-variable displacement axial piston pumps
Maximum oil flow	2 x 67.4 gpm
	2 x 255 l/min
Pilot control pump	Gear type
Maximum oil flow	5 gpm 19 l/min
Hydraulic motors	
Travel	2 axial piston motor with parking brake
Swing	1 axial piston motor with swing holding brake
Control valves.....	7 spools includes 1 auxiliary valve
Main relief valve pressure.....	4550 psi 320 kg/cm ²
Relief valve settings	
Boom, arm, bucket circuits	4980 psi 350 kg/cm ²
Swing circuit.....	3270 psi 230 kg/cm ²
Travel circuit.....	4615 psi 325 kg/cm ²
Pilot control circuit.....	4691 psi 33 kg/cm ²

HYDRAULIC CYLINDERS

High strength piston rods and tubes are used. Cylinder cushion mechanisms are provided for all cylinders to absorb shock when pistons reach their stroke ends.

Cylinder	Qty	Bore x Rod x Stroke	
Boom	2	5.5" x 3.7" x 60"	140mm x 95mm x 1520mm
Arm	1	5.9" x 4.1" x 68"	150mm x 105mm x 1740mm
Bucket	1	5.5" x 3.7" x 47"	140mm x 95mm x 1200mm

HYDRAULIC FILTERS

All hydraulic circuits have high quality hydraulic filters for protection against oil contamination and longer life of hydraulic components. A 105µ suction filter is built into the suction line and 10µ full flow filters are in the return circuit and swing/travel motor drain lines.

CONTROLS

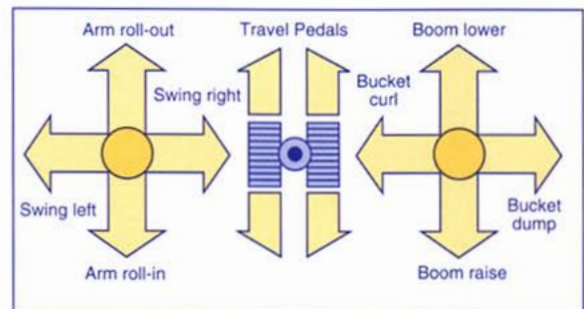
Power assisted pilot controls operated by ergonomically designed, semi-long hand levers. Two joystick hand levers actuate boom, arm, bucket and swing. Two foot pedals control steering and travel functions.

IMPLEMENT LEVERS

Right lever controls boom raise and lower and bucket curl and dump. Left lever controls arm roll-out and roll-in and direction of swing. Diagonal movement of either lever operates two functions simultaneously.

TRAVEL

Two rocker pedals, with detachable hand levers, control steering and travel function. One pedal and lever controls the left track; the other pedal and lever controls the right track. Pushing both pedals or levers forward or backward provides straight travel. Moving one pedal or lever forward or backward more than the other results in a gradual turn. Moving one pedal or lever forward and the other pedal or lever backwards counter-rotates the tracks for spot turns.



SWING DRIVE

High torque axial piston motor with planetary reduction gear. Swing cushion valve built into swing motor absorbs shocks when stopping swing. Swing ring is a single row ball bearing with induction hardened internal gear. Internal gear and pinion immersed in oil.

Swing brake is spring applied/hydraulic-released disc type; automatically applied 5 seconds after swing control is released. Swing lock clamps the superstructure for transportation.

Swing speed.....0 to 9.7 rpm

TRAVEL DRIVE

Fully hydrostatic. Each track driven by an independent, two-speed, axial piston hydraulic motor with planetary reduction gear. Drive motors are protected within the shoe width. Automatically operated parking brake is spring applied when machine is stationary. Engaging foot pedals or levers automatically releases the brake.

Drawbar Pull

Low Speed	46,960 lb	21,300 kg
High Speed	31,530 lb	14,300 kg

Travel Speed

Low	1.8 mph	2.9 km/h
High.....	2.7 mph	4.4 km/h

Gradeability.....35 degrees (70% continuous)



STRUCTURE

Modular designed upper frame is torque resistant. Boom tower and main rails are made of high-tensile steel plates. Redesigned boom and thicker plates increase boom strength and durability. "X"-shaped carbody made of durable and high-tensile steel. This design more evenly spreads stresses throughout the roller frame than "H"-shaped designs. Upper and lower frames are reinforced for longer life.

Counterweight11,464 lb. 5,200 kg

OPERATOR'S CAB

Futuristic and spacious rounded cab design optimizes operator visibility, comfort and increased ventilation. The all-weather, modular steel cab is mounted on anti-vibration rubber pads that reduce noise and extend cab life.

Curved front window slides upwards in a single motion for storage. Lower front window is removeable. Tinted safety glass is standard throughout. Standard equipment also includes 3 speed wiper with washer, air conditioning, 2 speed heater, AM/FM stereo cassette radio, deluxe Bostrom 8-way adjustable cloth seat with seat belt, digital clock, sun visor, coat hook and towel bar, cigarette lighter, glove box, horn, 2 rearview mirrors, hydraulic safety lock, lockable door, dome light, illuminated monitor display.

Cab dimensions (lhxwxh) 6'2" x 5'7" x 3'2" 1880mm x 1700mm x 975mm

SELF-DIAGNOSTIC MONITOR SYSTEM

The system monitors six vital machine functions, identifies any problem and simplifies the troubleshooting procedures.

- 1 Main power failure
- 2 Detection engine speed sensor
- 5 Proportional pressure reducing valve
- 6 High-speed operation function
- 7 Low speed operation function
- 0 CPU self diagnosis

SAFETY

Air horn, electrically operated. Automatic self-diagnostic monitor. Hydraulic safety lock. Light package includes 2 lights mounted on upper frame and 2 on boom. Main relief valves, anti-cavitation valves, overload relief valves and hydraulic brake valves protect the hydraulic system. Parking brake, spring applied/hydraulic-released disc type. Swing brake, spring applied/hydraulic-released disc type. Waterproof electrical connectors.

Monitor system, illuminated.

Gauges	Engine rpm
.....	Fuel
.....	Hourmeter
.....	Hydraulic oil temperature
.....	Engine coolant temperature
Indicator lights	Air cleaner restriction
.....	Battery charge
.....	Head lights
.....	Low fuel level
Warning lamps	Low engine oil pressure
.....	High engine coolant temperature
.....	Engine oil filter

UNDERCARRIAGE

Durable heavy-duty box section carbody is welded with high-tensile strength steel. Track roller frames are reinforced and welded securely to the carbody. Greater dependability and longer life of links, rollers, idlers, sprockets, pins and bushings are achieved through increased hardness and improved material composition.

Rollers, idlers and sprockets are permanently lubricated. Undercarriage includes; hydraulic track adjusters, center mounted track guides, travel motor guards and triple grouser track shoes.

Upper rollers, per side.....	2
Lower rollers, per side.....	9
Track shoes, per side	51
Track shoes, standard.....	32" 800mm
optional.....	24" 600mm
optional.....	28" 700mm
Track gauge.....	8'6" 2590mm
Track length.....	16'2" 4930mm
Ground clearance	1'8" 500mm
Ground contact area	
24" 600mm shoes.....	8,076 in ² 5.2 m ²
28" 700mm shoes.....	9,422 in ² 6.1 m ²
32" 800mm shoes	10,768 in ² 6.9 m ²

WEIGHTS

Machine equipped with one piece boom, 20'8" (6.3m), standard 9'10" (3.0m) arm, 1.64 cu yd. bucket and full fuel tank.

Shoe width	Operating Weight	Ground Pressure
24" 600mm	63,930 lb 29,000 kg	7.92 psi 0.56 kg/cm ²
28" 700mm	65,190 lb 29,570 kg	6.92 psi 0.49 kg/cm ²
32" 800mm	66,020 lb 29,950 kg	6.13 psi 0.43 kg/cm ²

MODE SELECTION SYSTEM

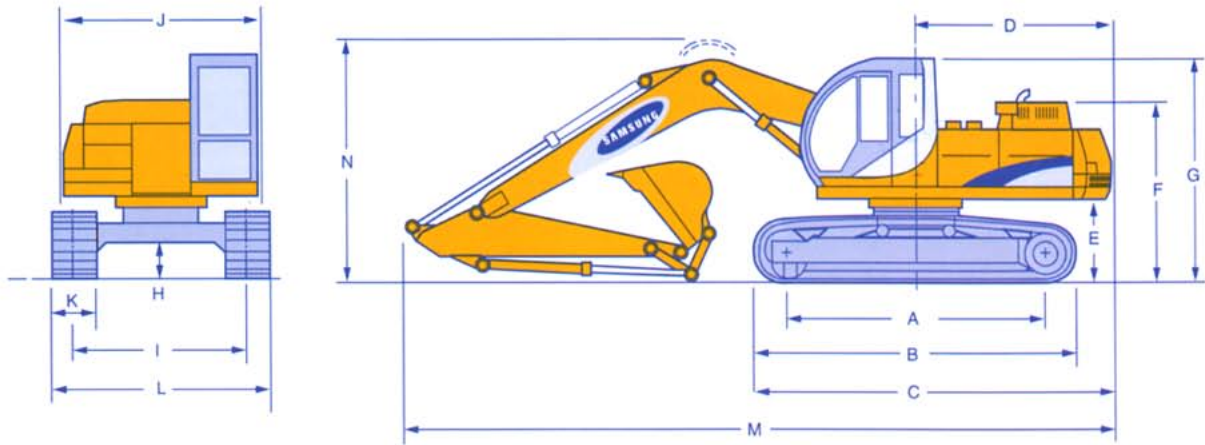
Three operating modes allow the selection of the proper speed and power to fit job conditions: H mode - heavy duty, S mode - standard duty, L mode - light duty.

Engine speed controlled by a micro-computer to improve working efficiency. A throttle control is available for the S and L operating modes. Travel speed switch allows the operator a choice of either low speed or high speed.

SERVICE REFILL CAPACITIES

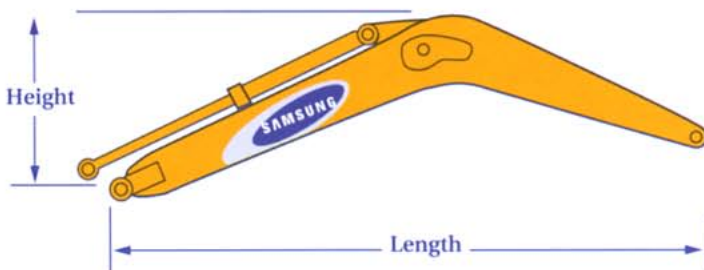
	gallons	liters
Cooling system	8.7	33
Lubricant		
Engine oil.....	5.0	19
Swing drive	2.9	11
Track drive (each)	1.8	7
Hydraulic tank	68.7	260
Fuel tank.....	113.6	430

SHIPPING DIMENSIONS



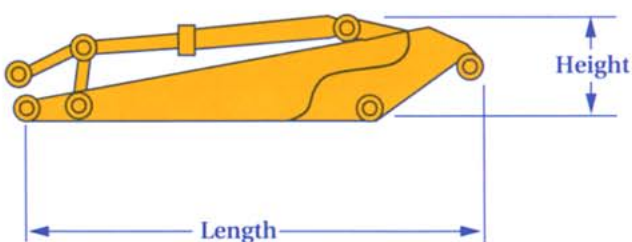
A	Distance between tumblers	13'2"	(4020 mm)
B	Undercarriage length	16'2"	(4930 mm)
C	Length of base machine	17'10"	(5430 mm)
D	Tail swing radius	9'9"	(2970 mm)
E	Counterweight clearance	3'9"	(1150 mm)
F	Height without cab	8'0"	(2450 mm)
G	Overall height of cab	10'0"	(3050 mm)
H	Minimum ground clearance	1'8"	(500 mm)
I	Track gauge	8'6"	(2590 mm)
J	Upper frame width	9'4"	(2840 mm)
K	Track shoe width (std)	32"	(800 mm)
L	Overall width	11'1"	(3390 mm)
M	Overall length	34'7"	(10540 mm)
N	Overall height of boom	11'1"	(3370 mm)

BOOM



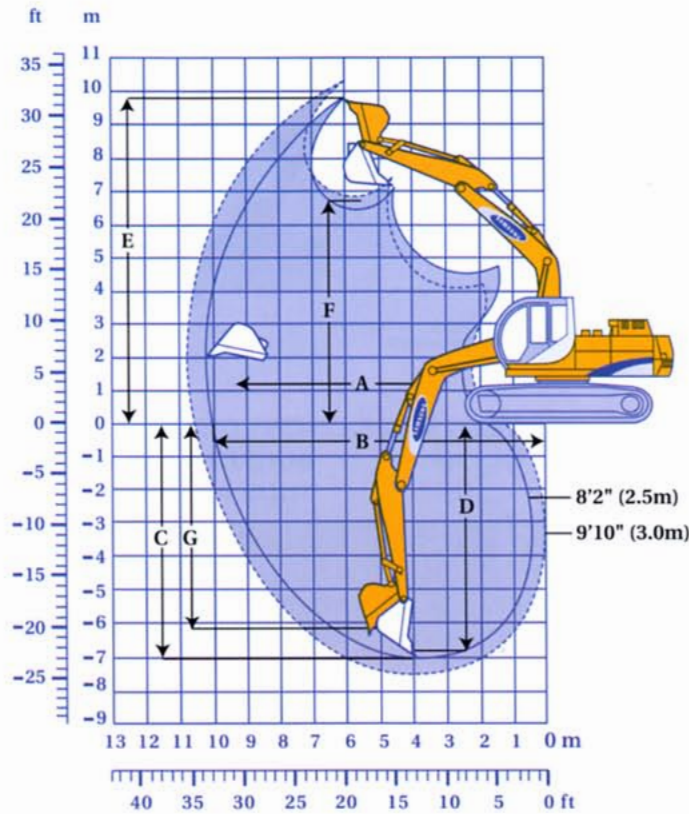
Size	20'8"	6.3 m
Length	21'4"	6500 mm
Height	5'10"	1770 mm
Width	2'6"	770 mm
Weight	5900 lb	2678 kg

ARM



Arm	Standard Duty		Heavy Duty	
Size	9'10"	3.0 m	8'2"	2.5 m
Length	13'7"	4130 mm	12'2"	3700 mm
Height	3'1"	950 mm	3'1"	950 mm
Width	1'4"	410 mm	1'4"	410 mm
Weight	3480 lb	1580 kg	3460 lb	1570 kg

WORKING RANGES



Boom length	20'8" (6.3 m)			
Arm length	9'10"	3.0 m	8'2"	2.5 m
A Maximum digging reach	35'4"	10,780 mm	33'8"	10,260 mm
B Maximum digging reach at ground level	34'9"	10,580 mm	32'9"	9990 mm
C Maximum digging depth	24'7"	7500 mm	22'10"	6960 mm
D Maximum digging depth at 8 ft. (2440mm) level	23'9"	7240 mm	22'1"	6740 mm
E Maximum digging height	33'4"	10,160 mm	32'3"	9820 mm
F Maximum dumping height	23'4"	7120 mm	22'3"	6790 mm
G Maximum vertical wall digging	20'9"	6325 mm	19'11"	6070 mm
Arm digging force	27,780 lb	12,600 kg	33,070 lb	15,000 kg
Bucket digging force	36,600 lb	16,600 kg	36,600 lb	16,600 kg

BUCKET and ARM COMBINATION

Bucket	Capacity		Width		No. of Teeth	Weight		Arm	
	yd ³	m ³	inches	mm		lb	kg	9'10" (3.0 m)	8'2" (2.5 m)
General Purpose	1.02	0.78	27	675	4	1728	784	A	A
	1.20	0.92	30	750	4	1736	787	A	A
	1.48	1.13	36	910	5	1843	836	A	A
	1.75	1.34	42	1065	5	1966	892	B	A
	2.03	1.55	48	1230	6	2066	937	B	B
Heavy Duty	1.02	0.78	27	675	3	1977	897	A	A
	1.20	0.92	30	750	4	2008	911	A	A
	1.48	1.13	36	910	4	2128	965	A	A
	1.75	1.34	42	1065	5	2277	1033	B	B
	2.03	1.55	48	1230	6	2493	1131	C	C

Material weights:

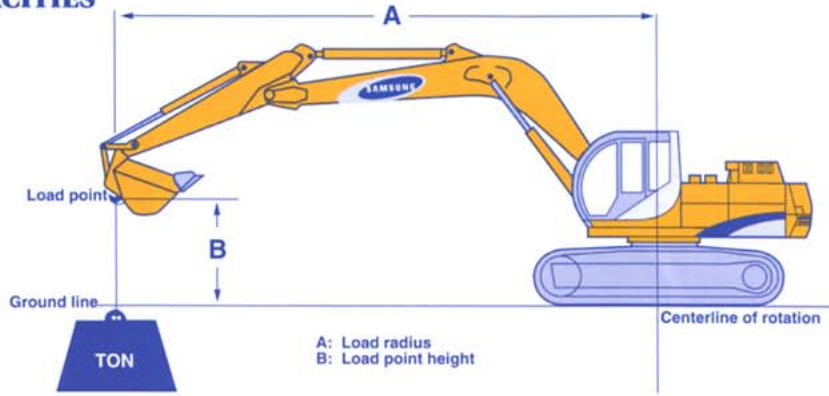
A - up to 3,040 lb/yd³ (1803 kg/m³)

B - up to 2,520 lb/yd³ (1494 kg/m³)

C - up to 2020 lb/yd³ (1198 kg/m³)

D - Not usable

LIFTING CAPACITIES



SE 280 LC-2 LIFT CAPACITY CHART

BOOM = 20'8"
ARM = 9'10"

BUCKET = SAE 1.64 cu yd (1896 lb)
SHOE = 32"

LOAD POINT HEIGHT**	UNIT	LOAD RADIUS												
		5'		10'		15'		20'		25'		MAXIMUM LOAD RADIUS		
		Front	Side	Front	Side	Front	Side	Front	Side	Front	Side	Front	Side	Radius
25'	lb											* 8964	* 8964	23.62 ft
20'	lb									* 11071	10518	* 8551	* 8551	26.82 ft
15'	lb					* 16398	* 16398	* 13368	* 13368	* 12007	10298	* 8595	7748	28.80 ft
10'	lb					* 22538	* 22538	* 16306	14417	* 13518	9907	* 9001	7081	29.82 ft
5'	lb					* 27596	21094	* 19124	13615	* 15111	9503	* 9804	6864	29.96 ft
Ground Line	lb					* 30093	20382	* 21128	13090	15344	9205	* 11157	7060	29.25 ft
-5'	lb			* 25655	* 25655	* 30554	20275	21873	12889	15216	9090	13005	7767	27.61 ft
-10'	lb	* 29854	* 29854	* 40099	* 40099	* 29303	20553	* 21434	12998			15533	9334	24.86 ft
-15'	lb			* 36625	* 36625	* 25634	21230	* 18139	13534			* 17291	13009	20.55 ft

SEE NOTES BELOW.

SE 280 LC-2 LIFT CAPACITY CHART

BOOM = 6.3 m
ARM = 3.0 m

BUCKET = 1.25 m³ (860 kg)
SHOE = 800 mm

LOAD POINT HEIGHT**	UNIT	LOAD RADIUS												
		1.5 m		3.0 m		4.6 m		6.1 m		7.6 m		MAXIMUM LOAD RADIUS		
		Front	Side	Front	Side	Front	Side	Front	Side	Front	Side	Front	Side	Radius
7.6 m	kg											* 4066	* 4066	7.20 m
6.1 m	kg									* 5022	4771	* 3879	* 3879	8.17 m
4.6 m	kg					* 7438	* 7438	* 6064	* 6064	* 5446	4671	* 3899	3514	8.78 m
3.0 m	kg					* 10223	* 10223	* 7396	6540	* 6132	4494	* 4083	3212	9.09 m
1.5 m	kg					* 12518	9568	* 8675	6176	* 6854	4311	* 4447	3114	9.13 m
Ground Line	kg					* 13650	9245	* 9584	5938	6960	4175	* 5061	3202	8.92 m
-1.5 m	kg			* 11637	* 11637	* 13859	9197	9922	5846	6902	4123	5899	3523	8.42 m
-3.0 m	kg	* 13542	* 13542	* 18189	* 18189	* 13292	9323	* 9722	5896			7046	4234	7.58 m
-4.6 m	kg			* 16613	* 16613	* 11628	9630	* 8228	6139			* 7843	5901	6.26 m

- Notes:
1. Ratings are based on SAE J1097
 2. Rated loads do not exceed 87% of hydraulic lifting capacity or 75% of tipping capacity.
 3. Ratings marked * are limited by hydraulic capacity.
 4. Lift Capacity will vary depending upon the actual weight of bucket or attachment.

LIFTING CAPACITIES



SE 280 LC-2 LIFT CAPACITY CHART

BOOM = 20'8"
ARM = 8'2"

BUCKET = SAE 1.64 cu yd (1896 lb)
SHOE = 32"

LOAD POINT HEIGHT**	UNIT	LOAD RADIUS										
		5'		10'		15'		20'		MAXIMUM LOAD RADIUS		
		Front	Side	Front	Side	Front	Side	Front	Side	Front	Side	Radius
25'	lb							* 12384	* 12384	* 12708	* 12708	21.39 ft
20'	lb							* 12831	* 12831	* 12808	10835	24.89 ft
15'	lb					* 18241	* 18241	* 14695	14695	* 13173	9084	27.02 ft
10'	lb					* 23862	21213	* 17224	14024	13360	8200	28.10 ft
5'	lb							* 19604	13089	12974	7881	28.25 ft
Ground Line	lb					* 29546	19117	* 21176	12580	13361	8065	27.49 ft
-5'	lb			* 25177	* 25177	* 29342	19250	21429	12503	14753	8886	25.74 ft
-10'	lb			* 38359	* 38359	* 27547	19807	* 20575	12864	* 17474	10857	22.76 ft
-15'	lb			* 31618	* 31618	* 22930	20987			* 18607	16163	17.95 ft

SEE NOTES BELOW.

SE 280 LC-2 LIFT CAPACITY CHART

BOOM = 6.3 m
ARM = 2.5 m

BUCKET = 1.25 m³ (860 kg)
SHOE = 800 mm

LOAD POINT HEIGHT**	UNIT	LOAD RADIUS										
		1.5 m		3.0 m		4.6 m		6.1 m		MAXIMUM LOAD RADIUS		
		Front	Side	Front	Side	Front	Side	Front	Side	Front	Side	Radius
7.6 m	kg							* 5617	* 5617	* 5764	* 5764	6.52 m
6.1 m	kg							* 5820	* 5820	* 5810	4915	7.59 m
4.6 m	kg					* 8274	* 8274	* 6666	6666	* 5975	4121	8.24 m
3.0 m	kg					* 10824	9622	* 7813	6361	6060	3720	8.56 m
1.5 m	kg							* 8892	5937	5885	3575	8.61 m
Ground Line	kg					* 13402	8671	* 9605	5706	6061	3658	8.38 m
-1.5 m	kg			* 11420	* 11420	* 13310	8732	9720	5671	6692	4031	7.85 m
-3.0 m	kg			* 17400	* 17400	* 12495	8984	* 9333	5835	* 7925	4925	6.94 m
-4.6 m	kg			* 14342	* 14342	* 10401	9520			* 8440	7332	5.47 m

Notes:

1. Ratings are based on SAE J1097
2. Rated loads do not exceed 87% of hydraulic lifting capacity or 75% of tipping capacity.
3. Ratings marked * are limited by hydraulic capacity.
4. Lift Capacity will vary depending upon the actual weight of bucket or attachment.

SE280_{LC-2} STANDARD and OPTIONAL EQUIPMENT

ENGINE 24 volt starting system ● 780 cold cranking amps @ 0°F (32°C) ● Air cleaner w/precleaner, dust ejector ● Air filter, dual element, dry type ● Alternator, 50 amp ● Antifreeze ● Auto deceleration button, one touch ● Cold weather starting aid ● Coolant auxiliary tank ● Cummins engine ● Engine air heater, electric ▲ Engine fan guard ● Fuel filling pump, automatic ▲ Fuel warmer ▲ Hinged side doors ● Hood, tiltable, includes locks ● Master electrical disconnect switch ● Muffler ● Oil filter, cartridge type ●	Triple grouser shoes 32" (800mm) ● 24" (600mm) ▲ 28" (700mm) ▲ OPERATOR'S AREA Air conditioning ● AM/FM stereo cassette radio ● Cigarette lighter ● Clock, digital ● Coat hook ● Diagnostic system, automatic Main power failure ● Detection engine speed sensor ● Proportional pressure reducing valve ● High-speed operation function ● Low-speed operation function ● CPU self-diagnosis ● Front windshield 3 Speed wiper w/washer ● Removable lower front window ● Roll up front windshield ● Heater, 2 speed ● Horn ● Hourmeter ● Hydraulic safety lock ● Illuminated monitor display ● Lockable door ● Mirrors, 2 rearview ● Mode selection 3 Operating modes ● 2 Travel speed ● Monitor System Battery charge warning light ● Engine coolant temperature gauge ● Engine oil pressure ● Fuel level warning light ● Headlights & boom light indicators ● Hydraulic oil temperature gauge ● Master switch indicator light ●	Safety glass, tinted ● Suspension seat, 8-way w/seat belt ● Sound isolation mounted cab ● Sun visor ● Travel pedals w/hand levers ● FRONT ATTACHMENTS Booms 20'8" (6.3m) ● Arms 9'10" (3.0m) ● 8'2" (2.5m) ▲ Attachment quick coupler ▲ Buckets Ditching ▲ General purpose ▲ Heavy duty ▲ Severe duty, plate lip ▲ Side cutters ▲ Teeth ▲ Hydraulic breaker piping kit ▲ Single ripper tooth ▲ MISCELLANEOUS Counterweight ● Electric power socket, external ● Grease gun ▲ Grease injection points, centralized ● Lights Boom-2 ● Front frame-2 ● Operator's manual ● Parts manual ● Tailights, recessed ● Tool compartment ● Tool kit ▲
HYDRAULIC SYSTEM 7 Spool control valve ● Auxiliary hydraulic valve ● Hydraulic oil cooler ● Pilot circuit - gear pump ● Swing and travel motor w/auto disc brake and cushion valve ● Variable displacement pump, dual position ●		
UNDERCARRIAGE Anti-slip step ● Hydrostatic drive ● Track adjusters, hydraulic ● Track frames, reinforced ● Track guide, center mounted ● Track rollers ● Upper-2 ● Lower-9 ● Travel motor guards ●		

KEY ● Standard Equipment-North American Configuration ▲ Optional Equipment

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*Specifications are subject to change without notice TDE28029807