SERVICE MANUAL

LG936L

0 General

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0 General

01 Product Introduction

011 Machine Appearance and Its Components Name

Fig. 0-1

1 Bucket	2 Link mechanism	3 Front tire	4 Rear frame
5 Cab	6 Rear tire	7 Engine hood	8 Counterweight

012 Overall Dimensions and Parameters

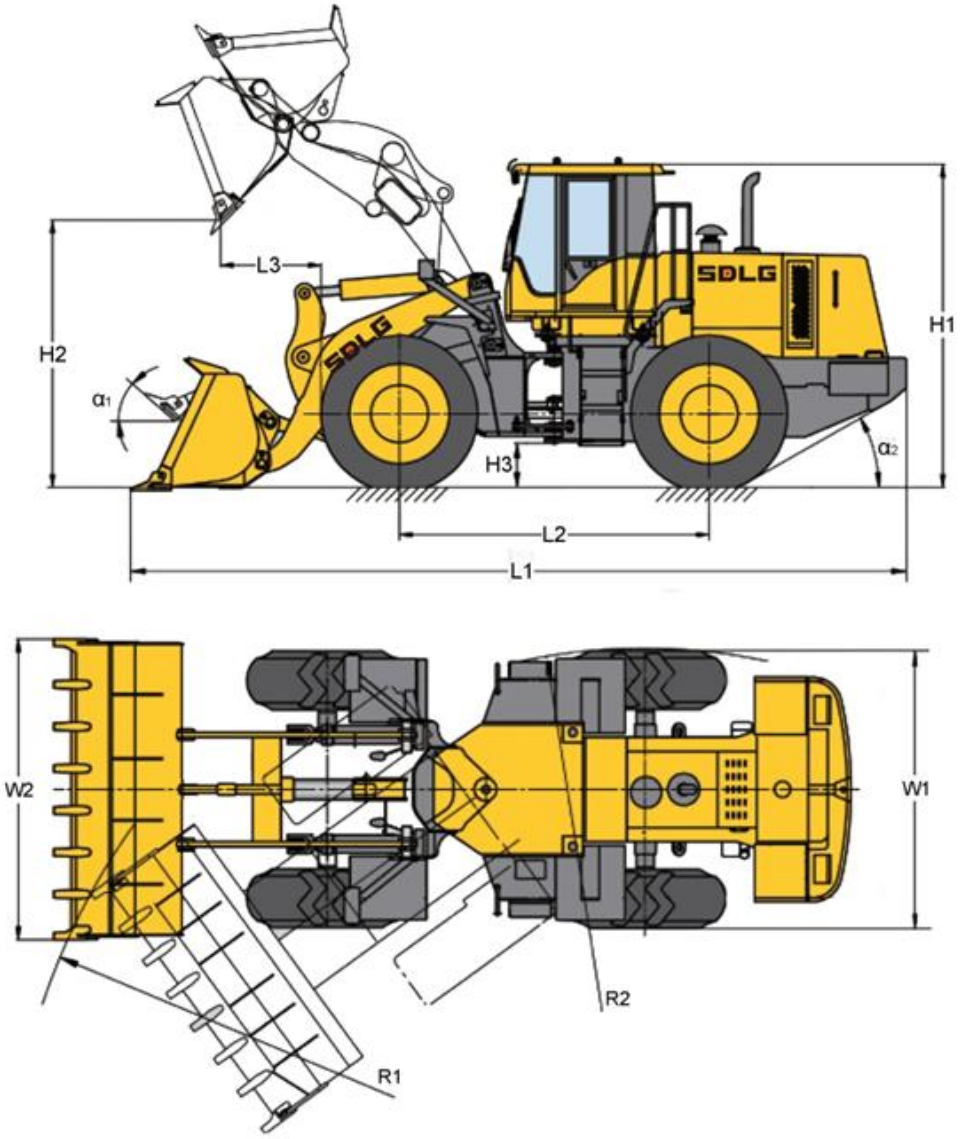
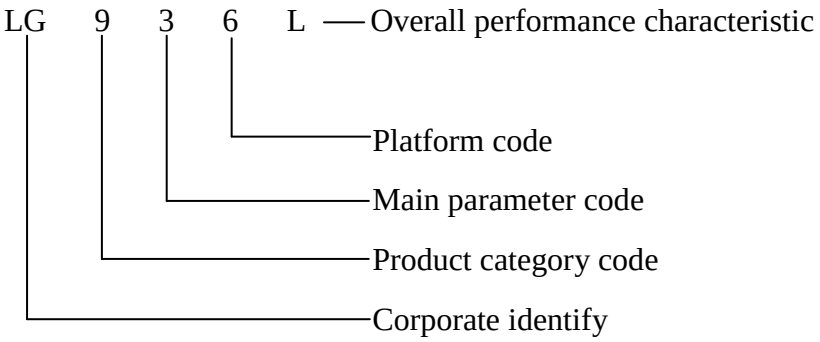


Fig. 0-2

Items (unit: mm)	Parameters	Items (unit: mm)	Parameters
Overall Length L1	7100	Wheel base L2	2850
Width (external part of wheel) W1	2310	Bucket width W2	2510
Height H1	3170	Min. ground clearance H3	370
Max. dump Height H2 (-45° dump angle)	2804	Moving levelly radius R1 (outside of bucket)	5912
Corresponding unloading distance L3 (-45° dump angle)	1198	Mini. steering radius R2 (outside of rear wheel)	5381

013 Product Model Composition and Significance



014 Use Conditions

The loader is featured with single bucket, unloading front, hinge joint and wheel type, a large construction machinery mainly for shoveling and loading of bulk materials. It is widely used in mineral yards, construction, roads, freight yards and ports, mainly for shoveling and short distance transport of bulk materials, such as loosened soil, sandy soil, dinas, coal and garbage. It can be used for dragging, flattening the ground, piling and stacking operations. Definitely it is a kind of multifunctional, efficient construction machinery.

015 Main Technical Parameters

Table 0-1 Overall performance parameters

Items	Parameters	Items	Parameters
Rated operating load (kg)	3000	Operating Weight	10935
Bucket capacity (m^3)	1.8	Number of shafts	2
Max. dragging force (provided by engine) (kN)	≥105	Max. breakout force (kN)	≥92
Tipping load (kN)	≥66	Max. climbing angle (°)	30

Speed	Gears	Ⅰ	Ⅱ	Ⅲ	Ⅳ
	Forward (km/h)	13	38	---	---
	Reverse (km/h)	17	---	---	---

Table 0-2 Engine parameters

Items	Parameters	Items	Parameters
Model	WP6G125E22	Number of cylinder	6
Rated power (kW)	92	Min fuel consumption (g/kWh)	215
Rated speed (r/min)	2200	Max torque (Nm)	500

Table 0-3 Transmission

Items			Parameter/contents
Torque converter	Inlet pressure of converter		0.45~0.55MPa
	Outlet pressure of converter		0.15~0.25MPa
Transmission box	Shifting gears		Forward-4-Reverse-3
	Shifting pressure		1.1~1.5MPa
Tire	Tire specification		17.5—25
	Tire pressure (MPa)	Front wheel	0.333~0.353MPa
		Rear wheel	0.275~0.294MPa
Brake system	Service brake type		Air-over-oil caliper disc brake
	Brake oil pressure (MPa)		0.784

Table 0-4 Hydraulic and steering system

Items	Parameter/contents
Steering angle (°)	38 °
Steering hydraulic system pressure	12Mpa
Working hydraulic system pressure	16MPa
Bucket lifting time (full load)	≤5.3s
Bucket lowering time (unload)	≤2.9s
Bucket unloading time (unload)	≤1.0s
Sum of three operation time	≤9.2s

02 Specification

Table 0-5 Tightening torque of common screws

Bolt strength grade	Yield strength N/mm^2	Bolt nominal diameter mm				
		6	8	10	12	14
		Tightening torque Nm				
8.8	640	9~12	22~30	45~59	78~104	124~165
10.9	900	13~16	30~36	65~78	110~130	180~210
12.9	1080	16~21	38~51	75~100	131~175	209~278
Bolt strength grade	Yield strength N/mm^2	Bolt nominal diameter mm				
		16	18	20	22	24
		Tightening torque Nm				
8.8	640	193~257	264~354	376~502	521~683	651~868
10.9	900	280~330	380~450	540~650	740~880	940~1120
12.9	1080	326~434	448~597	635~847	864~1152	1098~1464
Bolt strength grade	Yield strength N/mm^2	Bolt nominal diameter mm				
		27	30	33	36	39
		Tightening torque Nm				
10.9	900	1400~1650	1700~2000	2473~3298	2800~3350	4111~5481
12.9	1080	1606~2142	2181~2908	2968~3958	3812~5082	4933~6577

Table 0-6 Tightening torque table when the connected part is made of cast iron or aluminum

Bolt grade and torque / Bolt specification	8.8		10.9	
	Torque (Nm)		Torque (Nm)	
	Cast iron	Aluminum	Cast iron	Aluminum
M8	20~25	15~20	28~33	15~20
M10	45~50	25~30	55~60	25~30
M12	70~80	50~55	100~105	50~55
M14	110~125	80~90	150~165	80~90
M16	160~180	120~140	220~240	120~140
M18	205~230	165~180	295~320	165~180

Table 0-7 Tightening torque of connector

Connector with copper washer sealing or screw sealing		Connector with O ring	
Connector specification	Tightening torque Nm	Connector specification	Tightening torque Nm
M14, G1/4	34±5	M12×1.5	35±3.5
M18, G3/8	73±10	M14×1.5	45±4.5
M20, G1/2	93±10	M16×1.5	55±5.5
M24	142±20	M18×1.5	70±7.0
M27, G3/4	205±30	M20×1.5	80±8.0
M33, G1	421±49	M22×1.5	110±10
M42	872±98	M27×2.0	170±17
M30	320±40	M33×2.0	310±31

Table 0-8 Tightening torque of 24° cone sealing

Tightening torque of 24°cone sealing pipe nuts	
Specification	Tightening torque Nm
M12×1.5	20±5
M14×1.5	30±5
M16×1.5	35±5
M18×1.5	45±5
M20×1.5	50±5
M22×1.5	65±10
M24×1.5	70±10
M26×1.5	85±10
M30×2	115±15
M36×2	145±15
M42×2	210±20

Table 0-9 Tightening torque of hinged bolt

Specification	Tightening torque Nm
M10×1	25~35
M12×1.5	60~75
M14×1.5	80~100
M16×1.5	105~115
M18×1.5	20~130
M22×1.5	140~155
M24×1.5	160~180
M27×2	190~230
M33×2	270~320

Conversion of unit tables

Table 0-10 Length

Unit	CM	M	KM	IN.	FT	YD	Mile
CM	1	0.01	0.00001	0.3937	0.03281	0.01094	0.000006
M	100	1	0.001	39.37	3.2808	1.0936	0.00062
KM	100000	1000	1	39370.7	3280.8	1093.6	0.62137
IN.	2.54	0.0254	0.000025	1	0.08333	0.02777	0.000015
FT	30.48	0.3048	0.000304	12	1	0.3333	0.000189
YD	91.44	0.9144	0.000914	36	3	1	0.000568
Mile	160930	1609.3	1.6093	63360	5280	1760	1
1mm = 0.1cm 1μm = 0.001mm							

Table 0-11 Area

Unit	CM^2	M^2	KM^2	ARE	FT^2	YD^2	IN^2
CM^2	1	0.0001	-	0.000001	0.001076	0.000012	0.155000
M^2	10000	1	0.000001	0.01	10.764	1.1958	-
KM^2	-	1000000	1	10000	1076400	1195800	-
ARE	0.01	100	0.0001	1	1076.4	119.58	-
FT^2	-	0.092903	-	0.000929	1	0.1111	144.000
YD^2	-	0.83613	-	0.008361	9	1	1296.00
IN^2	6.4516	0.000645	-	-	0.006943	0.000771	1
1Ha =100Ares 1$mile^2$=259Ha =2.59km^2							

Table 0-12 Volume

Unit	CM^3	M^3	DM^3	IN^3	FT^3	YD^3
ML	1	0.000001	0.001	0.061024	0.000035	0.000001
KL	1000000	1	1000	61024	35.315	1.30796
L	1000	0.001	1	61.024	0.035315	0.001308
IN^3	16.387	0.000016	0.01638	1	0.000578	0.000021
FT^3	28316.8	0.028317	28.317	1728	1	0.03704
YD^3	764529.8	0.76453	764.53	46656	27	1
1 gallon (U.S.) = 3,785.41 cm^3 = 231 in^3 = 0.83267 gallon (British)						

Table 0-13 Weight

Unit	G	KG	MT	OZ	Ib. (pound)
G	1	0.001	0.000001	0.03527	0.0022
KG	1000	1	0.001	35.273	2.20459
MT	1000000	1000	1	35273	2204.59
OZ	28.3495	0.02835	0.000028	1	0.0625
Ib. (pound)	453.592	0.45359	0.000454	16	1
1 ton (metric) = 1.1023 tons (U.S.) = 0.9842 tons (British)					

Table 0-14 Pressure

Unit	KIP/CM^2	Bar	$Pa= N/m^2$	KPa	$Lbf/inch^2$	Lbf/ft^2
KIP/CM^2	1	0.98067	98066.5	98.0665	14.2233	2048.16
Bar	1.01972	1	100000	0.001	0.00015	0.02086
$Pa= N/m^2$	0.00001	0.001	1	0.001	0.00015	0.02086
KPa	0.01020	0.01	1000	1	0.14504	20.886
$Lbf/inch^2$	0.07032	0.0689	6894.76	6.89476	1	144
Lbf/ft^2	0.00047	0.00047	47.88028	0.04788	0.00694	1
1 Kg/cm^2 = 735.56 dry measure (mmHg) = 0.96784 atm						

Table 0-15 Unit description

Unit	Abbreviation
Newton metre	N ·m
Kilopound metre	kpm
Kilopascal	kPa
Megapascal	MPa
Kilowatt	kW
Kilojoule	kj
British thermal unit	Btu
Calorie	ca

03 Tools

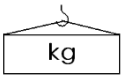
Table 0-16

Common tools	Specification	Quantity	Application
Pneumatic wrench	BQ8, BQ10, BQ16, BQ30, MI-17HE	1 set	Choose the specification according to size of different assembled bolts
sleeve	10, 13, 15, 16, 18, 21, 24, 36, 46	1 set	Choose the specification according to size of different assembled bolts
Soft hammer		1	Hit slightly when assembling some parts with interference.
Solid wrench	5.5×7, 8×10, 10×13, 11×13, 12×14, 13×15, 13×16, 14×16, 16×17, 16×18, 17×19, 18×24, 18×21, 22×24, 24×27, 24×30, 27×32, 30×34, 36×41, 41×46	1 set	Choose the specification according to size of different assembled bolts
Copper bar		1	Hit slightly when assembling some parts with interference.
Feeler gauge		1 set	Adjust the measure of gap positions
Flat tip screw driver		1	Slotted screw
Cross head screw-driver		1	Cross screw
Plier		1	
Clyburn spanner		1	
Crowbar		1	
Specific tools	Specification	Quantity	Application
Frame	Prepare the operation platform if it is not offered.	2	Install or remove working device and axle assembly
Wheelbarrow		1	Install or remove axle assembly
Wooden wedge		1	Fix the machine for repair

04 Marks

In order to emphasize the significance of safety and quality visually, we design the following signs as marks.

Table 0-17

Marks	Items	Notes
	Safety	Be careful for the safety during the operation.
		Be quite careful for the safety if there is pressure inside during the operation.
	Attention	Emphasize the technical requirements to ensure that the operation can meet the requirements of standard during operation.
	Weight	Weight and installation means of parts or device. Carefully select hanging tools and the operation gesture.
	Tightening torque	Pay more attention to the tightening torque of assembly parts.
	Coating	Carefully note the parts need to be coated with grease or adhesion agent.
	Oil, water	Fill a certain amount of water, oil and fuel.
	Draining	Be careful for the parts where water and oil need to be drained and drainage, and judge their volume.

05 Maintenance and Replacement Criterions

051 Visual Inspection or Hand Touching

1. Never further use the parts which are seriously bumped, having fracture and crack, or losing function.
2. Never further use the oil seals, dust ring, O-ring and seal gasket disassembled owing to leakage and because of low reliability and short service life in repeated use.
3. Never further use the bolts, nuts, washers, plug screws, pipe joints if they have serious corrosion, the screw couldn't be tightened, or the screw is damaged, worn out or slipping.
4. Never further use locking steel wire in the connection of bolt after disassembled.
5. Never further use the bearings if they could not be turned smoothly by hand, crack exists on their components or the ball race is seriously worn.
6. Never further use the gears and the teeth of spline with crack, sheet exfoliation, collision or over wearing.
7. Never further use the shell with crack, bearing holes with crack, wear, elliptic or sheet exfoliation, and screw damaged which doesn't work well in tightening operation.
8. Never further use bearing chock, oil seal pedestal with crack, wear, elliptic, collision or sheet exfoliation on the mating surface and spigot.

9. Never further use the pins with serious wear, collision or crack.
10. Judge the oil by visual and touching primarily, it should be replaced if hydraulic oil appears the following situation in the process of use and inspection: present milk white in color, accompany with acid stink, turn yellow or appear turbidity.

052 Measure

If it is hard to identify by ocular estimate or hand touching, check it by measurement.

Table 0- 18

Parts	Check items	Judgment standard		Oversize measures
		Dimension (Tolerance)	Allowable limit	
Bearing	ID tolerance	About 0~-0.02	+0.02	Replace
	OD tolerance	About 0~-0.02	-0.04	
Gear	Wear loss of teeth thickness	About 0~0.10	12 % of the reference circle thickness (usually 1.2~1.4)	Replace
Common parts	OD used in common assembly	Tolerance denoted by T	Recommend: 0.3T less than lower limit	Replace
	ID used in common assembly	Tolerance denoted by T	Recommend: 0.3T more than upper limit	
Multitandem valve	Fitting clearance between valve core and valve hole		>0.02	Replace
Steering device	Fitting g clearance between valve core and valve hole		>0.02	Replace
	Stator and rotor		>0.08	Replace
Monostable valve	Fitting g clearance between valve core and valve hole		>0.02	Replace
Priority valve	Fitting clearance between valve core and valve hole		>0.02	Replace