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### John Deere 850, 900HC, 950, 1050

# John Deere 850, 900HC, 950, 1050 Tractor Technical Repair Service Manual

## 1. OVERVIEW

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This manual provides comprehensive technical repair and service information for John Deere 850, 900HC, 950, and 1050 series tractors. It is officially designated as Technical (Service) Manual TM-1192. Comprising 820 pages, this document offers detailed instructions and diagrams essential for the maintenance and repair of these tractor models.

## 2. MANUAL STRUCTURE AND SETUP

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The manual is designed for ease of use in a workshop environment, typically presented in a durable ring-bound format. Its content is logically organized into distinct sections and groups, often separated by color-coded tabs, to facilitate quick navigation to specific topics. This structure ensures that users can efficiently locate information pertaining to various tractor systems and components.

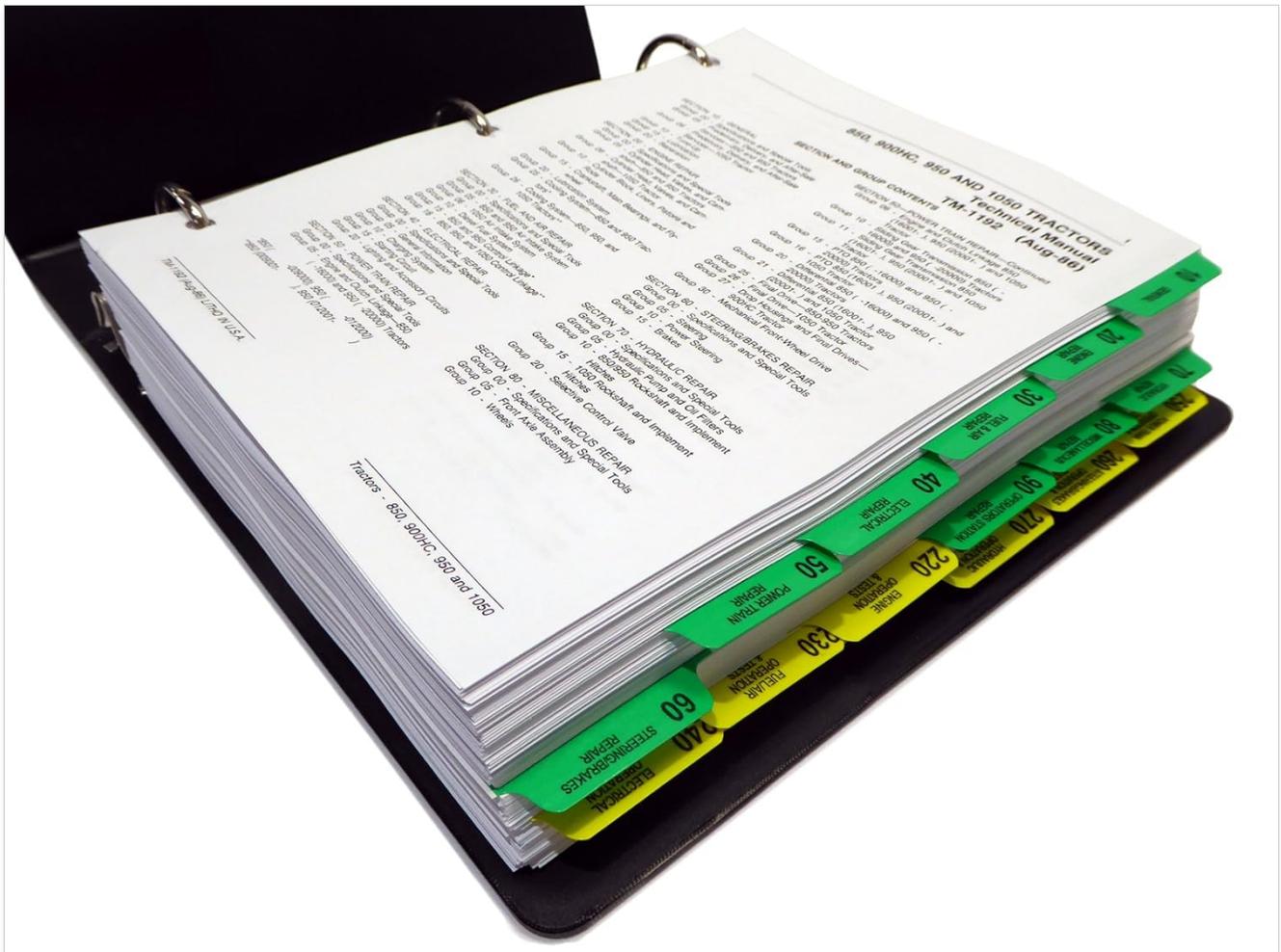


Figure 1: The manual is organized with color-coded tabs for easy navigation between sections.

### 3. OPERATING THE MANUAL

To effectively utilize this manual, identify the tractor system or component requiring service. Then, refer to the corresponding section and group within the manual. Sections are typically categorized by major tractor systems, such as Engine, Fuel and Air, Electrical, Power Train, and Hydraulics. Each group provides specific repair, adjustment, or troubleshooting procedures, often accompanied by detailed diagrams and illustrations for visual guidance.

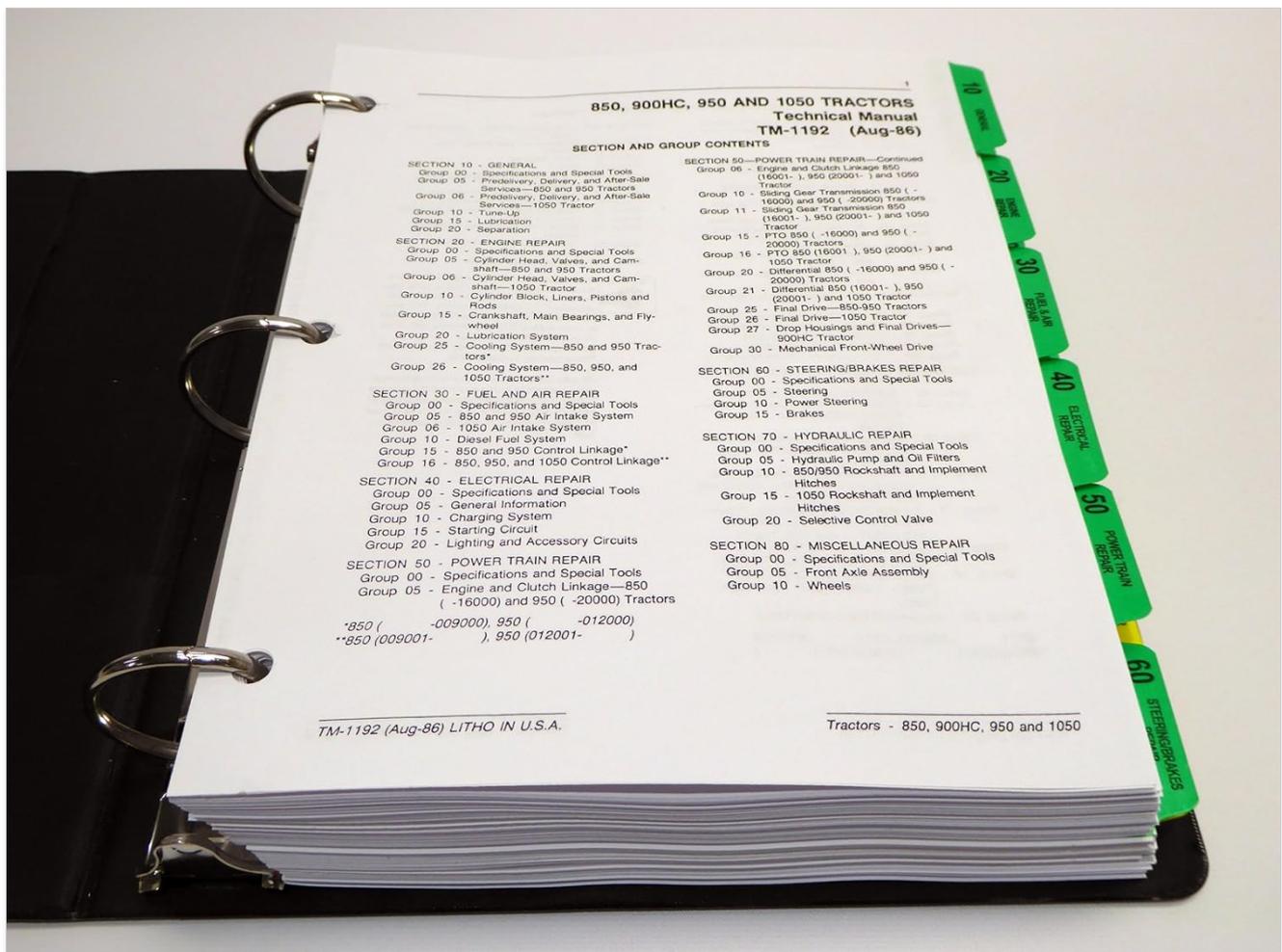


Figure 2: A page from the manual showing the detailed table of contents, outlining sections and groups for different tractor systems.

## 4. MAINTENANCE PROCEDURES

This manual details routine maintenance tasks crucial for ensuring the longevity and optimal performance of John Deere 850, 900HC, 950, and 1050 tractors. It includes comprehensive information on lubrication systems, fuel and air systems, and other critical components that require regular inspection and service. Following these procedures helps prevent premature wear and maintains operational efficiency.

Inspection—Continued



Fig. 3—Checking Outer Rotor-to-Pump Body Clearance

3. Use a feeler gauge to check clearances between outer rotor and pump body (Fig. 3). Compare measurement taken with the following specifications:

OUTER ROTOR-TO-PUMP BODY CLEARANCE	
New Part	Wear Tolerance
0.002 to 0.004 in. (0.05 to 0.10 mm)	0.006 in. (0.15 mm)

If measurement exceeds wear tolerance, replace pump.

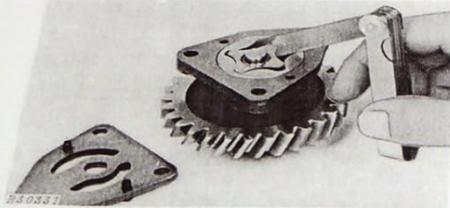


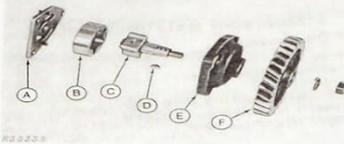
Fig. 4—Checking Inner Rotor-to-Outer Rotor Clearance

4. Check inner rotor-to-outer rotor clearance between a high point on inner rotor, and high point on outer rotor (Fig. 4). Compare measurement taken with the following specifications.

INNER ROTOR-TO-OUTER ROTOR SPECIFICATIONS	
New Part	Wear Tolerance
0.002 to 0.004 in. (0.05 to 0.10 mm)	0.006 in. (0.15 mm)

If measurement exceeds wear tolerance, replace pump.

Assembly and Installation

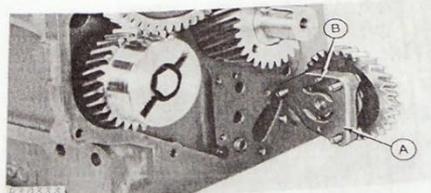


A—Spacer  
B—Outer Rotor  
C—Inner Rotor-Shaft Assembly

D—Key  
E—Pump Body  
F—Gear

Fig. 5—Oil Pump Assembly

1. Install inner rotor-shaft assembly (C, Fig. 5) in pump body (E).
2. Install outer rotor (B) in pump body.
3. Install key in inner rotor-shaft assembly.
4. Install cap screws in pump body.
5. Install gear on shaft.
6. Install lock washer and nut on shaft.
7. Tighten nut to 12 to 15 ft-lb (16 to 20 Nm) (1.6 to 2.0 kgm). DO NOT OVERTIGHTEN NUT.



A—Spacer Plate B—Spring Pin

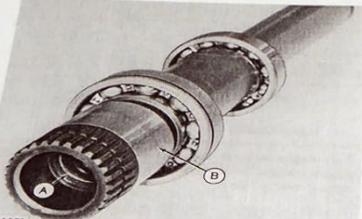
Fig. 6—Oil Pump Installation

8. Install spacer plate (A, Fig. 6) on pump body.
9. Install pump so spring pin (B) enters hole in block.

Figure 3: An example page illustrating pump assembly and inspection procedures, including clearance checks for rotors.

Transmission Clutch Driveshaft—Continued

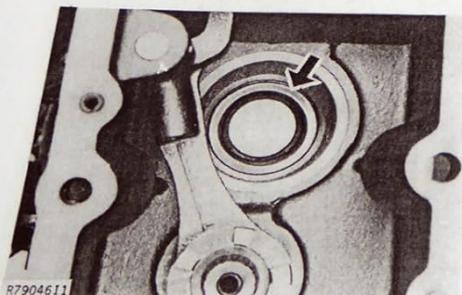
7. If clutch shaft oil seal (Fig. 29) in clutch housing was removed, install new seal using OTC #27521 (2-3/8 in. Driver) and OTC #27508 (1-9/16 in. Driver) Disks. Install oil seal with open side facing rear of housing. Drive oil seal in flush with front of bore.



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A—Oil Seal B—Transmission Clutch Drive Shaft

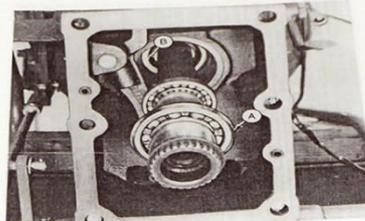
Fig. 30—PTO Shaft Oil Seal

8. If PTO clutch drive shaft oil seal (A, Fig. 30) was removed, replace with new. Install oil seal using OTC #27505 (1-3/8 in. Driver) and OTC #27497 (7/8 in. Pilot) Disks. Drive in oil seal until it bottoms in bore in drive shaft. Check to make sure spring in oil seal is in place after installation.



R7904611  
Fig. 31—Spacer Ring Installed

9. Install spacer ring (Fig. 31) in oil seal housing bore.



A—Snap Ring B—Spacer Ring

Fig. 32—Installing Drive Shaft

10. Install snap ring (A, Fig. 32) in groove in bearing.
11. Install clutch drive shaft from rear of clutch housing. Make sure spacer ring (B) stays in place while installing shaft.

Figure 4: Detailed instructions and diagrams for servicing transmission clutch and linkage assemblies, including oil seal replacement.

## 5. TROUBLESHOOTING AND REPAIR

This manual is an essential resource for diagnosing and resolving issues encountered with John Deere 850, 900HC, 950, and 1050 tractors. It contains detailed theory of operation and troubleshooting guides to help identify the root cause of problems. Specific sections address common issues related to electrical systems, power steering, hydraulic systems, and engine performance, providing step-by-step repair procedures.

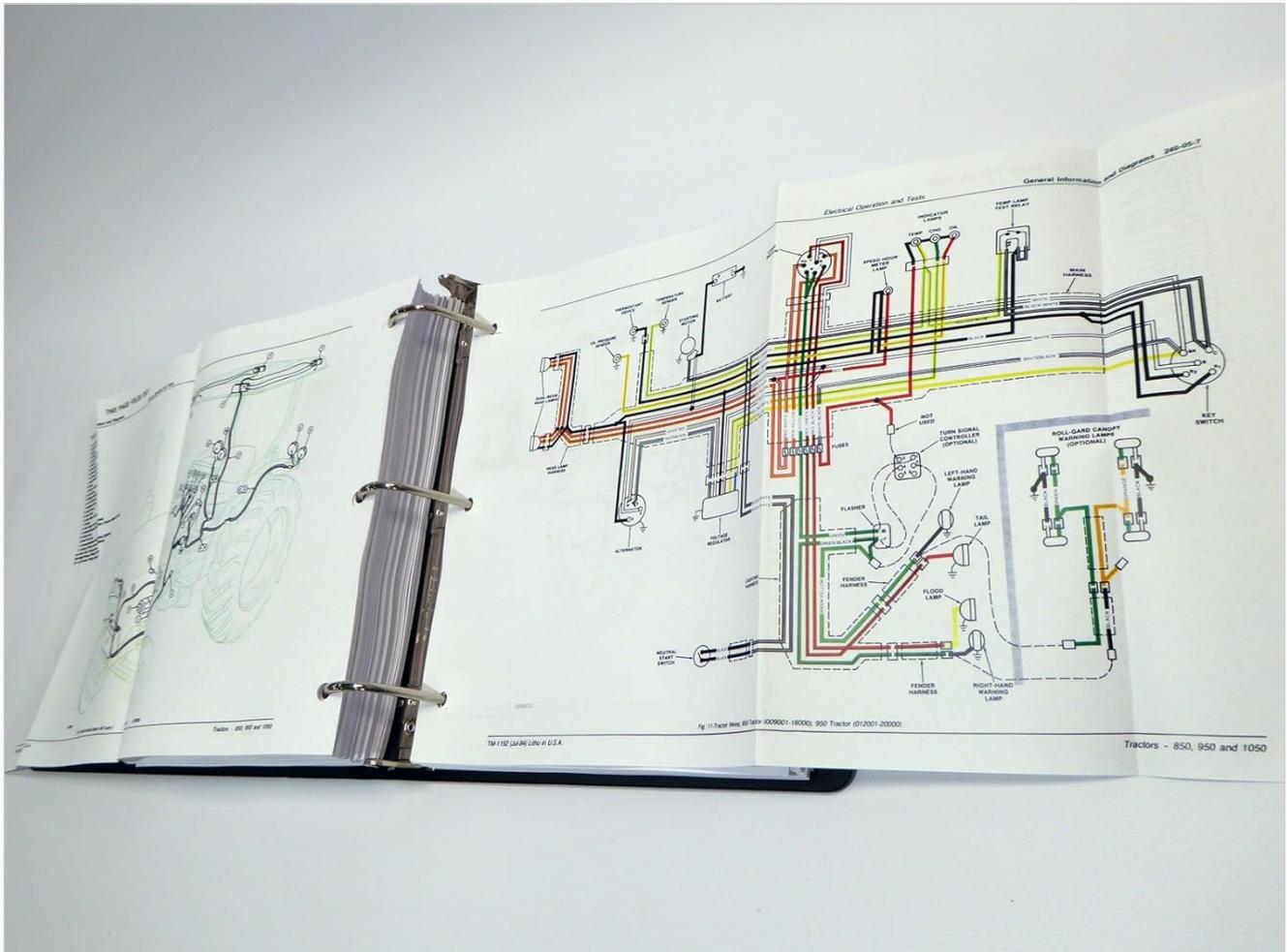


Figure 5: An electrical schematic from the manual, crucial for diagnosing wiring and component issues.

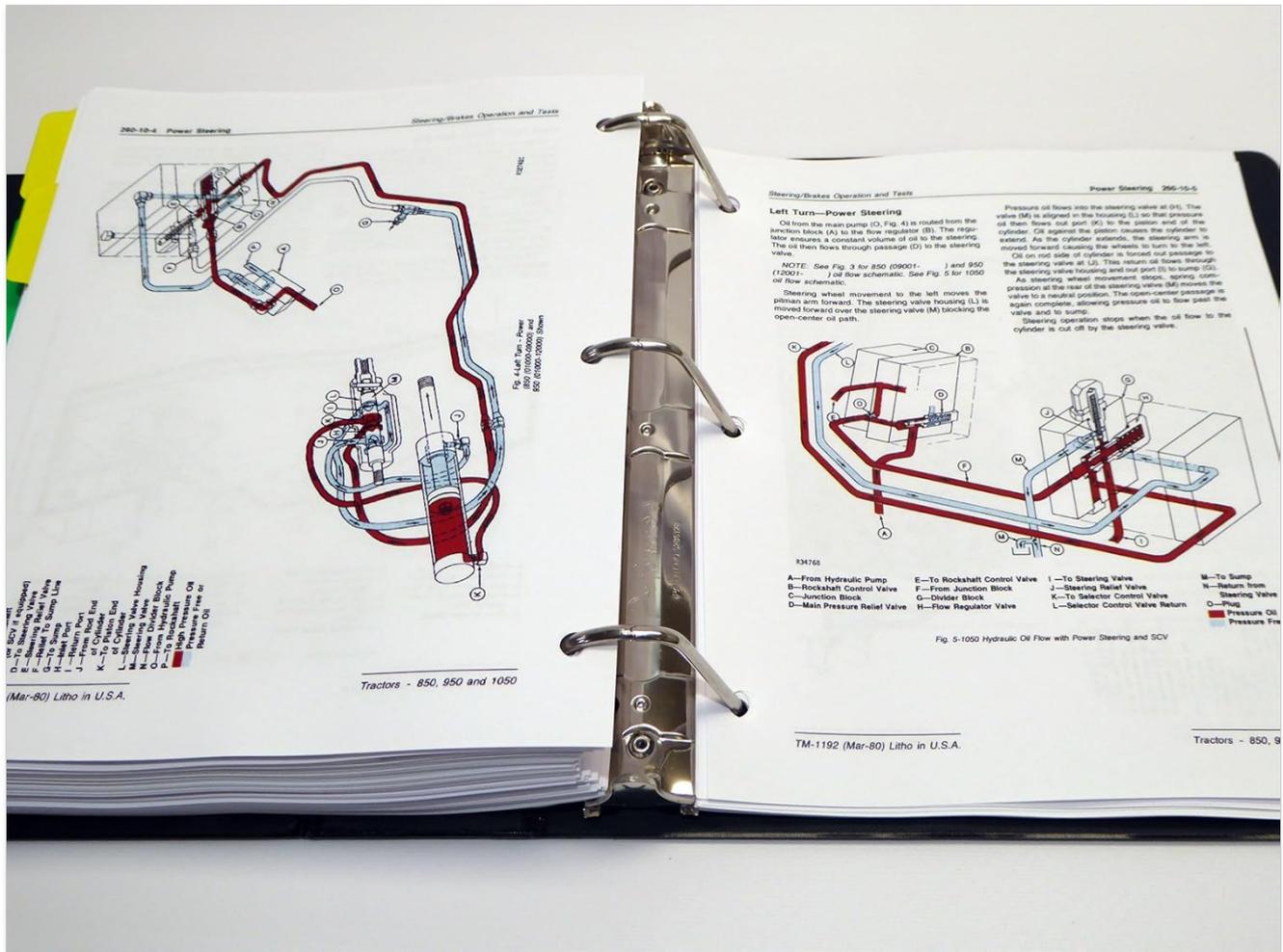


Figure 6: A hydraulic system diagram illustrating the power steering operation and components.

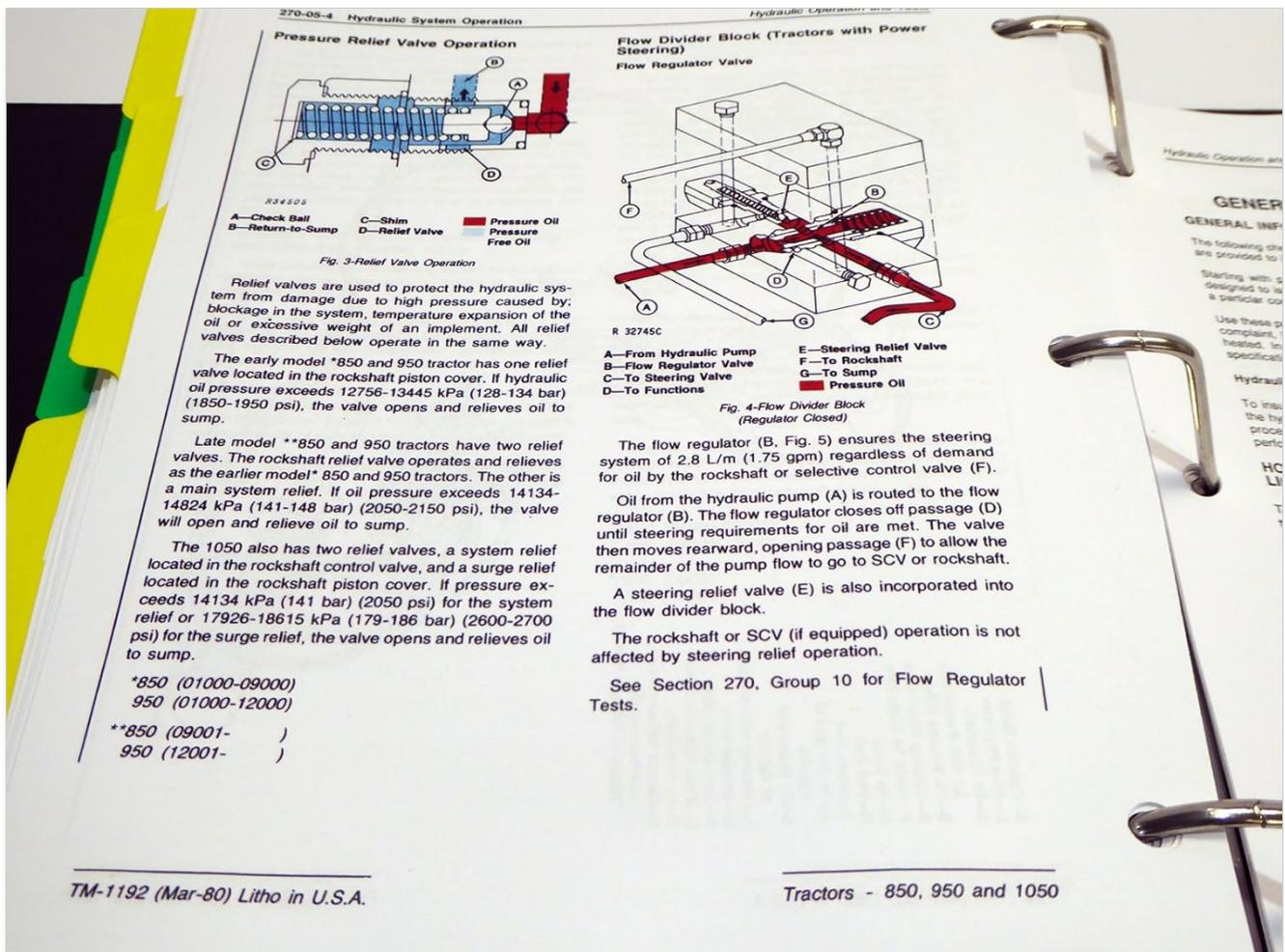


Figure 7: A hydraulic system diagram illustrating the pressure relief valve operation and components.

Figure 7: Detailed illustration and explanation of hydraulic system pressure relief and flow regulator valve operation.

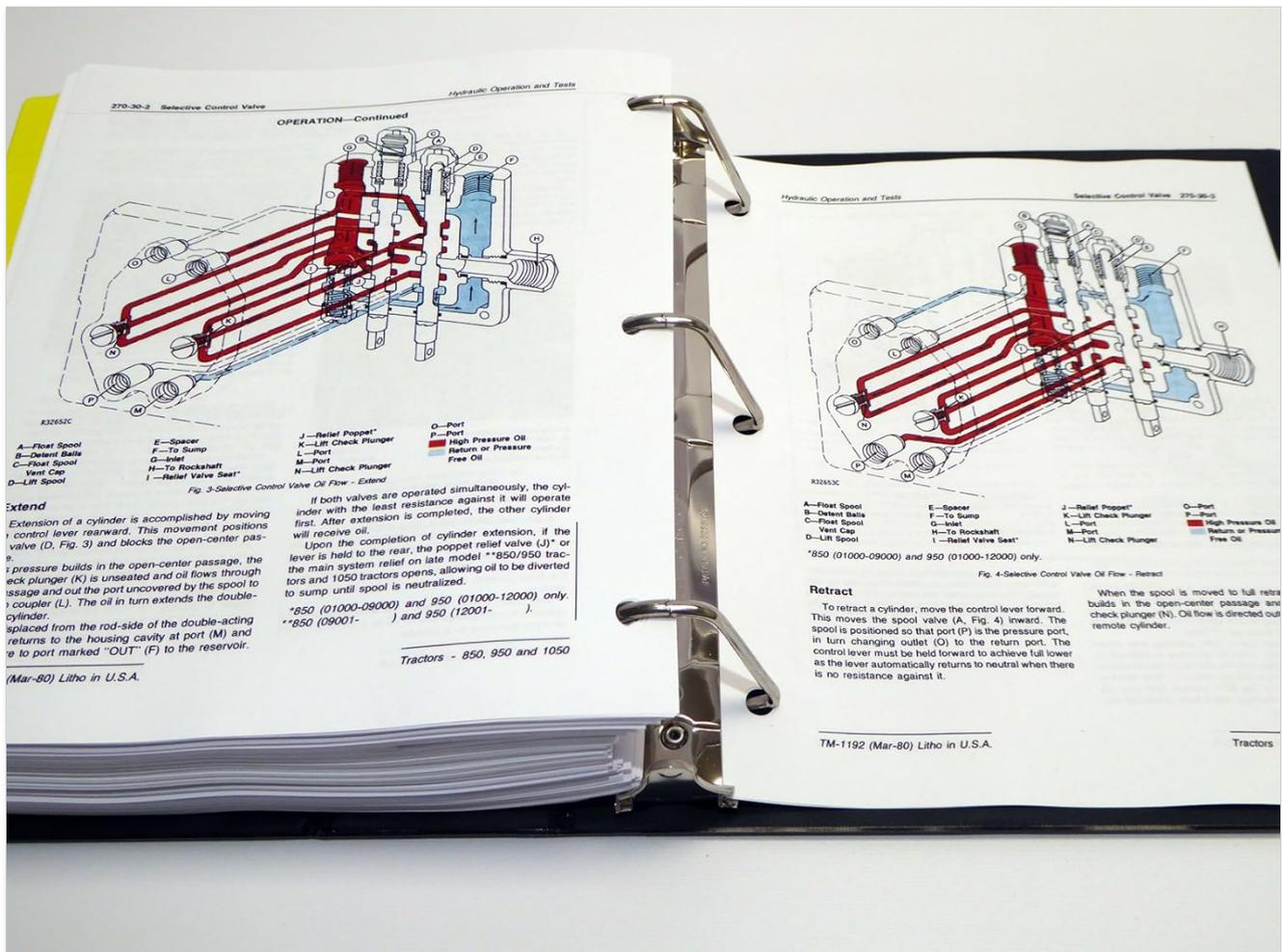


Figure 8: A diagram detailing the operation and components of the selective control valve (SCV) within the hydraulic system.

## 6. SPECIFICATIONS

- **Models Covered:** John Deere 850, 900HC, 950, 1050 Tractors
- **Manual Type:** Technical (Service) Manual (TM-1192)
- **Total Pages:** 820
- **Publisher:** TechMedia
- **Language:** English
- **Publication Date:** January 1, 1986
- **Physical Format:** Ring-bound
- **Dimensions:** 9 x 7 x 1 inches
- **Item Weight:** 2 pounds