T1-GROUND-RP-INST



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WEDDLE GROUND TYPE 1 R&P SETS INSTRUCTIONS AND PROCEDURES

OVERVIEW

Weddle Industries Ground Ring and Pinion Sets are manufactured using the most modern Gleason Bevel Gear technology including finish grinding after heat treat. Weddle ground R&P sets take advantage of the capabilities of finish grinding to make a stronger, more durable part. Finish grinding removes any distortion of the tooth form that occurs during heat treat resulting in gear teeth that are uniform and perfect.

Not only are the teeth perfect, finish grinding allows for greater control of the tooth contact patch. Weddle Industries worked very closely with our manufacturer, running sample R&P sets and sending them back for inspection and measurement. Through this process the contact pattern was adjusted in both size and location to increase strength and durability.

PINION DEPTH AND CONTACT PATTERN NOTES

Weddle Industries has added several millimeters to the length of the pinion teeth on our Type1 R&P's to make them stronger. While this makes the pinion teeth stronger, it unfortunately means that the factory VW tools will no longer work to measure pinion depth. The factory mandrels measure from the center line of the diff housing to the top of the pinion head. The top of the pinion head on the Weddle R&P is no longer in the same place, so a new procedure is required for setting and adjusting pinion depth.

Please see FIGURE 1 and FIGURE 2 for pinion depth measuring instructions. A sturdy flat surface large enough to support the VW main case and a height gauge will be required for this procedure.



FIGURE 1

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FIGURE 2 illustrates the measurements that will be needed to measure and adjust the pinion depth (PD). The pinion depth is measured from the center line of the differential housing to the back of the pinion head. Important dimensions are the following:

94.50 mm - Radius of the side cover bore

A – Distance from the high point of side cover bore to bottom of pinion head, measured with height gauge.

B – Pinion head height – Etched on pinion head but should be measured to verify

PD = 94.50 - (A - B)

If a height gauge is not available we recommend starting with a .55mm shim and adjusting as needed to get a pattern as seen in the attached photos. When setting up a Weddle ground R&P set the contact pattern should be located more to the toe side of the tooth on both drive and coast sides (See photos).

Recommended backlash on these R&P sets is .25mm (.010") to .30mm (.012").

To achieve more durability on the tooth face not only was the contact pattern moved to the toe side, the contact patch was also made larger. This spreads the drive load over a larger surface area to help reduce surface wear on the teeth. This process is not al-ways recommended and these R&P's may feel slightly rough when turning the R&P over by hand during set up, this is normal.

NOTE: Due to the above mentioned oversized contact patch Weddle ground R&P sets are not guaranteed to be quiet, especially during initial break in. These are a "Heavy Duty" R&P set, made with strength and durability as the top priority. Please keep this in mind if your project is a street driven vehicle.



FIGURE 2



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BREAK IN NOTES

Increase the lifespan of your new ring and pinion set and avoid damage by taking the time to properly break it in. New R&P sets straight from the factory have microscopic "peaks" and "valleys" on the faces of the gears left over from the manufacturing process. Unfortunately, the "lapping" procedure does not accomplish a proper break in of the gears as it cannot simulate the loads encountered during real world operation. True break in can only be done in the vehicle.

BREAK IN PROCEDURE

During initial use, running new R&P sets will create more heat than normal. If a new set is run too hard or for too long, a critical amount of heat will be generated that can damage the steel as well as the lubricant. This will result in increased wear and decrease the lifespan of the parts.

Take the time to properly break in your new R&P:

- On initial use, drive easy. No hard launches. No full throttle or high speed runs. No towing.
- Drive for 15-20 minutes. Stop and let the gearbox cool for 30 minutes. Repeat 3-5 times.
- Replace lubricant after initial break in and short run time.

Following this break in procedure will help to "work harden" the material by flattening high spots and compressing steel molecules near the surface. This will make your ring and pinion set a harder, better and more durable part.

REM POLISHING

REM polishing will reduce the heat created and eliminate high and low spots on the gear faces, but it will not "work harden" the surface of the teeth. The break in procedure is still highly recommended.

IF YOU HAVE ANY QUESTIONS

Please call us at: +1 (805) 562-8600 or e-mail us at: INFO@WEDDLEINDUSTRIES.COM

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