

**INA Engine Program** 



#### INA...the original Schaeffler brand.

For decades, INA has been the pioneer of automotive technology. As each model year rolls out, vehicle manufacturers continue to rely on INA's quality, reliability and unparalleled innovation. Our valvetrains, primary and front end auxiliary drives and camshaft phasing units maximize vehicle performance, improve safety and instill confidence among manufacturers, installers and drivers alike.

Schaeffler is the engine expert. That's why our products are in every car in the world.



As vehicles become more technologically advanced, our engineers are continuously working with OEMs to identify and develop new repair solutions and services to meet the evolving needs of the automotive aftermarket. Our goal is to continue providing OE-quality solutions for more makes and models around the globe.

Count on Schaeffler for innovative solutions that make cars run like new.





With its comprehensive engine, drivetrain and chassis solutions, Schaeffler is a leading global automotive supplier. Schaeffler is driven by a strong commitment to deliver creative solutions, support, and state-of-the-art technology and manufacturing. Schaeffler has earned its place as an engineering partner and supplier for nearly every original-equipment vehicle manufacturer worldwide. Top quality, outstanding technology, and exceptionally innovative spirit form the basis for the continued success of the company.

Schaeffler Automotive Aftermarket has an equally strong heritage as a systems innovator in the replacement market, developing unique products and solutions engineered to provide flawless performance, unbeatable durability and high customer satisfaction.

Operating 170 locations in 50 countries, Schaeffler has a worldwide network of manufacturing locations, research and development centers, sales companies, engineering offices, and training centers. With over 92,000 employees throughout the world, Schaeffler is proud to be one of the largest family-owned European technology companies.

# **SCHAEFFLER**



# INA provides a unique, OE engineered offering to the aftermarket



Research conducted with leading distributors and technicians showed that customers prefer premium products from an experienced OE-manufacturer.

INA has a respected and established supply relationship with all OE manufacturers. Together, we design and engineer the components and systems for tomorrow's vehicles.

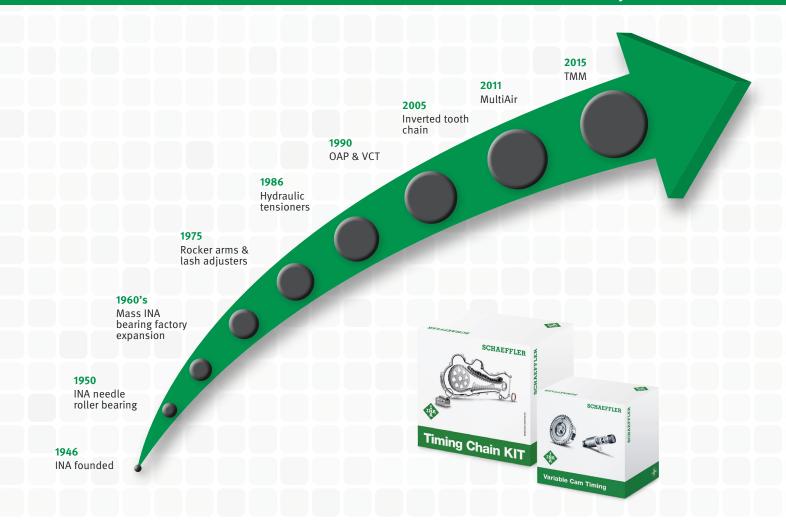
INA produces engine components and bearings in many countries worldwide. Our largest countries of operation are detailed on the map below.





Schaeffler is one of the leading OE manufacturers of timing drive, valvetrain, and accessory drive components. Under the INA brand, Schaeffler offers a broad range of single components, as well as complete KIT solutions. INA is a leading OE partner for various engine systems and now extends our product offering to the aftermarket.

As an OE manufacturer, we are committed to bringing the same quality and innovative repair solutions to the automotive aftermarket.



## **Overrunning Alternator Pulley (OAP)**



INA developed the OAP to reduce engine noise and vibration. A secondary benefit was improved fuel efficiency and lessened requirements for belts and tensioners. Since the start of series production in 1990, Schaeffler has produced more than 250 million OAP units, with one in four light vehicles in the world now fitted with an INA OAP. Thanks to our OE expertise, many years of experience and precision manufacturing, Schaeffler sets the industry standard for the OAP segment.

# Thermal Management Module (TMM)



Various solutions are currently in development to further reduce fuel consumption and CO2 emissions. The latest INA solution is "cooling on demand", i.e. intelligently controlling the cooling circuits of the engine. Schaeffler, partnering with an OE manufacturer, developed and produced the INA Thermal Management Module which enables this functionality.

#### **INA Chain Drive Kits & Components:**

As an OE manufacturer, INA offers complete timing chain kits and components. Our kits contain chains, guides, hydraulic and mechanical tensioners, sprockets, and other necessary hardware. Each component is design and manufactured according to INA OE standards, resulting in flawless operation of the entire timing system.



#### **INA FEAD Kits & Components:**

As a result of growing complexity and demands, front end accessory drive components require periodic inspection and replacement. Many OE manufacturers recommend accessory drive system replacement, to ensure optimal engine performance. The INA FEAD KIT provides the complete repair solution in one box. In addition to an OE quality INA belt and tensioner, certain kits also contain idler pulleys and an OAP, depending on the application.







INA offers a comprehensive line of timing belt kits and components for European light vehicle applications. In addition to the timing belt, tensioner, and pulleys, the KITs also contain all of the accessories required for the repair – including fasteners. A water pump is also offered on the most popular kits. All components are OE quality, including the INA belt.

#### **INA Variable Camshaft Timer (VCT):**



Variable Cam Timers (VCTs) deliver precise engine timing adjustment during operation. Communicating with various sensors and the vehicle's ECU, VCTs continuously adjust the engine timing as driving conditions change. These timing adjustments achieve higher engine efficiency, lower emissions, higher torque, and increased driver comfort. Schaeffler is a leading manufacturer of VCTs and the trusted development partner of many OEMs. Schaeffler is proud to offer a limited range of VCTs for the aftermarket for certain belt and chain-driven applications.

#### **INA Thermal Management Module (TMM):**

The INA Thermal Management Module controls engine temperature appropriately, right from the start. Depending on operating conditions and the driving situation, it controls the amount of coolant flowing through the engine's coolant circuits. This results in increased comfort of the passenger cabin, increased fuel efficiency, and reduced CO2 emissions. For convenience, the TMM is sold as a complete unit and includes all mounting parts and belt. This is available exclusively from Schaeffler for limited applications.



# **INA Valve Train Components:**

INA is a leading producer of various types of valve train components. Our first-class components are designed to withstand rising temperatures and high pressures even on smaller engines. INA is a trusted development partner of various OE manufacturers. We offer finger followers, rocker arms, lifters, lash adjusters, and tappets.



### **INA Overrunning Alternator Pulley (OAP):**



Today's smaller engines require special design consideration to reduce engine noise and vibration. The INA Overrunning Alternator Pulley (OAP) from Schaeffler delivers consistent dampening of the accessory belt drive system. The ingenious construction principle of the OAP resolves irregular loads within the front end accessory drive and reduces wear on the belt. Manufacturers recommend OAP replacement for optimal engine performance and to prevent damage. Replacing an OAP can often resolve a problem without replacing the entire alternator.

#### **INA OAP Tool Kit:**



The INA OAP Tool Kit includes fourteen custom fit adaptors to mate with nearly every alternator shaft and OAP or Litens OAD on the road. This tool kit is essential for all OAP inspections and replacements.

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