

KOBELCO

OPERATOR'S MANUAL

HYDRAULIC EXCAVATOR

K905

K905LC

Issued 07-1985

S2LP1004E-01

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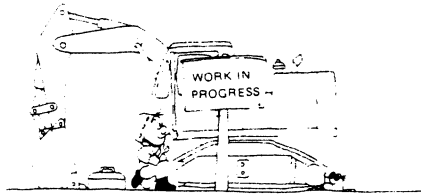


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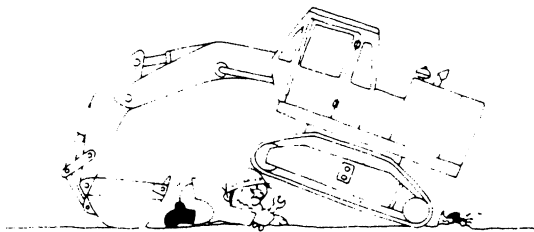
SAFETY PRECAUTIONS FOR PREVENTIVE MAINTENANCE

- 1) Stop the engine during inspection and maintenance, remove the key and place a sign on the cab clearly indicating that the machine is being worked on.



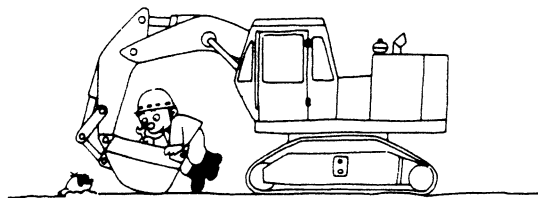
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- 2) Never work under a machine that is jacked up by the boom and bucket only. Always put wooden blocks under the crawlers when working under the machine.



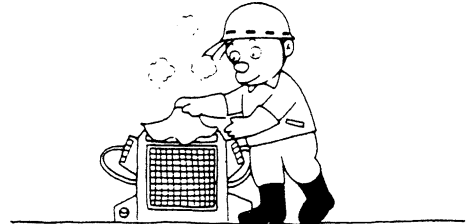
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- 3) When working on the boom, arm or bucket, lower the bucket to the ground.



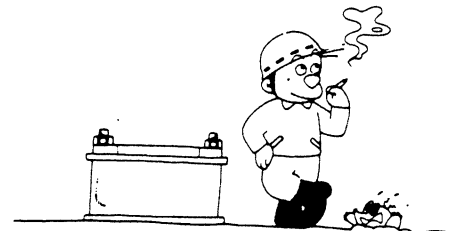
L-1555

- 4) Take great care when removing the radiator cap; if the engine is still hot, boiling water may gush out. If possible, wait until the engine has cooled.



L-1020

- 5) Gas generated from battery electrolyte is flammable so do not smoke or expose open flames when servicing the batteries. Also, make sure to keep this electrolyte off clothing, skin and out of eyes.



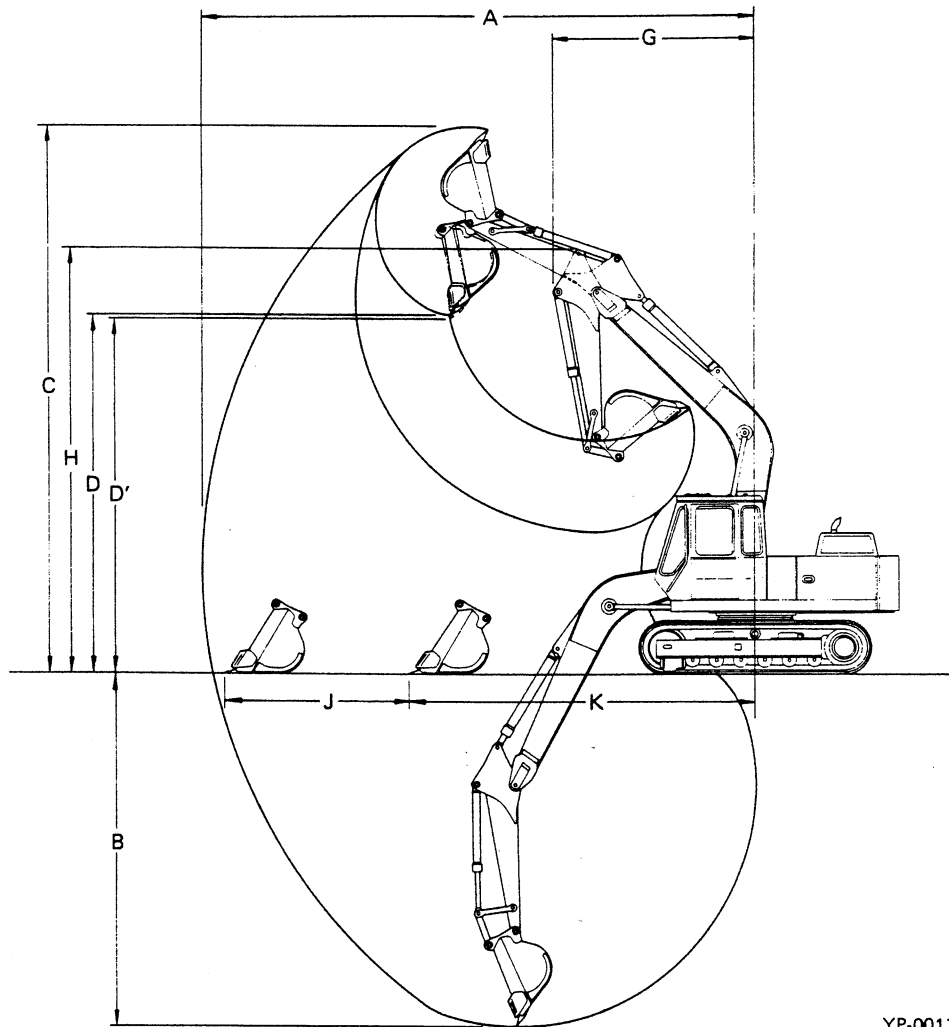
L-1551

- 6) Stop the engine when filling the fuel tank and be sure there are no open flames or heated surfaces that could ignite the fuel.



L-1550

K905, K905LC FACE SHOVEL ATTACHMENT



YP-0017

Unit: m

Type of Attachment		2.1m Arm (with 0.5m ³ Bucket)	2.6m Arm (with 0.4 m ³ Bucket)	3.1m Arm (with 0.35m ³ Bucket)	2.1m Arm + 1.0 m Ext. Arm (with 0.35m ³ Bucket)	
A	Maximum Digging Radius	8.05	8.47	8.97	8.94	
B	Maximum Digging Depth	5.18	5.67	6.17	6.17	
C	Maximum Digging Height	8.01	8.17	8.47	8.43	
D	Maximum Dumping Height	5.27	5.44	5.74	5.68	
D'	Maximum Dumping Height (45°)	5.20	5.26	5.59	5.61	
E	Minimum Swing Radius	2.93	2.94	3.02	3.18	
F	Height at Minimum Swing Radius	6.24	6.26	6.28	6.24	
J	Horizontal Bucket	Stroke	2.71	3.52	4.42	4.41
K	Digging Distance	Minimum	5.04	4.65	4.25	4.22

There are several different control lever layout patterns. These layouts are shown on pages 3-10 and 3-11. When you receive your machine, check which layout you have by checking what lever operates what actuator.

FACE SHOVEL OPERATION

Note that operation of the control lever of face shovel is opposite to that of hoe attachment.

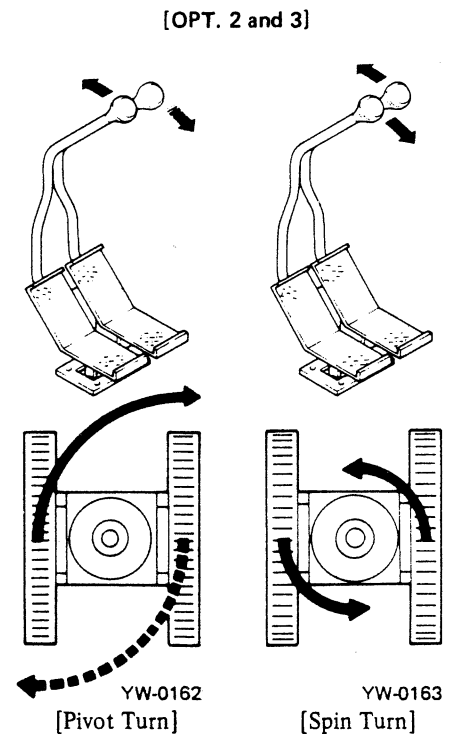
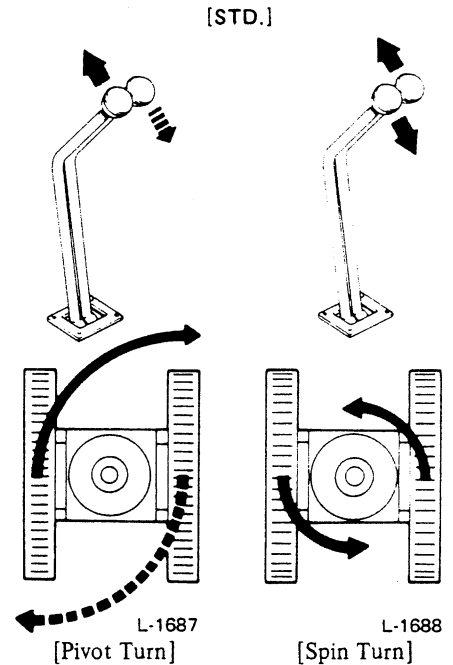
TRAVEL OPERATION

- (1) Forward or reverse travelling on flat ground
Push both levers forward and the machine will travel forward. Pull both travel levers backward toward the operator for reverse travelling. Speed for both forward and reverse travelling can be regulated according to how much the levers are shifted.
- (2) Pivot turn
This is done by driving only one of the crawlers and can be performed by operating either one of the travel levers.
- (3) Spin turn
This is done by driving the crawlers in opposite directions. Push one travel lever forward and pull the other backward.
- (4) Grades
The maximum gradeability of this machine is 35° (70%).

SWING LOCK

When swinging is not necessary, such as in travelling and transportation, secure the upper and the lower carrier with the swing lock pin. Two locking positions are provided—front and rear.

When the swing lock has been engaged, get out of the cab and make sure that it is properly engaged. Before beginning the swinging motion, be sure to disengage the swing lock.



LUBRICATION

Lubricant	Recommended Lubricant (Initial Factory Fill)	Location	Quantity (No. of Points)	Lubricating Interval (hr)	First Replacement Interval (hr) (Cleaning)	Replacement Interval (hr)	Cleaning Interval (hr)
Hydraulic Oil	KOBELCO Hydraulic Fluid -30°C ~ 15°C -25°C ~ 30°C -5°C ~ 40°C 5°C ~ 55°C ISO VG22 ISO VG32 ISO VG46 ISO VG68 Anti-Wear Type	Hydraulic oil tank	Tank capacity: 230 ℓ Oil level: 150 ℓ	8		2,000	2,000
Gear Oil	Extreme Pressure Gear Oil #90 Grade GL-4 by API Classification	Swing reduction unit	4.5 ℓ	120	500	2,000	
		Travel reduction unit	4.8 ℓ x (2)				
		Control lever joints	A few drops	120			
Grease	KOBELCO Extreme Pressure, Multipurpose Grease Cartridge ... 2421Z183 Pail Can ... 2421Z214	Attachment pins	(15)	8			
		Swing bearing	(4)	250			
		Track spring	(2)	50			
	M ₀ S ₂ Grease NLGI-1	Swing gear	6.5 kg	500		2,000	
Engine Oil	API Classification for Service CD		Upper rollers	0.04ℓ x (2)		2,000	
	Above 40°C	SAE40	Lower rollers	0.2ℓ x (12) 0.14ℓ x (14)			
	40°C ~ 5°C	SAE30	Idlers	0.3ℓ x (2)			
	10°C ~ -30°C	SAE 10W-30	Engine oil pan	Total: 24ℓ Oil pan: 20ℓ	8	50	250
Fuel	Above -5°C	-5°C ~ -15°C	-15°C ~ -25°C	Fuel tank	230 ℓ	8	
	JIS #2 Light Oil	JIS #3 Light Oil	JIS #3 Special Light Oil				
Cooling Water	Soft Water (Mixed with anti-freeze in winter)	Radiator	20 ℓ	8		500	500

NOTE

1. Overall tank capacity including hydraulic oil in circuit is 230 ℓ.
2. Regarding the engine, refer to the Engine Manual.

- (2) Change hydraulic oil return filter element.

It is especially important to always keep the hydraulic oil clean. Be extremely careful in the maintenance of the return filter. It is also necessary to change the return filter at every 250 hours in normal weather and normal operating conditions. However, if the atmosphere at the work site is excessively dirty, it is recommended that filter change interval be lowered to around 120 hours.

For replacement procedures, refer to "Replacement of Hydraulic Oil Return Filter" in "Maintenance of Hydraulic Oil System."

- (3) Retighten capscrews and nuts.

Check and retighten all capscrews and nuts every 250 hours referring to the chart "Tightening Torque of Capscrews and Nuts."

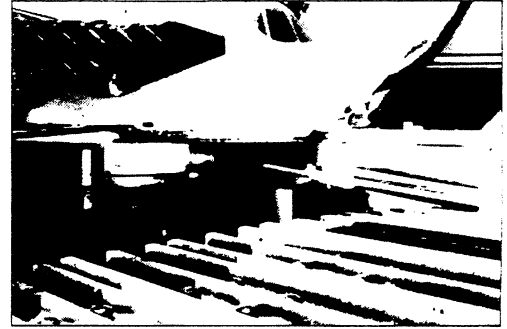
- (4) Check engine.

Perform the 250 hour maintenance checks by referring to the Engine Manual.

250 HOUR LUBRICATION

- (A) Lubrication of swing bearing

Check and lubricate the swing bearing every 250 hours. When it has been immersed in water or mud, lubricate immediately and change the grease.



L-1727

[Lubrication of Swing Bearing]

- (B) Change engine oil.

Change the engine oil every 250 hours, with reference to the Engine Manual.

4T CAPSCREWS

Size	Location	Tightening Torque (kg·m)
M6	Instrument Panel	0.3 ~ 0.5
M8	Cable Clamp	0.8 ~ 1.0
M10	Cover	1.6 ~ 2.0
M12	Cover	2.5 ~ 3.5
M16	Cab	6.5 ~ 9.0

NOTE

4T capscrews have the letter M marked at their head.

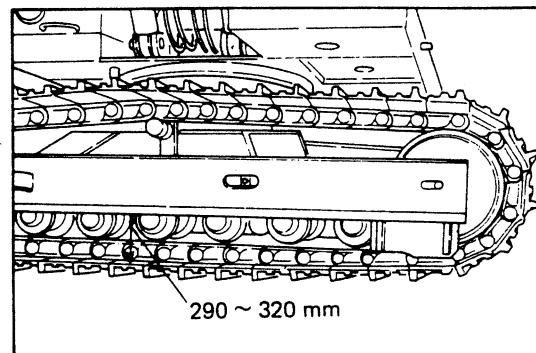
ADJUSTMENT OF TRACK TENSION

To adjust the track tension, swing the upper frame so that the crawlers to be adjusted come in front of the operator's seat, push the bucket against the ground by retracting the boom cylinder and lift up the machine body.

Adjust at the center of the crawler frame so the gap between the crawler frame bottom and the top surface of the track shoe is 290 ~ 320 mm. (The gap between the roller and the track link contact surface at this time is 90 ~ 120 mm.)

If the track tension is not correct, adjust as follows: To increase the tension, pump in grease through the grease fitting. To loosen the tension, release grease by slowly loosening the grease fitting.

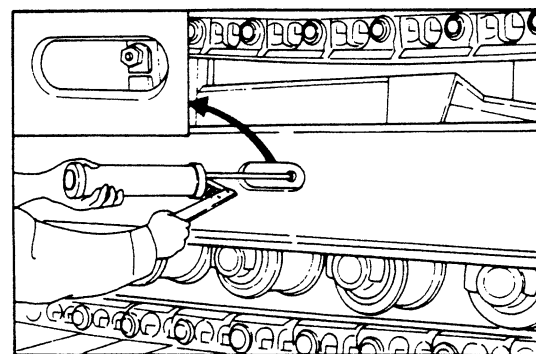
A nipple type is used for the grease fitting.



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WARNING

Do not loosen the grease fitting beyond the stopper. If loosened more than allowed, the grease fitting will shoot out by the high pressure inside. Move the machine back and forth if the grease does not come out smoothly.



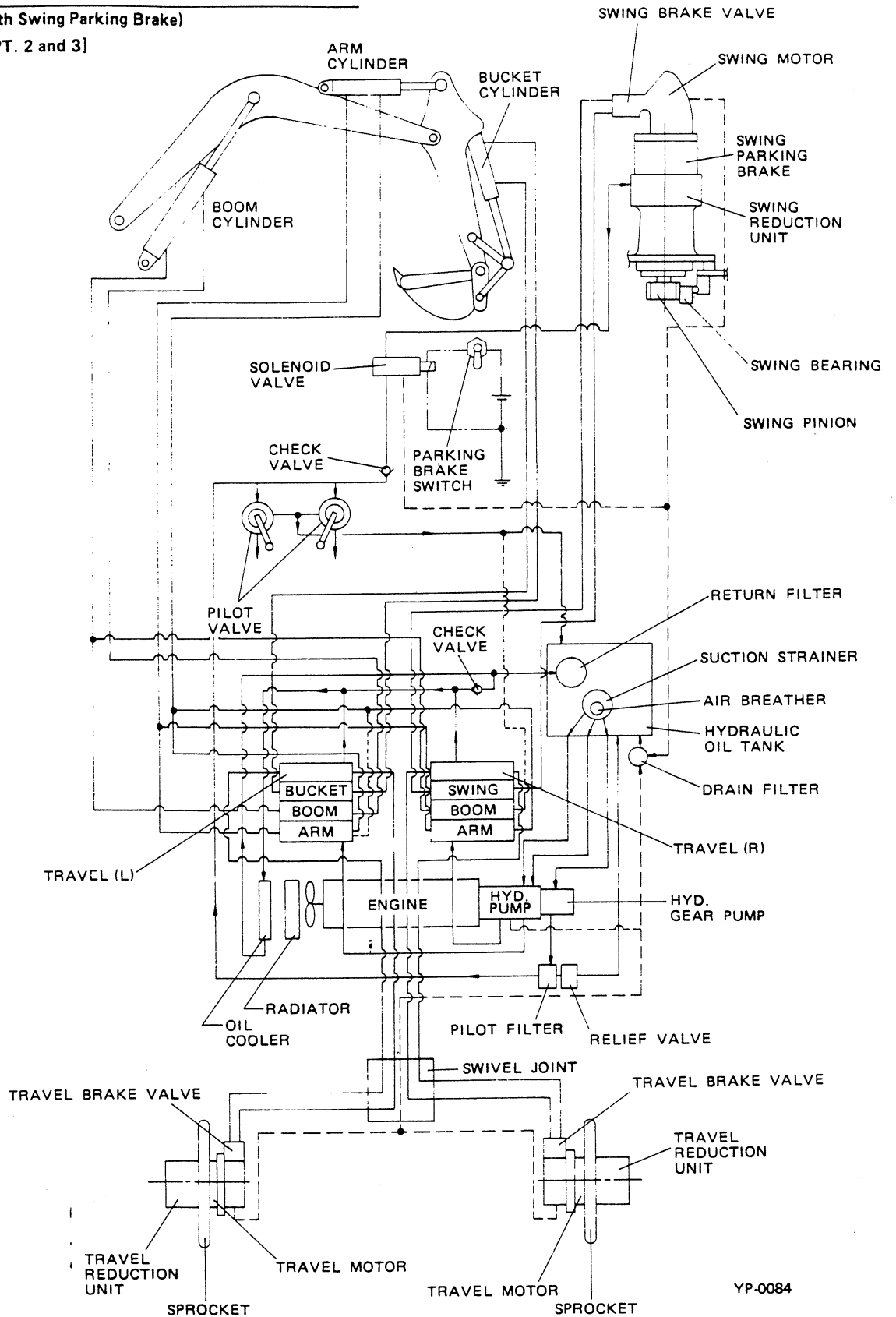
L-1478

[Adjustment of Track Tension]

K905, K905LC
BACKHOE HYDRAULIC SYSTEM DIAGRAM

(With Swing Parking Brake)

[OPT. 2 and 3]



YP-0084

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