

DEVELON

Excavator

DX140LC



A NEW MODEL WITH NOVEL FEATURES

The DX140LC hydraulic excavator has all the advantages of the previous model, the key phrase used during the development of the DX140LC was “giving optimum value to the end user.”

INCREASED PRODUCTION

and improved fuel economy is attributed to the electronic optimization of the hydraulic system and the new generation DEVELON engine.

IMPROVED ERGONOMICS

increases comfort and excellent all round visibility ensuring a safe and pleasant working environment.

IMPROVED RELIABILITY

is achieved through the use of high performance materials combined with new methods of structural stress analysis, and leads to increased component life expectancy, thus reducing running costs.

REDUCED MAINTENANCE

increases the availability and reduces operating costs of the excavator.



* The above image may differ from the actual product.



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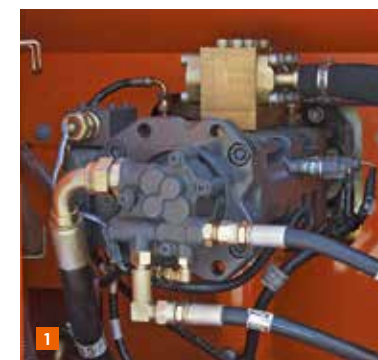
PERFORMANCE & PRODUCTIVITY

The performance of the DX140LC has a direct effect on its productivity. Its new "Common Rail" engine and new EPOS™ controlled hydraulic system have combined to create an unbeatable hydraulic excavator, with a cost/performance ratio that makes the DX140LC even more appealing.

DEVELON ENGINE(DL06)

The engine produces 95 hp (71 kW / 96 PS) at only 1,850 rpm, and more torque, due to its careful design combined with the use of common rail injection and 4 valves per cylinder. These features help optimize combustion and minimize pollution through reduced Nox & particulate emissions. Increased torque allows efficient use of the power of the hydraulic system.

- Faster working cycles increase productivity.
- Increased torque means the excavator is able to move more easily.
- Energy efficiency reduces fuel consumption.



1 HYDRAULIC PUMP

The main pump has a capacity of 2 x 114 l/min reducing cycle time while a high capacity gear pump improves pilot line efficiency.

2 TRAVEL DEVICE

In house travel device provides simple internal structure and increases efficiency of the performance. Thicker sprocket minimizes incoming debris and provides higher durability.

3 DOZER BLADE (OPTIONAL)

The pin type design allows the dozer blade to be mounted on the front and/or rear and is used for leveling, clean-up work and for stabilizing the machine during digging applications. The large dozer bottom and parallel design provide minimized ground pressure.

EXCAVATOR CONTROL

Improved Excavator control by new EPOS™ system The brains of the hydraulic excavator, the EPOS™, have been improved, through a CAN (Controller Area Network) communication link, these units are now perfectly synchronised.

DURABILITY & RELIABILITY

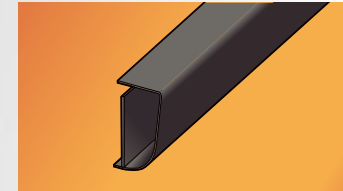


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The reliability of a product contributes to its overall lifetime operating costs. DEVELON uses computer-assisted design techniques, highly durable materials and structures then test these under extreme conditions.

D-TYPE FRAME

The D-type frame and chassis frame add strength and minimize distortion due to shocks.



X-CHASSIS

The X-chassis frame section has been designed using finite element and 3-dimensional computer simulation, to ensure greater durability and optimum structural integrity. The swing gear is solid and stable.



1



2



3



4



5

1 ADVANCED BUSHING

A highly metal sintered bushing and EM bushing are used for all front pivot points in order to increase the lifetime and durability. Extend the greasing intervals to 250 hours. (except bucket parts)

2 ULTRA-HARD WEAR-RESISTANT DISC

New materials have been used in order to increase the wear resistance and to increase the service intervals. The longevity is greatly increased by the addition of wear plates on the inside and outside of the bucket lugs.

3 POLYMER SHIM

A polymer shim is added to the bucket pivot to promote extended pin and bushing life.

4 INTEGRATED TRACK SPRING AND IDLER

The track spring and the idler have been joined directly to achieve high durability and improved maintenance convenience.

5 TRACKS

The chain is composed of self-lubricating sealed links isolated from all external contamination. The tracks are locked by mechanically bolted pins.

FUEL EFFICIENCY

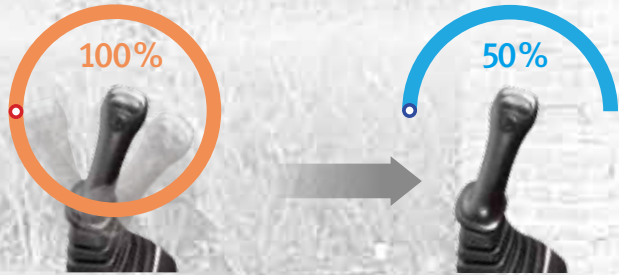
RELIEF CUTOFF



The pump continues to supply flow even when the maximum pressure on the system is reached due to severe working environments and large workloads. Relief cutoff technology of DX140LC prevents transfer of unnecessary flow to maintain powerful working level at the maximum value while reducing consumption of fuel.

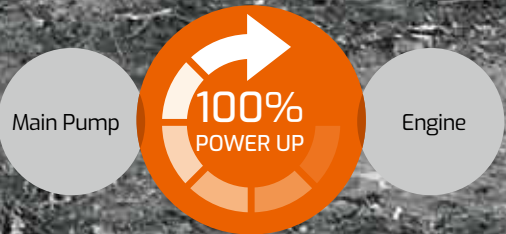
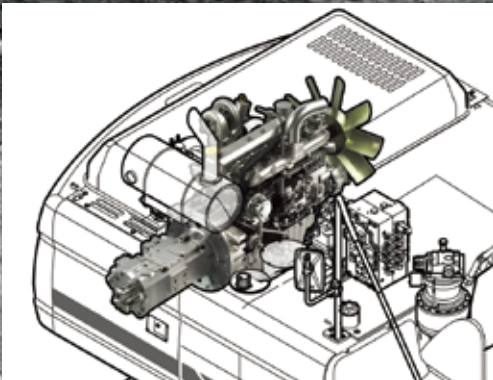
OPTIMIZED LEVER CONTROL & AUTO IDLE

When operator takes a break and leaves the control joystick fixed, both of the engine and the pump are kept in standby mode and prevents unnecessary fuel consumption.



PUMP MATCHING TECHNOLOGY

Engine & pump matching, the new technology of DEVELON, fully resolves problems; low responses time of the system, unnecessary fuel consumption. Matching response time between pump and engine efficiently reduces unnecessary fuel consumption as well as exhaust fumes.



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TECHNICAL SPECIFICATIONS

ENGINE

Model
DEVELON DL06* "Common Rail" engine with direct fuel injection and electronic control, 4 valves per cylinder, vertical injectors, water cooled, turbo charged with air to air intercooler. The emission levels are well below the values required for Tier III.
Number of cylinders
6
Nominal flywheel power
71 kW(95HP) @ 1,850 rpm (SAE J1349, net)
Max torque
44.5 kgf.m at 1,400 rpm
Piston displacement
5,890 cc
Bore & stroke
Ø100 mm x 125 mm (3.9" X 4.9")
Starter
24 V / 4.5kW
Batteries
2 x 12 V/ 100 Ah
Air cleaner

Double element with auto dust evacuation.
*According to engine regulation, DEVELON provides two kinds of engine. (Tier-3 engine : DL06 / Tier II engine : DL06C)

ENVIRONMENT

Noise levels comply with environmental regulations (dynamic values).
Sound level guarantee
101 dB(A) (2000/14/EC)
Cab sound level
71 dB(A) (ISO 6396)

Weight with Dozer Blade

STD.- Boom 4,600 mm	Arm 2,500 mm	Bucket SAE 0.51 m ³
Shoe width	Dozer Blade weight	Operating weight
STD. + 600 mm	2,600 mm : 602 kg	15,007 kg

*When the dozer blade is installed, additional weight may be occurred by track frame, dozer cylinder, dozer unit, pin assembly, track shoe.

HYDRAULIC SYSTEM

- The heart of the system is the e-EPOS (Electronic Power Optimizing System). It allows the efficiency of the system to be optimized for all working conditions and minimizes fuel consumption. The new e-EPOS is connected to the engine electronic control via a data transfer link to harmonize the operation of the engine and hydraulics.
- The hydraulic system enables independent or combined operations.
 - Two travel speeds offer either increased torque or high speed tracking.
 - Cross-sensing pump system for fuel savings.
 - Auto deceleration system.
 - Two operating modes, two power modes.
 - Button control of flow in auxiliary equipment circuits.
 - Computer-aided pump power control.

Main pumps
2 variable displacement axial piston pumps maxflow :2 x 114 l /min (2 X 30.1 US gpm , 2 X 25.1 Imp gpm)
Pilot pump
Gear pump - max flow: 27.75 l /min (7.33 US gpm, 6.1 Imp gpm)
Maximum system pressure
Boom/arm/Bucket : Normal mode: 330 kgf/cm ² (324 bar) Power mode: 350 kgf/cm ² (343 bar) Travel: 330 kgf/cm ² (324 bar) Swing: 245 kgf/cm ² (240 bar)

HYDRAULIC CYLINDERS

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.		
Cylinders	Quantity	Bore x Rod diameter x stroke
Boom	2	110 X 75 X 1,085mm
Arm	1	115 X 80 X 1,108mm
Bucket	1	100 X 70 X 900mm

UNDERCARRIAGE

Chassis are of very robust construction, all welded structures are designed to limit stresses. High-quality material used for durability. Lateral chassis welded and rigidly attached to the undercarriage. Track rollers lubricated for life, idlers and sprockets fitted with floating seals. Tracks shoes made of induction-hardened alloy with triple grouser. Heat-treated connecting pins. Hydraulic track adjuster with shock-absorbing tension mechanism.

Number of rollers and track shoes per side
Upper rollers : 2 Lower rollers : 7 Shoes : 44 Total length of track : 3,755mm

SWING MECHANISM

- An axial piston motor with two-stage planetary reduction gear is used for the swing.
- Increased swing torque reduces swing time.
- Internal induction-hardened gear.
- Internal gear and pinion immersed in lubricant bath.
- The swing brake for parking is activated by spring and release hydraulically.

Swing speed: 0 to 10.7 rpm

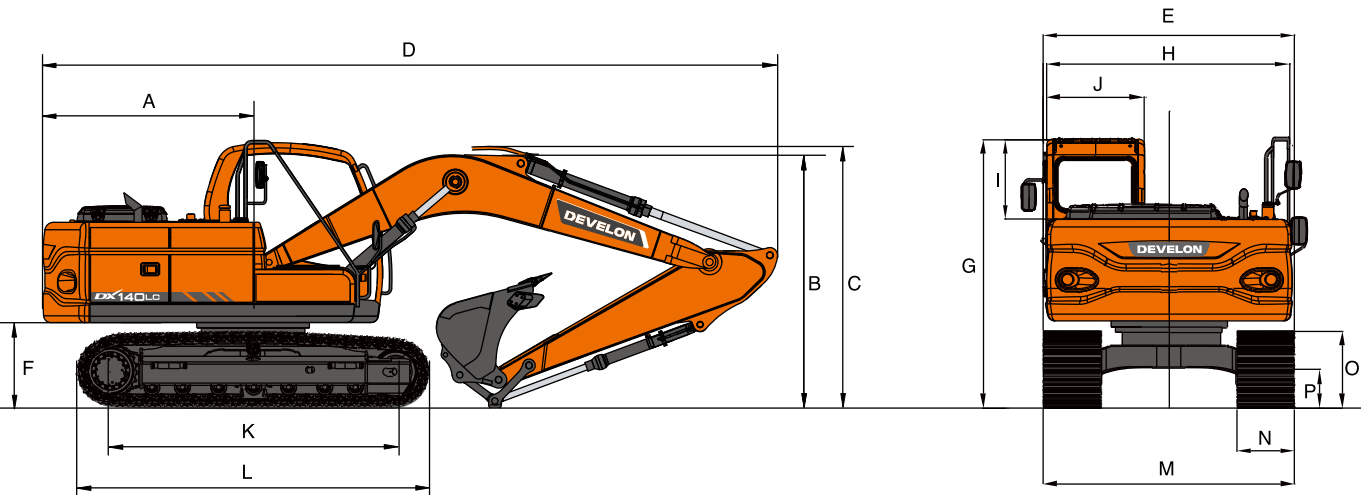
BUCKET

Bucket Type	Capacity (m ³)		Width (mm)		TRACK	STD Track						
					C/W (ton)	2.2						
					SHOE (mm)	600						
					Weight (kg)	4.3m Boom		4.6m Boom			Arti Boom(4.988m)	
	SAE/PCSA	CECE	W/O Cutter	With Cutter		1.9m Arm	2.1m Arm	2.1m Arm	2.5m Arm	3.0m Arm	2.1m Arm	2.5m Arm
General Purpose	0.24	0.22	458	534	292	A	A	A	A	A	A	A
	0.39	0.35	736	820	350	A	A	A	A	A	A	A
	0.45	0.40	821	911	389	A	A	A	A	A	A	A
	0.51	0.45	907	991	398	A	A	A	A	B	A	B
	0.59	0.51	997	1,081	420	A	B	A	B	C	B	C
	0.64	0.55	1,083	1,167	443	B	C	B	C	C	C	D
	0.76	0.65	1,255	1,339	437	C	C	C	D	D	D	X
Ditch Clean	0.45	0.38	1,500	1,500	357	A	A	A	A	A	A	A
	0.54	0.46	1,800	1,800	405	A	A	A	A	B	B	C
Heavy Duty	0.21	0.20	450	N/A	313	A	A	A	A	A	A	A
	0.31	0.29	600	N/A	372	A	A	A	A	A	A	A
	0.42	0.38	750	N/A	420	A	A	A	A	A	A	A
	0.52	0.47	900	N/A	478	A	A	A	B	B	B	C
	0.60	0.53	1,000	N/A	510	B	C	B	C	C	C	D
	0.67	0.60	1,100	N/A	542	C	C	C	C	D	D	X
	0.74	0.66	1,200	N/A	585	D	D	C	D	X	D	X
Maximum load pin-on(payload+bucket)						1,683	1,587	1,739	1,549	1,415	1,503	1,343

Based on ISO 10567 and SAE J296, arm length without quick change clamp
A : Suitable for materials with density of 2100 kg/m3 (3500 lb/yd3) or less B : Suitable for materials with density of 1800 kg/m3 (3000 lb/yd3) or less
C : Suitable for materials with density of 1500 kg/m3 (2500 lb/yd3) or less D : Suitable for materials with density of 1200 kg/m3 (2000 lb/yd3) or less
X : Not recommended

DIMENSIONS

[One-piece Boom]



DIMENSIONS

Boom type (One-piece)		4,600mm
Arm type		2,500mm
Bucket type (PCSA)		0.51m ³
A	Tail Swing Radius	2,200mm
B	Shipping Height (Boom)	2,630mm
C	Shipping Height (Hose)	2,710mm
D	Shipping Length	7,680mm
E	Shipping Width	→ 2,590mm
F	C/Weight Clearance	→ 894mm
G	Height Over Cab.	→ 2,773mm
H	House Width	→ 2,540mm
I	Cab. Height above House	→ 835mm
J	Cab. Width	→ 960mm
K	Tumbler Distance	→ 3,034mm
L	Track Length	→ 3,755mm
M	Undercarriage Width	→ 2,590mm
N	Shoe Width	→ 600mm
O	Track Height	→ 728mm
P	Car Body Clearance	→ 410mm

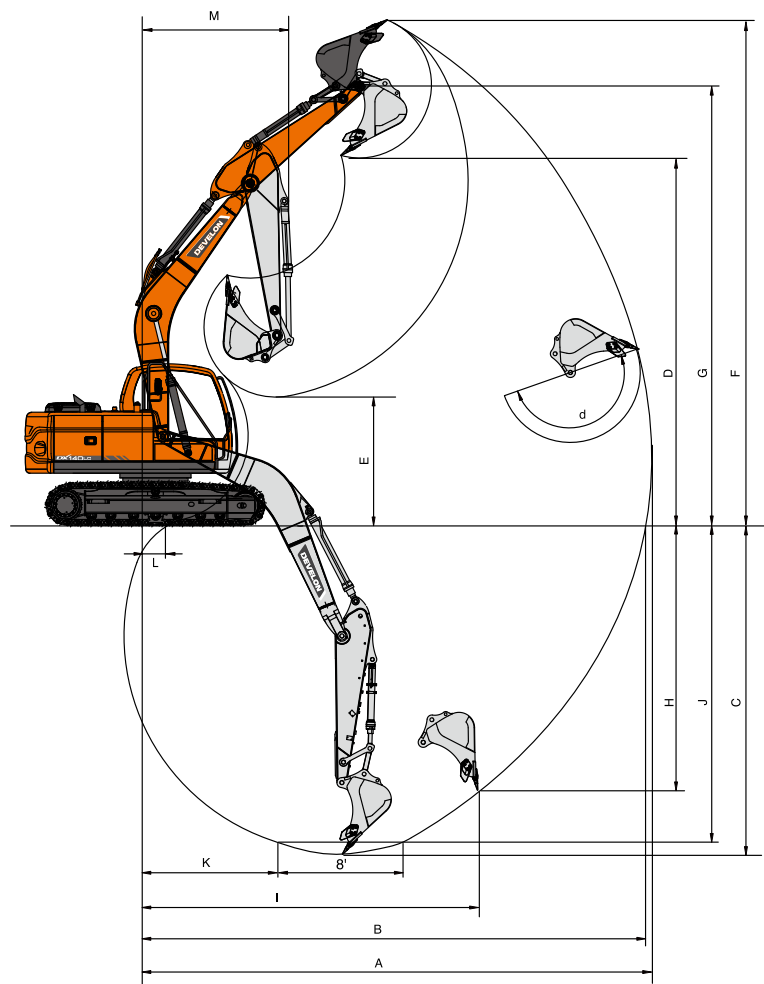
DIGGING FORCE

Bucket (PCSA)	0.22m ³	0.35m ³	0.40m ³	0.45m ³	0.51m ³	0.55m ³	0.65m ³
Digging force (ISO)	11,100 kgf	11,100 kgf	11,100 kgf	11,100 kgf	11,100 kgf	11,100 kgf	11,100 kgf
	109 kN	109 kN	109 kN	109 kN	109 kN	109 kN	109 kN
	24,471 lbf	24,471 lbf	24,471 lbf	24,471 lbf	24,471 lbf	24,471 lbf	24,471 lbf
Digging force (SAE)	9,600 kgf	9,600 kgf	9,600 kgf	9,600 kgf	9,600 kgf	9,600 kgf	9,600 kgf
	94 kN	94 kN	94 kN	94 kN	94 kN	94 kN	94 kN
	21,164 lbf	21,164 lbf	21,164 lbf	21,164 lbf	21,164 lbf	21,164 lbf	21,164 lbf

At power boost (ISO)

WORKING RANGES

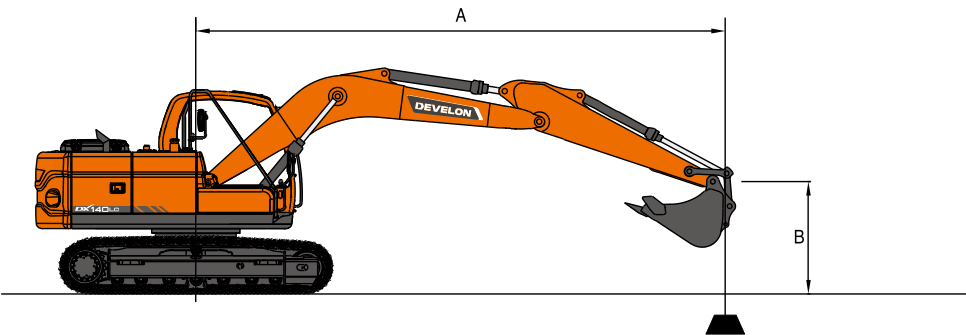
[One-piece Boom]



WORKING RANGE

Boom length		4,600mm One-piece Boom
Arm type		2,500mm
Bucket type (pcsa)		0.51m ³
A	Max. digging reach	8,300
B	Max. digging reach at ground level	8,156
C	Max. digging depth	5,645
D	Max. dumping height	6,300
E	Min. dumping height	2,166
F	Max. digging height	8,675
G	Max. bucket pin height	7,535
H	Max. vertical wall depth	4,560
I	Max. radius vertical	5,555
J	Max. digging depth(8'level)	5,420
K	Min. radius 8' line	1,960
L	Min. digging reach	265
M	Min. swing radius	2,375
d.	Bucket angle (deg)	173°

LIFTING CAPACITY



Metric
Boom : 4,600mm(15'1") Arm : 2,500mm(8'2") Bucket : SAE 0.51m³(0.67yd³) Shoe : 600mm(2') Dozer blade : 2,590mm(8'6") Unit : 1,000kg

A(m) B(m)	2		3		4		5		6		Max. Reach		A(m)
7					*3.73	*3.73					*2.88	*2.88	4.24
6					*3.39	*3.39	*3.59	3.21			*2.45	*2.45	5.32
5					*3.61	*3.61	*3.72	3.23	*2.57	2.35	*2.25	*2.25	6.04
4			*4.25	*4.25	*4.31	*4.31	*4.05	3.21	3.39	2.36	*2.17	2.02	6.53
3					*5.38	4.51	4.58	3.16	3.37	2.34	*2.16	1.86	6.83
2					*6.57	4.38	4.51	3.10	3.33	2.31	*2.20	1.79	6.98
1					6.46	4.27	4.44	3.04	3.30	2.28	*2.29	1.78	6.97
0 (ground)					6.39	4.21	4.39	3.00	3.27	2.26	*2.45	1.84	6.82
-1			*6.07	*6.07	6.36	4.18	4.37	2.98	3.26	2.25	*2.71	1.98	6.51
-2	*5.42	*5.42	*9.89	6.67	6.37	4.19	4.37	2.98	3.28	2.27	*3.13	2.26	6.01
-3	*9.35	*9.35	*9.47	6.74	6.41	4.23	4.42	3.01			4.11	2.82	5.24
-4			*7.27	6.86	*5.01	4.33					*4.55	4.11	4.14

Feet Unit : 1,000lb

A(ft) B(ft)	10'		15'		20'		Max. Reach		A(ft)
25							*7.75	*7.75	10.61
20			*8.03	*8.03			*5.46	*5.46	17.17
15			*8.44	8.24	*7.07	5.05	*4.87	4.78	20.58
10			*10.67	8.04	7.23	5.03	*4.75	4.11	22.38
5			11.45	7.76	7.12	4.94	*4.92	3.91	22.94
0 (ground)			11.22	7.57	7.03	4.86	*5.41	4.05	22.38
-5	*17.99	14.28	11.16	7.51	7.02	4.85	6.94	4.80	20.14
-10	*20.42	14.48	11.26	7.60			9.14	6.27	17.10