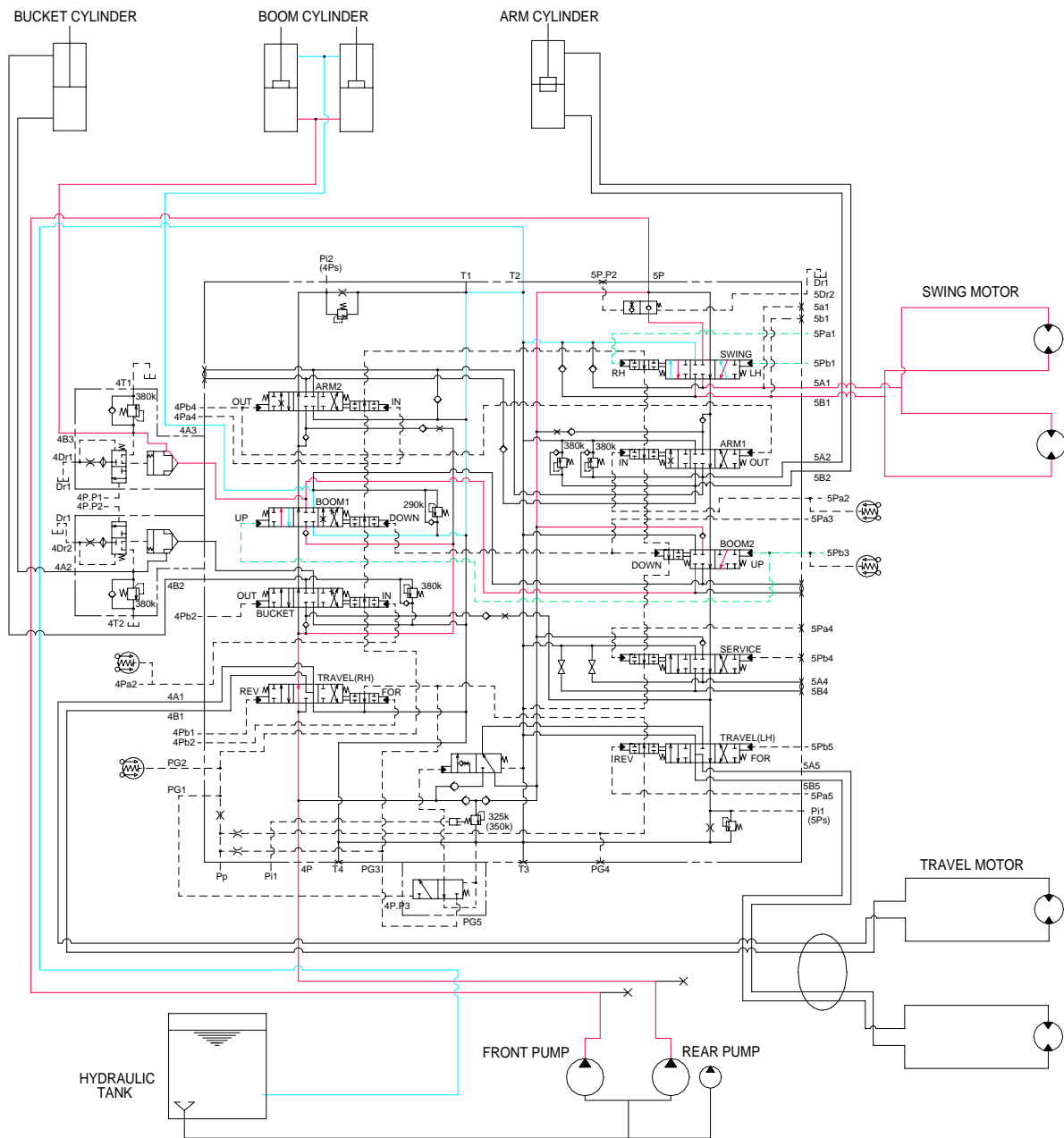


2. COMBINED SWING AND BOOM RAISE OPERATION



When the swing and boom raise functions are operated, simultaneously the swing spool and boom spools in the main control valve are moved to the functional position by the pilot oil pressure from the remote control valve.

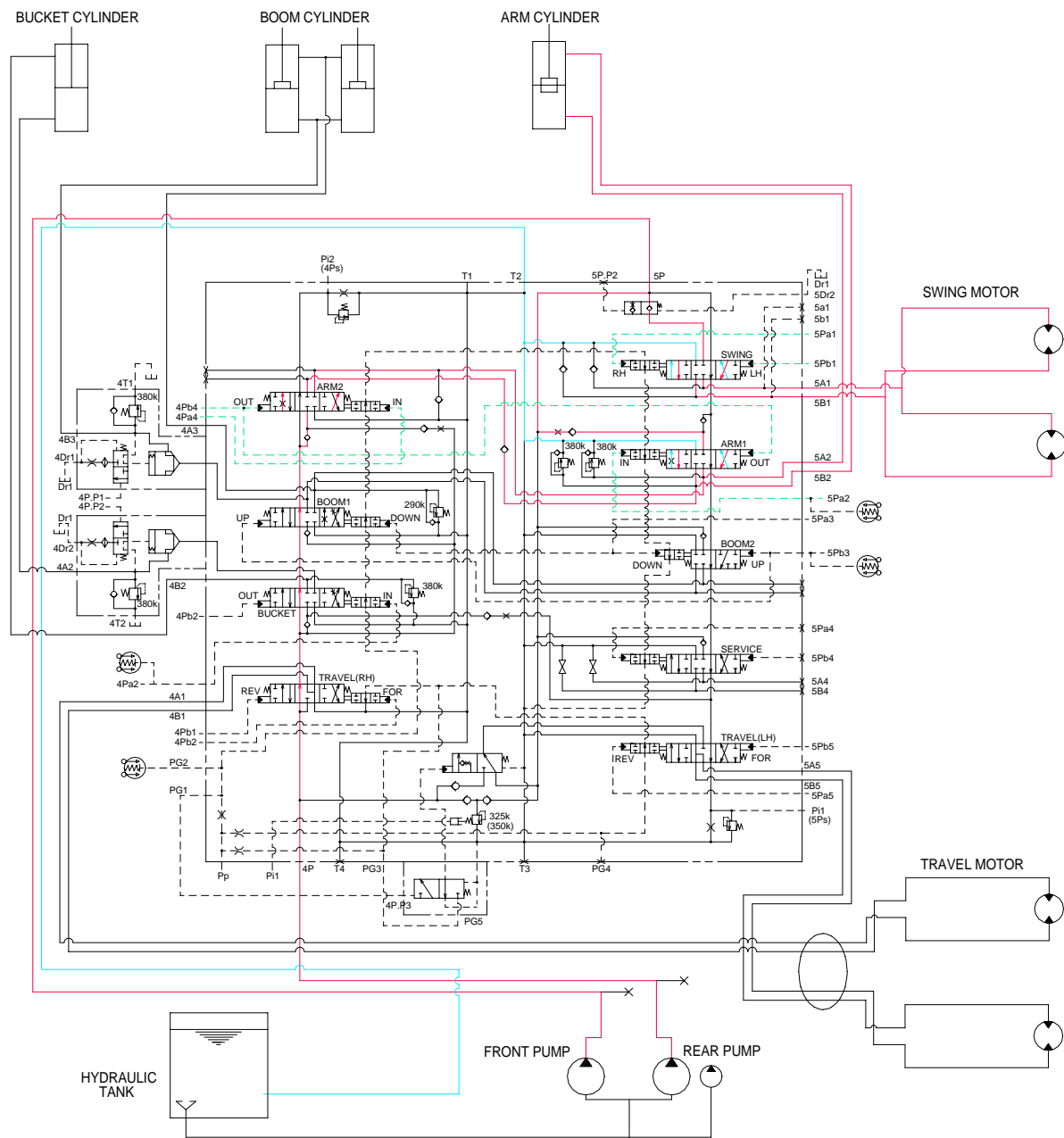
The oil from the front pump flows into the swing motors through swing spool.

At the same time, the pressure in the boom circuit can be high while the swing pressure is low, therefore the oil flows from front pump to boom cylinders through boom confluence passage.

The oil from the rear pump flows into the boom cylinders through the boom 1 spool in the left control valve.

The superstructure swings and the boom is operated.

3. COMBINED SWING AND ARM OPERATION



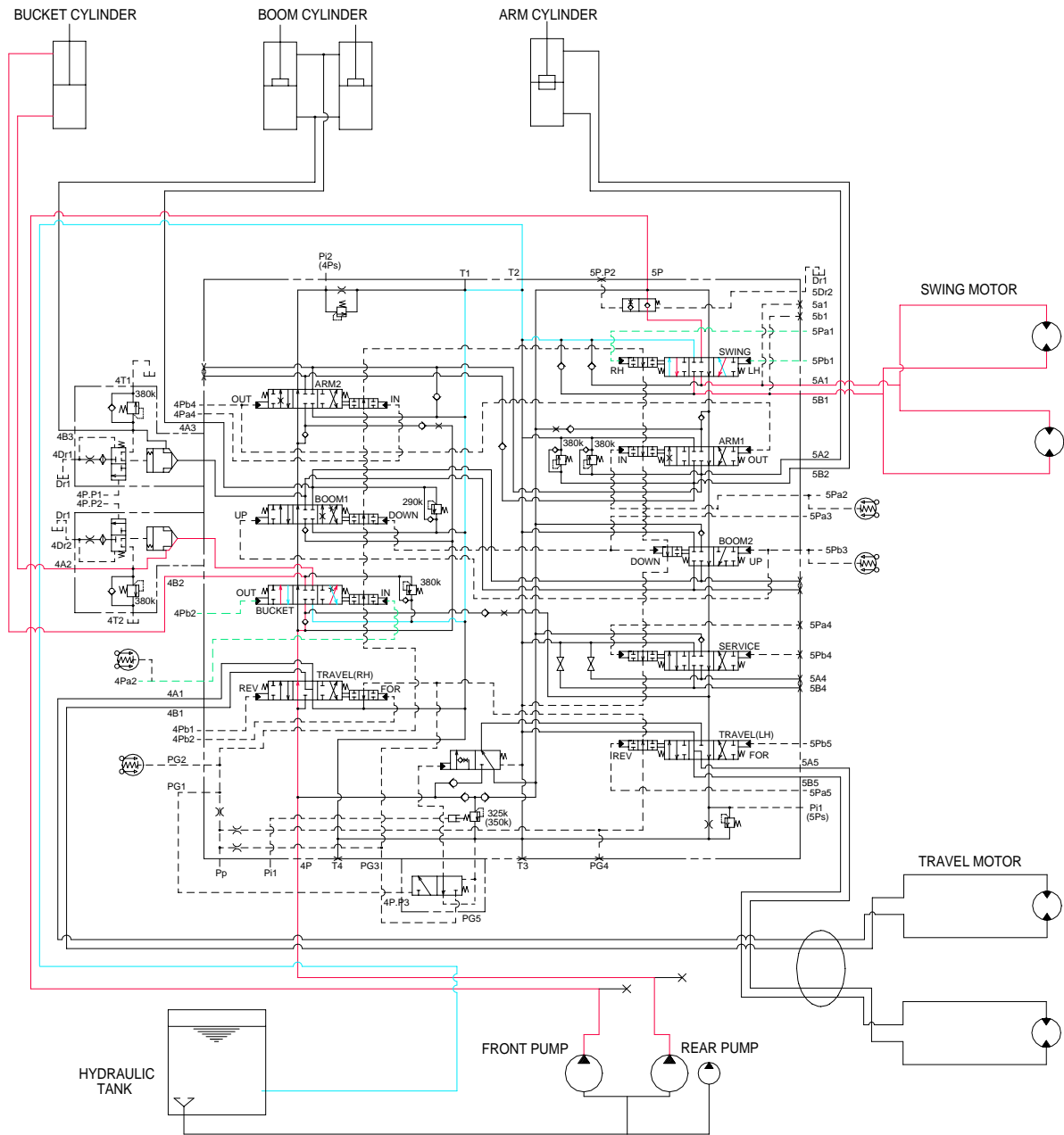
When the swing and arm functions are operated, simultaneously the swing spool and arm spools in the main control valve are moved to the functional position by the pilot oil pressure from the remote control valve.

The oil from the front pump flows into the swing motors through swing spool.

At the same time, the pressure in the arm circuit can be high while the swing pressure is low, therefore the oil flows from front pump to the arm cylinder through arm confluence passage.

The oil from the rear pump flows into the arm cylinder through the arm 2 spool of the left control valve. The superstructure swings and the arm is operated.

4. COMBINED SWING AND BUCKET OPERATION



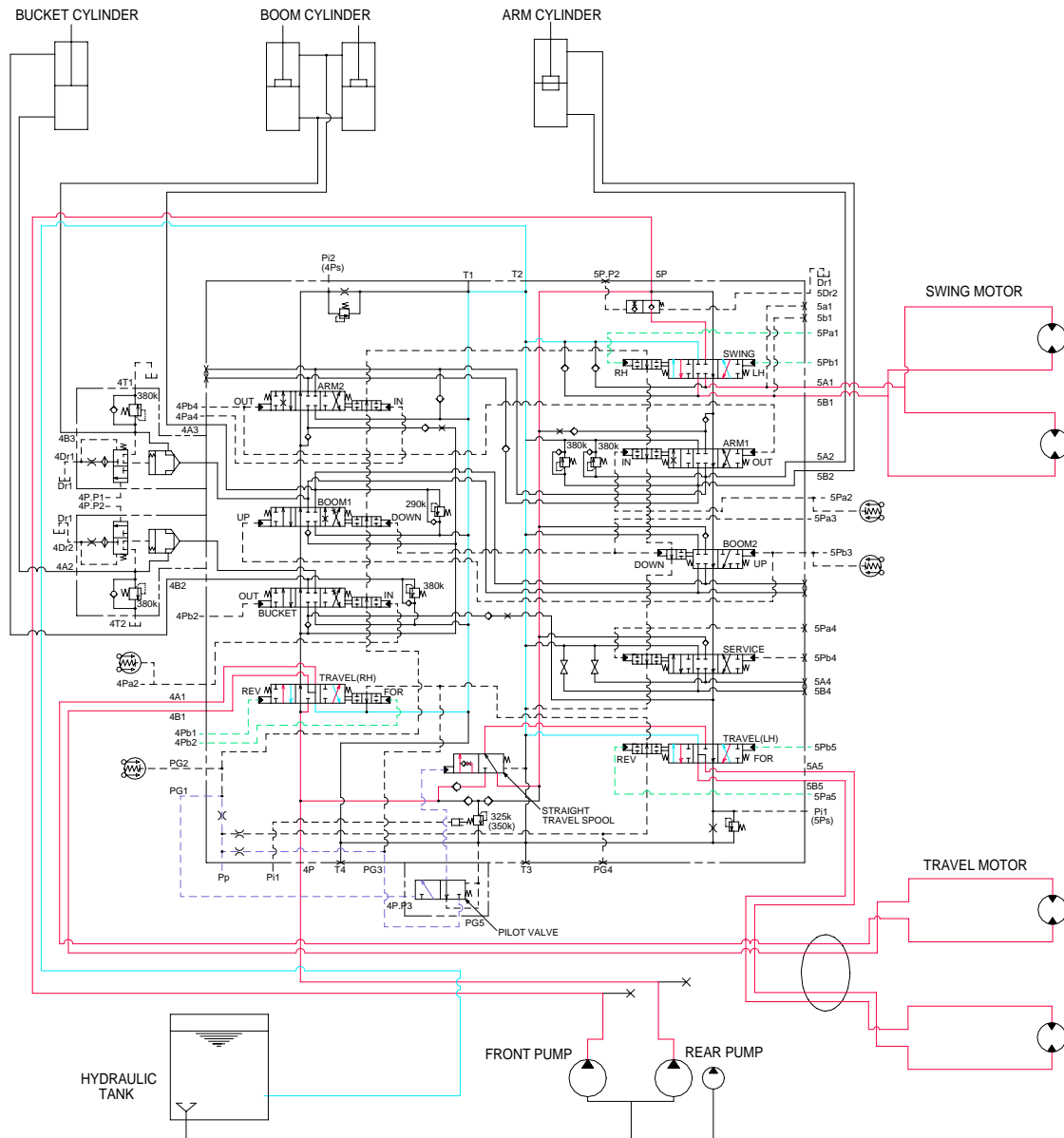
When the swing and bucket functions are operated, simultaneously the swing spool and bucket spool in the main control valve are moved to the functional position by the pilot oil pressure from the remote control valve.

The oil from the front pump flows into the swing motors through the swing spool in the right control valve.

The oil from the rear pump flows into the bucket cylinder through the bucket spool in the left control valve.

The superstructure swings and the bucket is operated.

6. COMBINED SWING AND TRAVEL OPERATION



When the swing and travel functions are operated, simultaneously the swing spool and travel(LH), travel(RH) spools in the main control valve are moved to the functional position by the pilot oil pressure from the remote control valve. At the same time the spool of pilot valve for straight travel is pushed to the right by the pilot oil pressure from the pilot pump. Thus the straight travel spool is pushed to the right by the oil through the pilot valve for straight travel.

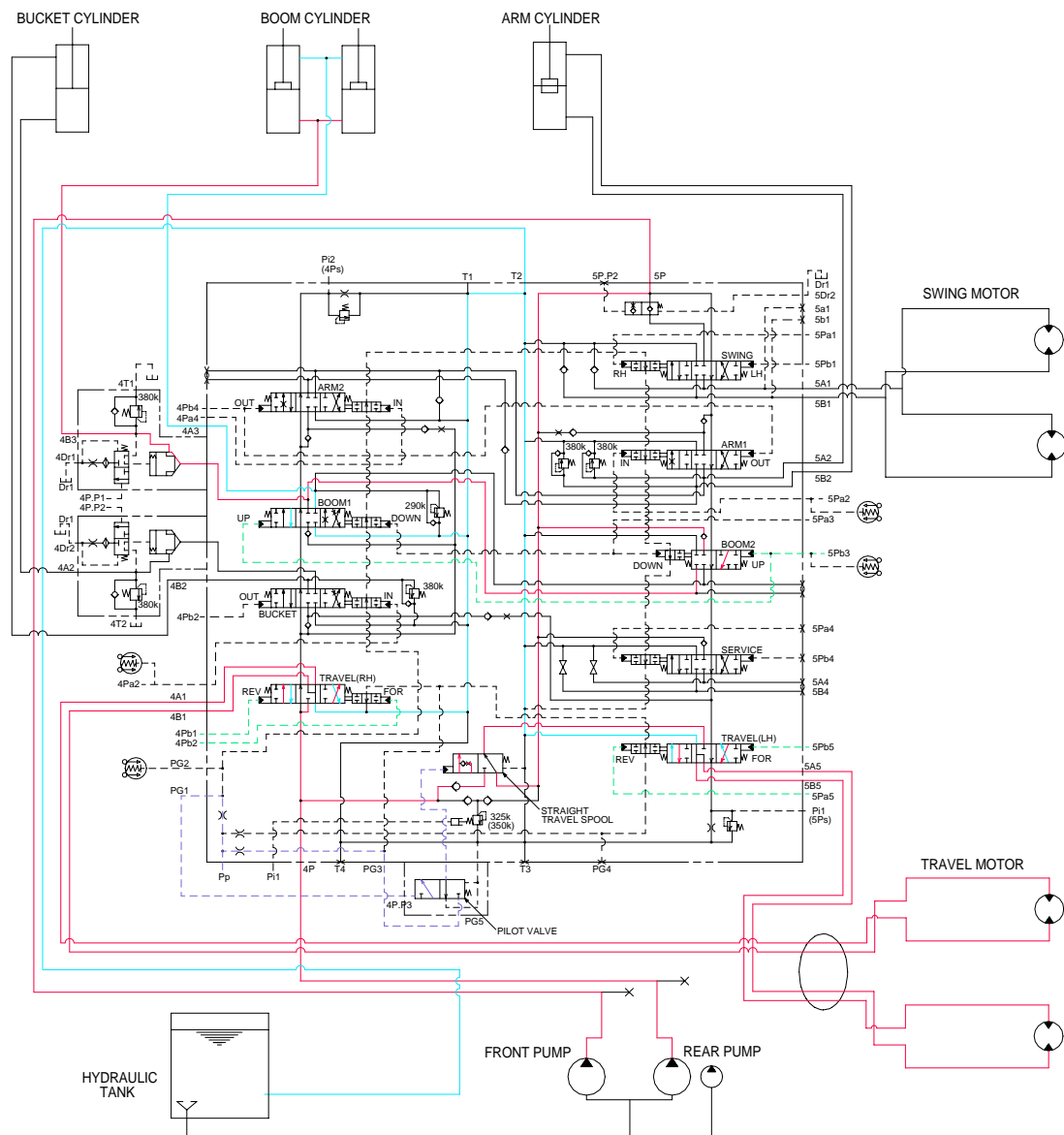
The oil from the rear pump flows into the right travel motor through the right travel spool of the left control valve and the left travel motor through the straight travel spool and left travel spool of the right control valve.

The oil from the front pump flows into the swing motors through the swing spool of the right control valve.

Meanwhile, the oil from the front pump flows into left travel motor through orifice of the straight travel spool. This orifice maintains the operating pressure actuators except traveling and reduce the shock of travel speed reduction.

The superstructure swings and the machine travels straight.

7. COMBINED BOOM RAISE AND TRAVEL OPERATION



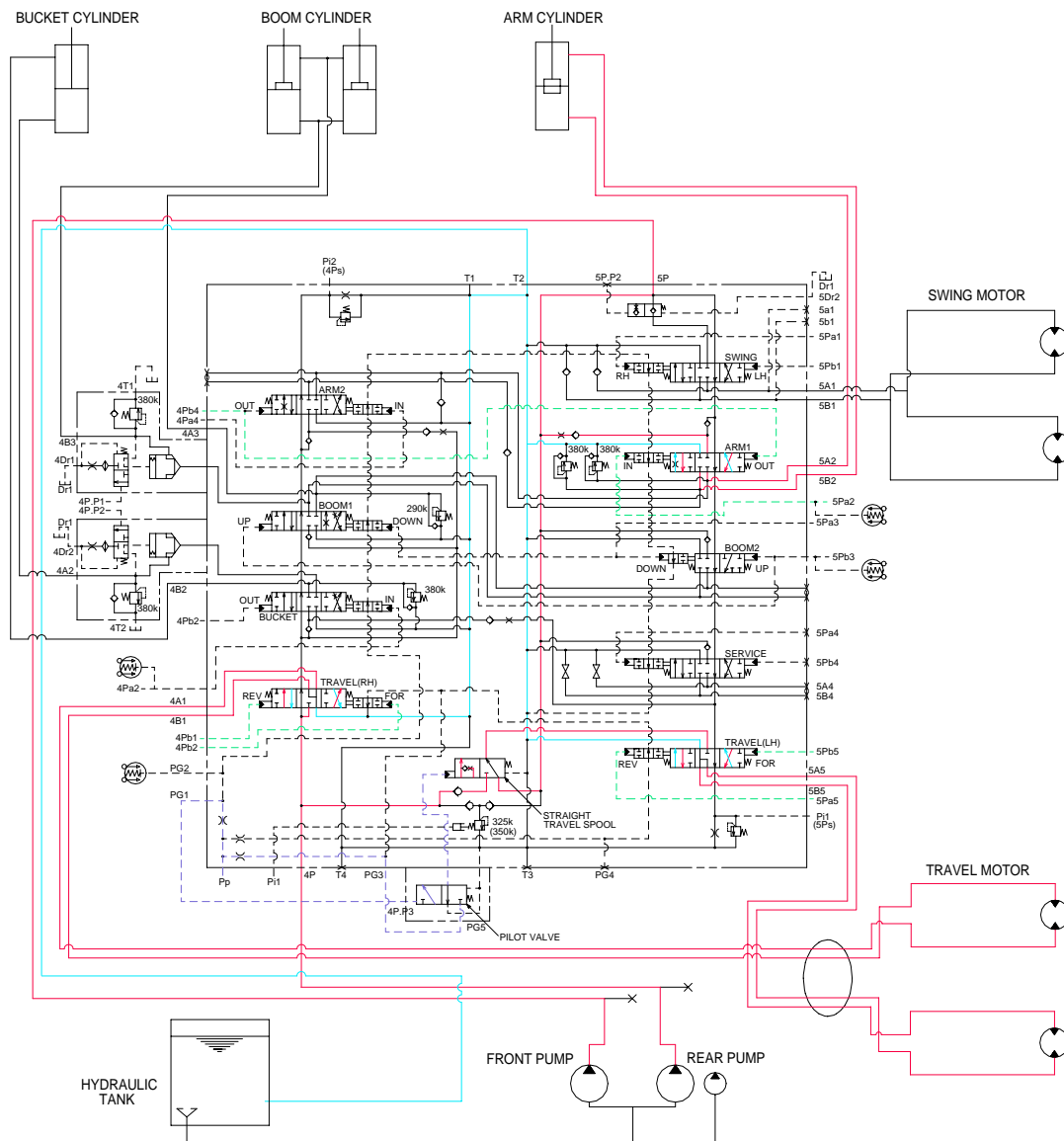
When the boom raise and travel functions are operated, simultaneously the boom spools and travel(LH), travel(RH) spools in the main control valve are moved to the functional position by the pilot oil pressure from the remote control valve. At the same time, the spool of pilot valve is pushed to the right by the pilot oil pressure from the pilot pump. Thus, the straight travel spool is pushed to the right by the oil through the pilot valve for straight travel.

The oil from the rear pump flows into the right travel motor through the right travel spool of the left control valve and the left travel motor through the straight travel spool and left travel spool of the right control valve.

The oil from the front pump flows into the boom cylinders through the boom 2 spool of the right control valve.

Meanwhile, the oil from the front pump flows into left travel motor through orifice of the straight travel spool. This orifice maintains the operating pressure actuators except traveling and reduce the shock of travel speed reduction.

8. COMBINED ARM AND TRAVEL OPERATION



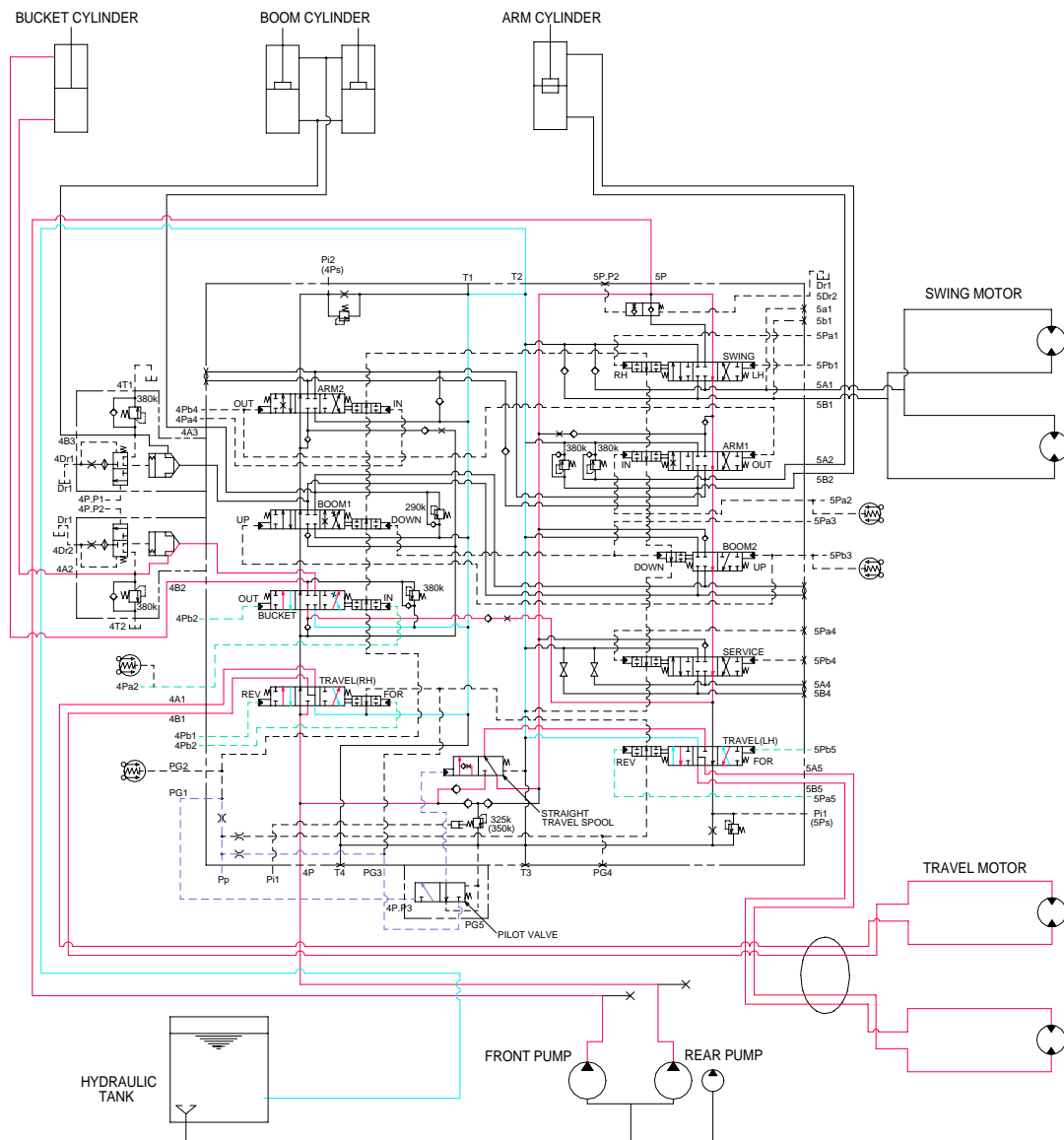
When the arm and travel functions are operated, simultaneously the arm spool and travel(LH), travel(RH) spools in the main control valve are moved to the functional position by the pilot oil pressure from the remote control valve. At the same time, the spool of pilot valve is pushed to the right by the pilot oil pressure from the pilot pump. Thus, the straight travel spool is pushed to the right by the oil through the pilot valve for straight travel.

The oil from the rear pump flows into the right travel motor through the right travel spool of the left control valve and the left travel motor through the straight travel spool and left travel spool of the right control valve.

The oil from the front pump flows into the arm cylinder through the arm 1 spool of the right control valve.

Meanwhile, the oil from the front pump flows into left travel motor through orifice of the straight travel spool. This orifice maintains the operating pressure actuators except traveling and reduce the shock of travel speed reduction.

9. COMBINED BUCKET AND TRAVEL OPERATION



When the bucket and travel functions are operated, simultaneously the bucket spool and travel(LH), travel(RH) spools in the main control valve are moved to the functional position by the pilot oil pressure from the remote control valve. At the same time, the spool of pilot valve is pushed to the right by the pilot oil pressure from the pilot pump. Thus, the straight travel spool is pushed to the right by the oil through the pilot valve for straight travel.

The oil from the rear pump flows into the right travel motor through the right travel spool of the left control valve and the left travel motor through the straight travel spool and left travel spool of the right control valve.

The oil from the front pump flows into the bucket cylinder and the left travel motor through the bucket spool of the left control valve and the left travel spool of the right control valve.

Meanwhile, the oil from the front pump flows into left travel motor through orifice of the straight travel spool. This orifice maintains the operating pressure actuators except traveling and reduce the shock of travel speed reduction.

The arm is operated and the machine travels straight.