



PRECISION PERFORMANCE
SINCE 2008

LN Engineering Nickies

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

1/E Helling
©2004



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
17,000 sq/ft
facility, located
one hour south of
Chicago, IL.**





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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.





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Our Partners

LN Engineering offers premium performance parts designed to meet or exceed OEM requirements from industry leaders JE Pistons, CP Carrillo, Mahle Motorsport, and Total Seal.



NICKIESTM
PERFORMANCE AIR-COOLED CYLINDERS

WITH MATCHING PISTON SETS BY





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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.





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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.





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.**

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.

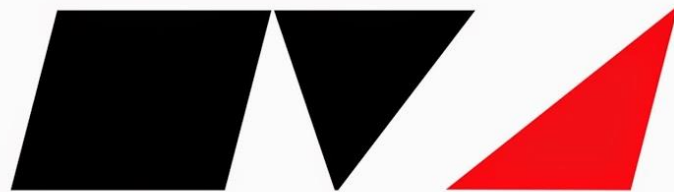




NSC-Plating

LN Engineering has utilized Millennium Technologies NSC-plating since 2002.

Similar to Nikasil, the NSC plating is made up of nickel, silicon, and carbide. Cylinders are precision honed to our specifications.



**MILLENNIUM
TECHNOLOGIES**

Advanced Engine Solutions



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.



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Porsche 356 & 912 Nickies+JE Sets

102-80.A	Porsche 356 80mm Nickies inc. ~8.5:1 JE Piston set
102-82.5.1	Porsche 356 912 82.5mm Nickies inc. ~9:1 JE Piston set. 22 Degree Heads 57.5-60.5cc chambers
102-82.5.2	Porsche 356 912 82.5mm Nickies inc. ~9:1 JE Piston set. 30 Degree Heads 57.5-60.5cc chambers
102-86SF.A	Porsche 356 912 86mm Nickies inc. ~9.5:1 JE Piston set. 57.5-60.5cc chambers
102-86SF.B	Porsche 356 912 86mm Nickies inc. ~9.5:1 JE Piston set. 60.5-63.5cc chambers
102-86SF.C	Porsche 356 912 86mm Nickies inc. ~9.5:1 JE Piston set. 63.5-66.5cc chambers
102-90.A	Porsche 356 912 90mm Nickies inc. ~9.5:1 JE Piston set. 57.5-60.5cc chambers
102-90.B	Porsche 356 912 90mm Nickies inc. ~9.5:1 JE Piston set. 60.5-63.5cc chambers
102-90.C	Porsche 356 912 90mm Nickies inc. ~9.5:1 JE Piston set. 63.5-66.5cc chambers
102-91.A	Porsche 356 912 91mm Nickies inc. ~9.5:1 JE Piston set. 57.5-60.5cc chambers
102-91.B	Porsche 356 912 91mm Nickies inc. ~9.5:1 JE Piston set. 60.5-63.5cc chambers
102-91.C	Porsche 356 912 91mm Nickies inc. ~9.5:1 JE Piston set. 63.5-66.5cc chambers
102-91.JPS.A	Porsche 356 912 91mm Nickies inc. 9.5:1 JE 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]





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.





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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.





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Piston and Rod Balancing Service

Our balancing service provides piston assemblies and connecting rods balanced within ± 0.5 grams.



Additional Products & Services

107-01	Cylinder Reconditioning, per cyl.
107-02	Surface grind cylinder deck, per cyl.
107-07	Custom cylinder fee for new cylinder not based off existing part. One time charge.
107-07.1	Change bore size to non-stocking diameter on existing cylinder design. Price per set.
107-07.2	Custom cylinder based off existing cylinder. One time charge.
107-09	Modify machine-in cylinders to slip-fit, per set of cylinders.
107-13	Replacement Cylinder Fee <i>(for quantities less than a complete set of cylinders)</i>
107-15.1	4 Cylinder Piston Ring End Gapping Service
107-16.1	4 Cylinder Porsche Engine Static Balancing Service
304-00	Custom four cylinder set of JE Pistons, inc. coated skirts, rings, pins, and clips.



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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





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)
102-00	Replacement Porsche 356/912 Camshaft Follower Lifter. Ea. (Qty 8 pcs req.)



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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.

Features black-oxide corrosion protection.





ARP

202-01	ARP 2000 Porsche 356 912 head stud kit inc. lube. Uses stock head fasteners.
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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.**



Willhoit Restoration

New stock replacement cylinder heads and performance oil coolers and deep sumps further enhance your Porsche 356 and 912 engine performance.





Willhoit Restoration

102-50	Willhoit Restoration Stock Replacement Porsche 356/912 Cylinder Heads
102-51	Willhoit Restoration Porsche 356/912 1.3 Quart Deep Sump
61610704101WH	Willhoit Restoration Porsche 356 912 Billet Aluminum Lightweight Engine Oil Cooler



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 magnetic drain plugs are available for additional makes and models.



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Free Technical Resources

Click on education on the LN Engineering home page for [free technical information](#).

Be sure to check out and subscribe to the [LN Engineering YouTube channel](#).



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TECHNICAL
LIBRARY



**AIRCOOLED ENGINE
WITH NICKIES™ CYLINDERS**
BASIC ASSEMBLY AND BREAK-IN INSTRUCTIONS



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