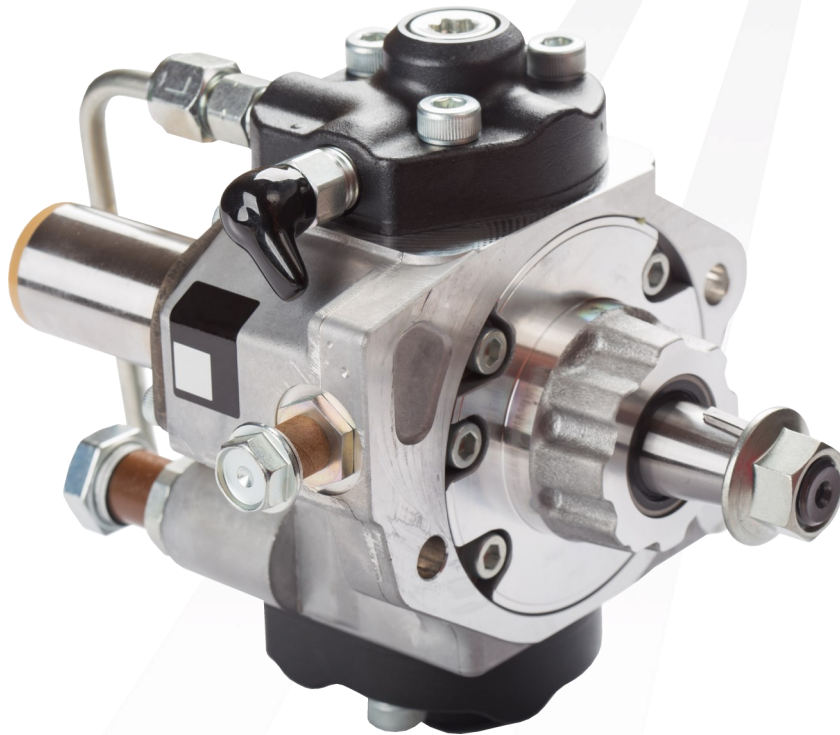


DENSO PRODUCT OVERVIEW



DISCOVER

DIESEL

EXCELLENCE

DENSO PRODUCT RANGE

As Denso National Distributors for diesel products, Merlin Diesel ensures that customers have access to the complete range of Denso products. The different types and characteristics of the products we offer are as follows:



Solenoid Common Rail Injector

Solenoid injectors control fuel injection by opening and closing the control valve with magnetic force, using a solenoid on the actuator. These units are commonly fitted to car and light commercial vehicles.

Part Number: 095000/295050-####

Piezo Common Rail Injector

Piezo injectors achieve faster responsiveness than solenoid types by using piezo elements on the actuators. Piezo elements work by converting changes in the voltage applied into expansion and contraction (displacement). Fitted to passenger and light commercial vehicles, a characteristic of a piezo injectors are built-in piezo stacks which layer (stack) these piezo elements.

Part Number: 295900-####





G4S type Common Rail Injector

The G4S injector can operate at 2500 to 3000 bar and uses a three-way valve function.

This improves the overall hydraulic performance which in turn reduces emissions, minimises fuel consumption and gains higher power as these are generally found in larger passenger and light commercial vehicles.

Part Number: 295700-####

PFR type Pump

PFR (Pintle-Forming Radius) pumps are flange mounted fixed displacement radial piston pumps.

These units are often fitted to smaller static engines or small construction/agricultural vehicles.

The PFR fuel injection pump operates based on the principle of generating high pressure by means of a reciprocating plunger.

Part Number: 094500-####



DENSO PRODUCT RANGE



HP2 type Common Rail Pump

In 1999, this first-generation common rail pump for passenger cars was introduced. Using a double pumping mechanism to ensure smooth operation, it can create a maximum system pressure of 145 MPa.

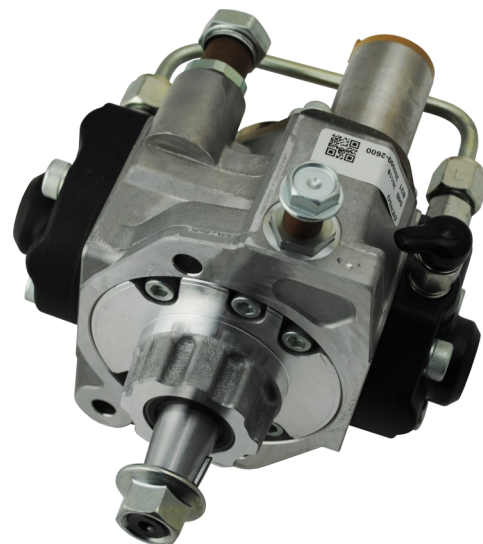
To accommodate the double pumping mechanism, this pump has two SCVs to regulate the pressure. These can be identified by the red and green connector of the valve.

Part Number: 097300-####

HP3 type Common Rail Pump

In 2001, this second-generation common rail pump was introduced. It is a lighter, more compact, two-cylinder pump.

This common rail pump is used in passenger cars and compact trucks. It was originally able to create a maximum system pressure of 180Mpa, but recent developments have increased this to 200Mpa. Because of its wide range of uses, this is the most popular common rail pump within the range.



Part Number: 294000-####



HP4 type Common Rail Pump

In 2004, this common rail pump was introduced to cover the medium-sized truck range.

The working principles of this pump are exactly the same as the HP3, but this pump has three cylinders and thus a higher fuel delivery capacity. It can create a maximum system pressure of 200Mpa.

Part Number: 294050-####

HP5S type Common Rail Pump

The HP5S is the fourth-generation of common rail system from Denso.

The HP5S pump is a single-cylinder variant and has its discharge quantity controlled by a pre-stroke control valve. This ensures the pump maintains its optimum pressure constantly.

Part Number: 299000-####



DENSO PRODUCT RANGE



HP5E type Common Rail Pump

The HP5E is a unit type pump that is primarily fitted to Volvo cars. The engine is a family of four-cylinder inline Euro 6 mild hybrid engines.

The pump is also found on a 4L Isuzu industrial engine and represents the very latest advancements in diesel technology.

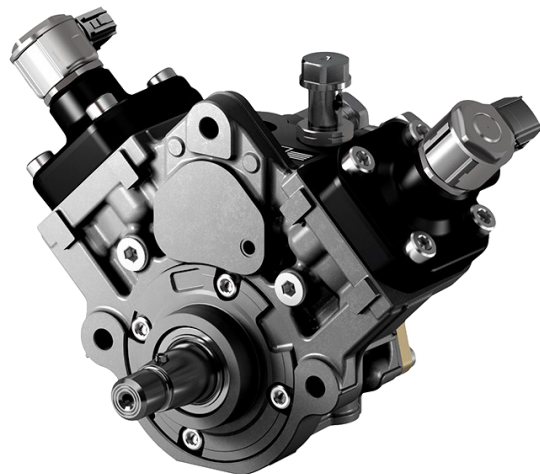
Part Number: 299090-####

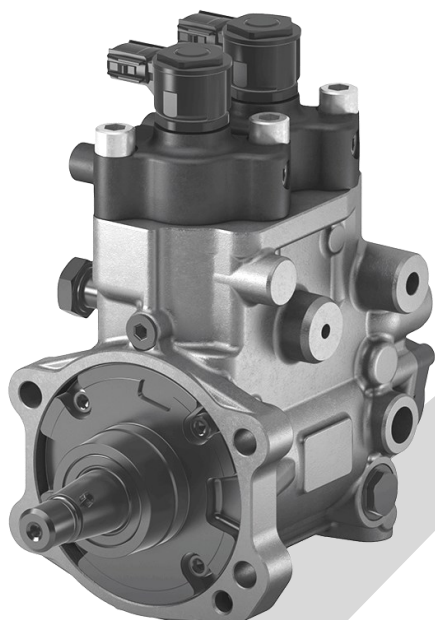
HP5D type Common Rail Pump

Like the HP5S, the HP5D is a two-cylinder variant for higher capacity light commercial as well as larger passenger vehicles.

Its discharge quantity works on the same principles as the HP5S and is controlled by a pre-stroke control valve with a working pressure of up to 250 MPa (Megapascals)

Part Number: 299020-####





HP6 type Common Rail Pump

The HP6 pump has been designed to cater for high capacity engines, from 6 to 8 litres.

They are generally fitted to large applications such as commercial, off-highway and agricultural vehicles.

Denso have used a MPP (mid pressure pump) to supply the two HPP (high pressure pump) chambers with a constant amount of fuel. This improves efficiency and reliability.

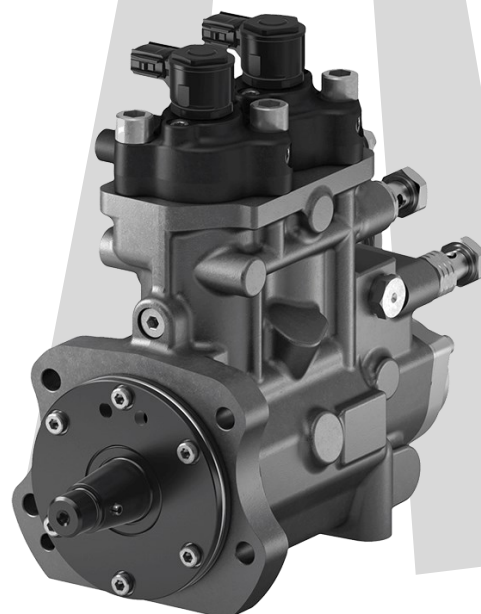
Part Number: 299050-####

HP7 type Common Rail

The HP7 works on exactly the same principles as the HP6 fuel injection pumps.

These pumps are designed for large engine applications such as marine, off-road, rail and power generation as well as large commercial vehicles.

Part Number: 299070-####



DENSO PRODUCT RANGE



Rotary type Pump

This pump design offered significant advantages over traditional inline fuel injection pumps. The rotary design for passenger as well as commercial vehicles enabled smoother and more precise fuel delivery, resulting in improved engine performance and reduced emissions.

Over the years, Denso continued to refine its rotary fuel injection pump technology. The company integrated electronic controls into its fuel injection systems, allowing for more precise fuel metering and timing.

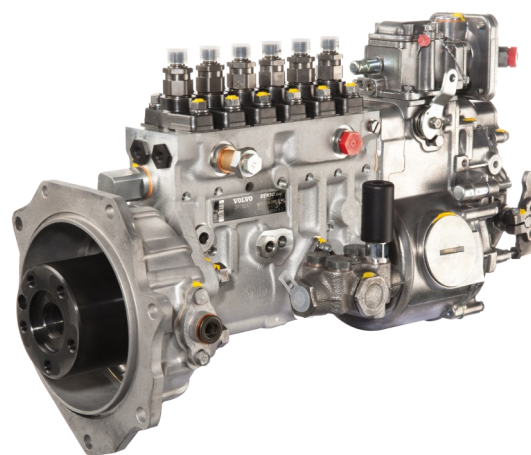
Part Number: 096000/098000-####

Inline type Pump

Denso's inline fuel injection pumps became widely recognised for their reliability, performance, and fuel efficiency.

A major advancement in Denso's inline fuel injection pump technology is the introduction of electronic controls. By integrating electronic control units (ECUs) with the pumps, Denso enhanced fuel delivery precision and responsiveness.

Part Number: 092000-####





HP2 Common Rail Pump Suction Control Valve

As this high-pressure pump has two pumping mechanisms, it also has two SCVs.

These on/off solenoid valves use a green or red connector to identify the two pumping systems, which is essential for pump timing.

Part Number: 096360/096710-####

HP3/4 Common Rail Pump Suction Control Valve

Operation of the SCV is the same for HP3 and HP4 pump systems.

For these two pump systems, depending on application, DENSO uses two different types of SCV. Both of them are linear solenoid valves and operate in the opposite way to each other.

Part Number: 294200/294009-####



DENSO PRODUCT RANGE



HP0 type Common Rail Pump

The HP0 was introduced in 1996 and was one of the first common rail systems on the market.

Designed for large/medium sized commercial vehicles and buses, it is mounted to 4, 6 and 8 cylinder engines and can produce pressures up to 120 MPa.

Part Number: 094000-####

Authorised Repair Parts

Merlin also supply all the parts you may associate with the remanufacture of Denso fuel Injectors and pumps. From the older mechanical type pumps, to the very latest common rail kits, we hold stock of all the authorised repair parts you will need to repair any Denso unit.



MERLIN EXCHANGE RANGE



An exchange range refers to a program where customers can exchange their faulty fuel injectors for remanufactured ones. This can be a cost-effective and environmentally friendly option compared to purchasing brand new injectors.

Merlin's repair program at our state-of-the-art remanufacturing facility is comprehensive and covers all the popular references.



Merlin Denso **Exchange** Pumps

As National Distributor for Denso Diesel in the UK and Ireland we are pleased to offer our Exchange Pump Range.

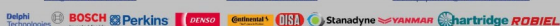
Denso Exchange Pumps **NOW AVAILABLE**

PART No.	TYPE	APPLICATION	PART No.	TYPE	APPLICATION	PART No.	TYPE	APPLICATION
094000-0310-EX	HPFO	John Deere	294000-0501-EX	HP3	GM	294000-1310-EX	HP3	Toyota
094000-0330-EX	HPFO	Hino	294000-0530-EX	HP3	Nissan	294000-1320-EX	HP3	Toyota
094000-0342-EX	HPFO	Komatsu	294000-0550-EX	HP3	Toyota	294000-1370-EX	HP3	Mitsubishi
094000-0350-EX	HPFO	Toyota	294000-0581-EX	HP3	John Deere	294000-1381-EX	HP3	CAT/Perkins
094000-0380-EX	HPFO	Komatsu	294000-0570-EX	HP3	Izuzu	294000-1390-EX	HP3	CAT/Perkins
094000-0421-EX	HPFO	Hino	294000-0580-EX	HP3	Izuzu	294000-1470-EX	HP3	GM
094000-0484-EX	HPFO	Izuzu	294000-0544-EX	HP3	Hino	294000-1520-EX	HP3	Izuzu
094000-0490-EX	HPFO	John Deere	294000-0620-EX	HP3	Mazda	294000-1540-EX	HP3	John Deere
094000-0580-EX	HPFO	Komatsu	294000-0700-EX	HP3	Toyota	294000-1550-EX	HP3	Hino
097300-0018-EX	HP2	Toyota	294000-0710-EX	HP3	Toyota	294000-1580-EX	HP3	Toyota
097300-0022-EX	HP2	Scania	294000-0750-EX	HP3	John Deere	294000-1680-EX	HP3	Mazda
097300-0040-EX	HP2	Toyota	294000-0780-EX	HP3	Subaru	294000-1800-EX	HP3	Izuzu
097300-0050-EX	HP2	Nissan	294000-0780-EX	HP3	Subaru	294000-2000-EX	HP3	John Deere
097300-0072-EX	HP2	Toyota	294000-0860-EX	HP3	Toyota	294000-2220-EX	HP3	Nissan
294000-0012-EX	HP3	Toyota	294000-0870-EX	HP3	Toyota	294000-2320-EX	HP3	Toyota
294000-0041-EX	HP3	Mazda	294000-0880-EX	HP3	Lexus	294000-2430-EX	HP3	GM
294000-0055-EX	HP3	John Deere	294000-0900-EX	HP3	Ford	294000-2441-EX	HP3	GM
294000-0081-EX	HP3	Toyota	294000-0970-EX	HP3	Toyota	294000-2500-EX	HP3	Izuzu
294000-0073-EX	HP3	Toyota	294000-0980-EX	HP3	Subaru	294000-2730-EX	HP3	John Deere
294000-0101-EX	HP3	Toyota	294000-0991-EX	HP3	Mitsubishi	294000-7040-EX	HP3	Nissan
294000-0170-EX	HP3	Toyota	294000-1003-EX	HP3	GM	294000-7040-EX	HP4	John Deere
294000-0265-EX	HP3	Izuzu	294000-1010-EX	HP3	GM	294000-0105-EX	HP4	Izuzu
294000-0324-EX	HP3	Lexus	294000-1020-EX	HP3	Toyota	294000-0130-EX	HP4	John Deere
294000-0370-EX	HP3	Nissan	294000-1120-EX	HP3	Izuzu	294000-0250-EX	HP4	John Deere
294000-0380-EX	HP3	Toyota	294000-1160-EX	HP3	Mazda	294000-0380-EX	HP4	Toyota
294000-0400-EX	HP3	PSA	294000-1190-EX	HP3	Izuzu	294000-0480-EX	HP4	John Deere
294000-0402-EX	HP3	Ford	294000-1200-EX	HP3	Izuzu	294000-0520-EX	HP4	CAT/Perkins
294000-0480-EX	HP3	Ford	294000-1210-EX	HP3	Izuzu	294000-0520-EX	HP4	John Deere
294000-0420-EX	HP3	Mazda	294000-1250-EX	HP3	Mitsubishi	294000-0680-EX	HP4	John Deere
294000-0470-EX	HP3	Nissan	294000-1280-EX	HP3	Mitsubishi	294000-0780-EX	HP4	Hino

For more information on our Exchange Range please contact:
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Authorised Denso **Exchange** Injectors

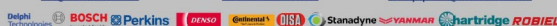
As National distributor for Denso Diesel in the UK and Ireland we are pleased to offer our authorised exchange injector range.

Genuine Denso Exchange Injectors **NOW AVAILABLE**

PART No.	APPLICATION	PART No.	APPLICATION	PART No.	APPLICATION
095000-508#	OPEL/ISUZU	095000-758#	TOYOTA	295050-012#	MITSUBISHI
095000-534#	ISUZU	095000-761#	TOYOTA	295050-018#	TOYOTA
095000-547#	ISUZU	095000-764#	TOYOTA	295050-019#	TOYOTA
095000-560#	MITSUBISHI	095000-767#	TOYOTA	295050-020#	TOYOTA
095000-565#	NISSAN	095000-769#	TOYOTA	295050-021#	TOYOTA
095000-576#	MITSUBISHI	095000-770#	TOYOTA	295050-025#	SUBARU
095000-578#	MAZDA	095000-771#	TOYOTA	295050-030#	NISSAN
095000-580#	FORD	095000-773#	TOYOTA	295050-034#	MITSUBISHI
095000-581#	FORD	095000-775#	TOYOTA	295050-046#	TOYOTA
095000-583#	OPEL/ISUZU	095000-776#	TOYOTA	295050-047#	TOYOTA
095000-602#	NISSAN	095000-778#	TOYOTA	295050-052#	TOYOTA
095000-613#	OPEL/ISUZU	095000-780#	TOYOTA	295050-053#	TOYOTA
095000-624#	NISSAN	095000-783#	TOYOTA	295050-054#	TOYOTA
095000-625#	NISSAN	095000-784#	TOYOTA	295050-056#	MITSUBISHI
095000-636#	ISUZU	095000-786#	SUBARU/MAZDA	295050-062#	TOYOTA
095000-651#	TOYOTA	095000-789#	SUBARU	295050-074#	TOYOTA
095000-659#	TOYOTA	095000-793#	FORD	295050-083#	TOYOTA
095000-662#	FORD	095000-811#	MITSUBISHI	295050-089#	MITSUBISHI
095000-698#	ISUZU	095000-851#	TOYOTA	295050-090#	NISSAN
095000-699#	ISUZU	095000-856#	MITSUBISHI	295050-105#	NISSAN
095000-706#	FORD	295050-001#	MAZDA	295050-106#	NISSAN
095000-749#	MITSUBISHI	295050-005#	OPEL	295050-176#	MITSUBISHI
095000-750#	MITSUBISHI	295050-008#	TOYOTA	295050-190#	ISUZU



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For more information on our exchange or any other Denso part please contact: Info@merlindiesel.com



- Diesel Pump / Injector / Test and Repair
- Suppliers of New and Remanufactured Pumps / Injectors
- Technical Support
- Test Equipment
- Parts Sales
- Injector Software Coding Solutions

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