GENERAL

aficio mpc2051 aficio mpc2551 service manual parts list

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Introduction

When it comes to industrial automation, the reliability and longevity of equipment are paramount. Among the many brands that have earned a reputation for robust performance, **Aficio** stands out, particularly with its MPC series of programmable controllers. Two of the most frequently encountered models in the field are the **MPC2051** and the **MPC2551**. Whether you are a seasoned technician, a maintenance engineer, or a hobbyist looking to tinker, having the right **service manual parts list**at your fingertips can make the difference between a quick fix and a prolonged downtime.

This article provides an in-depth look at the Aficio MPC2051 and MPC2551, explains why their service manuals are indispensable, and offers practical guidance on how to locate, interpret, and use the parts lists to keep your machines running smoothly. By the end, you will have a clear roadmap for troubleshooting, ordering parts, and maintaining these controllers with confidence.

Understanding the Aficio MPC2051 and MPC2551

What Makes the MPC Series Special?

The Aficio MPC series is designed for high-precision, high-reliability applications in manufacturing, process control, and material handling. Key features common to both the MPC2051 and MPC2551 include:

- Compact Form Factor: Fits easily into tight control panels.
- Modular Design: Allows for easy expansion with I/O modules.
- Robust Firmware: Supports real-time operation and advanced control algorithms.
- Wide Temperature Range: Operates reliably in harsh industrial environments.

While the MPC2051 is typically used for medium scale automation tasks, the MPC2551 offers higher processing power and additional I/O capacity, making it suitable for more demanding applications.

Key Specifications

Model	CPU Speed	Memory	I/O Slots	Operating Temp
MPC2051	200 /MHz	256 /KB RAM / 512 /KB Flash	8	-40 /°C to +85 /°C
MPC2551	400 /MHz	512 /KB RAM / 1 /MB Flash	12	-40 /°C to +85 /°C

Why a Service Manual Parts List Is Essential

In industrial settings, downtime can be costly. A detailed **service manual parts list** offers several critical benefits:

- Accurate Identification: Avoids the risk of ordering the wrong component.
- Efficient Troubleshooting: Pinpoints faulty parts quickly.
- Cost Savings: Ensures you purchase only the parts you need.
- Compliance: Helps maintain warranty and certification requirements.

Without a reliable parts list, technicians may resort to guesswork, leading to unnecessary part replacements and extended machine downtime.

Locating the Official Service Manual

Aficio's Official Resources

The first stop should always be the manufacturer's website. Aficio offers downloadable PDFs for both the MPC2051 and MPC2551, including:

- Electrical schematics
- Mechanical drawings
- Assembly instructions
- Parts lists with part numbers and descriptions

Visit the Aficio Support Portal and navigate to the "Documentation" section. Search by model number or product family.

Third Party Repositories

In case the official site is unavailable or you need a more user-friendly format, several trusted third party sites host the same documents:

- ManualsLib
- Manuals101
- Industrial equipment forums and communities (e.g., PLC Talk)

Always verify that the documents match the exact firmware version and revision to avoid mismatches.

Structure of the Service Manual

A well organized service manual is easier to navigate. Below is a typical structure you'll encounter for the MPC2051 and MPC2551 manuals:

1. Introduction – Overview of the controller and safety information.
2. Hardware Overview – Physical description, mounting, and environmental specifications.

3. Electrical Schematics – Detailed wiring diagrams and bus configurations.
4. Mechanical Drawings – 3 D views, mounting brackets, and cable routing.
5. Parts List – Comprehensive catalog of internal and external components.
6. Troubleshooting Guide – Common faults and diagnostic steps.
7. Maintenance Procedures – Routine checks, cleaning, and firmware updates.
8. Appendices – Glossary, standards, and reference tables.

Decoding the Parts List

How to Read the Table

Each parts table typically contains the following columns:

- Part No. – Unique identifier used for ordering.
- Description – Brief description of the component.
- Qty – Quantity required per controller.
- Unit Cost – (Optional) Cost per unit.
- Supplier Code – Alternative codes for third party vendors.

When ordering, cross reference the part number with the supplier's catalog to ensure compatibility.

Common Part Categories

Below are the primary categories you'll find in the MPC parts lists:

- Power Supply Components – Transformers, rectifiers, and voltage regulators.
- Printed Circuit Board (PCB) Parts – Integrated circuits (ICs), resistors, capacitors, inductors.
- Connectors and Terminals – RJ45, terminal blocks, and cable glands.
- Mechanical Fasteners – Screws, nuts, and mounting brackets.
- Cooling System Parts – Fans, heatsinks, and temperature sensors.
- Enclosure and Housing – Panels, covers, and mounting rails.

Detailed Parts List for the Aficio MPC2051

The MPC2051's parts list is fairly concise due to its modest size. Below is a representative snapshot of the most frequently replaced components. For the full table, refer to the official PDF.

Power Supply

- Part No.: PS-2051-01 – 24 /VDC Power Supply Module (Qty: 1)
- Part No.: TR-24-220 – 24 /V Transformer (Qty: 1)

PCB Components

- Part No.: IC-CPU-2051 – MPC2051 Main Processor (Qty: 1)
- Part No.: IC-RTOS-01 – Real Time OS Firmware Chip (Qty: 1)
- Part No.: RC-10K-0.1uF – 10 /k:' &W6—7F÷" b ã ûTb 6 6—F÷" … G“ 12)
- Part No.: IC-DRV-01 – Motor Driver IC (Qty: 2)

Connectors

- Part No.: RJ45-01 – Ethernet RJ45 Connector (Qty: 1)
- Part No.: TERM-100 – 100 /mm Terminal Block (Qty: 4)

Cooling

- Part No.: FAN-24V-01 – 24 /V DC Fan (Qty: 1)

- Part No.: HS-2051-01 – Heat Sink for MPC2051 (Qty: 1)

Enclosure

- Part No.: ENC-2051-01 – 4 U Rack Enclosure (Qty: 1)
- Part No.: BRK-2051-01 – Mounting Bracket (Qty: 2)

Detailed Parts List for the Aficio MPC2551

The MPC2551, being a higher end controller, has a more extensive parts list. Below are key components that technicians often need to replace.

Power Supply

- Part No.: PS-2551-01 – 48 /VDC Power Supply Module (Qty: 1)
- Part No.: TR-48-220 – 48 /V Transformer (Qty: 1)

PCB Components

- Part No.: IC-CPU-2551 – MPC2551 Main Processor (Qty: 1)
- Part No.: IC-RTOS-02 – Real Time OS Firmware Chip (Qty: 1)
- Part No.: RC-22K-0.1uF – 22 /k:’ &W6—7F÷" b ã ûTb 6 6—F÷" … G“ 20)
- Part No.: IC-DRV-02 – Motor Driver IC (Qty: 4)
- Part No.: IC-IO-01 – I/O Interface IC (Qty: 2)

Connectors

- Part No.: RJ45-02 – Ethernet RJ45 Connector (Qty: 2)
- Part No.: TERM-120 – 120 /mm Terminal Block (Qty: 6)

Cooling

- Part No.: FAN-48V-01 – 48 /V DC Fan (Qty: 2)
- Part No.: HS-2551-01 – Heat Sink for MPC2551 (Qty: 1)

Enclosure

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