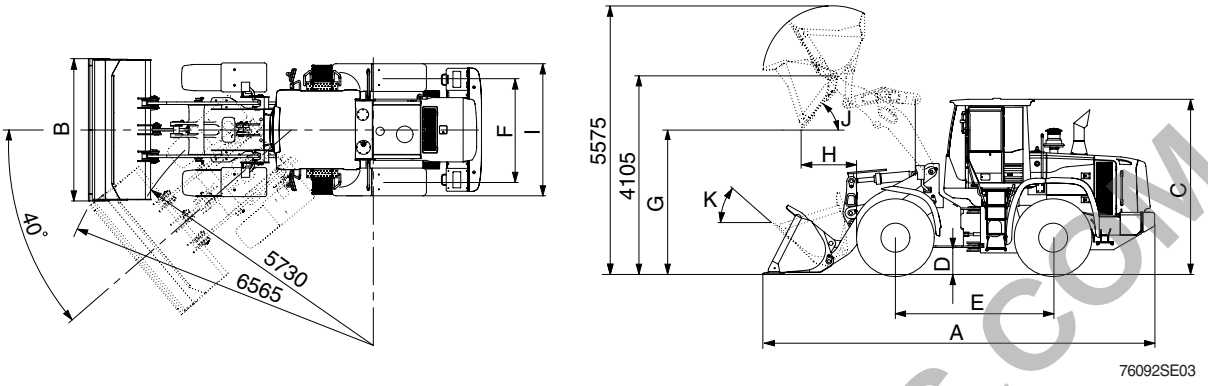
2. SPECIFICATIONS

1) WITH BOLT-ON CUTTING EDGE TYPE BUCKET (HL760-9)



Description			Unit	Specification
Operating weight			kg (lb)	17900 (39460)
Bucket capacity		Struck	m^3 (yd^3)	2.8 (3.7)
		Heaped		3.3 (4.3)
Overall length		A	mm (ft-in)	8100 (26' 7")
Overall width		B		2900 (9' 6")
Overall height		C		3450 (11' 4")
Ground clearance		D		420 (1' 5")
Wheelbase		E		3300 (10' 10")
Tread		F		2160 (7' 1")
Dump clearance at 45˚		G		2970 (9' 9")
Dump reach (full lift)		H		1220 (4' 0")
Width over tires		I		2770 (9' 1")
Dump angle		J	degree (˚)	47
Roll back angle (carry position)		K		47
Cycle time		Lift (with load)	sec	5.8
		Dump (with load)		1.2
		Lower (empty)		3.1
Maximum travel speed			km/hr (mph)	38.1 (23.7)
Braking distance			m (ft-in)	13 (42' 7")
Minimum turning radius (center of outside tire)				5.73 (18' 9")
Gradeability			degree (˚)	30
Travel speed	Forward	First gear	km/hr (mph)	6.3 (3.9)
		Second gear		12.0 (7.5)
		Third gear		24.0 (15.0)
		Fourth gear		38.1 (23.7)
	Reverse	First gear		6.7 (4.2)
		Second gear		12.6 (7.9)
		Third gear		25.2 (15.7)

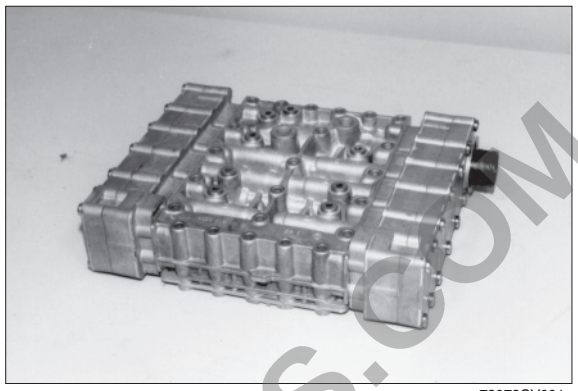
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1. CONTROL VALVE

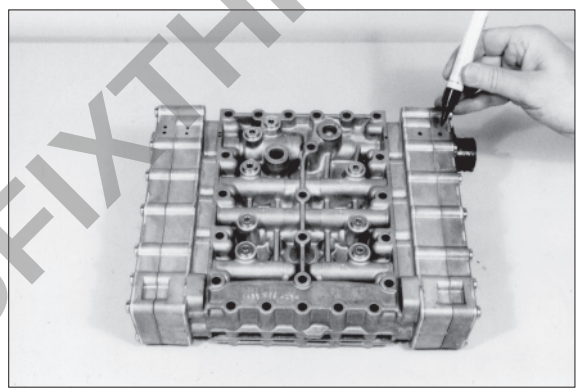
1) DISASSEMBLY

(1) Illustration on the right shows the complete control unit.



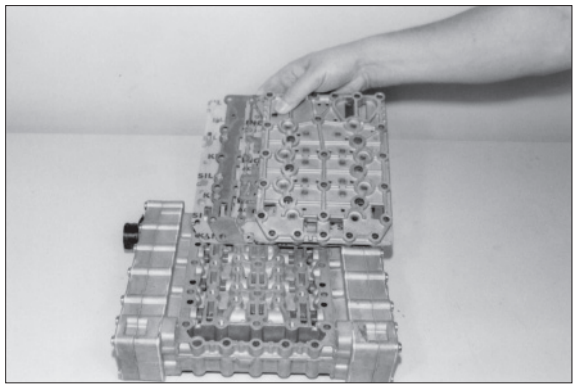
73073CV001

(2) Mark the installation position of the different covers, the housing and cable harness with the valve housing.



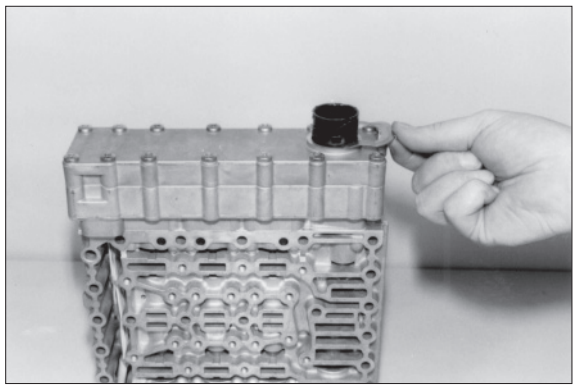
73073CV002

(3) Loosen socket head screws.
Separate duct plate, 1st gasket, intermediate plate and 2nd gasket from the valve housing.
Box spanner 5873 042 002



73073CV003

(4) Remove retaining clip.

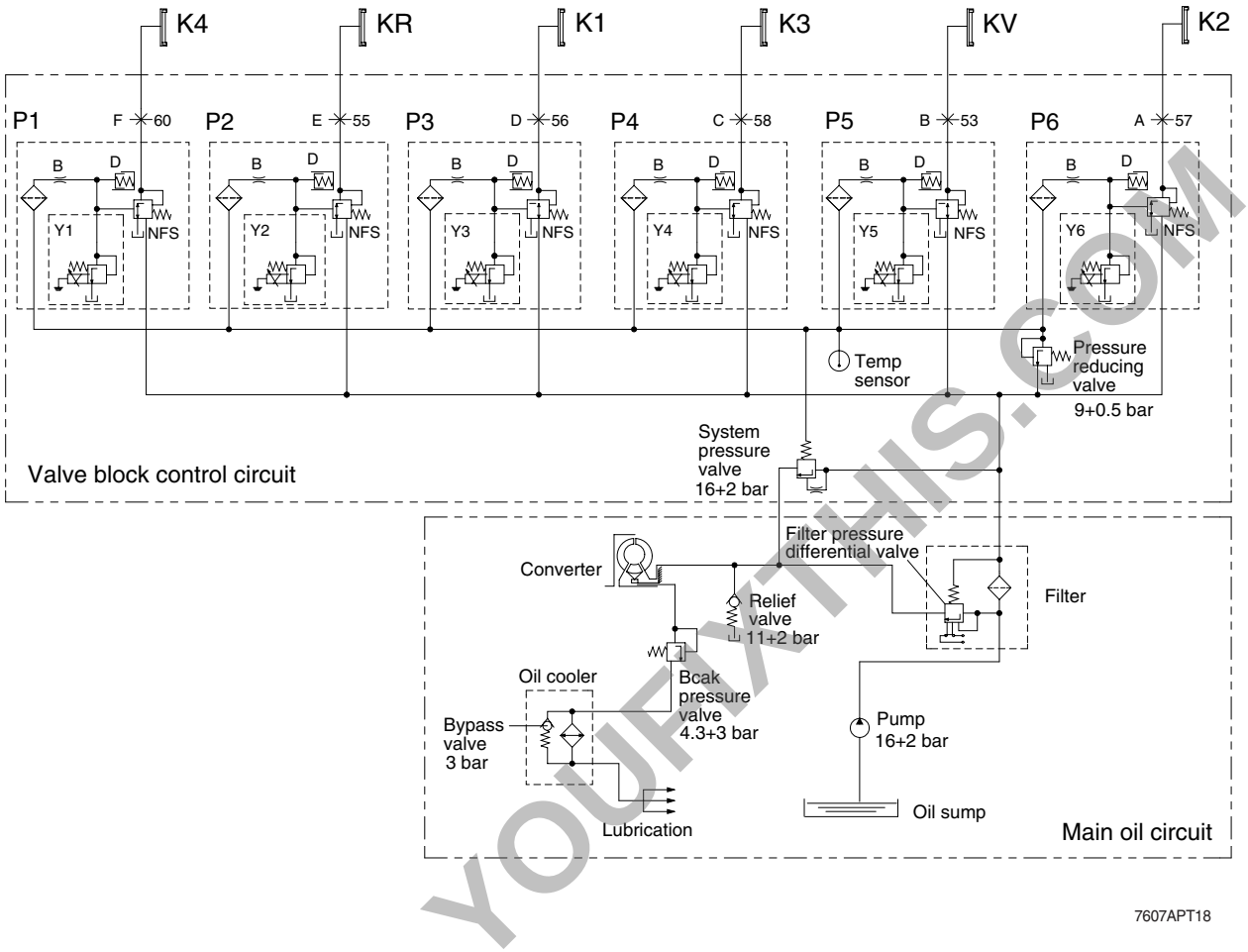


73073CV004

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HYDRAULIC CIRCUIT



7607APT18

NFS	Follow-on slide	P3	Proportional valve clutch K1
D	Vibration damper	P4	Proportional valve clutch K3
B	Orifice	P5	Proportional valve clutch KV
P1	Proportional valve clutch K4	P6	Proportional valve clutch K2
P2	Proportional valve clutch KR	Y1~Y6	Pressure regulator

Speed	Forward				Reverse			Neutral	Engaged clutch	Positions on the valve block	Current No. of the measuring points
	1	2	3	4	1	2	3				
Y1				X					K4	F	60
Y2					X	X	X		KR	E	55
Y3	X				X				K1	D	56
Y4			X	X			X		K3	C	58
Y5	X	X	X						KV	B	53
Y6		X				X			K2	A	57
Engaged clutch	K1,KV	KV,K2	K3,KV	K4,K3	KR,K1	KR,K2	KR, K3		-	-	-

X : Pressure regulator under voltage

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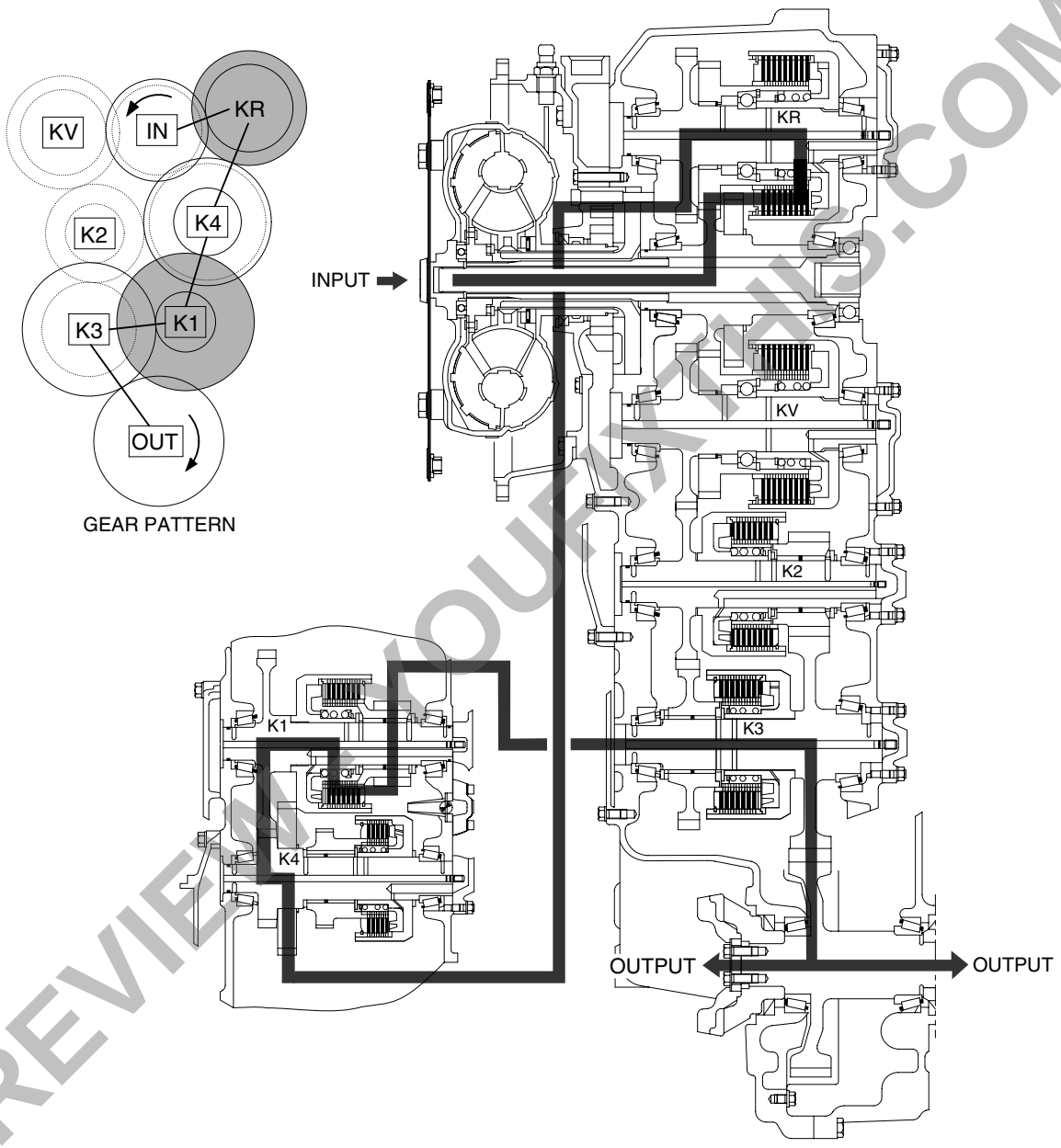
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(2) Reverse

① Reverse 1st

In 1st reverse, reverse clutch (KR) and 1st clutch (K1) are engaged.

Reverse clutch and 1st clutch are actuated by the hydraulic pressure applied to the clutch piston.



7577APT08 R1

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4. FAULT CODE

1) MACHINE FAULT CODE

HCESPN	FMI	Description
101	3	Hydraulic oil temperature sensor circuit - Voltage above normal, or shorted to high source (or open circuit)
	4	Hydraulic oil temperature sensor circuit - Voltage below normal, or shorted to low source
145	5	Engine cooling fan EPPR valve circuit - Current below normal, or open circuit
	6	Engine cooling fan EPPR valve bircuit - Current above normal
172	4	Boom up lever detent solenoid circuit - Voltage below normal, or shorted to low source (or open circuit)
	6	Boom up lever detent solenoid circuit - Current above normal
173	4	Boom down lever detent solenoid circuit - Voltage below normal, or shorted to low source (or open circuit)
	6	Boom down lever detent solenoid circuit - Current above normal
174	4	Bucket lever detent solenoid circuit - Voltage below normal, or shorted to low source (or open circuit)
	6	Bucket lever detent solenoid circuit - Current above normal
181	4	Engine cooling fan reverse solenoid circuit - Voltage below normal, or shorted to low source (or open circuit)
	6	Engine cooling fan reverse solenoid circuit - Current above normal
183	4	Engine cooling fan reverse driving status signal circuit - Voltage below normal, or shorted to low source (or open circuit)
	6	Engine cooling fan reverse driving status signal circuit - Current above normal
187	4	Emergency steering pump relay circuit - Voltage below normal, or shorted to low source (or open circuit)
	6	Emergency steering pump relay circuit – Current above normal
202	0	Steering main pump pressure sensor data above normal range (or open circuit)
	1	Steering main pump pressure sensor data below normal range
	2	Steering main pump pressure sensor data error
	4	Steering main pump pressure sensor circuit - Voltage below normal, or shorted to low source
203	0	Emergency steering pump pressure sensor data above normal range (or open circuit)
	1	Emergency steering pump pressure sensor data below normal range
	2	Emergency steering pump pressure sensor data error
	4	Emergency steering pump pressure sensor circuit - Voltage below normal, or shorted to low source
204	0	Boom cylinder pressure sensor data above normal range (or open circuit)
	1	Boom cylinder pressure sensor data below normal range
	2	Boom cylinder pressure sensor data error
	4	Boom cylinder pressure sensor circuit - Voltage below normal, or shorted to low source
205	0	Bucket cylinder pressure sensor data above normal range (or open circuit)
	1	Bucket cylinder pressure sensor data below normal tange
	2	Bucket cylinder pressure sensor data error
	4	Bucket cylinder pressure sensor circuit - Voltage below normal, or shorted to low source

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5. TIGHTENING TORQUE OF MAJOR COMPONENT

No.	Descriptions		Bolt size	Torque	
				kgf · m	lbf · ft
1	Engine	Engine mounting bolt, nut (rubber, 2EA)	M20×2.5	57.9 ± 8.7	419 ± 63
2		Engine mounting bolt (bracket, 8EA)	M12×1.75	10.7 ± 1.6	77.4 ± 11.6
3		Engine mounting bolt (T/C housing,12EA)	M10×1.5	4.6 ± 0.9	33.3 ± 6.5
4		Engine mounting bolt (flywheel, 4EA)	M10×1.5	4.5 ± 0.6	32.5 ± 4.3
5		Radiator mounting bolt	M16×2.0	29.7 ± 4.5	215 ± 32.5
6		Fuel tank mounting bolt, nut	M16×2.0	29.7 ± 4.5	215 ± 32.5
7	Hydraulic system	Main pump housing mounting bolt	M16×2.0	29.7 ± 4.5	215 ± 32.5
8		Fan & Brake pump housing mounting bolt	M10×1.5	6.9 ± 1.4	50 ± 10.1
9		Main control valve mounting bolt	M12×1.75	12.8 ± 3.0	92.6 ± 21.7
10		Steering unit mounting bolt	M10×1.5	6.9 ± 1.4	50 ± 10.1
11		Stop valve	M10×1.5	6.9 ± 1.4	50 ± 10.1
12		Steering valve (EHPS) mounting bolt	M8×1.25	2.5 ± 0.5	18.1 ± 3.6
13		Cushion valve	M8×1.25	2.5 ± 0.5	18.1 ± 3.6
14		Brake valve mounting bolt	M8×1.25	2.5 ± 0.5	18.1 ± 3.6
15		Cut-off valve mounting bolt	M12×1.75	12.8 ± 3.0	92.6 ± 21.7
16		Remote control lever mounting bolt	M6×1.0	1.1 ± 0.2	8.0 ± 1.4
17		Safety valve	M10×1.5	6.9 ± 1.4	50 ± 10.1
18		Hydraulic oil tank mounting bolt	M16×2.0	29.7 ± 4.5	215 ± 32.5
19	Power train system	Transmission mounting bolt, nut (rubber, 2EA)	M24×3.0	100 ± 15	723 ± 108
20		Transmission mounting bolt (bracket, 6EA)	M20×2.5	46.3 ± 7.0	335 ± 50.6
21		Front axle mounting bolt, nut	M27×2.0	135 ± 15	976 ± 108
22		Rear axle support mounting bolt, nut	M36×3.0	308 ± 46.2	2227 ± 334
23		Tire mounting nut	M22×1.5	79 ± 2.5	571 ± 18.1
24		Drive shaft joint mounting bolt	1/2-20UNF	15 ± 2.0	108 ± 14.5
25	Others	Counterweight mounting bolt	M30×3.5	199 ± 30	1439 ± 216
26		Additional counterweight mounting bolt	M24×3.0	100 ± 15	723 ± 108
27		Operator's seat mounting bolt	M8×1.25	3.4 ± 0.8	24.6 ± 5
28		ROPS Cab mounting bolt (4EA)	M20×2.5	58 ± 8.7	419 ± 63

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2. TROUBLESHOOTING

1) TRANSMISSION

※ **Diagnose malfunction charts are arranged from most probable and simplest to verify, to least likely, more difficult to verify. Remember the following steps when troubleshooting a problem :**

Step 1. Operational check out procedure (See group 3 in section 1.)
Step 2. Operational checks (In this group.)
Step 3. Troubleshooting
Step 4. Tests and/or adjustments (See group 3.)

Problem	Cause	Remedy
Transmission slippage	Low oil level.	Add oil.
	Wrong oil grade.	Change oil.
	Restricted transmission pump suction screen.	Remove and clean screen.
	Leak in transmission control valve or gasket.	Remove valve and inspect gaskets.
	Low transmission pump flow due to worn pump.	Do transmission pump flow test.
	Weak or broken pressure regulating valve spring.	Do transmission system pressure test.
Error code on display	Something wrong in transmission.	Go to transmission error code group at page 3-32~3-51.

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Millimeters to inches

1mm = 0.03937in

	0	1	2	3	4	5	6	7	8	9
0		0.039	0.079	0.118	0.157	0.197	0.236	0.276	0.315	0.354
10	0.394	0.433	0.472	0.512	0.551	0.591	0.630	0.669	0.709	0.748
20	0.787	0.827	0.866	0.906	0.945	0.984	1.024	1.063	1.102	1.142
30	1.181	1.220	1.260	1.299	1.339	1.378	1.417	1.457	1.496	1.536
40	1.575	1.614	1.654	1.693	1.732	1.772	1.811	1.850	1.890	1.929
50	1.969	2.008	2.047	2.087	2.126	2.165	2.205	2.244	2.283	2.323
60	2.362	2.402	2.441	2.480	2.520	2.559	2.598	2.638	2.677	2.717
70	2.756	2.795	2.835	2.874	2.913	2.953	2.992	3.032	3.071	3.110
80	3.150	3.189	3.228	3.268	3.307	3.346	3.386	3.425	3.465	3.504
90	3.543	3.583	3.622	3.661	3.701	3.740	3.780	3.819	3.858	3.898

Kilogram to Pound

1kg = 2.2046lb

	0	1	2	3	4	5	6	7	8	9
0		2.20	4.41	6.61	8.82	11.02	13.23	15.43	17.64	19.84
10	22.05	24.25	26.46	28.66	30.86	33.07	35.27	37.48	39.68	41.89
20	44.09	46.30	48.50	50.71	51.91	55.12	57.32	59.5.	61.73	63.93
30	66.14	68.34	70.55	72.75	74.96	77.16	79.37	81.57	83.78	85.98
40	88.18	90.39	92.59	94.80	97.00	99.21	101.41	103.62	105.82	108.03
50	110.23	112.44	114.64	116.85	119.05	121.25	123.46	125.66	127.87	130.07
60	132.28	134.48	136.69	138.89	141.10	143.30	145.51	147.71	149.91	152.12
70	154.32	156.53	158.73	160.94	163.14	165.35	167.55	169.76	171.96	174.17
80	176.37	178.57	180.78	182.98	185.19	187.39	189.60	191.80	194.01	196.21
90	198.42	200.62	202.83	205.03	207.24	209.44	211.64	213.85	216.05	218.26

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7. Steering system checks

- Steering unit check ☐ ☐ _____
- Steering system leakage check ☐ ☐ _____
- Steering valve (EHPS)
  Low check pressure ☐ ☐ _____
  High check pressure ☐ ☐ _____

8. Accessory checks

- Operating lights check ☐ ☐ _____
- Work light check ☐ ☐ _____
- Brake light check ☐ ☐ _____
- Cab light check ☐ ☐ _____
- Horn circuit check ☐ ☐ _____
- Windshield washer and wiper check ☐ ☐ _____
- Defroster blower check ☐ ☐ _____
- Heater/Air conditioner blower check ☐ ☐ _____
- Heater functional check ☐ ☐ _____
- Air conditioner functional check ☐ ☐ _____
- Start aid system check ☐ ☐ _____

9. Cab components and vandal protection checks

- Cab door latch check ☐ ☐ _____
- Cab door hold open latch check ☐ ☐ _____
- Cab door release button check ☐ ☐ _____
- Cab door lock check ☐ ☐ _____
- Cab door window check ☐ ☐ _____
- Cab window latch check ☐ ☐ _____
- Steering column adjustment check ☐ ☐ _____
- Seat and seat belt check ☐ ☐ _____
- Air intake filter door check ☐ ☐ _____
- Engine side panels check ☐ ☐ _____
- Radiator cap access door check ☐ ☐ _____
- Frame locking bar check ☐ ☐ _____
- Boom lock check ☐ ☐ _____
- Service decal check ☐ ☐ _____

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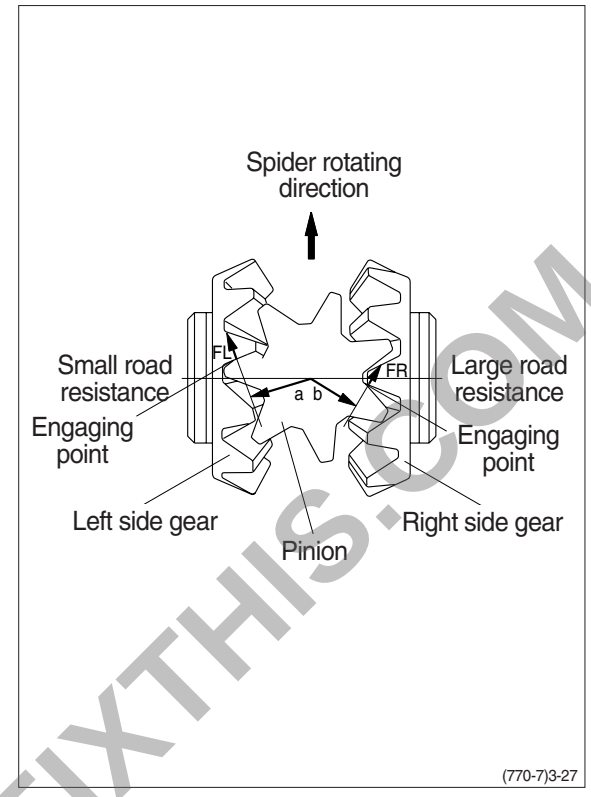
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Fault code J1939 SPN J1939 FMI	Reason	Effect (only when fault code is active)
145 110 4	Engine Coolant Temperature 1 Sensor Circuit - Voltage Below Normal, or Shorted to Low Source. Low signal voltage detected at engine coolant temperature circuit.	Possible white smoke. Fan will stay ON if controlled by ECM. No engine protection for engine coolant temperature.
146 110 16	Engine Coolant Temperature - Data Valid but Above Normal Operational Range - Moderately Severe Level. Engine coolant temperature signal indicates engine coolant temperature is above engine protection warning limit.	Progressive power derate increasing in severity from time of alert.
147 91 1	Accelerator Pedal or Lever Position 1 Sensor Circuit Frequency - Data Valid but Below Normal Operational Range - Most Severe Level. A frequency of less than 100 Hz has been detected at the frequency throttle input to the ECM.	Severe derate in power output of the engine. Limp home power only.
148 91 0	Accelerator Pedal or Lever Position Sensor 1 - Data Valid but Above Normal Operational Range - Most Severe Level. A frequency of more than 1500 Hz has been detected at the frequency throttle input to the ECM.	Severe derate in power output of the engine. Limp home power only.
151 110 0	Engine Coolant Temperature - Data Valid but Above Normal Operational Range - Most Severe Level. Engine coolant temperature signal indicates engine coolant temperature above engine protection critical limit.	Progressive power derate increasing in severity from time of alert. If Engine Protection Shutdown feature is enabled, engine will shut down 30 seconds after Red Stop Lamp starts flashing.
153 105 3	Intake Manifold 1 Temperature Sensor Circuit - Voltage Above Normal, or Shorted to High Source. High signal voltage detected at intake manifold air temperature circuit.	Possible white smoke. Fan will stay ON if controlled by ECM. No engine protection for intake manifold air temperature.
154 105 4	Intake Manifold 1 Temperature Sensor Circuit - Voltage Below Normal, or Shorted to Low Source. Low signal voltage detected at intake manifold air temperature circuit.	Possible white smoke. Fan will stay ON if controlled by ECM. No engine protection for intake manifold air temperature.
155 105 0	Intake Manifold 1 Temperature - Data Valid but Above Normal Operational Range - Most Severe Level. Intake manifold air temperature signal indicates intake manifold air temperature above engine protection critical limit.	Progressive power derate increasing in severity from time of alert. If Engine Protection Shutdown feature is enabled, engine will shut down 30 seconds after Red Stop Lamp starts flashing.
187 520195 4	Sensor Supply 2 Circuit - Voltage Below Normal, or Shorted to Low Source. Low voltage detected at the sensor supply number 2 circuit.	Engine power derate.
195 111 3	Coolant Level Sensor 1 Circuit - Voltage Above Normal, or Shorted to High Source. High signal voltage detected at engine coolant level circuit.	None on performance.
196 111 4	Coolant Level Sensor 1 Circuit - Voltage Below Normal, or Shorted to Low Source. Low signal voltage detected at engine coolant level circuit.	None on performance.
197 111 18	Coolant Level - Data Valid but Below Normal Operational Range - Moderately Severe Level. Low coolant level has been detected.	None on performance.
221 108 3	Barometric Pressure Sensor Circuit - Voltage Above Normal, or Shorted to High Source. High signal voltage detected at barometric pressure circuit.	Engine power derate.

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② When traveling on soft ground
(Resistance from road surface to left and right tires is different)
If the road resistance to the left wheel is smaller, the left side gear tends to rotate forward, and this rotation changes the engaging points between the side gears and pinion. As a result, the distances involving the engaging points becomes a>b. The pinion now is balanced as FL×a=FR×b, where FL>FR. The right side gear is driven with a greater force than the left side gear. The torque can be increased by up to about 30% for either side gear.
The pinion therefore does not run idle and driving power is transmitted to both side gears until the difference between road resistance to the right and left wheels reaches about 30%.



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④ Separate plate carrier from the shaft.
Three leg puller 5870 971 003



75773TM098

⑤ Squeeze snap ring out and remove plate pack.



75773TM099

⑥ Preload compression spring, squeeze snap ring out and remove components.
Assembly aid 5870 345 088



75773TM100

⑦ Lift piston by means of compressed air out of the cylinder bore and remove it.

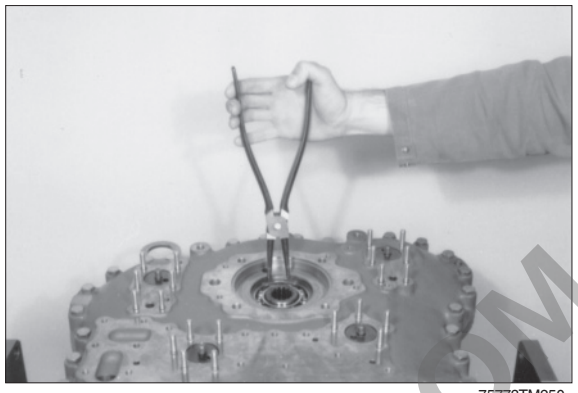


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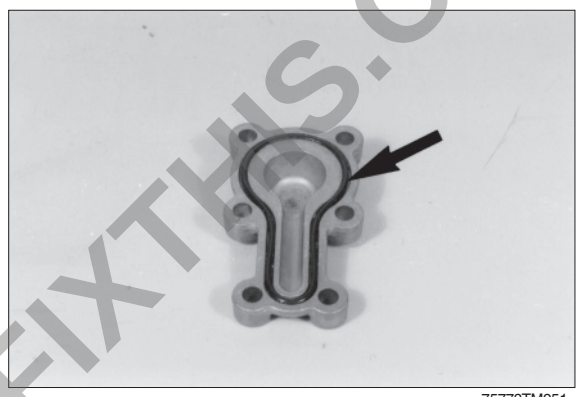
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③ Fix pump shaft by means of circlip.



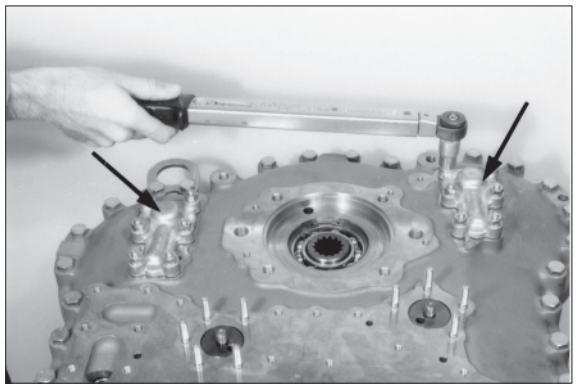
75773TM250

④ Insert O-ring (arrow) into the annular groove of the oil feed covers.



75773TM251

⑤ Fasten both covers (arrows) by means of hexagon nuts (use plain washers).
· Torque limit : 2.3 kgf · m (17.0 lbf · ft)

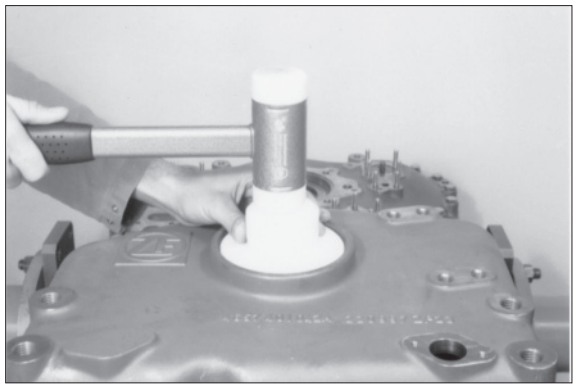


75773TM252

(9) Install output flanges

① Install shaft seal with the sealing lip facing the oil chamber.

※ At the use of the prescribed driver, the exact installation position is obtained.
Wet rubber coated outer diameter with spirit.
Grease sealing lip.
Driver 5870 048 213



75773TM255

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High-pressure test :

Increase test pressure up to p = 100_{-10} bar and close connection to HP-pump by means of shut-off valve.
During a 5 min. testing time a pressure drop of max. 2% (2 bar) is allowed.

⚠ **If the maximum pressure of 100 bar is exceeded, there will be an excessive piston adjustment and a repeated disassembly of the brake or the adjusting is required to reset the gripping rings to the adjusting dimension.**

Low-pressure test :
Reduce test pressure to p = 5 bar and close the shut-off valve again.
During a 5 min. testing time a pressure drop is not allowed.

※ Special tool

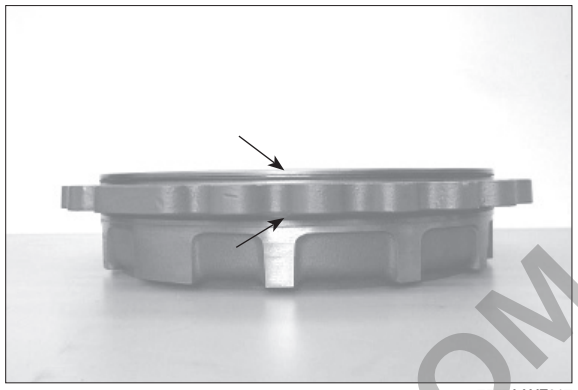
HP-Pump	5870 287 007
Mini-measuring hub (9/16"- 18UNF)	5870 950 115

※ Prior to putting the axle into operation, fill in the oil acc. to the lubrication instructions.

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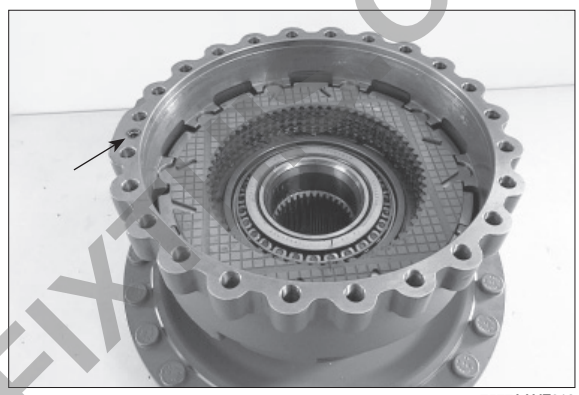
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(16) Remove O-rings (see arrows) from the annular grooves of the ring gear.



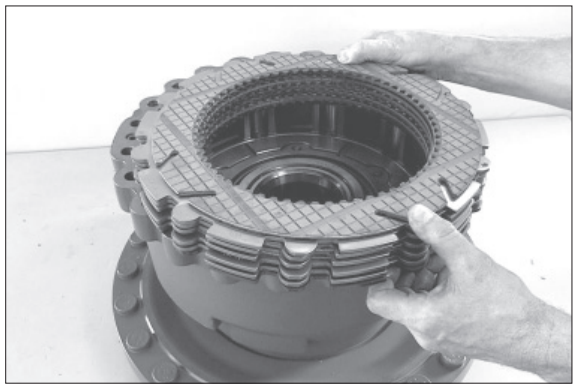
7577AAXF017

(17) Remove O-ring (see arrow) from the recess of the brake housing.



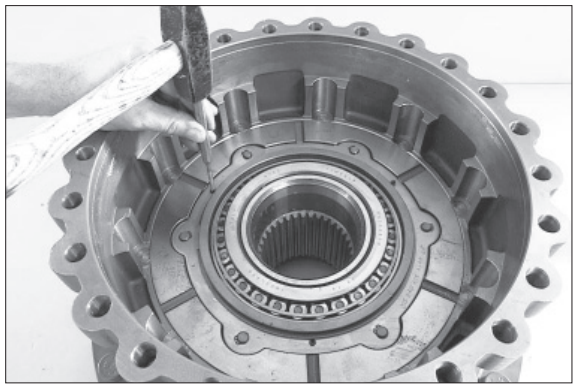
7577AAXF018

(18) Take the disc pack out of the brake housing.



7577AAXF019

(19) Install slotted pins (6EA) in the support shim until they are flush-mounted.



7577AAXF020

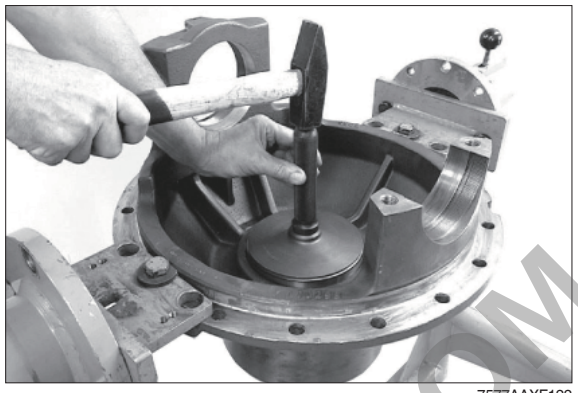
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⑥ Undercool bearing outer ring and insert it into the bearing bore until contact.

※ Special tool

Driver	5870 058 060
Handle	5870 260 002



7577AAXF122

⑦ Undercool bearing outer ring on the input flange side and insert it until contact.

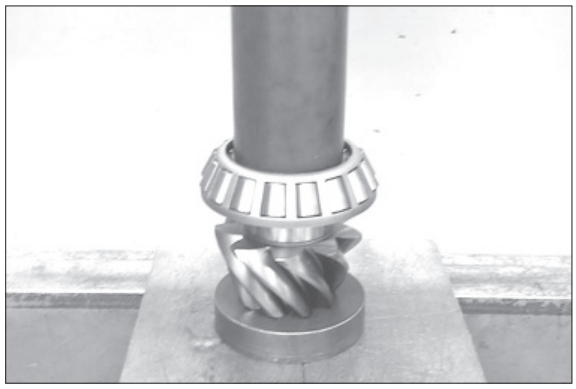
※ Special tool

Driver	5870 058 087
Handle	5870 260 002



7577AAXF123

⑧ Press bearing inner ring on the drive pinion until contact.

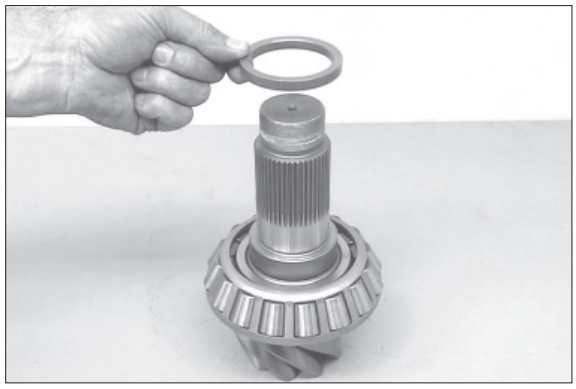


7577AAXF124

Adjust rolling moment of drive pinion bearing 0.15 ~ 0.31kgf · m (figure 7577AAXF125~133) :

⑨ Assemble spacer ring (e.g. s = 8.70 mm).

※ As per experience the required rolling moment is obtained by use of the spacer ring (e.g. s = 8.70 mm) available at disassembly.
However, a later checking of the rolling moment is imperative.



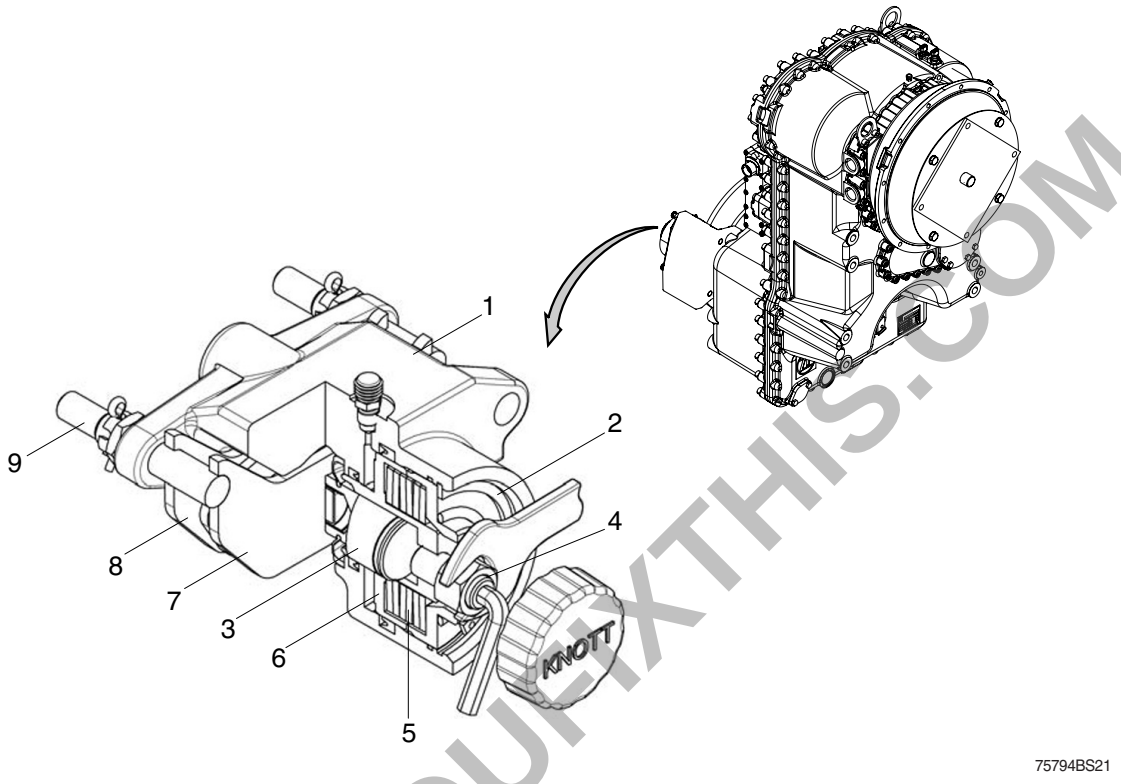
7577AAXF125

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8. PARKING BRAKE SYSTEM

1) STRUCTURE



1	Housing	4	Adjust screw	7	Lining pad
2	Pressure ring	5	Bank of cup springs	8	Lining pad
3	Thrust bolt	6	Piston	9	Gliding bolt

2) OPERATION

The two identical brake pads and slide freely on the guide bolt, which is fastened in the housing. The guide bolts are guided in an additional brake anchor plate which in turn is screwed onto the vehicle, i.e. its axle.

On actuation, the brake generates a clamping force at the brake lining pads, which cause a tangential force/braking moment to be generated at the brake disk, the extent of which depends on the coefficients of friction generated by the linings.

The clamping force is generated by the bank of cup springs, during which the piston is moved together with the adjusting screw, the thrust bolt and the brake pad towards the brake disk.

When the brake pad comes into contact with the brake disk, the reaction force shifts the housing onto the guide bolts until the brake pad is also pressed against the brake disk.

The brake is released by complete pre-tensioning of the bank of cup springs. During this process, through application of the necessary release pressure after overcoming the cup spring force, the piston must move back until it comes to rest against the pressure ring.

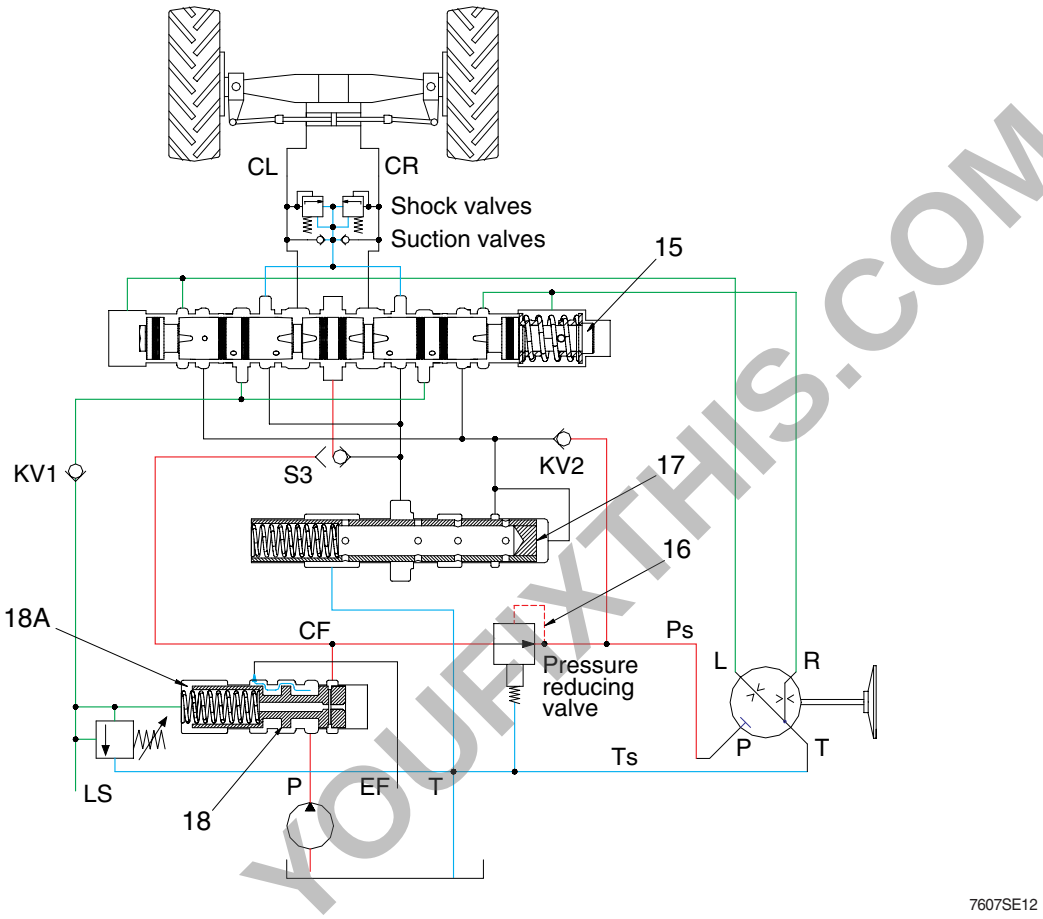
The clamping force diminishes with wear of the brake lining and brake disk. The brake must be adjusted at the latest at the times indicated by the adjusting specification followings.

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2) OPERATION

(1) Neutral



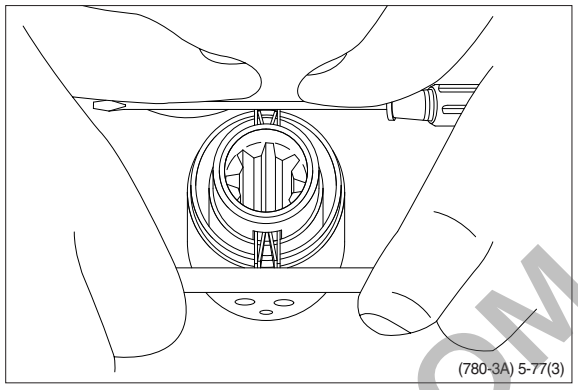
7607SE12

- In neutral position, the oil will pass from the pump across the integrated priority valve (18) in the steering valve for discharge through the EF port. When the steering unit is in neutral, flow through it is blocked and all flow through the priority valve (18) in steering valve is directed out the EF port and passed to the main control valve.
- When the engine is turned off, the priority valve spool (18) is pushed to the right by the spring. The passage to the EF port is blocked while the passage to the CF port is open.
- When the machine is started, EF port of the steering valve may be connected to the working hydraulic. Maximum pressure on the EF port = 250 bar.
- The operating pressure in the loader system has not effected on the operation of the priority valve(18) of steering valve. Independently of operation of the loader actuated in relief, the priority valve(18) will not shift until the machine is steered.
- A part of flow through the priority valve spool (18) will flow to P port of steering unit through pressure reducing valve. Also flow as pilot signal of steering through the priority valve spool (18) passes from the P port through the dynamic orifice and into the LS line. It flows to the tank through the LS orifice in main spool.
- In neutral position, the main spool will be in its center position. This means that knocks and impacts from the cylinder are not transmitted to the steering unit. The steering valve is thus of the non-reaction type.

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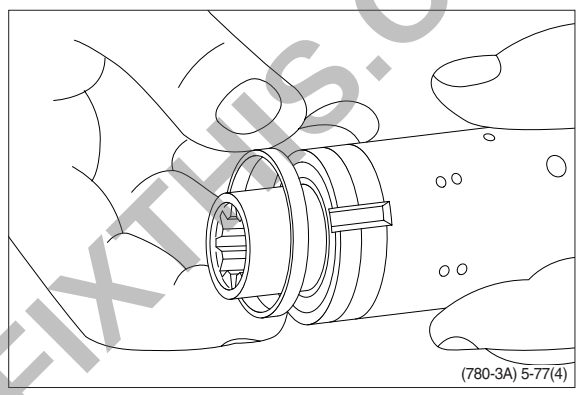
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(5) Line up the springs and center them.

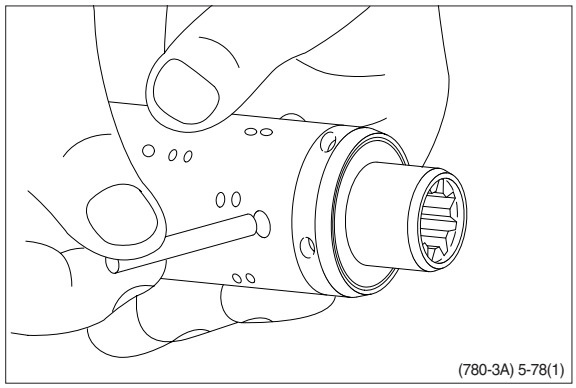

(780-3A) 5-77(3)

(6) Guide the ring down over the sleeve.

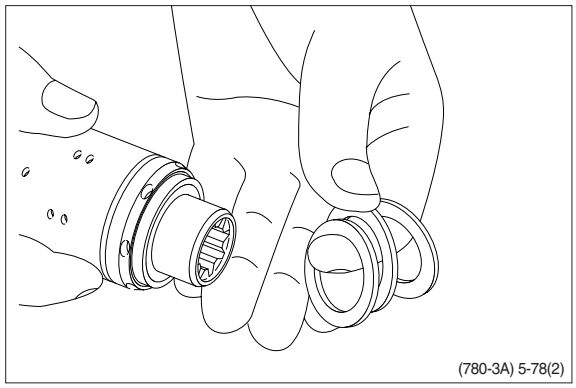
※ The ring should be able to move-free of the springs.


(780-3A) 5-77(4)

(7) Fit the cross pin into the spool / sleeve.


(780-3A) 5-78(1)

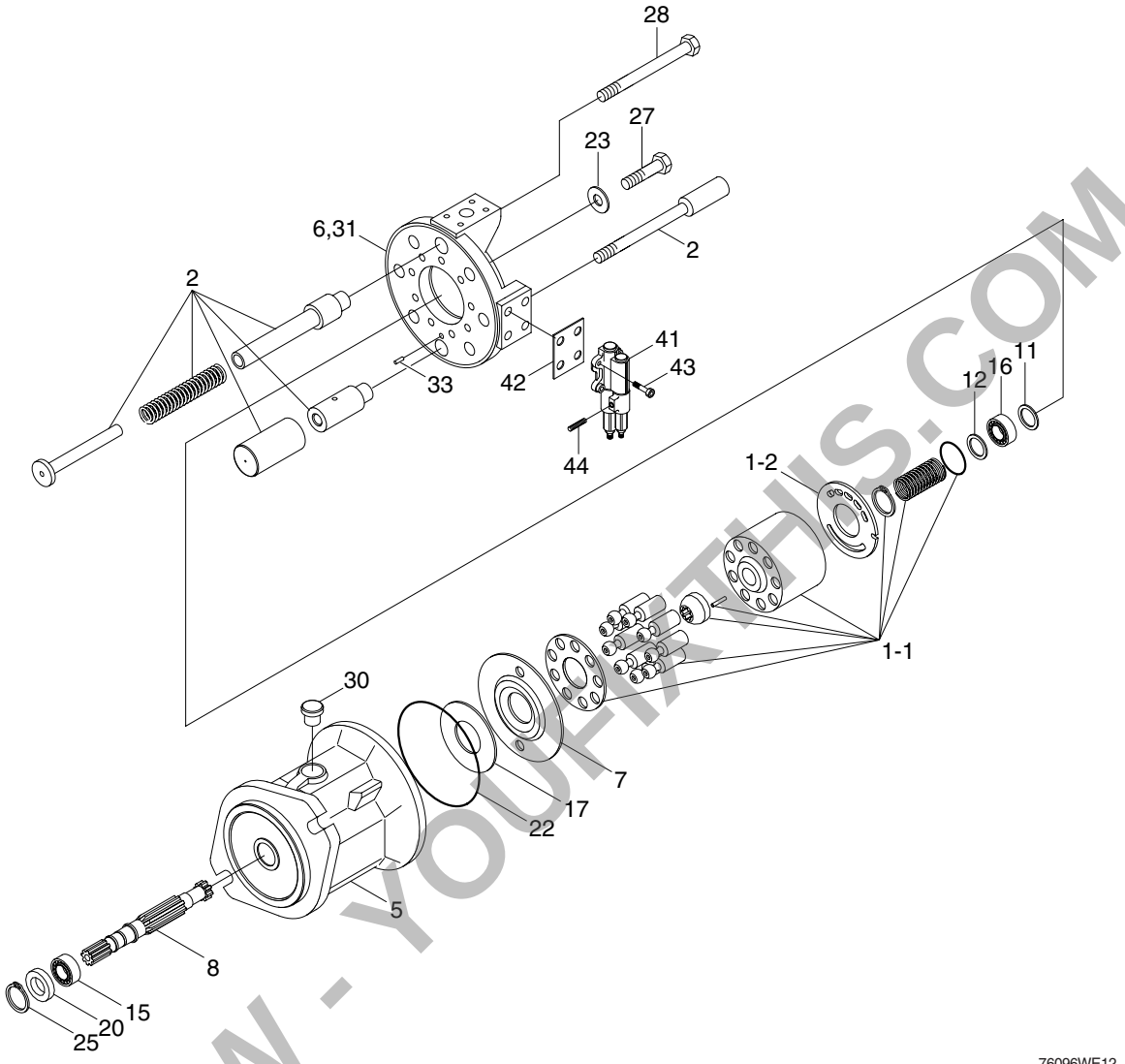
(8) Fit bearing races and needle bearing.
(See the next page)


(780-3A) 5-78(2)

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· **MAIN PUMP** (2/2, LOADER)

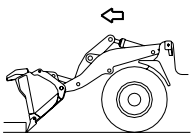
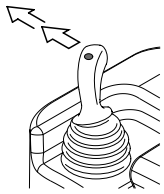
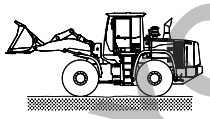
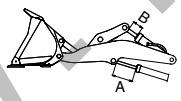


76096WE12

1	Rotary group	12	Adjustment shim	28	Locking screw
1-1	High speed rotary group	15	Taper roller bearing	30	Locking screw
1-2	Control plate	16	Taper roller bearing	31	Double break-off pin
2	Adjusting piece	17	Bearing liner	33	Cylinder pin
5	Pump housing	20	Shaft seal ring	41	Control valve
6	Port plate	22	O-ring	42	Gasket
7	Swash plate	23	O-ring	43	Socket screw
8	Drive shaft	25	Retaining ring	44	Locking screw
11	Adjustment shim	27	Socket screw		

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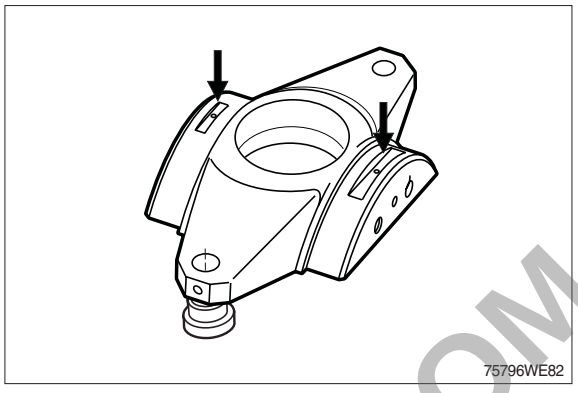
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Item	Description	Service action
Bucket rollback circuit relief valve check	 Position bucket at a 45˚ angle against an immovable object. Engage transmission in 3rd speed forward. **LOOK** : Bucket angle must not change.	**OK** Check complete. **NOT OK** Replace boom lower check valve.
Bucket dump circuit relief valve low pressure check	 Raise front of machine which bucket at 45˚ angle. Backdrag with bucket while observing bucket angle. **LOOK** : Bucket must not rollback	**OK** Go to next check. **NOT OK** Do loader system and circuit relief valve test at page 6-57.
Pilot control valve float check Run engine at low idle.	  With the bucket partially dumped, lower boom to raise front of machine. Push control lever to the float detent position and release lever. **LOOK** : Front of machine lower to the ground and valve must remain in float position when lever is released.	**OK** Check complete. **NOT OK** Do pilot control valve pressure test in group 3.
Boom cylinder and bucket cylinder drift check Heat hydraulic oil to operating temperature.	  Set the boom and bucket horizontal, then stop the engine. Stop the engine, wait for 5 minutes, then start measuring. Measure the amount the lift and dump cylinder rods retract during 15 minutes. (unloaded bucket) A : Retraction of boom cylinder rod B : Retraction of bucket cylinder rod Boom cylinder must drift less than 20 mm Bucket cylinder must drift less than 30 mm	**OK** Check complete. **NOT OK** Go to next check.

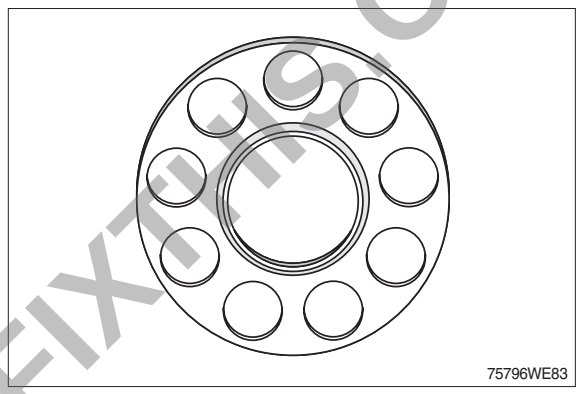
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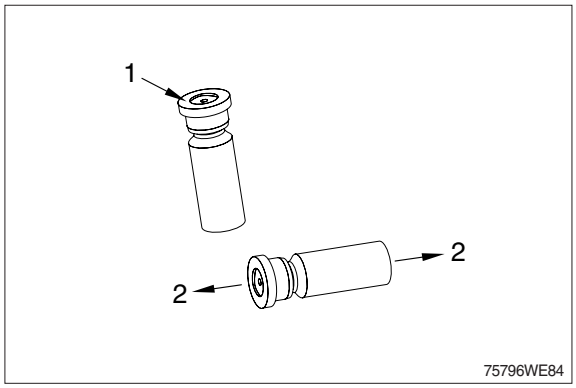
(4) Check :
Bearing surfaces.



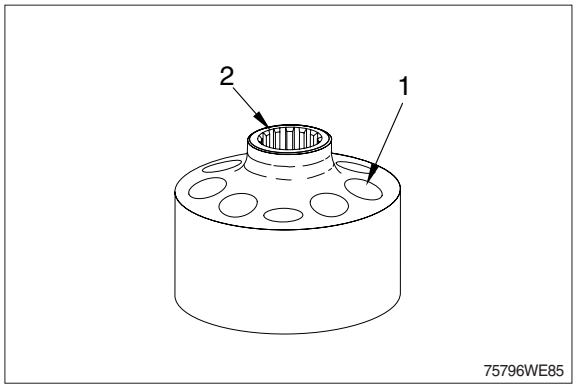
(5) Check :
That the retaining plate is free of grooves and that there is no wear in the slipper pad area.



(6) Check :
Check to see that there are no scratches or metal deposits on the sliding surface (1) and that there is no axial play (2) (Pistons must only be replaced as a set).



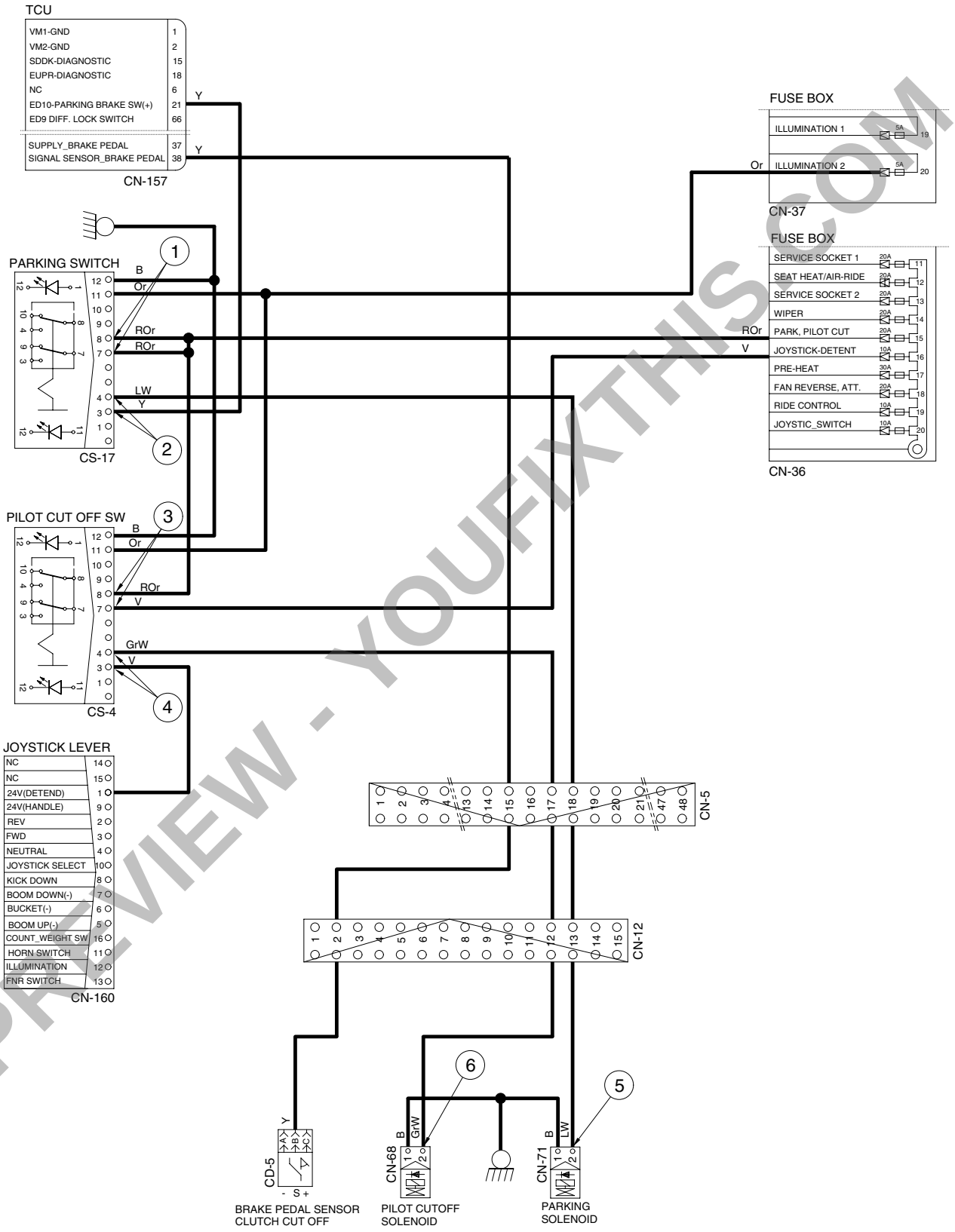
(7) Check :
1 Cylinder bores
2 Splines



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ELECTRIC PARKING, PILOT CUT OFF CIRCUIT

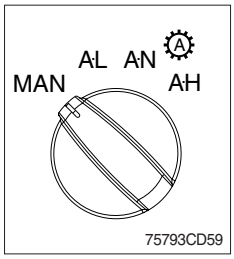


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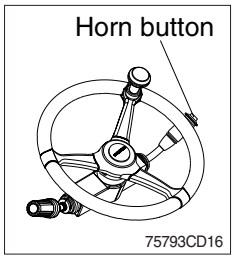
20) TRANSMISSION SHIFT MODE SWITCH



(1) Four modes are available for operator's preference and job condition.

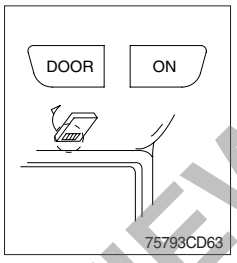
- MAN (Manual) : Machine is operated by selected gear on lever.
- AL (Auto Light) : Automatic shifting point is fast for long-distance transportation and fuel efficiency.
- AN (Auto Normal) : Automatic shifting point is normal without automatic kick-down to 1st gear for general digging and loading operation.
- AH (Auto Heavy) : Automatic shifting point is normal with automatic kick-down to 1st gear for more powerful operation.

21) HORN BUTTON



(1) If you press the button on the top of the multifunction switch, the horn will sound.

22) CAB LAMP SWITCH



(1) This switch turns ON the cab room lamp.

① DOOR

The lamp comes ON when the door is opened.
When the door is closed the lamp is OFF.

② ON

This switch is used to turn the lamp ON or OFF.

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