



PRECISION PERFORMANCE
SINCE 2008

LN Engineering FSI Engine Program

Total Engine Solutions for:

1997-2008 models with the M96/M97 Engine

1999-2011 GT3, Turbo, & GT2 with the Mezger Engine

2009-2016 models with the 9A1/MA1 Engine



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Mission

At Raby Enterprises, our mission is to redefine the performance, reliability, and longevity of air-cooled and water-cooled Porsche engines through unmatched craftsmanship and innovative engineering. Our commitment to quality ensures each engine is meticulously reconstructed to surpass original standards, providing our clients with engines that deliver enhanced durability, refined power, and the thrill that every Porsche owner deserves.



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About

Jake Raby is the founder and lead innovator behind Flat 6 Innovations, renowned for his pioneering work in Porsche engine performance and reliability. With almost 30 years of expertise, Jake has redefined the industry standard for Porsche engine builds, transforming factory engines into high-performance powerhouses with unmatched durability. Known for his hands-on approach, meticulous attention to detail, and dedication to education, his work has made Flat 6 Innovations the premier destination for Porsche enthusiasts seeking reliable, high-performance engine solutions that are highly sought world-wide.





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Facility

Key components are either manufactured or reconditioned by LN Engineering in Momence, IL.

Engine assembly is conducted in Georgia at Raby Enterprises, and also at LN as demand dictates, in dedicated cells by Porsche experts.





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Quality

Every part is meticulously inspected, reconditioned, and cleaned before going into any engine rebuild.

Most components are replaced and upgraded during the reconstruction process with those developed by Raby and reconditioned and manufactured by LN.





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Experience

As a master Porsche engine specialist, Raby has trained hundreds of technicians in the last two decades on how to properly rebuild Porsche engines. This includes apprentices that have graduated to become FSI Certified Assemblers.





Our Brands

Raby Enterprises includes:

[Flat 6 Innovations](#) and [Raby's Aircooled Technology](#). The

Knowledge Gruppe and Rennvision are focused on training and education.

[RND Engines](#) is an LN/FSI co-lab.



Engineered by Industry Experts





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FSI

**Flat 6 Innovations
offers bespoke high
performance rebuilt
air-cooled and water-
cooled Porsche
engines.**





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RND

RND Engines offers premium engine rebuilds utilizing LN Engineering, OEM and Genuine Parts as an economical alternative to factory stock replacement M96 and M97 engines.





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Aircooled Technology

Raby's Aircooled Technology specializes in performance VW Type 4 engines for upright conversions in Porsche 356, 912, and various VW models.





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Relationship

LN Engineering and Flat 6 Innovations have a long history together. Most recently, Raby joined the LN team as Technical Director in 2024.

Raby and Navarro own IMS Solution LLC which holds IP and under which their collaborative efforts are managed.

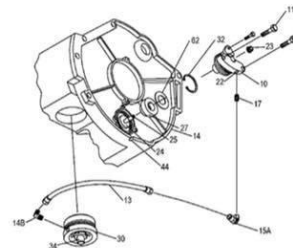




Our Patents

The Raby and Navarro team retains multiple patents, for the [IMS Solution](#), [IMS Retrofit](#), and [Faultless Tools](#). The collaboration between these two continues to allow for development and manufacture of solutions to complex problems for the Porsche market and beyond.

(12) United States Patent Raby et al.	(10) Patent No.: US 9,909,469 B2 (45) Date of Patent: Mar. 6, 2018
(54) OIL FILTER ADAPTER AND METHOD FOR OBTAINING POSITIVE OIL PRESSURE EXTERNAL TO ENGINE	33/1045 (2013.01); F16C 35/02 (2013.01); F16C 2360/22 (2013.01); Y10T 29/49231 (2015.01); Y10T 29/49638 (2015.01)
(71) Applicant: IMS SOLUTION , Watkinville, GA (US)	(58) Field of Classification Search CPC F01M 11/03; F01M 7/00; F16C 35/02; F16C 33/04; F16C 33/1045; F16C 17/08; F16C 2360/22; B23P 15/003; Y10T 29/49231; Y10T 29/49638 See application file for complete search history.
(72) Inventors: Jacob Dean Raby , Cleveland, GA (US); Charles Lauren Navarro , Momence, IL (US)	(56) References Cited U.S. PATENT DOCUMENTS 3,540,594 A * 11/1970 Sanderson B01D 35/06 210:232 3,558,942 A 1/1971 Hill et al. (Continued)
(73) Assignee: IMS SOLUTION , Bogart, GA (US)	FOREIGN PATENT DOCUMENTS JP 55109715 A * 8/1980 F01M 11/03
(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 105 days.	OTHER PUBLICATIONS Notice of Allowance in U.S. Appl. No. 14/615,142 dated Jun. 7, 2016, 9 pages (pp. 1-9 in pdf). (Continued)
(21) Appl. No.: 15/211,227	<i>Primary Examiner</i> — Hung Q Nguyen (74) <i>Attorney, Agent, or Firm</i> — Mitch Harris, Atty at Law, LLC; Andrew M. Harris
(22) Filed: Jul. 15, 2016	(57) ABSTRACT An oil filter adapter provides lubrication delivery for lubricating an engine bearing provides high reliability through an externally-supplied lubrication. The oil filter adapter may be supplied as part of a kit including a lubrication delivery tube for supplying the external lubrication to a mounting flange of the bearing.
(65) Prior Publication Data US 2016/0326923 A1 Nov. 10, 2016	7 Claims, 6 Drawing Sheets
Related U.S. Application Data	
(60) Division of application No. 14/615,142, filed on Feb. 5, 2015, now Pat. No. 9,416,697, which is a (Continued)	
(51) Int. Cl. <i>F01M 1/02</i> (2006.01) <i>F01M 11/03</i> (2006.01) <i>F16C 17/08</i> (2006.01) <i>B23P 15/00</i> (2006.01) <i>F16C 33/10</i> (2006.01) (Continued)	
(52) U.S. Cl. CPC <i>F01M 11/03</i> (2013.01); <i>B23P 15/003</i> (2013.01); <i>F01M 7/00</i> (2013.01); <i>F16C 17/08</i> (2013.01); <i>F16C 33/04</i> (2013.01); <i>F16C</i>	





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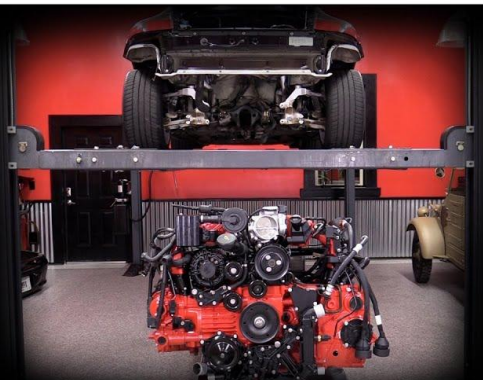
Certified Assemblers & Installers

We realize the demand for FSI engines exceeds supply. As such, we have built a training and [certification](#) process to enable other Porsche shops to rebuild and upgrade Porsche engines using the processes, products, and services offered exclusively by the FSI/LN team.

Certified Installers



LN ENGINEERING - FLAT SIX INNOVATIONS





Training

The Knowledge Gruppe offers online and hands-on training, bringing up to speed the next generation of technicians to carry on the Porsche legacy.



THE KNOWLEDGE
GRUPPE

WITH



M96/97

Engine Rebuild Class **PRO**

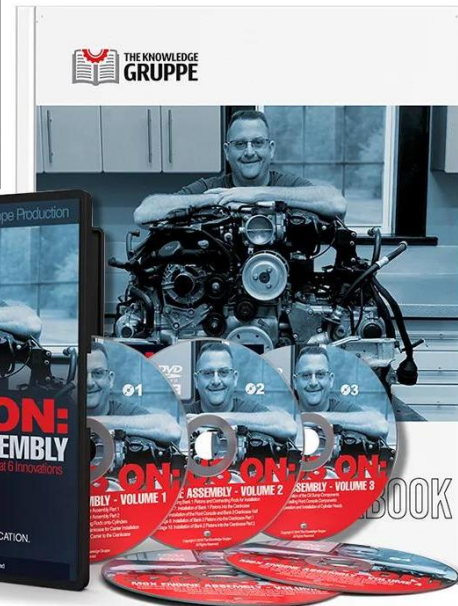




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Education

Resources offered by Raby through the Knowledge Gruppe and [Rennvision](#) enable both enthusiasts and professions alike to correctly rebuild Porsche engines.





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Services

Every aircooled and watercooled Raby Enterprises engine features machining and processes carried out by LN Engineering.



Scan QR code for the most up to date list of machine shop services offered





Why FSI?

Since the beginning of our program we have been constantly asked “Why are you doing this, Porsche sells new engines?” Our response to this is simple: They won’t be doing it forever.

We can do it better, make it last longer and best of all: it will be faster!

Jake Raby
Owner, Inventor, Developer





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LN ENGINEERING
KNOWLEDGE

Technical Resources for Porsche Owners

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

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lnengineering.com/knowledge/



AI-Powered Tools



ENHANCED 24/7 SUPPORT
Porsche experts, always here.



SOLUTIONS ▾

KNOWLEDGE

SUPPORT 24/7



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](#)



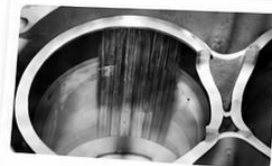
[Technical Downloads for Porsche Owners](#)



[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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