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› AgPubs Service Repair Manual for Case W18, W20, W20B Wheel Loaders

AgPubs W18, W20, W20B

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Technical Workshop and Overhaul Instructions

INTRODUCTION

This manual provides comprehensive service, repair, and overhaul instructions for the Case W18, W20, and W20B Wheel Loaders. It is designed to assist technicians and owners in performing maintenance, troubleshooting, and repair procedures effectively and accurately. Adherence to the procedures outlined in this manual is crucial for maintaining equipment performance and safety.



Figure 1: Front cover of the AgPubs Service Manual for Case W18, W20, W20B Wheel Loaders, presented in a durable binder.

UNDERSTANDING MANUAL TYPES

Different types of manuals serve distinct purposes. This section clarifies the primary functions of common equipment manuals:

- **Service Manual:** Focuses on repair, overhaul, and troubleshooting procedures. This manual falls into this category.
- **Operators Manual:** Provides information on basic maintenance, operational guidelines, fluid types, quantities, and adjustments.
- **Parts Catalog:** Contains exploded views, part names, and original equipment manufacturer (OEM) part numbers for identification and ordering.

MANUAL STRUCTURE AND CONTENT OVERVIEW

This service manual is organized into several series and sections, each addressing specific components or systems of the Case W18, W20, and W20B Wheel Loaders. Key sections include:

W18, W20, AND W20B LOADERS - P.I.N. 9123140 AND AFTER		
TABLE OF CONTENTS		
SERIES/SECTION	SECTION NO.	FORM NO.
18 SERIES - GENERAL		
General Engine Specifications - 4018D	1010	8-22740
Decals	1012	9-68960
Detailed Engine Specifications - 4018D	1022	9-77065
Maintenance and Lubrication	1050	9-68960
Torque Charts	1051	9-68960
Noise Control	1052	9-68960
20 SERIES - ENGINES		
Engine Diagnostics	2001	9-76355
Engine Tune-Up	2002	9-76379
Cylinder Head, Valve Train and Camshaft	2015	9-76168
Cylinder Block, Sleeves, Pistons and Rods	2025	9-76176
Crankshaft, Main Bearings, Flywheel and Oil Seals	2035	9-76187
Lubrication System	2045	9-76805
General Engine Information (Start Tests, Engine Removal and Installation, Radiator Removal and Installation)	2050	9-68960
Air Cleaner and Muffler	2051	9-68960
Ether Injection	2053	9-68960
Cooling System	2065	9-76337
Turbocharger	2065	9-68960
Reconditioning Engine Cylinder Block	2280	8-21170
Turbocharger Failure Analysis	2565	9-76235
30 SERIES - FUEL SYSTEM		
Fuel System and Filters	3010	9-75287
Robert Bosch Fuel Injection Pump	3012	9-74937
Roosa Master Fuel Injectors	3013	9-74959
Engine Controls, Fuel Lines, and Fuel Tank	3052	9-68960
Electric Fuel Pump	3053	9-67781
40 SERIES - ELECTRICAL		
Electrical System Specifications and Troubleshooting	4002	9-68960
Wiring Diagrams	4003	9-68960
Instrument Cluster	4004	9-67781
Batteries	4005	9-68960
Starter	4006	9-68960
Alternators	4007	9-68960
50 SERIES - STEERING		
Hydraulic Diagram, Troubleshooting, and Pressure Check	5002	9-68960
Steering Control Valve and Flow Control Valve	5007	9-68960
Steering Cylinders	5010	9-68960
Center Pivot	5023	9-68960
Auxiliary Steering	5025	9-68960

Figure 2: Excerpt from the manual's table of contents, detailing sections on General Information, Engines, Fuel System, Electrical, and Steering.

- **Series 10 - General:** Covers general engine specifications, decals, detailed engine specifications, maintenance and lubrication, torque charts, and noise control.
- **Series 20 - Engines:** Includes engine diagnostics, tune-up procedures, cylinder head, valve train, camshaft, cylinder block, sleeves, pistons, rods, crankshaft, main bearings, flywheel, oil seals, lubrication system, engine removal, installation, radiator removal, installation, air cleaner, ether injection, cooling system, turbocharger, reconditioning engine cylinder block, and turbocharger failure analysis.
- **Series 30 - Fuel System:** Details fuel system and filters, Roosa Master fuel injectors, engine controls, fuel lines, and electric fuel pump.
- **Series 40 - Electrical:** Provides electrical system specifications, troubleshooting, wiring diagrams, instrument cluster, batteries, starter, and alternators.
- **Series 50 - Steering:** Covers hydraulic diagram, troubleshooting, pressure check, steering control valve, flow control valve, steering cylinders, center pivot, and auxiliary steering.

SERIES/SECTION	SECTION NO.	FORM NO.
80 SERIES - POWER TRAIN		SA1277
Allison Powershift Transmission Manual	6102	9-68960
Maintenance, Removal and Installation, and Troubleshooting	6118	9-68960
Transmission Controls	6120	9-68960
Drive Shafts, Center Bearing, and Universal Joints	6125	9-68960
Rear Axle Trunnion	6126	9-68960
Differential and Planetaries - GKN axle for W20B	6127	9-68960
Differential and Planetaries - Rockwell axle for W18 and W20 ..	6128	9-68960
Wheels and Tires		
70 SERIES - BRAKES		9-68960
General Air System Information	7102	9-68960
Air Compressor, Governor, and Reservoir	7103	9-68960
Brake Valve	7105	9-68960
Brake Actuator	7107	9-68960
Pressure Reducing Valve and Pressure Protection Valve	7109	9-68960
Air Horn and Air Horn Valve	7110	9-68960
Alcohol Evaporator	7111	9-68960
Double Check Valve and Stoplight Switch	7112	9-68960
Disc Brakes - W20B	7121	9-68960
Drum Brakes - W18 and W20	7122	9-68960
Parking Brake	7128	9-68960
80 SERIES - HYDRAULICS		9-68960
General Hydraulic System Information	8002	9-68960
Hydraulic Pump	8005	9-68960
Loader Control Valve	8007	9-68960
Cylinders	8090	9-68960
90 SERIES MOUNTED EQUIPMENT		9-67221
Air Conditioning Troubleshooting and System Checks	9002	9-68960
Air Conditioning System	9003	9-68960
Loader	9010	9-68960
ROPS Cab and ROPS Canopy	9061	9-67221

Figure 3: Further sections of the manual's table of contents, including Power Train, Brakes, Hydraulics, and Mounted Equipment.

- **Series 60 - Power Train:** Covers Allison Powershift Transmission, maintenance, removal, installation, and troubleshooting, transmission controls, drive shafts, center bearing, universal joints, rear axle, differentials, planetaries (GKN axle for W20B, Rockwell axle for W18 and W20), and wheels and tires.
- **Series 70 - Brakes:** Includes general air system information, air compressor, governor, reservoir, brake valve, brake actuator, pressure reducing valve, pressure protection valve, air horn, air horn valve, alcohol evaporator, double check valve, stoplight switch, disc brakes (W20B), drum brakes (W18 and W20), and parking brake.
- **Series 80 - Hydraulics:** Provides general hydraulic system information, hydraulic pump, loader control valve, and cylinders.
- **Series 90 - Mounted Equipment:** Details air conditioning troubleshooting, system checks, air conditioning system, loader, and ROPS cab and ROPS canopy.

SETUP AND NAVIGATION

This manual is provided in a binder format, allowing for easy page turning and reference during repair work. Sections are typically tabbed for quick navigation. To effectively use this manual:

1. Identify the specific system or component requiring attention.
2. Locate the corresponding series and section using the table of contents or section tabs.
3. Refer to the detailed instructions, diagrams, and specifications within that section.

OPERATING AND REPAIR PROCEDURES

Each section provides step-by-step instructions for various tasks, often accompanied by illustrations and diagrams to clarify complex procedures. Examples include:

- **Fuel System Maintenance:** Instructions for cleaning fuel line screens and filters.
- **Engine Component Removal/Installation:** Detailed steps for tasks such as flywheel removal and installation.
- **System Diagrams:** Comprehensive diagrams for systems like engine lubrication and coolant, aiding in understanding flow and component placement.
- **Troubleshooting Guides:** Visual aids and descriptions for diagnosing issues, such as compressor damage.

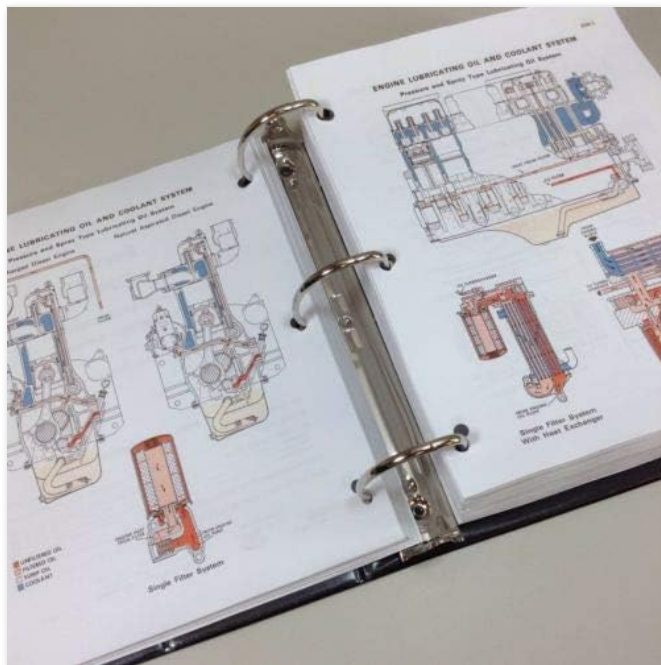


Figure 6: Example page displaying detailed diagrams of the engine lubricating oil and coolant systems, indicating flow paths and components.



Figure 7: Example page providing visual examples of various types of compressor damage, useful for diagnostic purposes.

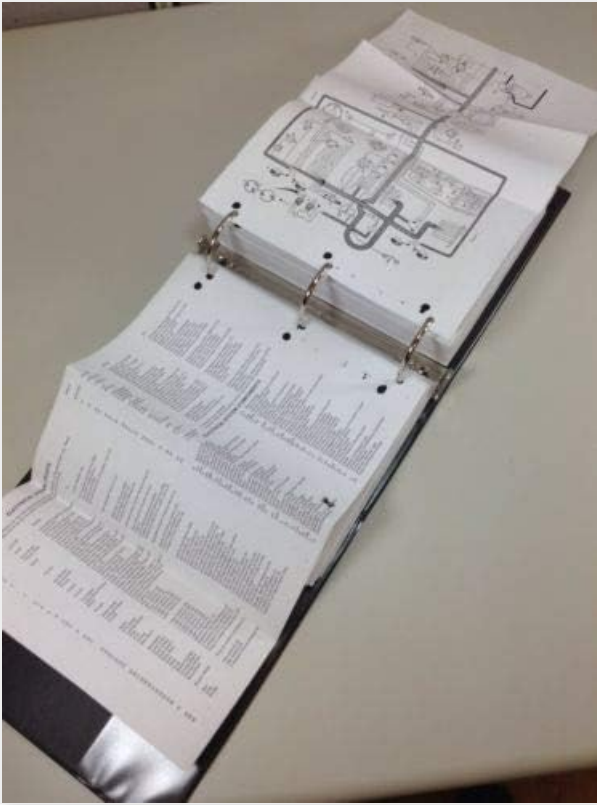


Figure 8: Example page featuring a detailed wiring diagram, essential for electrical system troubleshooting and repair.

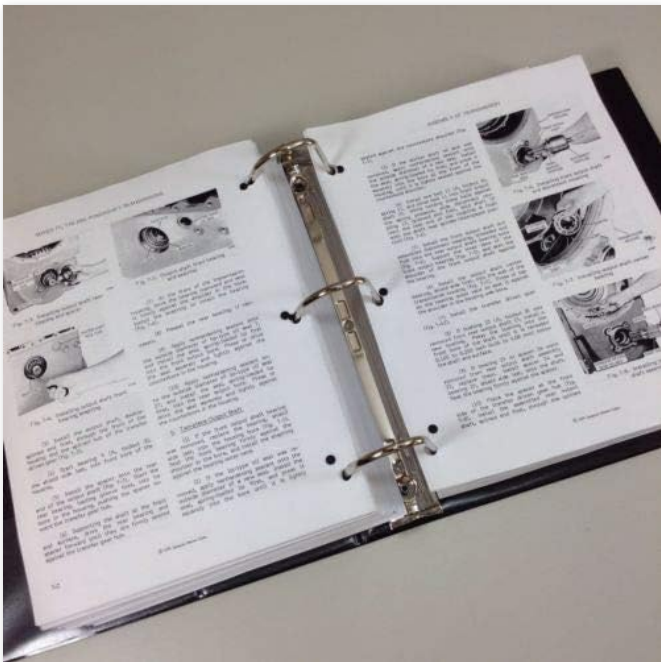


Figure 9: Example page illustrating steps for transmission assembly, including component placement and fastening details.

MAINTENANCE AND TROUBLESHOOTING

This service manual is an indispensable tool for both routine maintenance and complex troubleshooting. It provides:

- **Scheduled Maintenance:** Guidelines for regular service intervals and procedures to ensure optimal performance and longevity of the wheel loader.
- **Diagnostic Charts:** Flowcharts and tables to help identify the root cause of operational issues.
- **Repair Procedures:** Detailed instructions for disassembling, inspecting, repairing, and reassembling components.

- **Adjustment Specifications:** Critical values for settings and tolerances to ensure components operate within manufacturer specifications.

SPECIFICATIONS

Technical specifications for various components and systems of the Case W18, W20, and W20B Wheel Loaders are integrated throughout the relevant sections of this manual. These specifications include, but are not limited to:

- Engine performance data and dimensions.
- Fluid capacities and types.
- Torque values for fasteners.
- Electrical system parameters.
- Component clearances and tolerances.

Always refer to the specific section pertaining to the component in question for accurate and up-to-date specifications.

WARRANTY AND SUPPORT

This AgPubs service manual is a reproduction of the original factory-authored manual, designed for durability and clarity. For questions regarding the content or specific procedures, it is recommended to consult with a certified Case equipment technician or refer to official Case documentation. Information regarding any warranty for the manual itself would typically be provided by the retailer at the time of purchase.

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