

en

Service Manual

Crawler Dozers

PR 711B - 741B



LIEBHERR



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Preface

This book gives you all data about construction, troubleshooting, disassembly, assembly and adjustments of all units and building groups of LIEBHERR-BULLDOZERS.

This data are set up with brief close descriptions, instruction, photos and drawings of adjustments, hydraulic, electric and pneumatic schemes, graphic expositions of explosive- and section drawings. This should help you to do all necessary repairs on our bulldozers.

Photographs for every job as handled in other service manuals - are not generally used for every job by purpose, as for this repairs you need qualified service engineers who know the usual routine jobs, the data given in here can be used as a reference for certain adjustment specifications.

Directions for services and attendance of the machine are not quoted as they are given in the concerning operators guide.

Of course you need for all repair jobs faultless and complete basic tools as well as the necessary devices and special tools.

Cleanliness and order are necessary of course.

In this education we assume that sealing materials like O-rings, paper gaskets a. o. are renewed during a repair.

Bolts have to be tightened, if no special specifications are given, with the necessary torque.

We hope, that by giving you this service manual, we both will be able to make further improvements in servicing LIEBHERR-BULLDOZERS.

List of Subgroups

Supplements

1.01.01	Specifications PR 721 B	PR 721 B-M/301	Supplement
1.02.01	Specifications PR 731 B	PR 731 B /301 PR 731 B-M/301	
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1.04.01	Specifications LR 631	LR 631	
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Specifications

	TYP OF MACHINE Valid from serial-no.	PR 721 B-M 301	PR 721 B-M 501	PR 721 B-M 531
General specifications	Gross weight (t) without ripper	10,6/10,8/11,0	=	=
	Lenght with blade (mm)	4440	=	=
	Tilt blade - width (mm)	2990	=	=
	Hight of machine (mm)	2930	=	=
	Track-lenght (mm)	3370	=	=
	Wheel-base (mm)	2400	=	=
	Track-widht (mm)	1780	=	=
	Pull-force (t)	14,4	=	=
Daimler-Benz-engine	Typ	OM 352	OM 352 A	=
	Engine output (bhp/kw)	100 / 73,6	105/77	=
	Ratet engine speed (rpm)	2200	2200	=
	Oil quantity (liter)	12	14	=
	Oilviscosity over + degree C	SAE 30	=	=
	Oilviscosity from - 10° to +20°C	SAE 20 W/20	=	=
	Oilviscosity from - 20° to 0°C	SAE 10 W	=	=
	Oil changing intervalls	10-100-100	=	=
	Firing order	1-5-3-6-2-4	=	=
	Valve clearance (cold) outlet/inlet (mm)	0,30 / 0,20	-	-
	compression-pressure min. (bar)	XXX 22	20	=
	Begin of delivery, degree before top dead center	18 + 0,5	21	=
	Injection pressure, new (bar)	200 + 10	=	=
	Fuel consumption (ltrs./min)	11,2 - 18	=	=
	Oil consumption (% from fuel consumption)	ca. 1 %	=	=
Capacity of fuel tank (ltrs.)	220	=	=	
max. sloping position	45°	=	=	
Travelling hydraulic	Hydraulic pump	Gü.BPV 50 S	=	=
	max. delivery (ltrs./min)	2 x 153	=	=
	max. operating pressure (bar)	420	=	=
	Cooling-Feeding-Pump (ltrs./min)	2 x 37	=	=
	Servopump (ltrs./min)	12	=	=
	Hydraulic tank capacity (ltrs.)	120	=	=
	Hydraulic circuit (additional ltr)	20	=	=
	Changing intervalls of hydraulic oil (hrs)	3000	=	=
	Changing intervalls oil of distributer gear (hrs)	500	=	=
	Oil capacity-distributer gear (ltr)	1,5 SAE 90	=	=
	Changing intervalls-Hydraulic- filters (hrs) tank	100-400-500	=	=
	Changing intervalls-pump-filter	100-400-500	=	=
Changing intervalls-pressure filters travel hydraulic (hrs)	100/ all 500	=	=	
Regulating oil motor, left/right	Gü BMV-105 T	=	=	
Education:	AUG.79	Valid from serial no. PR 721 B	Sheet no:	1.01.01

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Specifications

	TYP OF MACHINE Valid from serial-no.	PR 721 B-M 301	PR 721 B-M 501	PR 721 B-M 531
Working hydraulic	Twin-gearpump	Si C40 +E4	=	=
	Delivery capacity (ltrs)	117	=	=
	Operating pressure max. (bar)	140	=	=
	Control valve	MO 1004 NW 16	=	=
	Lift-cylinder (cyl. \emptyset , Ram \emptyset , lift-length)	85/50/810	=	=
	Tilt-cylinder (cyl. \emptyset , Ram \emptyset , lift-length)	150/60/120	=	=
	Servo control unit	41 142 213	=	=
Travelling gear	Travelling gear left	LI 9114514	=	LI 9165957
	Travelling gear right	LI 9114522	=	LI 9165958
	Oil changing intervalls	500 - 2000	=	=
	Filling capacity (ltrs.)	23/SAE 80	=	16/SAE 80
	Reduction total	46,1	=	=
Track-assembly	Track assembly	D 4 D	=	=
	track (links)	D 4 D / 42	=	=
	Track-shoes width (mm)	508/610/737	=	=
	Groundpressure-average (kp/cm ²)	0,43/0,37/0,31	kg/cm ² =	=
	Track roller	CR 1328C/CR 1 329C	=	=
	Support roller	CR 2880	=	=
	Front idler	35331	=	=
	Roll pin	35320	=	=
	Check measure of adjuster piston (mm) max.	215	=	=
	Travelling speed max. (km/h)	10,5	-	-
	Filling capacity support roller (ltrs.)	0,15 - 0,20 SAE 80	=	=
	Filling capacity track roller (ltr)	0,20-0,30/SAE 80	=	=
	Filling capacity front idler (ltr)	0,20-0,30/SAE 80	=	=



Specifications

	TYP OF MACHINE Valid from serial-no.	PR 731 B 301	PR 731 B-M 301	PR 731 B-L 301
General specifications	Gross weight (t) without ripper	13,8 / 14,0	15,8 / 16,0	15,1 / 15,3
	Lenght with blade (mm)	4620	5050	5085
	Tilt blade - width (mm)	3150	3500	3150
	Hight of machine (mm)	3023	3023	3023
	Track-lenght (mm)	3538	3942	3942
	Wheel-base (mm)	2475	2880	2880
	Track-widht (mm)	1880	2080	1880
	Pull-force (t)	20,0	20,0	20,0
Daimler-Benz-engine	Typ	OM 401	=	=
	Engine output (bhp/kw)	140 / 103	=	=
	Ratet engine speed (rpm)	2100	=	=
	Oil quantity (liter)	22	=	=
	Oilviscosity over + degree C	SAE 30	=	=
	Oilviscosity from - 10° to +20°C	SAE 20W/20	=	=
	Oilviscosity from - 20° to 0°C	SAE 10W	=	=
	Oil changing intervalls	10-100-100	=	=
	Firing order	1-4-2-5-3-6	=	=
	valve clearance (cold) outlet/inlet (mm)	0,35/0,25	=	=
	compression-pressure min. (bar)	20	=	=
	Begin of delivery, degree before top dead center	15 ⁺ 0,5	=	=
	Injection pressure, new (bar)	180 [±] 2	=	=
	Fuel consumption (ltrs./min)	15,5 - 25	=	=
Oil consumption (% from fuel consumption)	appr. 1 %	=	=	
Capacity of fuel tank (ltrs.)	310	=	=	
max. sloping position	45°	=	=	
Travelling hydraulic	Hydraulic pump	Gü.BPV 70 S	=	=
	max. delivery (ltrs./min)	2 x 175	=	=
	max. operating pressure (bar)	420	=	=
	Cooling-Feeding-Pump (ltrs./min)	2 x 46	=	=
	Servopump (ltrs./min)	9,5	=	=
	Hydraulic tank capacity (ltrs.)	190	=	=
	Hydraulic circuit (additional ltr)	60	=	=
	Changing intervalls of hydraulic oil (hrs)	3000	=	=
	Changing intervalls oil of distributer gear (hrs)	500	=	=
	Oil capacity-distributer gear (ltr)	2,0 SAE 90	=	=
	Changing intervalls-Hydraulic- filters (hrs) tank	100-400-500	=	=
	Changing intervalls-pump-filter	100-400-500	=	=
Changing intervalls-pressure filters travel hydraulic (hrs)	100/ ev. 500	=	=	
Regulating oil motor, left/right	Gü.BMV 140T	=	=	

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Aug 80

Valid from serial no:

PR 731 B 301

Sheet no:

1.02.01

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Specifications

	TYP OF MACHINE Valid from serial-no.	PR 731 B 301	PR 731 B-M 301	PR 731 B-L 301
Working hydraulic	Twin-gearpump	Si C 80 + E 4	=	=
	Delivery capacity (ltrs)	190	=	=
	Operating pressure max. (bar)	140	=	=
	Control valve	MO 1000 NW 22	=	=
	Lift-cylinder (cyl. \emptyset , Ram \emptyset , lift-length)	100/50/900	=	=
	Tilt-cylinder (cyl. \emptyset , Ram \emptyset , lift-length)	150/60/120	=	=
	Servo control unit	41 142 213	=	=
Travelling gear	Travelling gear left	LI 9161027	LI 9161440	LI 9161027
	Travelling gear right	LI 9161028	LI 9161441	LI 9161028
	Oil changing intervalls	500-2000	=	=
	Filling capacity (ltrs.)	30/SAE 80	=	=
	Reduction total	50,9	=	=
Track-assembly	Track assembly	D6c	=	=
	track (links)	D6c/37	D6c/41	D6c/41
	Track-shoes width (mm)	508/610	812/914	508/610
	Groundpressure-average (kp/cm ²)	0,55/0,46	0,34/0,30	0,52/0,44
	Track roller	D6c-16557	=	=
	Support roller	D6c-16562	=	=
	Front idler	D6c-01286	=	=
	Roll pin	35333	=	=
	Check measure of adjuster piston (mm) max.	170	=	=
	Travelling speed max. (km/h)	10	-	-
	Filling capacity support roller (ltrs.)	0,4/SAE 80	=	=
	Filling capacity track roller (ltr)	0,5/SAE 80	=	=
Filling capacity front idler (ltr)	0,5/SAE 80	=	=	



Specifications

	TYP OF MACHINE Valid from serial-no.	PR 731 B 498	PR 731 B-M 392	PR 731 B-L 319
General specifications	Gross weight (t) without ripper	13,8 / 14,0	15,8 / 16,0	15,1 / 15,3
	Lenght with blade (mm)	4620	5050	5085
	Tilt blade - width (mm)	3150	3500	3150
	Hicht of machine (mm)	3023	3023	3023
	Track-lenght (mm)	3538	3942	3942
	Wheel base (mm)	2475	2880	2880
	Track-widht (mm)	1880	2080	1880
	Pull-force (t)	20,0	20,0	20,0
Daimler-Benz-engine	Typ	OM 401	=	=
	Engine output (bhp/kw)	140 / 103	=	=
	Ratet engine speed (rpm)	2100	=	=
	Oil quantity (liter)	22	=	=
	Oilviscosity over + degree C	SAE 30	=	=
	Oilviscosity from - 10° to +20°C	SAE 20W/20	=	=
	Oilviscosity from - 20° to 0°C	SAE 10W	=	=
	Oil changing intervalls	10-100-100	=	=
	Firing order	1-4-2-5-3-6	=	=
	Valve clearance (cold) outlet/inlet (mm)	0,35/0,25	=	=
	compression-pressure min. (bar)	20	=	=
	Begin of delivery, degree before top dead center	15 ± 0,5	=	=
	Injection pressure, new (bar)	180 ± 2	=	=
	Fuel consumption (ltrs./min)	15,5 - 25	=	=
	Oil consumption (% from fuel consumption)	appr. 1 %	=	=
Travelling hydraulic	Capacity of fuel tank (ltrs.)	310	=	=
	max. sloping position	45°	=	=
	Hydraulic pump	Gü.BPV 70 S	=	=
	max. delivery (ltrs./min)	2 x 175	=	=
	max. operating pressure (bar)	420	=	=
	Cooling-Feeding-Pump (ltrs./min)	2 x 46	=	=
	Servopump (ltrs./min)	9,5	=	=
	Hydraulic tank capacity (ltrs.)	190	=	=
	Hydraulic circuit (additional ltr)	60	=	=
	Changing intervalls of hydraulic oil (hrs)	3000	=	=
	Changing intervalls oil of distributor gear (hrs)	500	=	=
	Oil capacity-distributor gear (ltr)	2,0 SAE 90	=	=
	Changing intervalls-Hydraulic-filters (hrs) tank	100-400-500	=	=
	Changing intervalls-pump-filter	100-400-500	=	=
	Changing intervalls-pressure filters travel hydraulic (hrs)	100/ ev. 500	=	=
Regulating oil motor, left/right	Gü.BMV 140T	=	=	
Education:	Aug 81	valid from serial no:	PR 731 B	Sheet no.
				1.02.02



Specifications

TYP OF MACHINE Valid from serial-no.		PR 731 B 498	PR 731 B-M 392	PR 731 B-L 319
Working hydraulic	Twin-gearpump	Si C 80 + E 4	=	=
	Delivery capacity (ltrs)	190	=	=
	Operating pressure max. (bar)	140	=	=
	Control valve	M 1/1000	=	=
	Lift-cylinder (cyl. \emptyset , Ram \emptyset , lift-length)	100/50/900	=	=
	Tilt-cylinder (cyl. \emptyset , Ram \emptyset , lift-length)	150/60/120	=	=
	Servo control unit	41 142 213	-	-
Travelling gear	Travelling gear left	LI 9170156	LI 9170160	LI 9170156
	Travelling gear right	LI 9170158	LI 9170161	LI 9170158
	Oil changing intervalls	500-2000	=	=
	Filling capacity (ltrs.)	17/SAE 80	=	=
	Reduction total	50,9	=	=
Track-assembly	Track assembly	D6c	=	=
	track (links)	D6c/37	D6c/41	D6c/41
	Track-shoes width (mm)	508/610	812/914	508/610
	Groundpressure-average (kp/cm ²)	0,55/0,46	0,34/0,30	0,52/0,44
	Track roller	D6c-16557	=	=
	Support roller	D6c-16562	=	=
	Front idler	D6c-01286	=	=
	Roll pin	35333	=	=
	Check measure of adjuster piston (mm) max.	170	=	=
	Travelling speed max. (km/h)	10	=	=
	Filling capacity support roller (ltrs.)	0,4/SAE 80	=	=
	Filling capacity track roller (ltr)	0,5/SAE 80	=	=
Filling capacity front idler (ltr)	0,5/SAE 80	=	=	

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