Excel Blades D35488

EXCEL D35488 Differential Ring & Pinion Gear Set for Dana 35 Axles, 4.88 Ratio - Instruction Manual

Model: D35488 | Brand: Excel Blades

1. Introduction

This manual provides essential information for the proper installation, operation, and maintenance of your EXCEL D35488 Differential Ring & Pinion Gear Set. This high-quality gear set is engineered for performance and durability in Dana 35 axles, featuring a 4.88 gear ratio. Adherence to these instructions will help ensure the longevity and optimal performance of your differential components.

Important: Differential gear installation requires specialized tools and expertise. It is highly recommended that installation be performed by a qualified automotive technician.

2. Product Features

- **Gear Ratio:** Premium 4.88 ratio ring & pinion gear set for Dana 35 axles.
- **Carrier Compatibility:** Designed for use with carriers supporting 3.54 and higher ratios.
- **Rotation:** Standard rotation for front or rear axle applications.
- **Material:** Constructed from heat-treated 8620 steel for maximum strength and longevity.
- **Bolt Flexibility:** Dual-drilled ring gear for both 3/8" and 7/16" bolts to increase installation flexibility.
- **Pinion & Ring Gear Details:** Features an 8-tooth pinion and 39-tooth ring gear with a 26-spline pinion shaft.
- **Dimensions:** Ring gear measures 7.5" in diameter; pinion shaft diameter is 1.376".

Image 1: The EXCEL D35488 differential ring and pinion gear set, showing both components. The ring gear is a large, circular gear with internal teeth, and the pinion gear is a smaller, conical gear with external teeth designed to mesh with the ring gear.

3. Vehicle Compatibility

This EXCEL D35488 gear set is compatible with Dana 35 axles found in a wide range of vehicles. Please verify your vehicle's axle type before purchase and installation.

Compatible Brands and Models:

- **AMERICAN MOTORS:**
  - 1968–1970 AMX
  - 1978–1983 Concord
  - 1980–1988 Eagle
  - 1970–1977 Hornet
  - 1968–1974 Javelin
  - 1975–1980 Pacer
  - 1979–1983 Spirit

- **DODGE:**
  - 1997–1999 Dakota
- **FORD:**
  - 1996–2005 Explorer
  - 2001–2003 Explorer Sport
  - 2001–2005 & 2007–2010 Explorer Sport Trac
  - 1998–2011 Ranger
- **JEEP:**
  - 1984–2001 Cherokee
  - 1986–1992 Comanche
  - 1993–2004 Grand Cherokee
  - 2002–2003 Liberty
  - 1997–2006 TJ
  - 1987–1995 Wrangler
  - 1997–2006 Wrangler
- **MERCURY:**
  - 1997–2006 Mountaineer

This product also serves as a direct replacement for various OEM and aftermarket part numbers, including SVL: 2020484, USA Standard Gear: 36238, ZG M35-488, Dorman: 697-366, Motive Gear: D35-488, and Richmond Gear: SD3505.

4. Setup and Installation

Installing a differential ring and pinion gear set is a complex procedure that requires precision and specialized tools. Incorrect installation can lead to premature wear, noise, and catastrophic failure of the differential. **Professional installation by a certified mechanic is strongly recommended.**

General Installation Steps (Overview):

1. **Preparation:** Safely lift and secure the vehicle. Drain the differential fluid and remove the differential cover. Remove axle shafts and the carrier assembly.
2. **Disassembly:** Carefully remove the old ring gear from the carrier and the old pinion gear from the housing. Note all shims and bearing positions.
3. **Cleaning and Inspection:** Thoroughly clean the differential housing and inspect all components for wear or damage. Replace bearings, seals, and crush sleeves as necessary.
4. **Pinion Installation:** Install the new pinion gear with appropriate shims, bearings, and a new crush sleeve. Set the pinion depth and preload according to manufacturer specifications using specialized tools.
5. **Ring Gear Installation:** Mount the new EXCEL ring gear onto the carrier. Ensure proper bolt torque. The dual-drilled design accommodates both 3/8" and 7/16" bolts.
6. **Carrier Installation:** Install the carrier assembly into the differential housing. Set the backlash and carrier bearing preload using shims.
7. **Pattern Check:** Apply gear marking compound to the ring gear teeth and rotate the gears to check the contact pattern. Adjust pinion depth and backlash as needed to achieve an optimal pattern.
8. **Final Assembly:** Reinstall axle shafts, differential cover with a new gasket and sealant, and fill with the

correct type and amount of differential fluid.

Refer to your vehicle's specific service manual for detailed torque specifications and procedures.

Image 2: Close-up view of the EXCEL D35488 pinion gear, highlighting its helical teeth and splined shaft. This component drives the ring gear within the differential.

5. Operating and Break-in Procedure

Proper break-in of new ring and pinion gears is crucial for their longevity and quiet operation. Failure to follow these steps can lead to premature wear, overheating, and gear failure.

Break-in Steps:

1. **Initial Drive:** Drive the vehicle for 15-20 miles at moderate speeds, avoiding hard acceleration or heavy loads.
2. **Cool Down:** Allow the differential to cool completely for at least 30 minutes. This allows the gear oil to cool and the gear surfaces to normalize.
3. **Repeat:** Repeat the 15-20 mile drive and cool-down cycle approximately 2-3 more times.
4. **Extended Driving:** For the first 500 miles, avoid continuous high speeds, heavy towing, or aggressive driving. Vary your speed and load conditions.
5. **Fluid Change:** After approximately 500 miles, it is highly recommended to change the differential fluid. This removes any microscopic metal particles that may have worn off during the initial break-in period. Use a high-quality gear oil with the correct viscosity and any necessary friction modifiers for your application.

During the break-in period, it is normal for the differential housing to get warm. However, if it becomes excessively hot to the touch, stop driving and allow it to cool. Consult your installer or a qualified technician if you experience unusual noises or excessive heat.

6. Maintenance

Regular maintenance is essential for the longevity and reliable operation of your differential. Adhere to your vehicle manufacturer's recommended service intervals for differential fluid changes and inspections.

Key Maintenance Practices:

- **Fluid Checks:** Periodically check the differential fluid level and condition. Low fluid levels or contaminated fluid can lead to premature wear.
- **Fluid Changes:** Change differential fluid at recommended intervals, typically every 30,000 to 50,000 miles, or more frequently for vehicles used in severe conditions (towing, off-roading, racing). Always use the correct type and weight of gear oil specified for your axle.
- **Leak Inspection:** Regularly inspect the differential housing, pinion seal, and axle seals for any signs of fluid leaks. Address leaks promptly to prevent fluid loss.
- **Noise Monitoring:** Pay attention to any unusual noises coming from the differential, such as whining, clunking, or grinding. These can indicate a problem that requires immediate attention.
- **Vent Tube:** Ensure the differential vent tube is clear and not clogged. A clogged vent can cause pressure buildup, leading to seal leaks.

Image 3: A detailed view of the EXCEL D35488 ring gear, showcasing its robust construction and the precision-machined teeth. This gear is designed to withstand significant torque and stress within the differential.

7. Troubleshooting

If you experience issues with your differential, consult this section for common problems and potential solutions. For complex issues, professional diagnosis and repair are recommended.

Common Differential Issues:

- **Whining Noise:**
  - **Cause:** Often indicates incorrect gear setup (pinion depth or backlash), worn bearings, or improper break-in.
  - **Solution:** Check fluid level. If noise persists, professional inspection of gear setup and bearings is required.
- **Clunking or Clicking Noise:**
  - **Cause:** Can be loose U-joints, worn splines, excessive backlash, or issues with the limited-slip differential (if applicable).
  - **Solution:** Inspect U-joints and driveshaft. Check for excessive play in the differential.
- **Grinding Noise:**
  - **Cause:** Typically indicates severe wear or damage to gear teeth or bearings.
  - **Solution:** Immediate professional inspection is necessary to prevent further damage.
- **Fluid Leaks:**
  - **Cause:** Damaged seals (pinion seal, axle seals, differential cover gasket), loose bolts, or a clogged vent tube.
  - **Solution:** Identify the source of the leak and replace seals or gaskets as needed. Ensure vent tube is clear.

- **Overheating:**
    - **Cause:** Low fluid level, incorrect fluid type, improper gear setup (too tight), or heavy towing/off-roading without adequate cooling.
    - **Solution:** Check fluid level and type. Allow differential to cool. If persistent, professional inspection of gear setup is needed.

Always address differential issues promptly to prevent minor problems from escalating into costly repairs.

8. Specifications

EXCEL D35488 Differential Ring & Pinion Specifications

Feature	Detail
Manufacturer	EXCel
Brand	Excel Blades
Model Number	D35488
Axle Fitment	Dana 35 (Standard Rotation)
Gear Ratio	4.88
Carrier Break	3.54 and Higher
Ring Gear Diameter	7.5"
Ring Gear Tooth Count	39
Pinion Tooth Count	8
Pinion Shaft Diameter	1.376"
Pinion Spline Count	26
Material	8620 Steel
Ring Gear Bolt Holes	Dual Drilled for 3/8" & 7/16" Bolts
Item Weight	17.6 pounds
Product Dimensions	15.25 x 11 x 5.25 inches

Image 4: The EXCEL D35488 ring and pinion gear set shown separately, illustrating the distinct forms of the ring gear and the pinion gear before assembly.

9. What's in the Box

The EXCEL D35488 Differential Ring & Pinion Gear Set package includes:

- 1 x Ring Gear
- 1 x Pinion Gear

Note: Bearings, seals, shims, and other installation hardware are typically sold separately and are required for a complete installation.

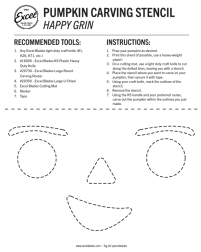
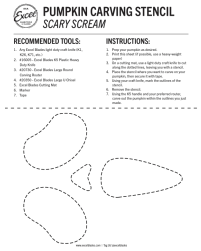
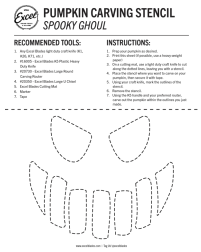
Image 5: The packaging for the EXCEL D35488 Ring & Pinion gear set, featuring the brand logo and product information.

10. Warranty and Support

The EXCEL D35488 Differential Ring & Pinion Gear Set is backed by a**1-Year / 50,000-Mile Warranty**. This warranty covers defects in materials and workmanship under normal use and service. For warranty claims or technical support, please contact Excel Blades customer service.

For additional information or to explore other products, visit theExcel Blades Store.

Related Documents - D35488

	[Excel Blades Halloween Garland Craft: Ghost and Bat Instructions] Step-by-step instructions and recommended tools from Excel Blades for creating a DIY Halloween ghost and bat garland using paper and cardstock.
	[Excel Happy Grin Pumpkin Carving Stencil Instructions] Download and use the Excel Happy Grin pumpkin carving stencil. This guide provides recommended tools and step-by-step instructions for creating a happy grin pumpkin face.
	[Excel Scary Scream Pumpkin Carving Stencil Instructions] Step-by-step instructions and recommended tools for using the Excel Scary Scream pumpkin carving stencil to create custom Halloween decorations.
	[Excel Spooky Ghoul Pumpkin Carving Stencil Instructions] Download and use the Excel Spooky Ghoul pumpkin carving stencil. Includes recommended tools and step-by-step instructions for creating a spooky Halloween pumpkin.
	[Excel Blades 44383 Craftsman Set - Precision Craft Knife Kit] Explore the Excel Blades 44383 Craftsman Set, a comprehensive craft knife kit featuring multiple precision blades and ergonomic handles, all housed in a wooden case. Includes detailed product dimensions for this versatile tool.
	[Excel Blades 44290 Professional Hobby Knife Set] Detailed overview of the Excel Blades 44290 Professional Hobby Knife Set, featuring a comprehensive collection of precision blades and interchangeable handles housed in a durable wooden case. Includes product dimensions for easy reference.