CRAWLER EXCAVATOR

# SERVICE MANUAL

## *R17Z-9A*

HYUNDAI

MidWestTech | Hyundai R17Z-9A Crawler Excavator Service Manual | Publication R17Z-9A

Order the manual at mid-west-tech.com >

# CONTENTS


## SECTION 1 GENERAL

Group 1 Safety Hints ..... 1-1
Group 2 Specifications ..... 1-9

## SECTION 2 STRUCTURE AND FUNCTION

Group 1 Pump Device ..... 2-1
Group 2 Main Control Valve ..... 2-6
Group 3 Swing Device ..... 2-11
Group 4 Travel Device ..... 2-14
Group 5 RCV Lever ..... 2-24
Group 6 RCV Pedal ..... 2-29

## SECTION 3 HYDRAULIC SYSTEM

Group 1 Hydraulic Circuit ..... 3-1
Group 2 Main Circuit ..... 3-2
Group 3 Pilot Circuit ..... 3-5
Group 4 Single Operation ..... 3-9
Group 5 Combined Operation ..... 3-21

## SECTION 4 ELECTRICAL SYSTEM

Group 1 Component Location ..... 4-1
Group 2 Monitoring system ..... 4-3
Group 3 Electrical Circuit ..... 4-7
Group 4 Electrical Component Specification ..... 4-19
Group 5 Connectors ..... 4-24

## SECTION 5 TROUBLESHOOTING

Group 1 Before Troubleshooting ..... 5-1
Group 2 Hydraulic and Mechanical System ..... 5-4
Group 3 Electrical System ..... 5-24


MidWestTech | Hyundai R17Z-9A Crawler Excavator Service Manual | Publication R17... Order the manual at mid-west-tech.com >

## SECTION 6 MAINTENANCE STANDARD


Group 1 Operational Performance Test ..... 6-1
Group 2 Major Components ..... 6-20
Group 3 Track and Work Equipment ..... 6-30


## SECTION 7 DISASSEMBLY AND ASSEMBLY


Group 1 Precaution ..... 7-1
Group 2 Tightening Torque ..... 7-4
Group 3 Pump Device ..... 7-7
Group 4 Main Control Valve ..... 7-20
Group 5 Swing Device ..... 7-44
Group 6 Travel Device ..... 7-57
Group 7 RCV Lever ..... 7-87
Group 8 Turning Joint ..... 7-98
Group 9 Boom, Arm and Bucket Cylinder ..... 7-103
Group 10 Undercarriage ..... 7-123
Group 11 Work Equipment ..... 7-134

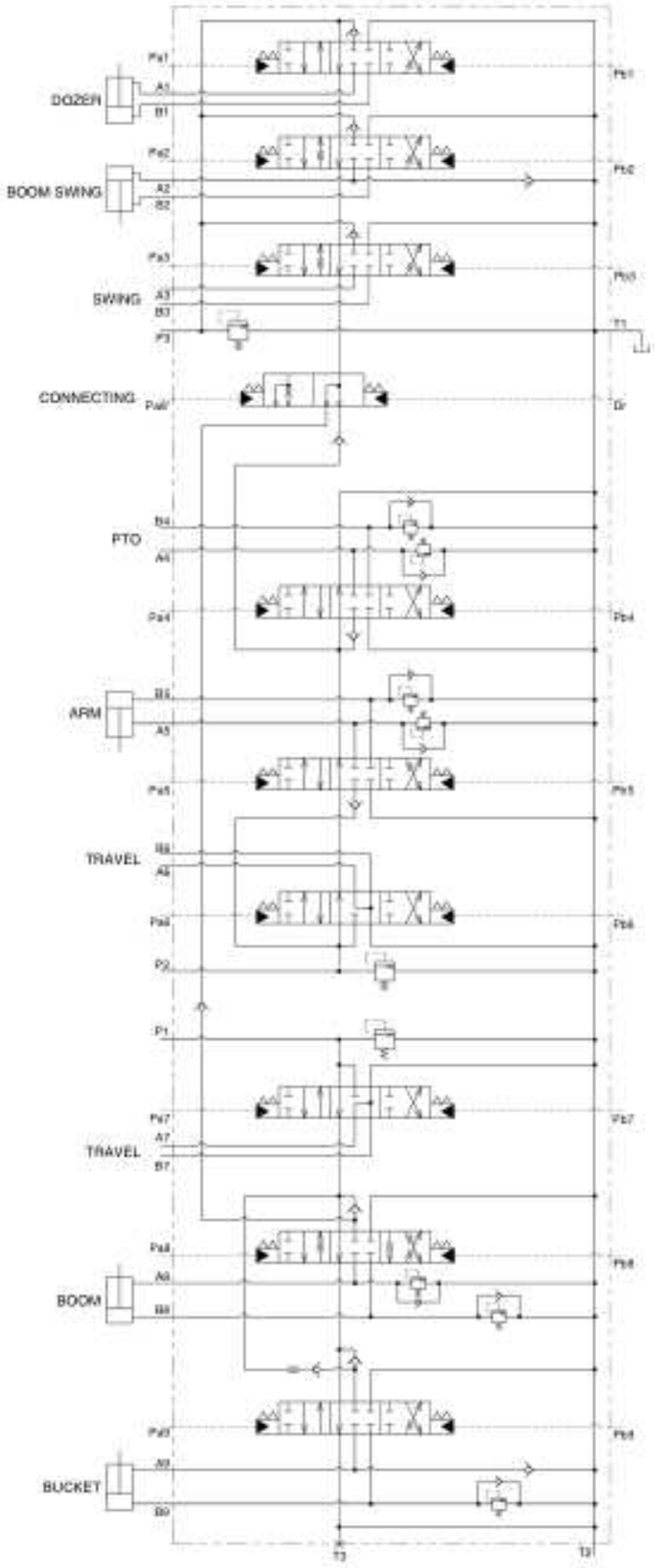

## SECTION 8 COMPONENT MOUNTING TORQUE


Group 1 Introduction Guide ..... 8-1
Group 2 Engine System ..... 8-2
Group 3 Electric System ..... 8-4
Group 4 Hydraulic System ..... 8-5
Group 5 Undercarriage ..... 8-7
Group 6 Structure ..... 8-8
Group 7 Work Equipment ..... 8-10



MidWestTech | Hyundai R17Z-9A Crawler Excavator Service Manual | Publication R17... Order the manual at mid-west-tech.com >

## 3. HYDRAULIC CIRCUIT






MidWestTech | Hyundai R17Z-9A Crawler Excavator Service Manual | Publication R17... Order the manual at mid-west-tech.com >

# SECTION 5 TROUBLESHOOTING


Group 1 Before Troubleshooting ..... 5-1
Group 2 Hydraulic and Mechanical System ..... 5-4
Group 3 Electrical System ..... 5-24


MidWestTech | Hyundai R17Z-9A Crawler Excavator Service Manual | Publication R17... Order the manual at mid-west-tech.com >

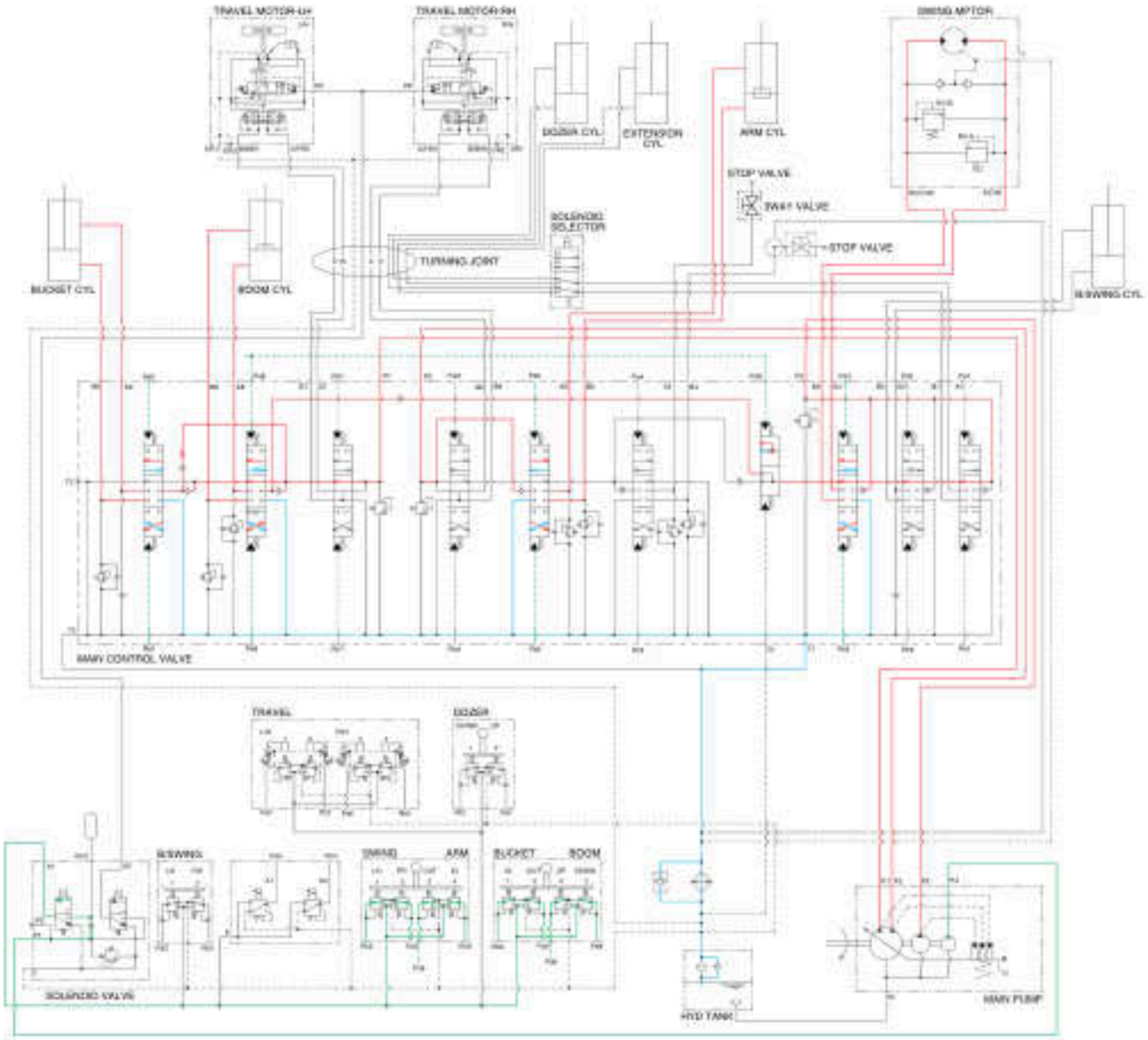
(2) Hydraulic valve and motor

| No. | Part name | Point to be checked | Standard | Action |
|---|---|---|---|---|
| 12 | Body 1 | Spool sliding contact surface | No abnormal damage, wear | Relpace whole body 1 kit |
| 13 | Counter valve spool<br>Two-speed spool<br>Shuttle spool | Body 1 sliding contact surface | No abnormal damage, wear | Relpace whole body 1 kit |
| 14 | Body 2 | Spline tooth surface | No abnormal damage, wear | Replace whole body 2 kit |
| | | Control piston sliding contact surface | No abnormal damage, wear<br>Clearance between piston and body 2 is 0.023 mm or smaller | |
| | | Swash plate installaion surface | No abnormal damage, wear | |
| | | Ball sliding contact surface | No abnormal damage, wear | |
| 15 | Shaft | Spline tooth surface | No abnormal damage, wear | Replace shaft kit |
| | | Oil seal sliding contact surface | No abnormal damage, wear<br>(0.025 mm or greater) | |
| 16 | Cylinder barrel | Piston sliding contact surface | No abnormal damage, wear<br>Clearance between piston and cylinder barrel is 0.030 mm or smaller | Replace cylinder barrel kit |
| | | Valve place sliding contact surface | No abnormal damage, wear<br>(0.020 mm or greater) | Lap or replace cylicder barrel kit |
| 17 | Valve plate | Cylinder barrel sliding contact surface | No abnormal damage, wear<br>(0.020 mm or greater) | Lap or replace cylicder barrel kit |
| 18 | Pistons<br>Shoes | Cylinder barrel sliding contact surface | No abnormal damage, wear<br>(0.020 mm or greater) | Replace cylinder barrel kit |
| | | Swash plate sliding contact surface | No abnormal damage, wear<br>(0.020 mm or greater) | Lap or replace cylicder barrel kit |
| | | Loose of shoe calking part | Loose is smaller than 0.3 mm | Replace cylinder barrel kit |
| 19 | Shoe holder | Barrel holder sliding contact surface | No abnormal damage, wear | Replace cylinder barrel kit |
| 20 | Barrel holder | Spline tooth surface | No abnormal damage, wear | Replace cylinder barrel kit |
| | | Shoe holder sliding contact surface | No abnormal damage, wear | |
| 21 | Swash plate | Shoe sliding contact surface | No abnormal damage, wear<br>(0.020 mm or greater) | Lap or replace |
| | | Ball sliding contact surface | No abnormal damage, wear | Replace |
| 22 | Control piston | Body 2 sliding contact surface | Clearance between piston and body 2 is 0.023 mm or smaller | Replace body 2 kit |
| 23 | Oil seal | Lip surface | No abnormal damage, wear and deformation | Replace |
| 24 | Ball bearing | Rolling contact surface | No abnormal damage, flaking | Replace |
| 25 | Springs | Surface | No crack | Replace |
| 26 | O-rings | Surface and hardness | No damage, deformation, and hardening | Replace |



MidWestTech | Hyundai R17Z-9A Crawler Excavator Service Manual | Publication R17... Order the manual at mid-west-tech.com >

## 5. COMBINED SWING, BOOM, ARM AND BUCKET OPERATION




17Z9A3HC34

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

The oil from the P2 pump flows into the arm cylinder through, arm spool.

The oil from the P1 pump flows into the boom cylinders and bucket cylinder through the boom spool, bucket spool.

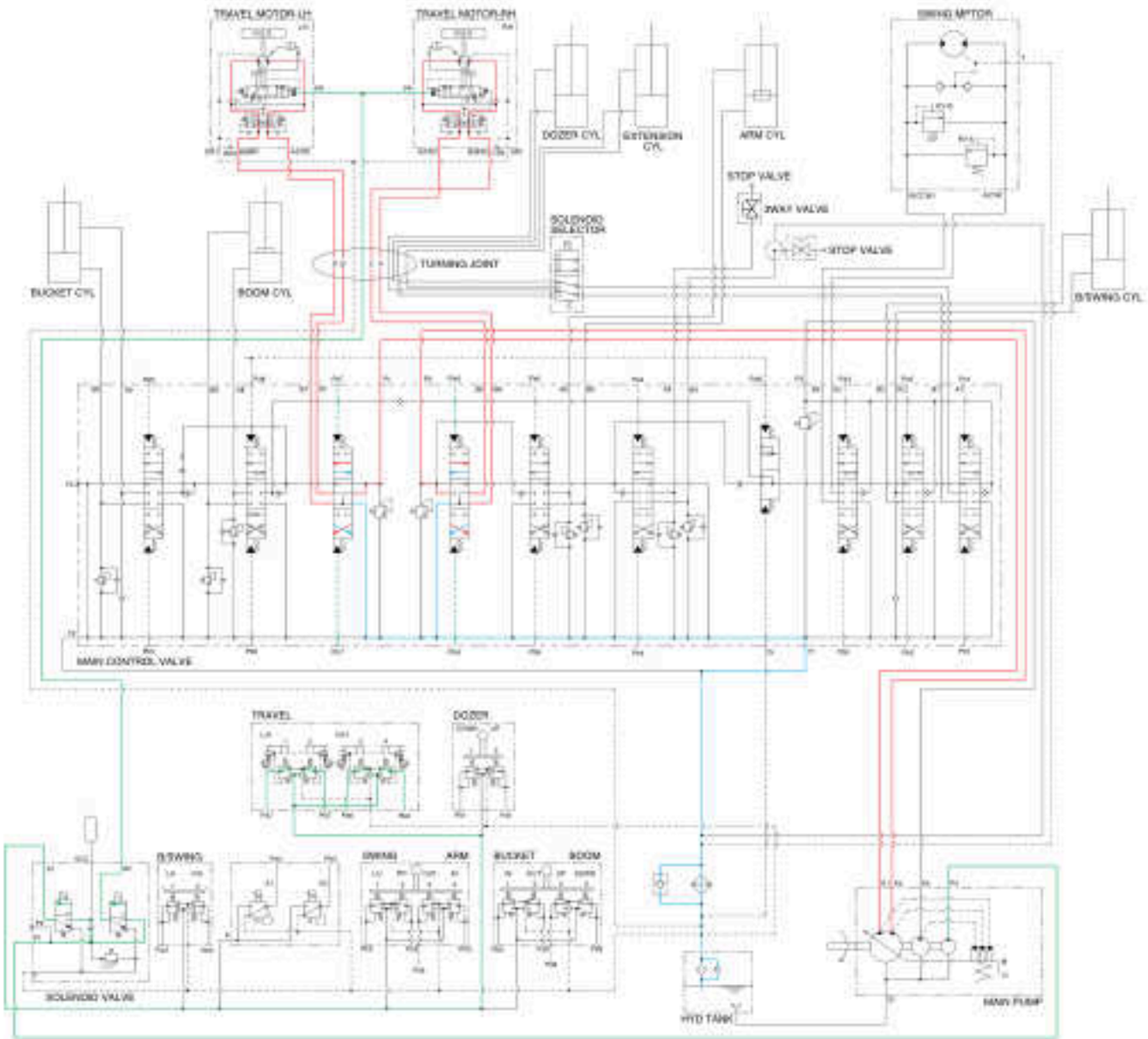
The oil from the P3 pump flows into the swing motor through the swing spool.

The superstructure swings and the boom, arm and bucket are operated.



MidWestTech | Hyundai R17Z-9A Crawler Excavator Service Manual | Publication R17... Order the manual at mid-west-tech.com >

## 8. TRAVEL FORWARD AND REVERSE OPERATION



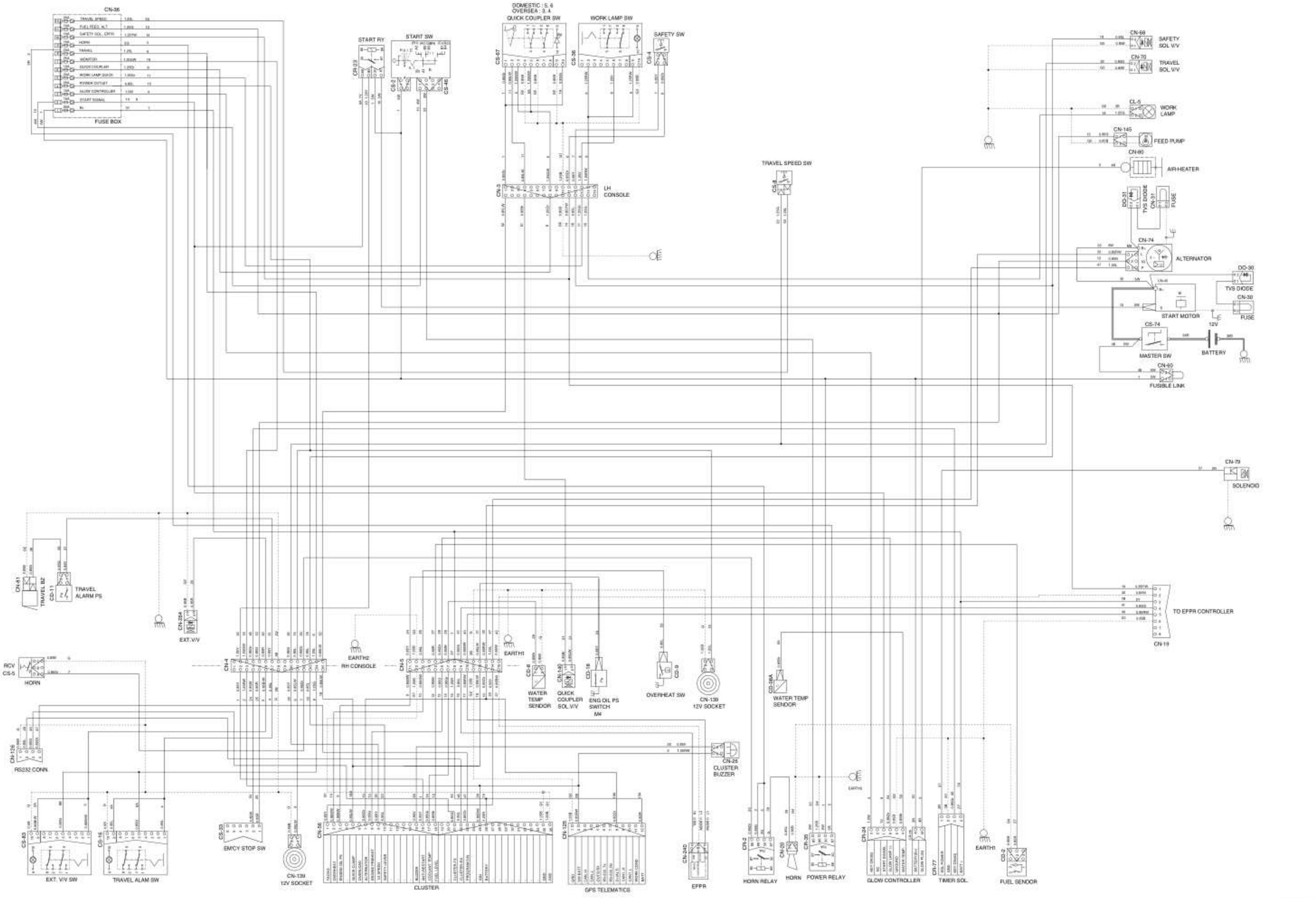

17Z9A3HC17

When the travel levers are pushed forward or reverse position, the travel spools in the main control valve are moved to the forward or reverse travel position by pilot pressure oil. The oil from the both pumps flows into the main control valve and then goes to the both travel motors through the turning joint. The return oil from both travel motors returns to the hydraulic oil tank through the turning joint and the travel spools in the main control valve. When this happens, the machine moves to the forward or reverse.



MidWestTech | Hyundai R17Z-9A Crawler Excavator Service Manual | Publication R17... Order the manual at mid-west-tech.com >

## - ELECTRICAL CIRCUIT (CANOPY TYPE)






MidWestTech | Hyundai R17Z-9A Crawler Excavator Service Manual | Publication R17Z-9A
Order the manual at mid-west-tech.com >