Technical Manual

AH250D/300D

Vol No.: T8TDE-00

HITACHI

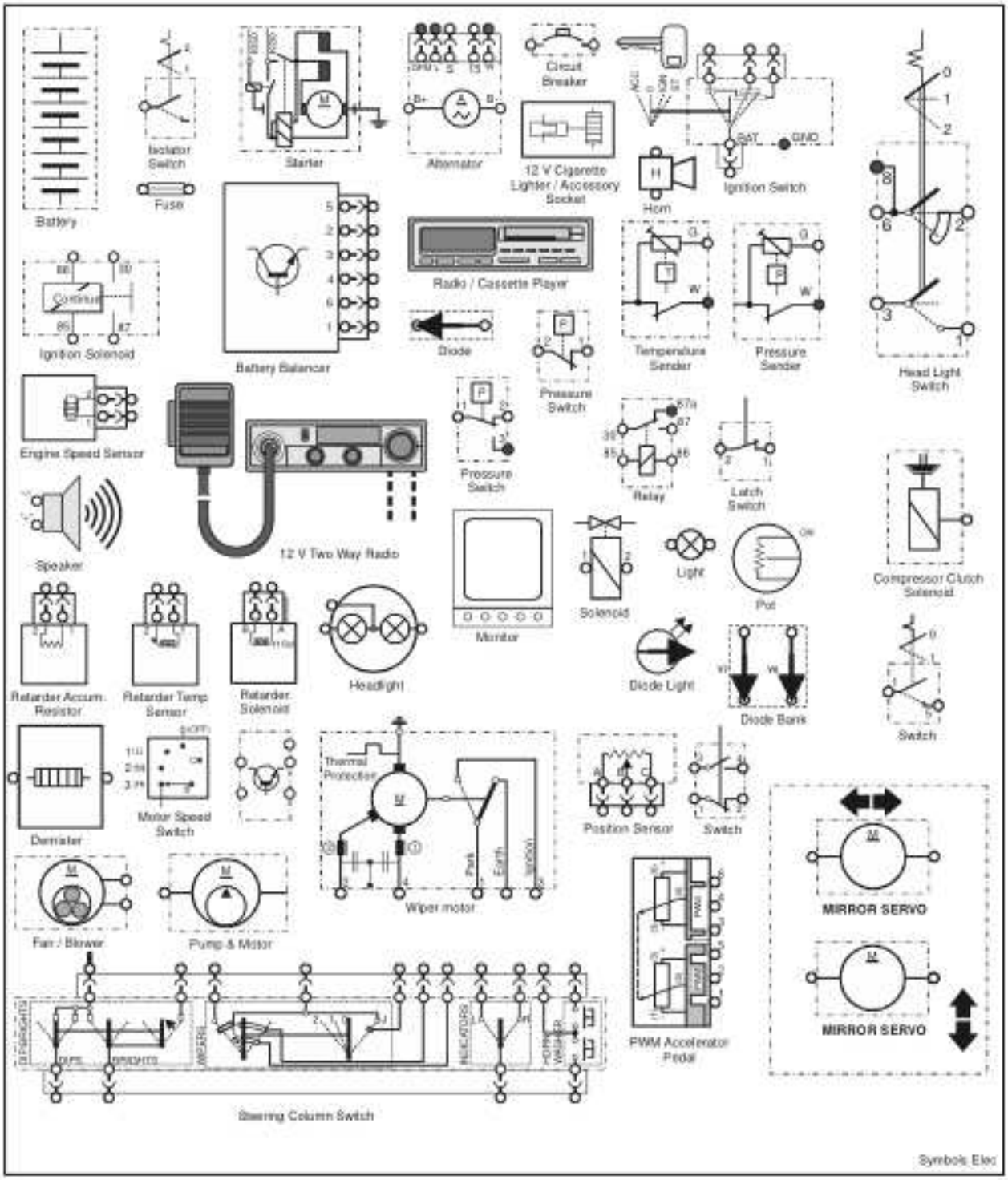
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CHAPTER 3. ELECTRICAL SYSTEM

SECTION 1. SYSTEM INFORMATION

Electrical Schematic Symbols



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A4 Transmission Shift Control.
A5 Transmission Control Unit (TCU).
A7 Retarder Control.
W12 Transmission Control Harness.
X6B Transmission Control Harness-to-Cab Main Harness Connector.
X162ATransmission Control Harness-to-Transmission Harness Connector.
X163Transmission Shift Control (A4) Connector.
X164—Retarder Control (A7) Connector.
X167TCU (A5) CAN Connector.
X168Blue TCU (A5) Connector.
X169Transmission Diagnostic Connector.
X170Transmission Diagnostic Connector.

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CHAPTER 6. HYDRAULIC SYSTEM

SECTION 2. DIAGNOSTIC INFORMATION

DIAGNOSTIC PROCEDURE

Follow the six basic steps below to carry out troubleshooting efficiently.

Know the system.

Study the machine technical manual. Understand the system and circuits.

Use schematics, component location drawings, and theory of operation for each circuit and circuit components to better understand how the system, circuits, and components work.

Ask the operator.

What type of work was the machine doing when the trouble was noticed?

Did the trouble start suddenly or has it been getting worse?

Did the machine have any previous problems? If so, which parts were repaired?

Inspect the machine.

Check all daily maintenance points. **(See CHAPTER 12 in the OMM).** Check batteries, battery disconnect switch, circuit breakers, fuses, and electrical connections.

Perform Operational Check-out.

Check all systems and functions on the machine. Use the helpful diagnostic information in the check-out to pinpoint the possible cause of the problem.

Perform troubleshooting.

Connect the laptop computer with diagnostic software, if available. The self-diagnosing function lists any service codes.

Before starting any troubleshooting, first check battery voltage, battery disconnect switch, fuses, and circuit breakers.

Go to test groups to check pressures and voltages. Make sure adjustments are correct.

Trace a cause.

Before reaching a conclusion, check the most probable and simplest to verify.

Use the symptom, problem, solution charts to help identify probable problem components.

Make a plan for appropriate repair to avoid other malfunctions.

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Adjust compensator valve to specification. **(See "MAIN HYDRAULIC PUMP RESIDUAL AND COMPENSATOR VALVES TEST AND ADJUSTMENT" on page 255).**

PRIORITY VALVE TEST

Specifications

Hydraulic Oil Temperature ----- 50 ± 5°C (120± 10°F)

Engine Speed ---------- Slow Idle.

Main Hydraulic Pump Load Sense Pressure ---------- 1500 kPa (15 bar) (218 psi) minimum

Essential Tools

JT03482 High Pressure Test Hose Kit

Service Equipment And Tools

JT02156A Digital Pressure/Temperature Analyser

Gauge ---------- 0 - 1000 psi

The purpose of this test is to verify the operation of the priority valve.

Connect digital pressure/temperature analyser and transducer or a gauge to port ML1 of hydraulic system manifold. **(See "Hydraulic System Manifold Operation (Top View)" on page 354).**

Do Hydraulic System Warm-Up Procedure to heat hydraulic oil to specified temperature. **(See "HYDRAULIC SYSTEM WARM-UP PROCEDURE" on page 253.)** Use menu display menu "B 034" to monitor hydraulic oil temperature. **(See Menu Display Unit - Menu Function in CHAPTER 8 of OMM).**

Run engine at specification.

Starting with machine against right or left steering stop, steer machine in opposite direction as fast as the hydraulics will allow.

Read pressure gauge while steering. Pressure should be no less than specification. If pressure is less, replace priority valve. **(See Hydraulic System Manifold Assembly CHAPTER 14, SECTION 1 in the Repair Manual).**

ACCUMULATOR PRESSURE REDUCING VALVE TEST AND ADJUSTMENT

Specifications

Hydraulic Oil Temperature ----- 50 ± 5°C (120± 10°F)

Engine Speed ---------- 1000 ± 20 r.p.m.

Accumulator Pressure Reducing Valve Pressure ----- 18 500 - 19 500 kPa ---------- (185 - 195 bar) (2685 - 2830 psi).

Essential Tools

JT03482 High Pressure Test Hose Kit

Service Equipment And Tools

JT02156A Digital Pressure/Temperature Analyser

The purpose of this test is to check the accumulator pressure reducing valve pressure setting and adjust as necessary.

⚠ CAUTION

To avoid injury from escaping fluid under pressure, stop engine and relieve pressure in the system before disconnecting hydraulic lines. Tighten all connections before applying pressure.

Apply and release brake pedal approximately 35 - 40 times to relieve pressure from system.

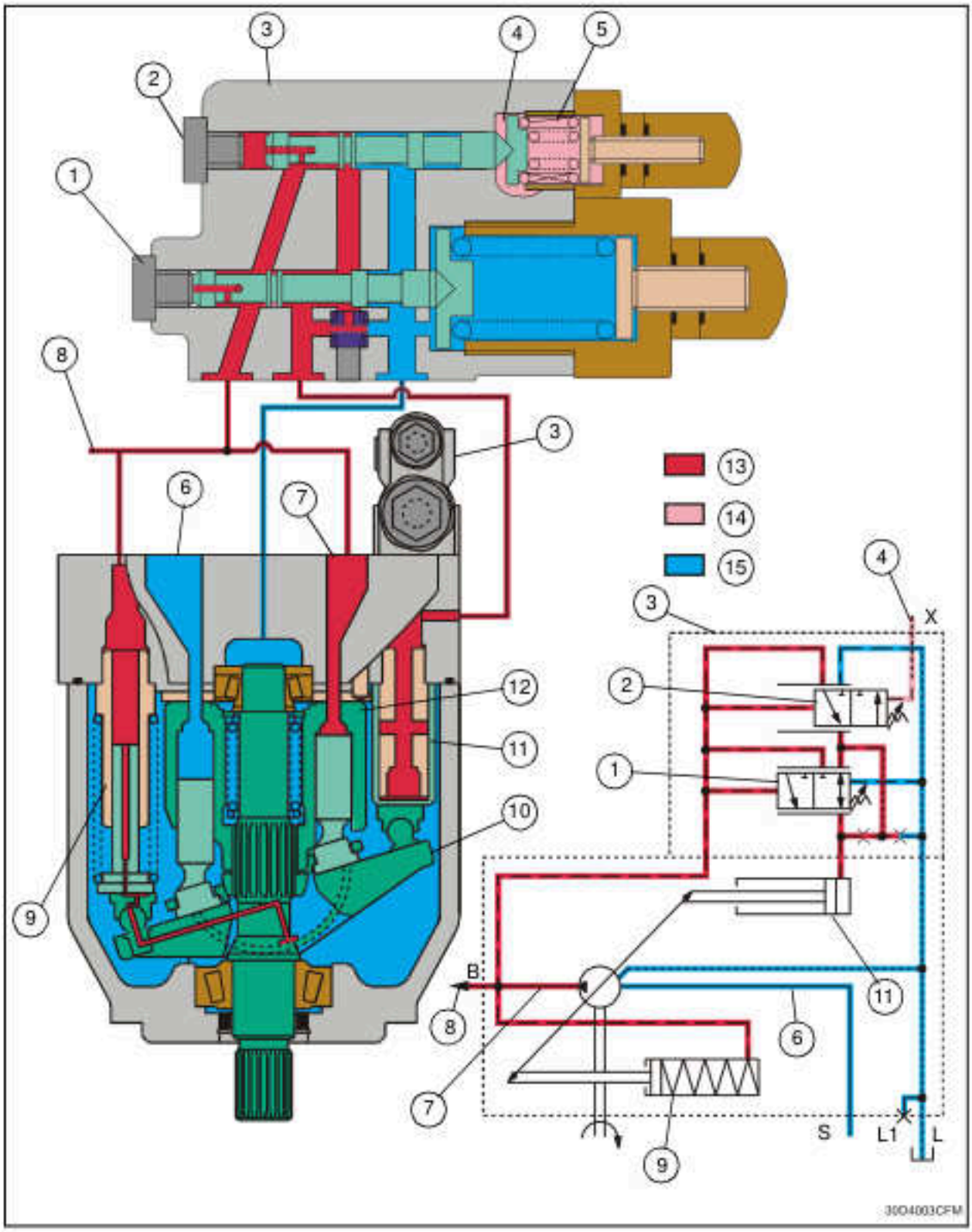
Connect digital pressure/temperature analyser and transducer or a gauge to port M4 of test port manifold.

Do Hydraulic System Warm-Up Procedure to heat hydraulic oil to specified temperature. **(See "HYDRAULIC SYSTEM WARM-UP PROCEDURE" on page 253.)** Use menu display menu "B 034" to monitor hydraulic oil temperature. **(See Menu Display Unit - Menu Function in CHAPTER 8 of OMM).**

Run engine at specification.

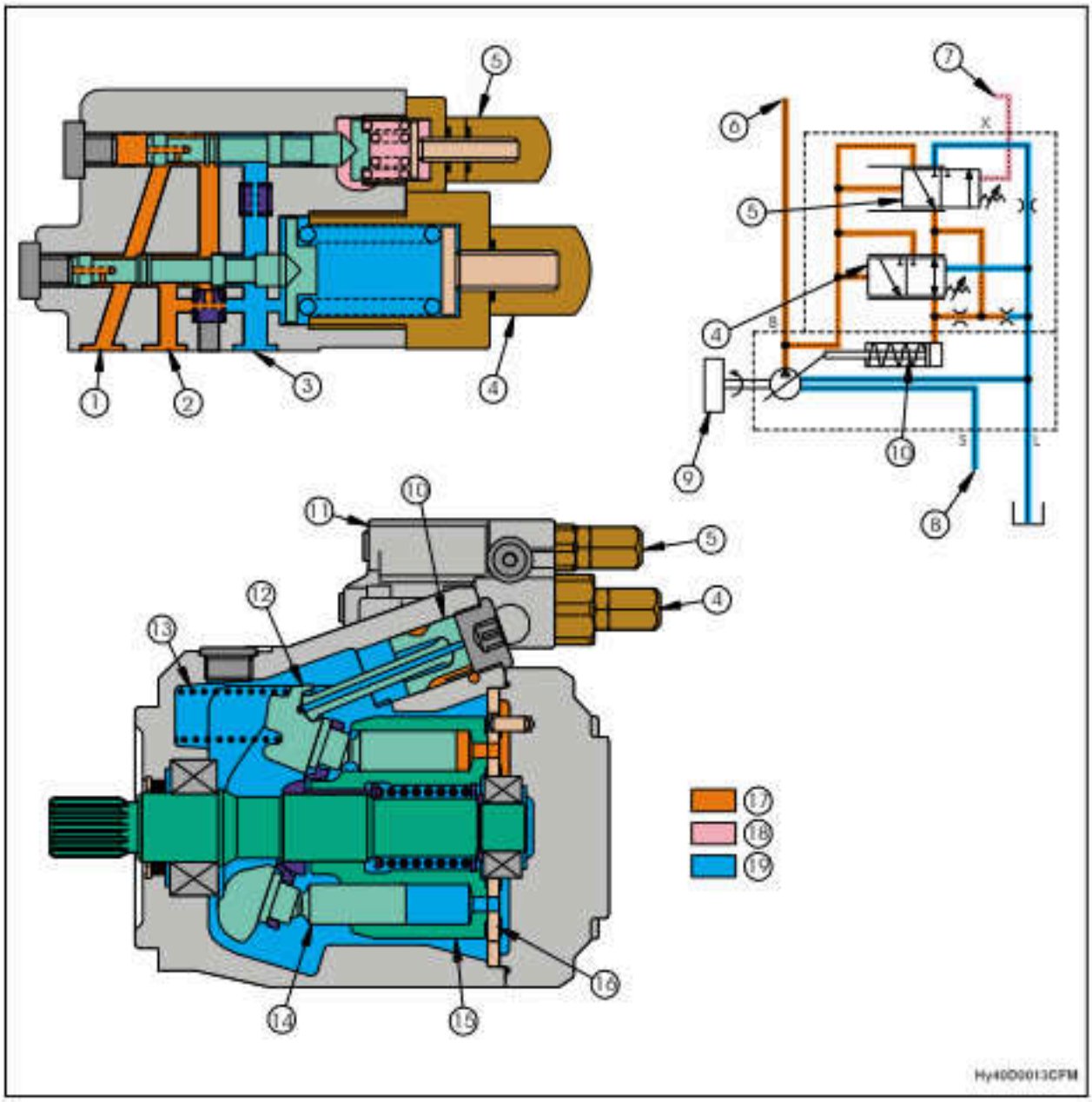
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Main Hydraulic Pump Operation



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Secondary Steering Pump Operation



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CHAPTER 3. ELECTRICAL SYSTEM

SECTION 2. SYSTEMS AND SUB-SYSTEM DIAGRAMS

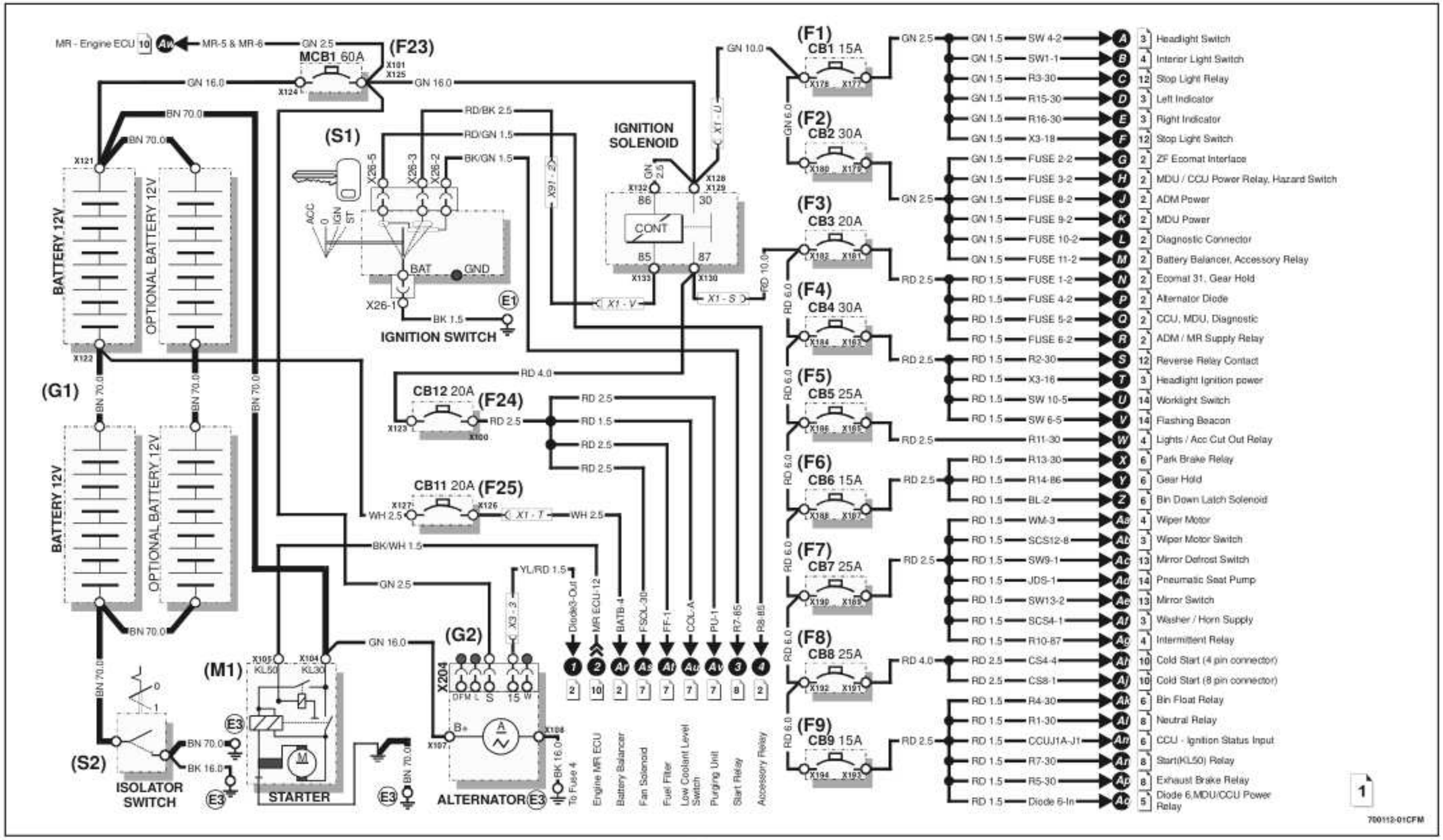


Figure 1

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