

# Bendix Air Disc Brakes Manual

## 5.7 BENDIX® SPLINED DISC® HUB ROTOR

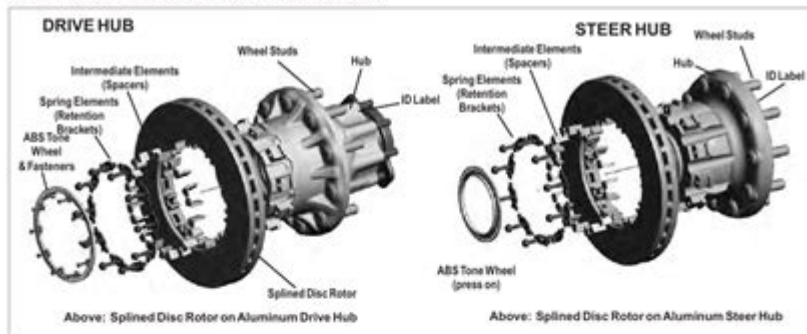


FIGURE 86 - SPLINED DISC ROTOR EXAMPLES - EXPLODED VIEWS

Bendix® Splayed Disc® Hub Rotors are designed to assist vehicle maintenance by typically allowing the rotor to be serviced without requiring the entire hub/rotor assembly be replaced.

Periodic inspection of the Splayed Disc attachment hardware is recommended to ensure optimum braking performance. Bendix recommends verifying the torque on the spring element fasteners whenever a brake inspection is performed.

**NOTE:** In situations where the entire hub/rotor assembly is to be replaced, follow the vehicle manufacturer's guidelines. Bendix recommends that the wheel seal also be replaced at the same time, using a high-temperature seal. Follow the wheel seal and/or vehicle manufacturer's guidelines for full installation instructions. Adjust the bearings and refill bearing oil to vehicle manufacturer's specifications.

When replacing a Splayed Disc Rotor, Bendix strongly recommends that the brake pads be replaced (as an axle set.) Contact 1-800-AIR-BRAKE for appropriate brake pad kit. Rotor replacement necessitates the removal of the pads.

**CAUTION:** Follow all safe maintenance practices, including those listed on page two of this document. Park the vehicle (by other means than the foundation brakes) on level ground and chock the wheels. Also read the vehicle manufacturer's recommendations. When installing pads, where appropriate, use heavy duty gloves and always keep fingers away from potential pinch hazard areas.

Bendix Air Disc Brakes are precision-engineered braking mechanisms. The "friction couple" braking characteristics have been carefully optimized and the rotor design and materials have been matched with special formulation brake pads for optimal performance, therefore use only genuine Bendix® brand parts and brake pads.

### Rotor Replacement

5.7.1 Before removing the brake pads it is strongly recommended that the air disc brake adjuster mechanism be checked for correct operation (See Section 4.1). When replacing brake pads, Bendix strongly recommends that the pads be replaced as an axle set.

5.7.2 Refer to the vehicle manufacturer's recommendations and release (or cage) spring brakes and remove the wheel.

5.7.3 Remove the pads (See Section 5.2).

5.7.4 Remove the air disc brake (See Section 5.3).

**Note:** Follow the vehicle manufacturer's guidelines for removal of the wheel hub and rotor assembly from the vehicle in lieu of these instructions, where available.

**CAUTION:** Be sure to secure both the rotor and hub before removing the retention clips.

5.7.5 Use suitable hand tools to remove the intermediate elements (spacers). Remove all the right-hand intermediate elements (spacers) of each set first and then the rotor can be turned slightly to release the remaining intermediate elements (spacers). In all cases, take care not to damage the hub and its teeth. Remove and discard the intermediate elements (spacers) and retention clips attaching the rotor. Discard the rotor.

35

BENDIX AIR DISC BRAKES MANUAL IS AN ESSENTIAL RESOURCE FOR ANYONE INVOLVED IN THE MAINTENANCE, INSTALLATION, OR OPERATION OF BRAKING SYSTEMS IN COMMERCIAL VEHICLES. UNDERSTANDING HOW TO PROPERLY UTILIZE THIS MANUAL CAN NOT ONLY ENHANCE SAFETY BUT ALSO IMPROVE THE OVERALL PERFORMANCE OF AIR DISC BRAKES. IN THIS ARTICLE, WE WILL EXPLORE THE BENDIX AIR DISC BRAKE SYSTEM, ITS COMPONENTS, TROUBLESHOOTING TIPS, AND MAINTENANCE PRACTICES, ALL WHILE EMPHASIZING THE IMPORTANCE OF THE BENDIX AIR DISC BRAKES MANUAL.

## UNDERSTANDING BENDIX AIR DISC BRAKES

BENDIX AIR DISC BRAKES ARE AN ADVANCED BRAKING TECHNOLOGY DESIGNED FOR HEAVY-DUTY VEHICLES. THEY OFFER SEVERAL ADVANTAGES OVER TRADITIONAL DRUM BRAKES, INCLUDING IMPROVED STOPPING POWER, REDUCED FADE, AND BETTER HEAT DISSIPATION. THE AIR DISC BRAKE SYSTEM TYPICALLY CONSISTS OF THE FOLLOWING COMPONENTS:

# COMPONENTS OF BENDIX AIR DISC BRAKES

1. BRAKE CALIPER: THE CALIPER HOUSES THE BRAKE PADS AND IS RESPONSIBLE FOR APPLYING PRESSURE TO THE BRAKE ROTOR.
2. BRAKE ROTOR: A DISC-SHAPED COMPONENT THAT ROTATES WITH THE WHEEL. THE BRAKE PADS CLAMP ONTO THE ROTOR TO CREATE FRICTION AND SLOW DOWN THE VEHICLE.
3. BRAKE PADS: MADE FROM FRICTION MATERIAL, THESE PADS PRESS AGAINST THE ROTOR TO GENERATE STOPPING POWER.
4. AIR SUPPLY SYSTEM: THIS INCLUDES THE AIR COMPRESSOR, AIR RESERVOIR, AND RELATED COMPONENTS THAT PROVIDE THE NECESSARY AIR PRESSURE TO OPERATE THE BRAKE SYSTEM.
5. ACTUATOR: THIS COMPONENT CONVERTS AIR PRESSURE INTO MECHANICAL FORCE TO ENGAGE THE CALIPER AND BRAKE PADS.

# BENEFITS OF BENDIX AIR DISC BRAKES

BENDIX AIR DISC BRAKES PROVIDE A VARIETY OF BENEFITS THAT MAKE THEM A SUPERIOR CHOICE FOR COMMERCIAL VEHICLES:

- ENHANCED STOPPING POWER: THE DESIGN OF AIR DISC BRAKES ALLOWS FOR MORE EFFECTIVE BRAKING, REDUCING STOPPING DISTANCES.
- REDUCED BRAKE FADE: AIR DISC BRAKES HANDLE HEAT BETTER THAN TRADITIONAL DRUM BRAKES, MINIMIZING THE OCCURRENCE OF BRAKE FADE DURING PROLONGED USE.
- LOWER MAINTENANCE COSTS: THE DURABILITY OF AIR DISC BRAKES OFTEN RESULTS IN LONGER SERVICE INTERVALS AND REDUCED MAINTENANCE EXPENSES.
- CONSISTENT PERFORMANCE: AIR DISC BRAKES OFFER RELIABLE BRAKING PERFORMANCE REGARDLESS OF THE CONDITIONS, WHETHER WET OR DRY.

# CONSULTING THE BENDIX AIR DISC BRAKES MANUAL

THE BENDIX AIR DISC BRAKES MANUAL IS A COMPREHENSIVE GUIDE THAT PROVIDES DETAILED INFORMATION ON THE INSTALLATION, OPERATION, AND MAINTENANCE OF THESE BRAKING SYSTEMS. HERE ARE SOME KEY SECTIONS TYPICALLY COVERED IN THE MANUAL:

## INSTALLATION GUIDELINES

- PREPARATION: ENSURE THAT YOU HAVE ALL NECESSARY TOOLS AND EQUIPMENT BEFORE BEGINNING THE INSTALLATION PROCESS.
- STEP-BY-STEP INSTRUCTIONS: THE MANUAL PROVIDES CLEAR INSTRUCTIONS ON HOW TO INSTALL THE AIR DISC BRAKE SYSTEM, INCLUDING:
  1. REMOVING THE EXISTING BRAKING SYSTEM.
  2. INSTALLING THE NEW BRAKE CALIPERS AND ROTORS.
  3. CONNECTING THE AIR SUPPLY AND ENSURING PROPER AIR PRESSURE.
  4. PERFORMING INITIAL ADJUSTMENTS.

## MAINTENANCE PROCEDURES

REGULAR MAINTENANCE IS CRUCIAL FOR THE LONGEVITY AND PERFORMANCE OF AIR DISC BRAKES. THE MANUAL TYPICALLY INCLUDES:

- INSPECTION: GUIDELINES FOR CHECKING THE CONDITION OF BRAKE PADS, ROTORS, AND CALIPERS, INCLUDING:
  - VISUAL INSPECTIONS FOR WEAR OR DAMAGE.
  - CHECKING FOR PROPER ALIGNMENT AND FIT.
- CLEANING: INSTRUCTIONS ON HOW TO CLEAN COMPONENTS TO PREVENT CONTAMINATION AND ENSURE OPTIMAL PERFORMANCE.

- LUBRICATION: RECOMMENDATIONS FOR LUBRICATING MOVING PARTS TO REDUCE WEAR AND TEAR.
- ADJUSTMENTS: STEPS FOR ADJUSTING THE CALIPER AND BRAKE PADS TO ENSURE PROPER ENGAGEMENT.

## TROUBLESHOOTING COMMON ISSUES

THE BENDIX AIR DISC BRAKES MANUAL INCLUDES A TROUBLESHOOTING SECTION TO HELP DIAGNOSE AND RESOLVE COMMON ISSUES. SOME TYPICAL PROBLEMS AND THEIR SOLUTIONS ARE:

1. UNEVEN BRAKE WEAR:
  - CHECK FOR PROPER ALIGNMENT OF THE CALIPER AND ROTOR.
  - INSPECT BRAKE PADS FOR PROPER INSTALLATION.
2. BRAKE FADE:
  - ENSURE THAT THE AIR SUPPLY SYSTEM IS FUNCTIONING CORRECTLY.
  - INSPECT FOR ANY AIR LEAKS IN THE SYSTEM.
3. NOISY BRAKING:
  - CHECK FOR DEBRIS BETWEEN THE BRAKE PADS AND ROTOR.
  - ENSURE THAT THE BRAKE PADS ARE ADEQUATELY LUBRICATED.
4. POOR BRAKING PERFORMANCE:
  - VERIFY THAT THE AIR PRESSURE IS WITHIN THE RECOMMENDED RANGE.
  - INSPECT THE CALIPER FOR ANY SIGNS OF DAMAGE OR MALFUNCTION.

## SAFETY PRECAUTIONS

WHEN WORKING WITH BENDIX AIR DISC BRAKES, SAFETY SHOULD ALWAYS BE A PRIORITY. HERE ARE SOME ESSENTIAL SAFETY PRECAUTIONS TO FOLLOW:

- PERSONAL PROTECTIVE EQUIPMENT (PPE): ALWAYS WEAR APPROPRIATE PPE, INCLUDING GLOVES, SAFETY GLASSES, AND STEEL-TOED BOOTS.
- WORK ENVIRONMENT: ENSURE THAT THE WORKSPACE IS WELL-LIT AND FREE FROM HAZARDS.
- PROPER TOOL USAGE: USE THE RIGHT TOOLS FOR THE JOB AND ENSURE THEY ARE IN GOOD CONDITION.
- FOLLOW MANUFACTURER INSTRUCTIONS: ALWAYS ADHERE TO THE GUIDELINES AND RECOMMENDATIONS OUTLINED IN THE BENDIX AIR DISC BRAKES MANUAL.

## CONCLUSION

THE BENDIX AIR DISC BRAKES MANUAL IS A VITAL RESOURCE FOR ANYONE INVOLVED IN THE MAINTENANCE AND OPERATION OF HEAVY-DUTY BRAKING SYSTEMS. BY UNDERSTANDING HOW TO EFFECTIVELY USE THIS MANUAL, YOU CAN ENSURE THE SAFETY, PERFORMANCE, AND LONGEVITY OF BENDIX AIR DISC BRAKES. REGULAR MAINTENANCE, ADHERING TO INSTALLATION GUIDELINES, AND TROUBLESHOOTING COMMON ISSUES WILL HELP YOU MAXIMIZE THE BENEFITS OF THIS ADVANCED BRAKING TECHNOLOGY. WHETHER YOU ARE A FLEET MANAGER, TECHNICIAN, OR VEHICLE OWNER, HAVING A SOLID GRASP OF THE BENDIX AIR DISC BRAKES MANUAL IS KEY TO KEEPING YOUR VEHICLES OPERATING AT PEAK PERFORMANCE.

## FREQUENTLY ASKED QUESTIONS

## WHAT IS A BENDIX AIR DISC BRAKE MANUAL?

THE BENDIX AIR DISC BRAKE MANUAL IS A COMPREHENSIVE GUIDE THAT PROVIDES DETAILED INFORMATION ON THE INSTALLATION, MAINTENANCE, AND TROUBLESHOOTING OF BENDIX AIR DISC BRAKE SYSTEMS USED IN COMMERCIAL VEHICLES.

## HOW OFTEN SHOULD I CONSULT THE BENDIX AIR DISC BRAKE MANUAL?

IT IS RECOMMENDED TO CONSULT THE BENDIX AIR DISC BRAKE MANUAL REGULARLY, ESPECIALLY BEFORE PERFORMING MAINTENANCE OR REPAIRS, TO ENSURE COMPLIANCE WITH MANUFACTURER SPECIFICATIONS AND SAFETY STANDARDS.

## WHERE CAN I FIND A COPY OF THE BENDIX AIR DISC BRAKE MANUAL?

A COPY OF THE BENDIX AIR DISC BRAKE MANUAL CAN BE FOUND ON THE OFFICIAL BENDIX WEBSITE, THROUGH AUTHORIZED DEALERS, OR IN THE SERVICE DEPARTMENT OF VEHICLE MANUFACTURERS THAT USE BENDIX PRODUCTS.

## WHAT ARE THE KEY MAINTENANCE PROCEDURES OUTLINED IN THE BENDIX AIR DISC BRAKE MANUAL?

KEY MAINTENANCE PROCEDURES INCLUDE CHECKING BRAKE PAD WEAR, INSPECTING BRAKE ROTORS FOR DAMAGE, ENSURING PROPER AIR PRESSURE, AND VERIFYING THE FUNCTIONALITY OF THE BRAKE SYSTEM COMPONENTS.

## DOES THE BENDIX AIR DISC BRAKE MANUAL INCLUDE TROUBLESHOOTING TIPS?

YES, THE BENDIX AIR DISC BRAKE MANUAL INCLUDES TROUBLESHOOTING TIPS THAT HELP IDENTIFY AND RESOLVE COMMON ISSUES SUCH AS UNEVEN BRAKING, NOISE, AND PREMATURE WEAR.

## ARE THERE SPECIFIC SAFETY PRECAUTIONS MENTIONED IN THE BENDIX AIR DISC BRAKE MANUAL?

YES, THE MANUAL OUTLINES SPECIFIC SAFETY PRECAUTIONS SUCH AS WEARING APPROPRIATE PERSONAL PROTECTIVE EQUIPMENT (PPE), PROPERLY SECURING THE VEHICLE, AND FOLLOWING SAFE LIFTING PROCEDURES WHEN WORKING ON BRAKE SYSTEMS.

## CAN THE BENDIX AIR DISC BRAKE MANUAL HELP WITH RETROFITTING OLDER VEHICLES?

YES, THE MANUAL PROVIDES GUIDELINES AND COMPATIBILITY INFORMATION THAT CAN ASSIST IN RETROFITTING OLDER VEHICLES WITH BENDIX AIR DISC BRAKE SYSTEMS, ENSURING PROPER INSTALLATION AND PERFORMANCE.

## HOW DOES THE BENDIX AIR DISC BRAKE MANUAL ADDRESS COMMON PERFORMANCE ISSUES?

THE MANUAL ADDRESSES COMMON PERFORMANCE ISSUES BY PROVIDING DIAGNOSTIC STEPS, RECOMMENDED ADJUSTMENTS, AND REPLACEMENT PARTS SPECIFICATIONS TO ENHANCE BRAKE EFFICIENCY AND RELIABILITY.

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