Technological Development Timeline

Since its foundation, DENSO has contributed to the realization of a new automotive society by repeatedly developing technologies and products that are ahead of the times, while refusing to compromise on quality. The following introduces many of the world-first products that DENSO has developed through its innovative technology.

Foundation and Early Years

1949
Establishment of Nippondenso Co., Ltd., after separation from Toyota Motor Co., Ltd.

1954
Established technical training center

1980s to 1990s

1987
Developed car navigation system using CD digital maps

1994
Invented QR code, a matrix bar code

1995
Developed first mass-produced common rail fuel-injection system

1997
Developed long-life iridium plugs with superfine iridium alloy center electrodes

1997
Developed two-dimensional scanning laser radar system that scans using vertical and horizontal beams

Early 2000s

2000
Introduced semiconductor into stator coil; with simultaneous transition to use of one regulator chip, achieved high efficiency and power in small and light sizes

2000
Started mass production of single fin cooling Module, which integrates the radiator and condenser

2001
Developed heat-pump water heater using the natural refrigerant CO_2

2002
Implemented common rail system that reaches 180 MPa injection pressure through the use of outer-cam-type supply pump

2003
Developed world-first ejector combining the functions of an expansion valve and compressor, which efficiently uses energy lost after use of conventional expansion valve

2003
Developed millimeter-wave radar and pre-crash electronic control unit as pre-crash safety systems to reduce damage from impact

2004
Developed electric compressor that achieves both comfortable air conditioning and fuel efficiency during an idling stop

2004
Developed mercury-free eco-friendly discharge headlamp ballast

2005 to Today

2006
Developed electric variable cam timing (VCT) powered by the motor rather than hydraulic pressure, leading to increased performance and fuel efficiency and reduced environmental impact

2006
Developed matrix infrared sensors for controlling air conditioning to match the surface temperature of passengers when they enter the vehicle

2007
Developed small, high-output inverter with cooling on both sides

2008
Developed night-view system for detection of pedestrians using near-infrared rays

2009
Developed world-first radiator tank made from plant-derived resin (from the castor oil tree) as an environmental initiative

2009
Developed first remote touch controller with a two-dimensional cursor

2009
Developed ejector-based car air-conditioning system

2010
Developed UC injector with two injectors on each suction port and smaller-than-ever fuel particle injection

2011
Developed ISS (idle-stop system) tandem solenoid starter to make it possible to restart the engine when it is coasting, shaving up to 1.5 seconds off the restart time

2011
Launched 20 MPa direct-injector, high-pressure pump with state-of-the-art injection, atomization, and spray formation technologies, as well as durability

2012
Developed motor generator using DENSO's proprietary coil technology

2012
Developed air-conditioning system that divides the car interior into three zones, the driver's seat, front passenger seat, and rear seats, and allows air conditioning of only the driver's seat if there are no passengers

2013
Developed common rail fuel injection system for use in diesel engines that realized the world's highest* injection pressure of 2,500 bar

* For diesel common rail fuel injection systems comprising injector, fuel pump, and common rail. As at June 2013, DENSO data.

2014
Developed highly standardized automotive climate control unit, the first the world that can be installed across vehicle models from compacts to luxury cars

2014
Developed an exhaust gas recirculation (EGR) valve unit, the first in the world to integrate the air intake throttle valve and the EGR valve, that is half the size of conventional products and reduces costs by 20%

2014
Developed the world’s highest-quality SiC power device, which substantially reduces the incidence of product defects using proprietary patented technology