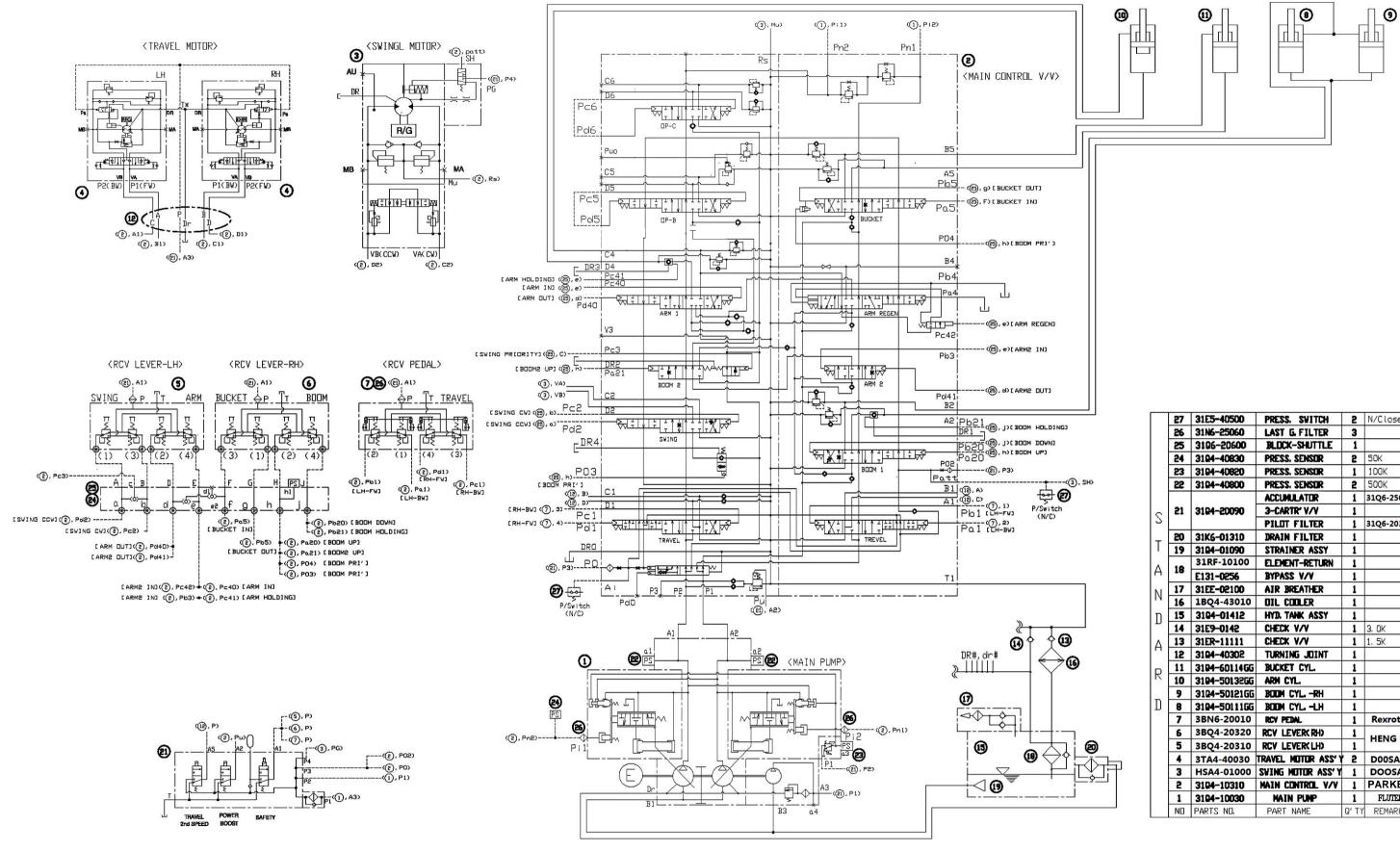
Group	1	Hydraulic Circuit	3-1
Group	2	Main Circuit	3-2
Group	3	Pilot Circuit	3-5

#### **GROUP 1 HYDRAULIC CIRCUIT**



# SECTION 3 HYDRAULIC SYSTEM

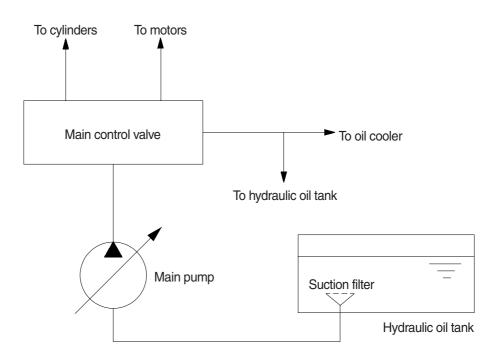
	27	31E5-40500	PRESS. SWITCH	5	N/Closed
	26	31N6-25060	LAST G. FILTER	3	
	25	3106-20600	BLOCK-SHUTTLE	1	
	24	3104-40830	PRESS. SENSOR	5	50K
	23	3104-40820	PRESS. SENSOR	1	100K
	22	3104-40800	PRESS. SENSOR	5	500K
		3194-20090	ACCUMULATOR	1	31Q6-25010
S	21		3-CARTR' V/V	1	•
			PILOT FILTER	1	31Q6-20340
	20	31K6-01310	DRAIN FILTER	1	
Т	19	3104-01090	STRAINER ASSY	1	
^	18	31RF-10100	ELEMENT-RETURN	1	
А	10	E131-0256	BYPASS V/V	1	
Ν	17	31EE-02100	AIR BREATHER	1	
14	16	1BQ4-43010	OIL COOLER	1	
п	15	3104-01412	HYD. TANK ASSY	1	
Ъ	14	31E9-0142	CHECK V/V	1	3. OK
А	13	31ER-11111	CHECK V/V	1	1. 5K
л	12	3104-40302	TURNING JUINT	1	
R	11	3194-60114GG	BUCKET CYL.	1	3 
	10	3194-501326G	ARH CYL.	1	
	9	3104-50121GG	BOIDM CYLRH	1	
D	8	3104-501116G	BOOM CYLLH	1	
	7	3BN6-20010	RCV PEDAL	1	Rexroth
	6	3BQ4-20320	RCV LEVER(RH)	1	
	5	3BQ4-20310	RCV LEVER(LH)	1	
	4	3TA4-40030	TRAVEL MUTUR ASS' 1	2	DOOSAN
	3	HSA4-01000	SVING MOTOR ASS' Y	1	DOOSAN
	5	3104-10310	MAIN CONTROL V/V	1	PARKER
	1	3194-10030	MAIN PUMP	1	FLUTEK
	ND	Parts No.	PART NAME	Q' TY	REMARK

# **GROUP 2 MAIN CIRCUIT**

The main hydraulic circuit consists of suction circuit, delivery circuit, return circuit and drain circuit. The hydraulic system consists of one main pump, one control valve, one swing motor, four cylinders and two travel motors.

The swash plate type variable displacement tandem axial piston pump is used as the main pump and is driven by the engine at ratio 1.0 of engine speed.

## **1. SUCTION AND DELIVERY CIRCUIT**



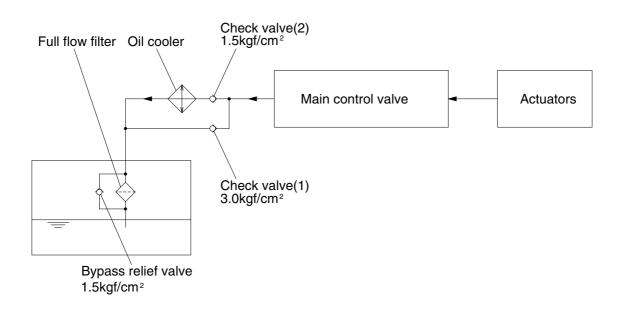
The pumps receive oil from the hydraulic tank through a suction filter. The discharged oil from the pump flows into the control valve and goes out the tank ports.

The oil discharged from the main pump flows to the actuators through the control valve.

The control valve controls the hydraulic functions.

The return oil from the actuators flows to the hydraulic tank through the control valve and the oil cooler.

## 2. RETURN CIRCUIT



All oil from each actuator returns to the hydraulic tank through the control valve.

The bypass check valves are provided in the return circuit.

The setting pressure of bypass check valves are 1.5 kgf/cm<sup>2</sup> (21psi) and 3.0 kgf/cm<sup>2</sup> (43psi). Usually, oil returns to the hydraulic tank from the left side of control valve through oil cooler.

When oil temperature is low, viscosity becomes higher and flow resistance increases when passing through the oil cooler. The oil pressure exceeds 3.0 kgf/cm<sup>2</sup> (43psi), the oil returns directly to the hydraulic tank, resulting in the oil temperature being raised quickly at an appropriate level.

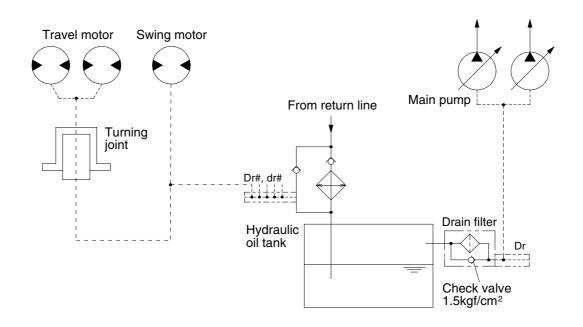
When the oil cooler is clogged, the oil returns directly to the hydraulic tank through bypass check valve (1).

The full-flow filter and bypass relief valve are provided in the hydraulic tank.

The oil from right and left side of control valve is combined and filtered by the return filter. A bypass relief valve is provided in the full-flow filter.

When the filter element is clogged, the bypass relief valve opens at 1.5 kgf/cm<sup>2</sup> (21psi) differential pressure.

### **3. DRAIN CIRCUIT**



Besides internal leaks from the motors and main pump, the oil for lubrication circulates. These oil have to be fed to the hydraulic tank passing through drain filter.

When the drain oil pressure exceed 1.5 kgf/cm<sup>2</sup> (21psi), the oil returns to the hydraulic tank directly.

#### 1) TRAVEL MOTOR DRAIN CIRCUIT

Oil leaking from the right and left travel motors comes out of the drain ports provided in the respective motor casing and join with each other. These oils pass through the turning joint and return to the hydraulic tank after being filtered by drain filter.

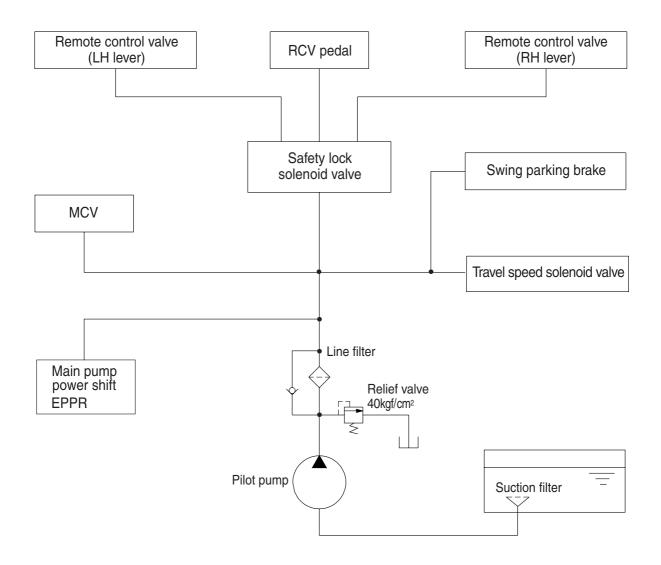
#### 2) SWING MOTOR DRAIN CIRCUIT

Oil leaking from the swing motor come out and return to the hydraulic tank passing through a drain filter.

#### 3) MAIN PUMP DRAIN CIRCUIT

Oil leaking from main pump come out and return to the hydraulic tank passing through drain filter.

## **GROUP 3 PILOT CIRCUIT**



The pilot circuit consists of suction circuit, delivery circuit and return circuit.

The pilot pump is provided with relief valve, receives the oil from the hydraulic tank through the suction filter.

The discharged oil from the pilot pump flows to the remote control valve through line filter, EPPR valve, solenoid valve assemblies, swing parking brake, main control valve and safety lock solenoid valve.