



PRECISION PERFORMANCE
SINCE 2003

LN Engineering Nickies

**Delivering Six Cylinder Performance
For Your Four Cylinder Porsche 356 & 912 Engine**

1/E Helling
©2004



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Mission

LN Engineering seeks to provide innovative “no-compromise” solutions to the automotive aftermarket to exceed OEM requirements. We strive to deliver the highest level of precision performance for our products using improved material, manufacturing, and finishing technologies, all backed up by industry leading educational resources and support.



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Facility

We do all our machining and manufacturing in the USA in our 18,000 sq/ft facility, located one hour south of Chicago, IL.





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Process

Nickies billet cylinders are proudly machined on U.S.-made HAAS CNC equipment using custom AL extrusions from Hydro in Cressona, PA.





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Bore Coating and Plating

LN Engineering has extensive experience with Nikasil type plating as well as the latest in bore coating technologies, APS and PTWA, used by Porsche since 2017.



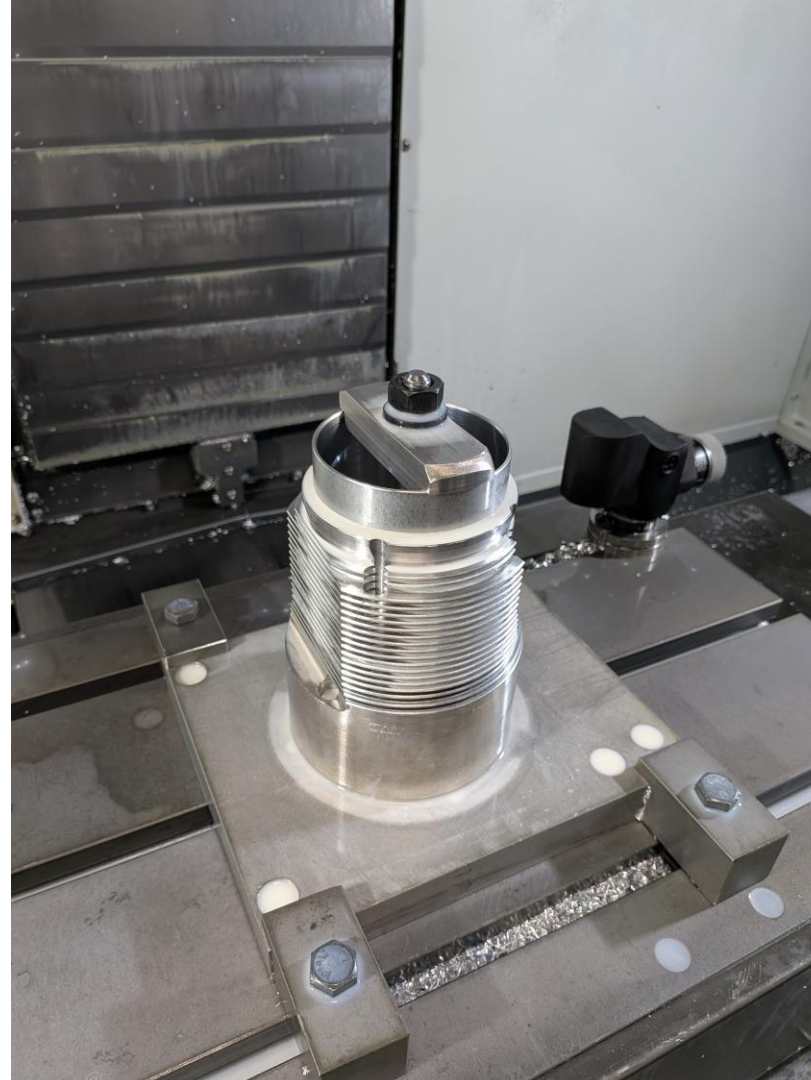


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Quality

Every part made by LN Engineering undergoes stringent quality control inspections at multiple points during the manufacturing or reconditioning process to ensure the best possible outcome for our customer.

ISO 9001 Compliant





Quality

Cylinders are precision honed to our exacting specifications and are measured using Sunnen bore gauges, Mitutoyo profilometers, and Digital Metrology Traceboss to ensure proper cylinder geometry and surface finish.





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Our Partners

LN Engineering offers premium performance parts designed to meet or exceed OEM requirements from industry leaders CP Carrillo, Mahle Motorsport, UEM and Wossner.





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Our Partners



CYLINDER & PISTON SETS

Mahle Motorsport piston and cylinders kits allow for tighter clearances, reduced wear on both the piston and bore, and quieter operation, providing true OEM compatibility with no compromises. Now for 356 & 912.
An LN Engineering exclusive.





Why LN Engineering?

- **LN Engineering has been manufacturing Nickies cylinders in the USA since 2002 with tens of thousands sold.**
- **LN Engineering was the first to pass the 1720cc barrier with 88mm in 2003 and 90mm in 2005 for Porsche 356 and 912 models.**
- **LN Engineering is one of the most trusted names in the Porsche aftermarket and the leading authority on cylinders and pistons for Porsche engines in the USA.**



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History

- **All VW, Porsche 914, and early Porsche 911 models used cast iron cylinders.**
- **At their maximum with cast iron cylinders, the 2.4L 911 engine produced about 22hp per cylinder.**
- **Even Porsche realized that cast iron cylinders were not sufficient to properly cool an aircooled engine.**
- **Porsche used aluminum cylinders to make engines run cooler with Ferral, Chromal, and eventually Nikasil coatings to provide optimal cooling and durability.**



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Nickies Benefits

- **Billet aluminum Nickies are better than cast iron cylinders:**
- **Superior cooling with lower cylinder head and oil temps**
- **Less wear and longer life**
- **Less friction = more horsepower**
- **More torque, less heat**
- **Quieter operation**





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Pistons

Our modern piston designs allow for a large weight reduction over the original cast pistons.

C, SC, or 912 crankshafts and OE connecting rods can be safely used with 1.9L engines turning 6,000 rpm or less.





Displacement Increases

- **Direct Bolt-On Slip Fit Nickies (No machining required)**
86mm 1720 cc
- **Machine-in Nickies (Requires heads to be opened up to 98mm and case register to 94.50mm):**
90mm 1883cc
91mm 1925cc
91.5mm 1946cc
- **Nickies for JPS Sport Plus Billet Cylinder Heads (Requires 8mm head studs and special case machining; Cylinders honed to 3.6598")**
93mm 2011cc.



Porsche 356 & 912 Nickies+JE Sets

| | |
|--------------|---|
| 102-80.A | Porsche 356 80mm Nickies inc. ~8.5:1 CP Piston set |
| 102-82.5.1 | Porsche 356 912 82.5mm Nickies inc. ~9:1 CP Piston set. 22 Degree Heads 57.5-60.5cc chambers |
| 102-82.5.2 | Porsche 356 912 82.5mm Nickies inc. ~9:1 CP Piston set. 30 Degree Heads 57.5-60.5cc chambers |
| 102-86SF.A | Porsche 356 912 86mm Nickies inc. ~9.5:1 CP Piston set. 57.5-60.5cc chambers |
| 102-86SF.B | Porsche 356 912 86mm Nickies inc. ~9.5:1 CP Piston set. 60.5-63.5cc chambers |
| 102-86SF.C | Porsche 356 912 86mm Nickies inc. ~9.5:1 CP Piston set. 63.5-66.5cc chambers |
| 102-90.A | Porsche 356 912 90mm Nickies inc. ~9.5:1 CP Piston set. 57.5-60.5cc chambers |
| 102-90.B | Porsche 356 912 90mm Nickies inc. ~9.5:1 CP Piston set. 60.5-63.5cc chambers |
| 102-90.C | Porsche 356 912 90mm Nickies inc. ~9.5:1 CP Piston set. 63.5-66.5cc chambers |
| 102-91.A | Porsche 356 912 91mm Nickies inc. ~9.5:1 CP Piston set. 57.5-60.5cc chambers |
| 102-91.B | Porsche 356 912 91mm Nickies inc. ~9.5:1 CP Piston set. 60.5-63.5cc chambers |
| 102-91.C | Porsche 356 912 91mm Nickies inc. ~9.5:1 CP Piston set. 63.5-66.5cc chambers |
| 102-91.JPS.A | Porsche 356 912 91mm Nickies inc. 9.5:1 CP Piston set for Single Plug JPS Sport Plus 90/91 Cylinder Heads [special order] |



Mahle Motorsport 356 & 912 Sets

| | |
|-----------|---|
| PS86-003N | Porsche 356 912 86mm 1720cc PP86-003N, Slip-fit, 57.5-60.5cc chambers, 30 deg 9.5:1 |
| PS86-004N | Porsche 356 912 86mm 1720cc PP86-004N, Slip-fit, 60.5-63.5cc chambers, 30 deg 9.5:1 |
| PS86-005N | Porsche 356 912 86mm 1720cc PP86-005N, Slip-fit, 63.5-66.5cc chambers, 30 deg 9.5:1 |
| PS91-001N | Porsche 356 912 91mm 1925cc PP91-001N, Machine-in, 57.5-60.5cc chambers, 30 deg 9.5:1 |
| PS91-002N | Porsche 356 912 91mm 1925cc PP91-002N, Machine-in, 60.5-63.5cc chambers, 30 deg 9.5:1 |
| PS91-003N | Porsche 356 912 91mm 1925cc PP91-003N, Machine-in, 63.5-66.5cc chambers, 30 deg 9.5:1 |





Porsche 356 & 912 Nickies Cylinders

| | |
|----------|---|
| 102-80 | Porsche 356 80mm Nickies [special order] |
| 102-82.5 | Porsche 356 912 82.50mm Nickies |
| 102-83 | Porsche 356 912 83mm Nickies [special order] |
| 102-83.5 | Porsche 356 912 83.5mm Nickies [special order] |
| 102-85 | Porsche 356 912 85mm Nickies [special order] |
| 102-86SF | Porsche 356 912 86mm Nickies |
| 102-88 | Porsche 356 912 88mm; machine-in Nickies [special order] |
| 102-90 | Porsche 356 912 90mm; machine-in Nickies |
| 102-91 | Porsche 356 912 91mm; machine-in Nickies |
| 102-91.5 | Porsche 356 912 91.5mm; machine-in Nickies [special order] |
| 102-93 | Porsche 356 912 93mm (3.6598"); machine-in Nickies; Requires JPS Heads, 8mm Studs [special order] |
| 102-94 | Porsche 356 912 94mm (3.6922") machine-in Nickies; Requires JPS Heads, 8mm Studs [special order] |





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Tapered Sleeve Ring Compressors

Modern piston rings require a modern approach to piston installation.

Tapered sleeve ring compressors reduce the chances of bending or breaking a piston ring during installation.

Available in all bore sizes.





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Base Shims

Base shims are available to adjust deck height in thicknesses of .25mm, .5mm, .75mm, and 1.0mm.

Custom thicknesses can be special ordered.



Base Shims

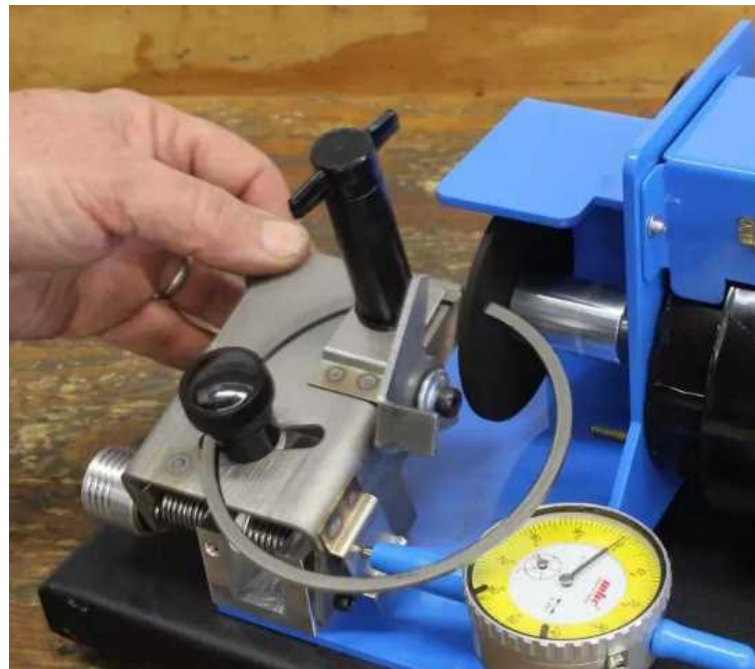
| | |
|--------------|--|
| 107-94-5.25 | Porsche 356 912 base shim for 102-90, 91, 91.5mm Nickies, copper .010", set of 4 pcs |
| 107-94-5.50 | Porsche 356 912 base shim for 102-90, 91, 91.5mm Nickies, copper .020", set of 4 pcs |
| 107-94-5.75 | Porsche 356 912 base shim for 102-90, 91, 91.5mm Nickies, copper .030", set of 4 pcs |
| 107-94-5.100 | Porsche 356 912 base shim for 102-90, 91, 91.5mm Nickies, copper .040", set of 4 pcs |



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Ring Gapping Service

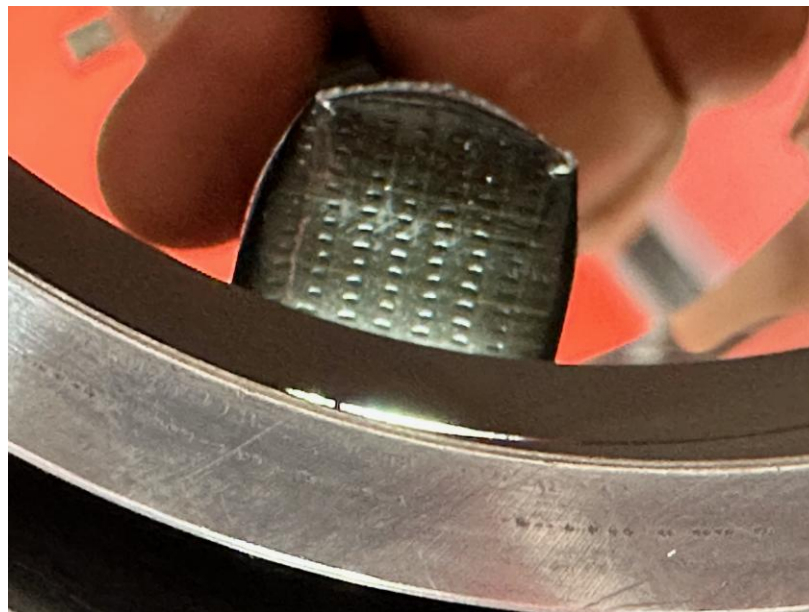
Our piston ring end gapping service provides you with piston rings with pre-set end gaps.





Light Checking

Piston rings should be round. If they are not round, they won't function properly. When gapping rings, we can also light check them for you.





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Piston and Rod Balancing Service

Our balancing service provides piston assemblies and connecting rods balanced within +/- 0.5 grams.





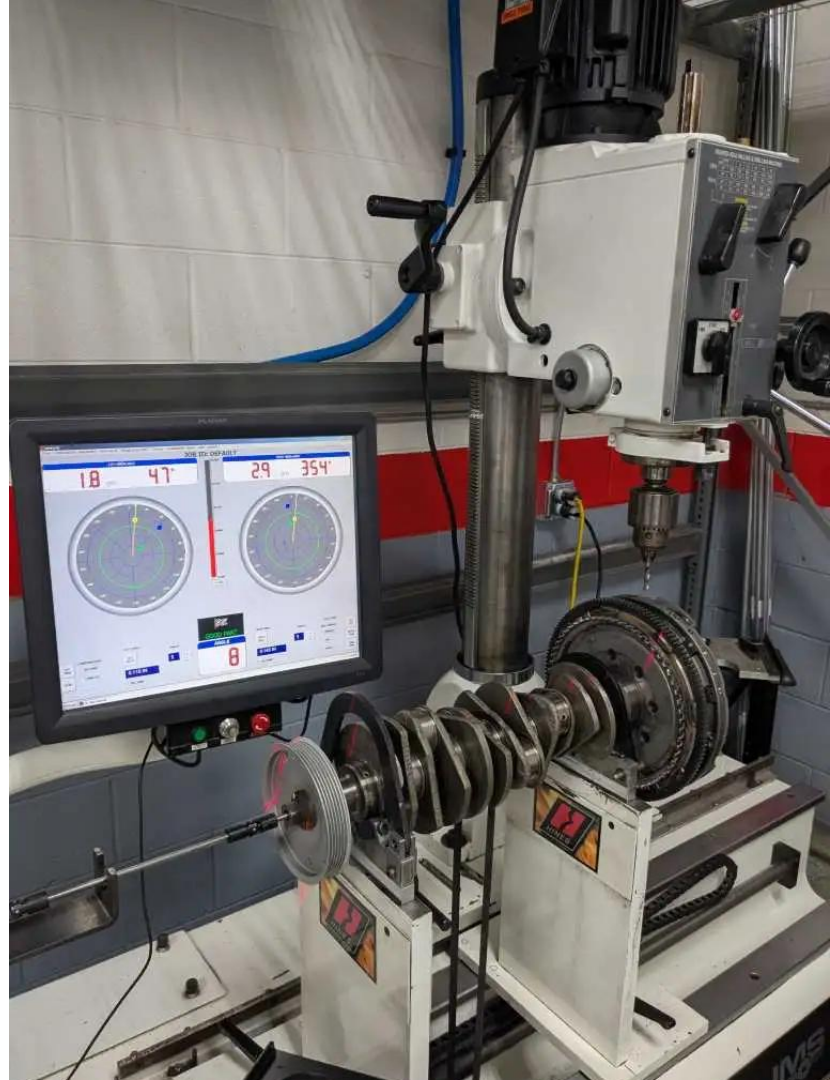
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Dynamic Balancing

**We now offer
Dynamic Engine
Balancing.**

**Standard balance
specification is 0.5
oz/in.**

**Race balance is to
0.2 oz/in.**



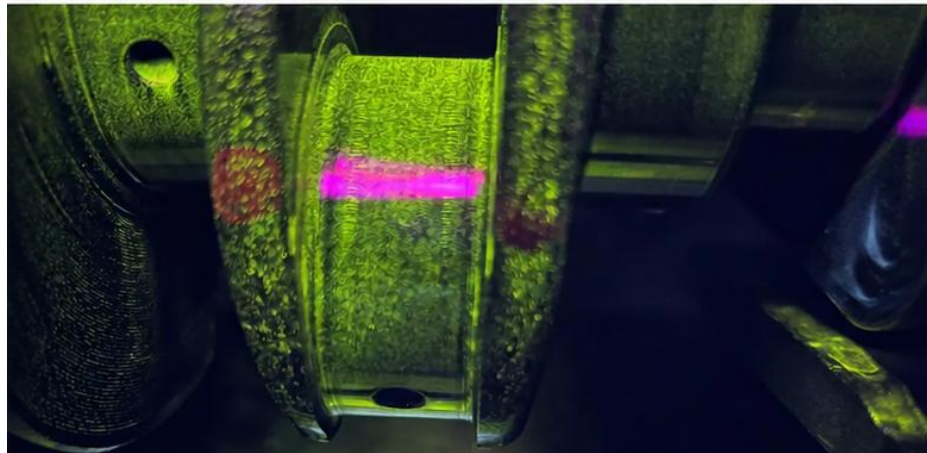


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Crankshaft

Magnetic particle inspection ensures crankshafts are not cracked.

Surface finish influences oil film stability, load capacity, and bearing longevity. LN Engineering polishes journals to achieve a consistent, controlled finish that supports long-term reliability.





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Cryogenic Treatment

The advanced process of Deep Cryogenic Processing involves bringing the temperature of materials down to temperatures below -300°F slowly.

Optional Cryogenic Processing alters the crystalline structure, transforming it into a more uniform and durable construct.

These changes become permanent as the temperature of the material is gradually brought back up to room temperature or beyond.





WPC Treatment

WPC is an anti-friction micro shot-peening treatment to the surface of the (any) part.

The peaks and valleys scoop up oil and increase the surface hardness of the material.

Due to the fact there is virtually no dimension change, we can add the treatment to already finished parts.

Engine main and rod bearings can be special ordered with WPC.





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Additional Services

LN Engineering's automotive machine shop offers services like cylinder reconditioning, honing, aluminum engine block repair and sleeving, connecting rod reconditioning, crankshaft polishing, engine balancing, cylinder head remanufacturing, surface grinding and more.



Scan QR code for the most up to date [list of machine shop services offered](#)





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Camshafts

Torquer camshaft suitable for all displacements; peak power <5000 rpm with 1883cc

Performer peak power <7000 for 1720 and <6000 for 1883cc with significantly more idle torque than stock 912

Performer Plus peak power <7000 for 1883cc

Vintage Race for JPS Sport Plus 93 <7000 rpm for engines larger than 2000cc





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Camshafts

| | |
|--------|--|
| 102-01 | Torquer camshaft, 100% new camshaft; equivalent to "Maestro" grind. |
| 102-02 | Performer camshaft, 100% new camshaft; use with 86mm 1720cc or 90mm 1883cc (or larger) |
| 102-03 | Vintage Race camshaft, 100% new camshaft for JPS Sport Plus Heads and 93mm Nickies |
| 102-04 | Performer Plus camshaft, 100% new camshaft; use with 90mm 1883cc (or larger) |



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ARP Head Studs

New head studs should be fitted when installing Nickies cylinders.

LN Engineering's exclusive heads studs are made from ARP2000 and ensure even clamping force and correct torque application.

Factory fasteners are retained.





ARP

202-01

ARP 2000 Porsche 356 912 head stud kit inc. lube. Uses stock head fasteners.



Crankshaft & Connecting Rods

Scat Billet Crankshafts and Forged Carrillo or Pauter Connecting are the ultimate upgrade for your Porsche 356 or 912 engine.





Crankshaft & Connecting Rods

| | |
|-------------------|---|
| 912-220-560-1360C | Porsche 356/912 Pauter Rods (5/16 bolts, uses CB1833P rod bearings for Toyota 1MZFE engine) |
| 400-912-X | Porsche 356/912 Carrillo Rods (CARR bolts, extra clearance) |
| 8-10912L | Scat Billet 74mm Crankshaft for Porsche 356/912 [special order] |
| 61610314202C | Porsche 356 912 Coated Performance Rod Bearings (STD) |
| 61610314252C | Porsche 356 912 Coated Performance Rod Bearings (+0.25mm) |

- **Scat crankshaft and Carrillo or Pauter connecting rods are recommended for engines that will see more than 6000 rpm regularly.**



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Magnetic Drain Plug

Our billet magnetic stainless steel and aluminum engine and transmission drain plugs allow for easy inspection to monitor for wear debris.



Magnetic Drain Plugs

| | |
|-------------|---|
| 53901133LN | LN Engineering Billet Stainless Steel Porsche 356 912 Magnetic Drain Plug |
| WHT001937LN | LN Engineering Billet Stainless Steel Porsche/VW/Audi Magnetic Trans Drain Plug (24 x 1.5). Replaces 999-064-020-02 |
| N91059701LN | LN Engineering Billet Stainless Steel Porsche/VW/Audi Magnetic Transmission Drain Plug (22x1.5) |





Our Brands

**Curated Brands.
Proven Performance.**

**LN Engineering's
aircooled Porsche parts
program brings
together trusted
manufacturers,
specialty suppliers, and
precision-engineered
components for serious
Porsche engine builds.**



123ignition.nl

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Performance Products

AA Performance

aasco
motor

AASCO

NICKIES
PERFORMANCE AIR-COOLED CYLINDERS™

Aircooled Nickies
Cylinders

ARP
automotive racing products

ARP



Automobile Associates

AutoVerde
Racing PUMPS & HOSES

AutoVerdi

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BAUM TOOLS
SINCE 1958

Baum

bRS
Bike Racing Service

BRS

BURSCH
EXHAUST

Bursch

CALLAS

COBB

GT

DRIVEN

DRIVEN



Shipping

Easy and secure shipping with trusted UPS Air Freight minimizes time in transit which means less time waiting for your shipment with discounted rates that save you money.





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Technical Resources for Porsche Owners

Guides, videos, downloads, AI-powered tools, and **enhanced 24/7 support.**

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Porsche experts, always here.



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Knowledge

Technical Resources for Porsche Owners

LN Engineering provides educational resources, training, and guidelines to help you get the most from your aircooled Porsche. Our resources are built by engineers, for enthusiasts—plus, enjoy **enhanced 24/7 support.**



[What is the best oil for my Porsche?](#)



[Porsche Engine Technical Videos](#)



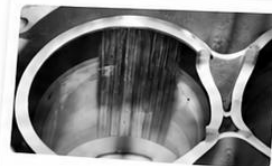
[Technical Downloads for Porsche Owners](#)



[The Definitive Guide to the Porsche IMS Bearing](#)



[The Ultimate Guide to Nikasil and NSC Cylinder Platings](#)



[The Porsche Cylinder Bore Scoring Problem](#)



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Contact Details



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