

Item	Description	Item	Description
1	Impeller	2	Pendulum slide
3	Control piston	4	Pressure spring
5	Pump shaft	6	Rotor
7	Rotational axis		

Fig. 15: Identifying N52 Engine - Oil Pump Components
 Courtesy of BMW OF NORTH AMERICA, INC.

How it works

The oil pump is driven by a chain from the crankshaft. The oil pressure generated affects the control piston with oblique thrust surface (hinged bracket) against the force of a compression spring. The hinged bracket varies the location of the pendulum slide. If the pump shaft is located centrally on the pendulum slide, changes in volume and the delivery capacity will be small. If the pump shaft is located away from the middle, changes in volume and the delivery capacity will be larger. If the oil requirement of the engine rises, the pressure in the lubricating system falls and thus also at the control piston. The pump increases the delivery volume and restores the pressure conditions. If the oil requirement of the engine falls, the pump regulates a low delivery volume towards zero delivery accordingly.



Item	Description	Item	Description
1	Control piston	2	Pressure spring

Fig. 16: Identifying Pressure Spring And Control Piston
 Courtesy of BMW OF NORTH AMERICA, INC.

EXHAUST SYSTEM

E65, E66 / N73/N73TU



Fig. 17: Identifying Exhaust System
 Courtesy of BMW OF NORTH AMERICA, INC.

INTRODUCTION

> N73

The exhaust system on the previous N62 engine has been adapted for the N73 engine

> N73TU with introduction 09/2006

The N73TU satisfies the legal emissions limits, e.g. Euro 4 standard for Europe or LEV II for the USA (LEV: Low Emission Vehicle).

Measures on the exhaust system:

- new oxygen sensors
- 2 control sensors upstream of catalytic converter (LSU 4.9)
- 2 monitor sensors downstream of catalytic converter (LSF 4.2)

BRIEF DESCRIPTION OF COMPONENTS

The exhaust system consists of the following components:

- **Exhaust flap**

The exhaust flap controls the flow of exhaust gas in the rear silencer to reduce noise levels.

- 2 rear silencers
- intermediate silencer
- 2 front silencers
- 2 monitor sensors
- 2 broadband oxygen sensors
- 2 exhaust manifolds with preliminary and main catalytic converters

SYSTEM FUNCTIONS

There are no new functions in the exhaust system of the N73, N73TU.

FRESH AIR SYSTEM

E65, E66 / N73/N73TU



T1202001

Fig. 18: Identifying Fresh Air System
Courtesy of BMW OF NORTH AMERICA, INC.

INTRODUCTION

> E73

The fresh air system of the N62 engine has been adapted for the N73 engine.

> N73TU with introduction 09/2006

The N73TU satisfies the legal emissions limits, e.g. Euro 4 standard for Europe or LEV II for the USA (LEV: Low Emission Vehicle).

Measures on the fresh air system:

- modified fleece inserts in intake noise damper

BRIEF DESCRIPTION OF COMPONENTS

The fresh air system consists of the following components:

- **2 auxiliary air flaps**

The engine receives more air via the auxiliary air flaps.

- Solenoid valve for auxiliary air flaps
- 2 diaphragm canisters
- 2 intake air pipes
- 2 air cleaner housings with air cleaner
- 2 intake air sound resonators
- 2 hot-film air mass meter
- 2 air ducts to throttle valves
- 2 throttle valves
- Intake manifold
- 2 intake manifold pressure sensors
- Pressure control valve for engine ventilation
- Secondary air pump
- 2 secondary air valves

SYSTEM FUNCTIONS

There are no new functions in the fresh air system of the N73, N73TU.

NEW FEATURES OF ENGINES N73, N73TU

E65, E66

INTRODUCTION

This document lists the new features of the previous N73 engine by subsystem.

In 09/2006, the N73 engine was modified.

The N73TU satisfies the legal emissions levels, e.g. Euro 4 standard for Europe or LEV II for the USA (LEV: Low Emission Vehicle).

Attention is drawn to the differences between the two engines (N73 and N73TU).

OVERVIEW OF SUBSYSTEMS

The new features are divided into the following subsystems:

Direct fuel injection -E65, E66/N73/N73TU

(SBT 13 01 03 023)

With the N73B60 engine, direct injection technology is used for the first time on a BMW spark-ignition engine. Direct injection means that the fuel is injected under high pressure directly into the combustion chamber.

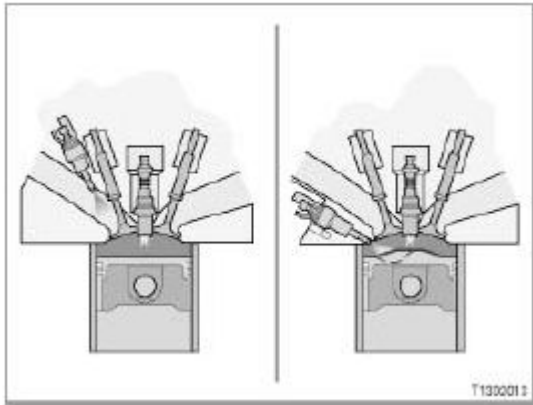


Fig. 19: Identifying Direct Fuel Injection - E65, E66/N73/N73TU
Courtesy of BMW OF NORTH AMERICA, INC.

Fuel supply system E65, E66/N73/N73TU

(SBT 16 01 03 024)

The fuel system (of the N62 engine) has been slightly modified for the E65 with N73 engine to adapt it to the new direct injection system.



Fig. 20: Identifying Fuel Supply System E65 - E66/N73/N73TU
Courtesy of BMW OF NORTH AMERICA, INC.

Engine management

MED 9.2.1 and MED 9.2.2 E65, E66/N73/N73TU

(SBT 12 01 03 033)

The MED 9.2.1 engine management system (engine electronics direct injection) is based on the ME 9.2 engine electronics.

> N73TU from 09/2006

The MED 9.2.2 engine management system will be introduced with the introduction of the modified N73 engine. This engine management system is based on the ME 9.2.1 engine electronics.



T1200009

Fig. 21: Identifying Engine Management System
Courtesy of BMW OF NORTH AMERICA, INC.

Fresh air system -E65, E66/N73/N73TU

(SBT 11 02 03 038)

The fresh air system of the N62 engine has been adapted for the N73 engine.



T1200006

Fig. 22: Identifying Fresh Air System - E65, E66/N73/N73TU
Courtesy of BMW OF NORTH AMERICA, INC.

Exhaust system - E65, E66/N73/N73TU

(SBT 11 03 03 039)

The exhaust system of the current N62 engine has been adapted for the N73 engine.



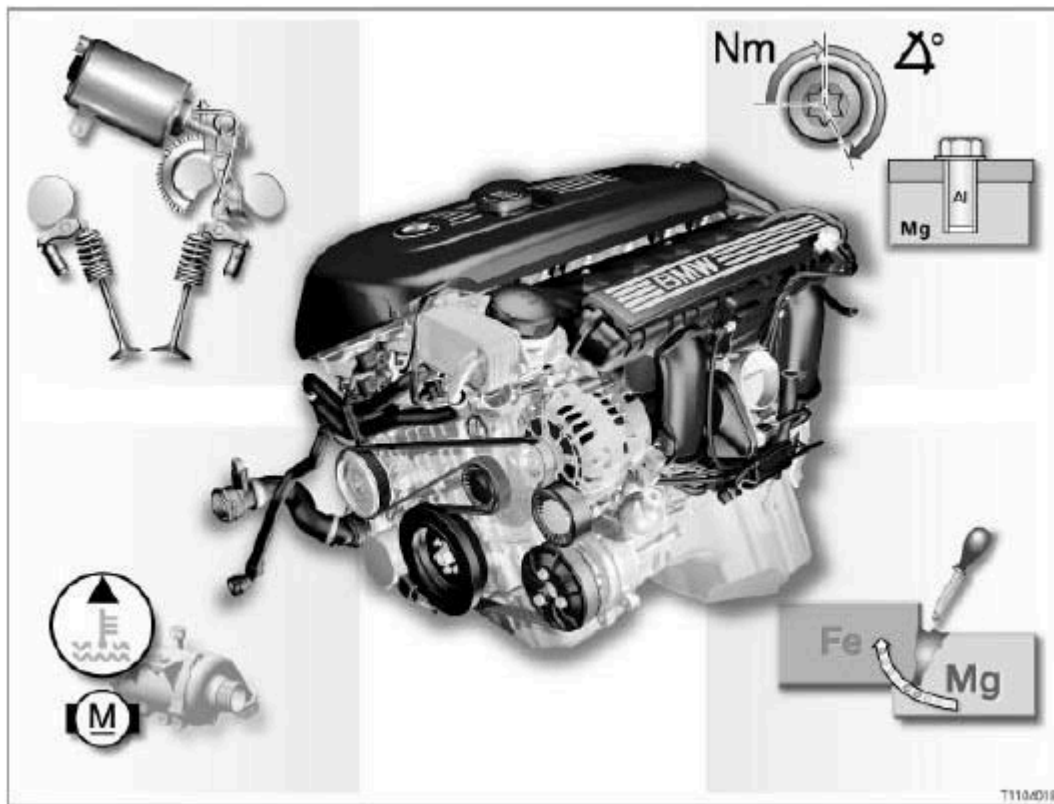
T1100005

Fig. 23: Identifying Exhaust System - E65, E66/N73/N73TU
 Courtesy of BMW OF NORTH AMERICA, INC.

Subject to alteration due to misprints, errors and technical modifications.

N52 ENGINE

E60, E61, E63, E64, E65, E66, E87, E90, E91



T110M018

Fig. 24: Identifying N52 Engine - E60, E61, E63, E64, E65, E66, E87, E90, E91
 Courtesy of BMW OF NORTH AMERICA, INC.

INTRODUCTION

The new 6-cylinder N52 spark-ignition engine represents the start of a new generation of engine at BMW.