

TOMORROW'S TECHNOLOGY BUILT ON A PIONEERING SPIRIT

*Strong and growing domestic
OE involvement impacts the aftermarket
in a very positive way*

An industry White Paper

By

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I. TOMORROW'S TECHNOLOGY BUILT ON A PIONEERING SPIRIT

The name Bosch has been synonymous with pioneering innovative products since the beginnings of the automotive era. Today, Bosch develops, manufactures and supplies every major OEM worldwide and is a preeminent supplier of systems and automotive products to the domestic automotive industry. Bosch systems and products make driving safer and more efficient throughout North America. And new products and just-

over-the-horizon developments will vastly improve automotive efficiency and safety, and have significant impact on the automotive aftermarket.

Advanced Bosch technology now (or very soon being installed) will transform automobile engine management systems, emissions monitoring, braking systems, transmissions and steering and stability systems. Bosch is prepared like no other organization in the industry to bring about this transformation. And, these products and systems are or eventually will be available for service and replacement in the aftermarket. With more than 200 million cars and light trucks on our highways, Bosch is committed to bringing these systems and quality parts to the aftermarket... and backs up its systems and component commitment with significant and expanding service and training to ensure proper vehicle maintenance and performance.

Bosch -- as it has since the beginnings of the automotive era -- is leading the automotive industry and the aftermarket into the future with unprecedented technical innovation and ever-growing influence as a worldwide supplier. Bosch is driving innovation every mile.

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II. THE PIONEERING LEGACY

The small "workshop for precision mechanics and electrical engineering" that Robert Bosch began in Stuttgart in 1886 is today a worldwide organization employing approximately 224,000 associates, more than half of whom work outside Germany. First and foremost, Bosch remains a company that thrives on innovation, pioneering and technical excellence. Around 20,000 scientists, engineers and technicians work every day to improve the function and reliability of current products -- and to develop new products and systems. Bosch applies for more than 2000 patents each year, and maintains worldwide customer service and support in 130 countries.

The pioneering Bosch legacy in the first century of the automobile helped propel the motorcar to its present position as the key to domestic mobility, and includes:

➤ Development of the first commercially viable high-voltage spark plug with the high-voltage magneto in 1902, which transformed the internal combustion engine and propelled the automobile into reliability and acceptance. This was followed by over 100 years of spark plug development of more than 1200 models with 26 different electrode designs in more than 20,000 different types of plugs, including the Bosch Platinum Series sold in North America.



➤ Development of high-speed diesel fuel injection pumps in 1927 making diesel engines in passenger cars and trucks a reality. This was followed by 75 years of improvements in diesel injection systems, sophisticated diesel glow plugs, and diesel controls.



- Development of the first Automotive Gasoline Direct Injection System in 1952, followed by production of millions of port fuel injection systems for both domestic and import vehicles.
- Invention and series production of the automotive oxygen sensor in 1976 that marked a major step towards the control of exhaust emissions. This was followed by three decades of oxygen sensor development, including introduction of heated sensors, now installed in virtually every automobile built, domestic or import, worldwide.
- Market launch of the world's first series-produced antilock braking system (ABS) for installation in 1978 vehicles. 25 years of constant improvements in ABS systems, for both domestic and import vehicles followed this.

25 Years of Bosch ABS – Development Milestones

1992: 10 million ABS systems from Bosch.

1993: Start of production of ABS 5.0 from Bosch.

1995: Production of Bosch ABS 5.3 starts (with attached micro-hybrid control unit)

1998: Bosch begins volume production of ABS 5.7

1999: 50 million Bosch ABS systems.

2001: Bosch ABS version 8 launched.

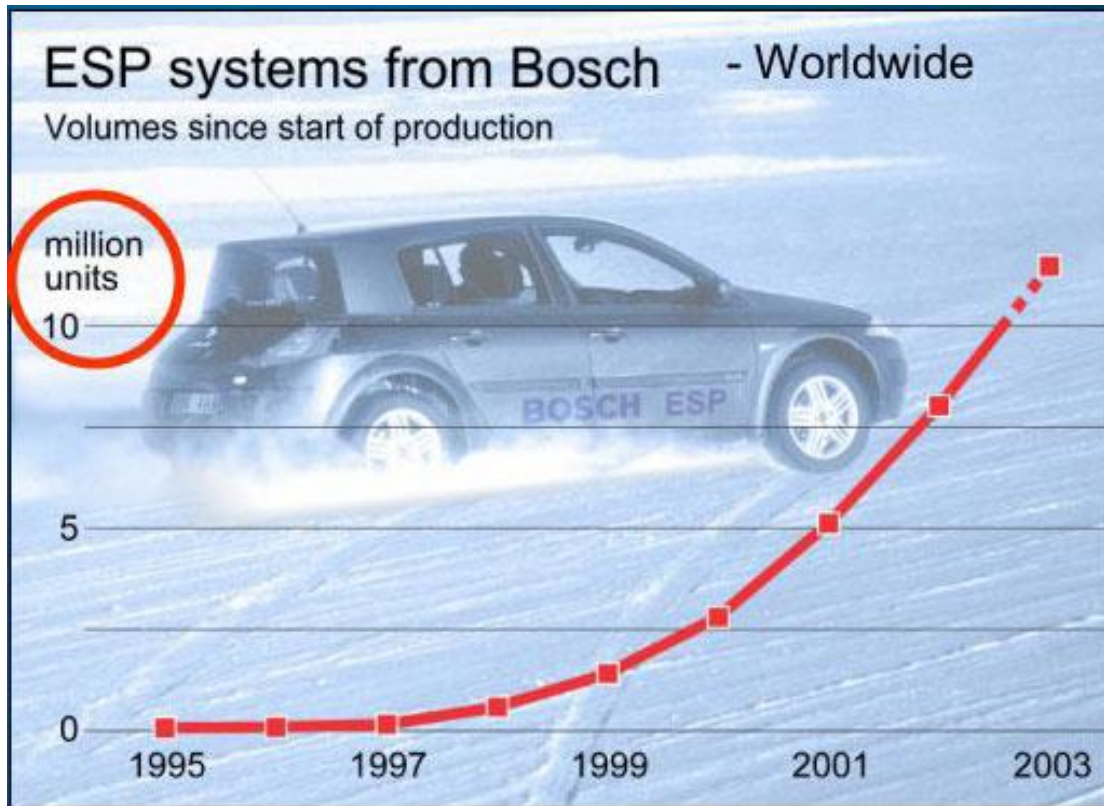
2003: 25 years of series production of Bosch ABS

25 years of ABS 1978 - 2003

ABS installation rate in new vehicles worldwide



- Market launch of Bosch Traction Control System (ASR) in 1986.
- Bosch introduction of Electronic Stability Program (ESP) in 1995.



- Market launch of the Common Rail Diesel Injection System in 1997 making the diesel engine quieter and more economical.
- Continual expansion of Bosch's commitment to the automotive aftermarket, with a wide array of products and services to help keep America's vast vehicle fleet operating efficiently and safely.

III. MAJOR SUPPLIER TO DOMESTIC AUTOMOTIVE INDUSTRY

As a major supplier of automotive systems to both import and domestic automobile manufacturers worldwide, Bosch is helping launch the second century of the automobile by developing and producing dramatic new products that vastly improve automotive performance, efficiency and safety -- and ultimately affect automotive service and the aftermarket.

For example, Bosch supplies Daimler/Chrysler, Ford, General Motors and import OEM's worldwide with precision components and systems including:

Powertrain Systems and Components

- Injectors
- Electric Fuel Pumps
- Fuel Pump Kits
- Fuel Rail Assemblies
- Fuel Injector Coils
- Pressure Regulators
- Oxygen Sensors
- Integrated Air Fuel Module (IAFM)
- Common Rail Diesel Systems
- Inline Injection Pumps
- Distributor Injection Pumps
- Electronic Diesel Control
- Unit Injection Systems
- Engine Management Systems
- Transmission Control

Electronic/Electrical Systems and Components

- Alternators/starters
- Air moving Equipment
- Adaptive Cruise Control (ACC)
- Airbag Sensors
- Engine Cooling Modules
- Electronic Control Units (ECU)
- Hybrid Circuits
- Navigation Systems
- Vehicle Entertainment Systems
- Programmable Instrument Cluster
- Relays and Switches
- Rear Parking Assist Systems
- Small Motors
- Semiconductors
- Windshield Wiper Systems

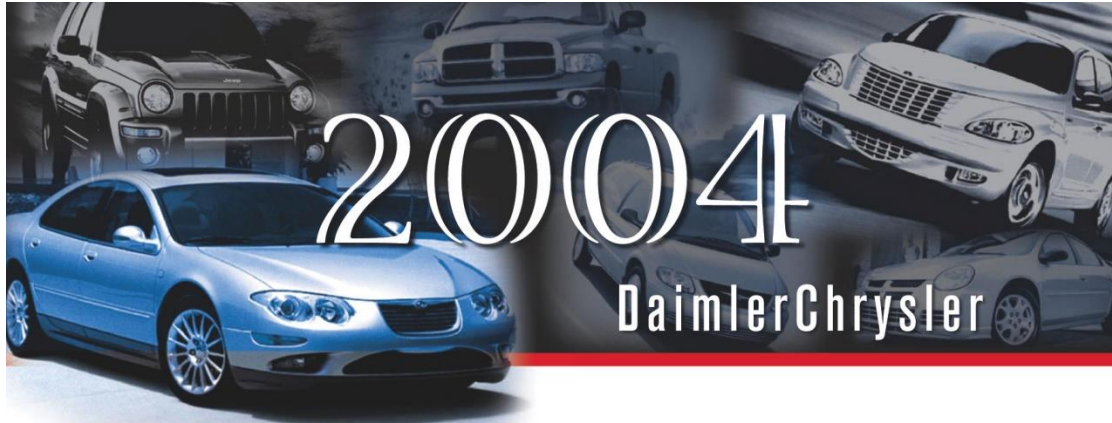
Chassis and Braking Systems

- Rear Disc Brake Calipers with Integrated Parking Brake
- Drum-in-hat Parking Brakes
- Front and Rear Disc Brake Caliper Assemblies
- Brake Drums
- Drum Brakes
- Rotors
- Hub and Bearing Assemblies
- Hubs

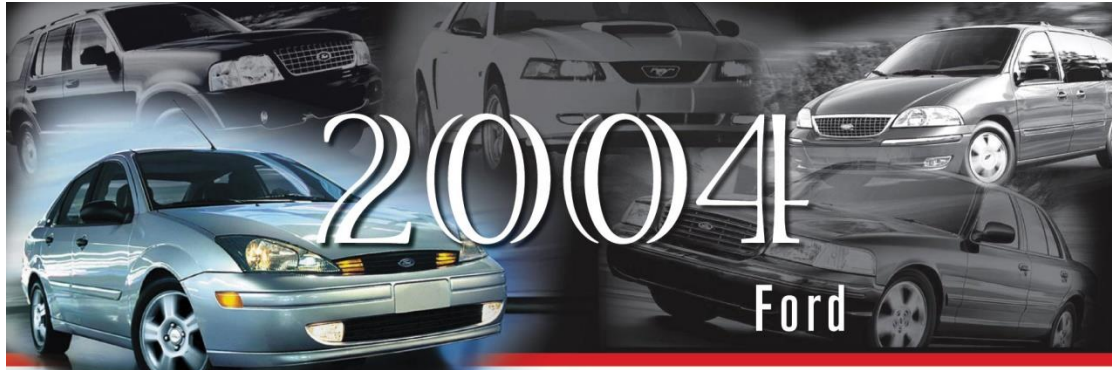
- Antilock Braking System (ABS)
- Traction Control System (TCS)
- Electronic Stability Program (ESP)
- Electro-Hydraulic Braking (EHB)
- Corner Modules
- Master Cylinders
- Vacuum and Hydraulic Boosters
- Sensors

As it has for more than a century, Bosch works closely with auto manufacturers – both in this country and abroad – to advance the quality and performance of passenger cars, light trucks and sport utility vehicles produced and marketed to the motoring public. Although many of these advances in automotive technology receive widespread publicity and public awareness, just as many are subtle and unseen by the motorist, yet benefit us all.

Increasingly, domestic automakers are relying on Bosch to help reduce automotive pollution, improve driving safety, and make all vehicles more efficient and pleasant to drive.



Bosch Original Equipment Systems and Components						
	BODY & ELECTRONICS		CHASSIS SYSTEMS	POWERTRAIN		
	Automotive Electronics (w/o transmission management)	Energy & Body Systems		Diesel Systems	Gasoline Systems	Automotive Electronics (transmission management only)
CHRYSLER						
300M	X		X		X	
300N	X	X	X		X	
Concorde	X		X			
Concorde/New Yorker	X	X	X		X	
Pacifica SUV	X	X	X		X	
PT Cruiser (Cabrio)	X	X	X			
PT Cruiser	X	X	X	X	X	
Sebring	X	X	X		X	
Town & Country	X	X	X		X	
Voyager	X	X	X		X	
DODGE						
Caravan	X	X	X		X	
Dakota	X		X	X	X	
Dakota (4-door)	X	X	X	X	X	
Durango		X	X		X	
Intrepid	X		X		X	
Magnum	X	X	X		X	
Neon	X	X	X			
Ram Pickup 1500	X	X			X	
Ram Pickup 2500	X	X	X	X		
Ram Pickup 3500	X	X	X	X		
Sprinter				X		
Stratus	X	X	X		X	
Viper	X		X			
JEEP						
Grand Cherokee	X	X			X	
Liberty	X	X	X	X	X	
Wrangler	X	X	X		X	
	diodes, driver assist, relays, restraint system electronics, navigation systems, horns	air condition components, engine thermomanagement, generators, electronic and body networks, seat comfort systems, side-door and roof mechanics, starters, wiper systems	master cylinders, vacuum and hydraulic boosters, hubs, hub and bearing assemblies, rotors, drum brakes, brake drums, front & rear disc brake caliper assemblies, drum-in-hat parking brakes, rear disc brake calipers w/integrated parking, corner modules, ABS, TCS, ESP, EHB, sensors	common rail systems, electronic diesel control, unit injector systems, in-line fuel injection pumps, distributor pumps, nozzle and nozzle holder	gasoline systems for manifold and direct injection, electric fuel pumps, engine management systems and components, automatic transmission control	transmission control products



Bosch Original Equipment Systems and Components						
BODY & ELECTRONICS			POWERTRAIN			
	Automotive Electronics (w/o transmission management)	Energy & Body Systems	CHASSIS SYSTEMS	Diesel Systems	Gasoline Systems	Automotive Electronics (transmission management only)
LINCOLN						
Aviator		X	X		X	
LS8/LS8	X	X			X	X
Navigator	X	X	X		X	
Town Car	X	X	X		X	
FORD						
Crown Victoria		X	X		X	
E150 Econoline			X		X	
E250/E350 Econoline Club Wagon			X		X	
E450 Econoline			X		X	
Escape		X			X	
Excursion		X	X		X	
Expedition		X	X		X	
Explorer		X	X		X	
Explorer Sport Trac		X	X		X	
F150 Classic Pickup			X		X	
F150 Heavy Duty			X		X	
F150 Pickup		X	X		X	
F250 Pickup		X	X		X	X
F350/F450 Pickup		X	X		X	X
Focus	X	X			X	
Focus ZXE	X	X			X	
GT			X		X	
Mustang	X	X	X		X	
Ranger		X	X		X	
Taurus		X	X		X	
Thunderbird		X				X
Windstar		X			X	
MERCURY						
Grand Marquis		X	X		X	
Marauder		X	X		X	
Monterey		X			X	
Mountaineer		X	X		X	
Sable		X	X		X	
	diodes, driver assist, relays, restraint system electronics, navigation systems, horns	air condition components, engine thermomanagement, generators, electronic and body networks, seat comfort systems, side-door and roof mechanics, starters, wiper systems	master cylinders, vacuum and hydraulic boosters, hubs, hub and bearing assemblies, rotors, drum brakes, brake drums, front & rear disc brake caliper assemblies, drum-in-hat parking brakes, rear disc brake calipers w/integrated parking, corner modules, ABS, TCS, ESP, EHB, sensors	common rail systems, electronic diesel control, unit injector systems, in-line fuel injection pumps, distributor pumps, nozzle and nozzle holder	gasoline systems for manifold and direct injection, electric fuel pumps, engine management systems and components, automatic transmission control	transmission control products



Bosch Original Equipment Systems and Components

	BODY & ELECTRONICS			CHASSIS SYSTEMS	POWERTRAIN		Automotive Electronics (transmission management only)
	Automotive Electronics (w/o transmission management)	Energy & Body Systems			Diesel Systems	Gasoline Systems	
CADILLAC							
CTS		X				X	
DeVille	X	X	X			X	
Escalade	X	X	X			X	
Seville	X	X	X			X	
SRX	X	X				X	
XLR	X	X				X	
CHEVROLET							
Astro			X				
Avalanche 1500		X	X			X	
Avalanche 2500		X	X				
Cavalier							X
Colorado	X						X
Corvette		X	X			X	
Equinox		X	X			X	X
Express			X				
Impala		X					X
Malibu		X					X
Monte Carlo		X					X
S10 Blazer		X	X				
S10 Pickup		X					X
Silverado 1500/2500/3500		X	X	X			X
Suburban 1500		X	X			X	X
Suburban 2500		X	X				X
Tahoe 4-door		X	X			X	X
TrailBlazer		X				X	X
Venture	X	X					X
BUICK							
Century		X					X
LeSabre		X	X				X
Park Avenue	X		X			X	X
Ranier		X				X	
Regal		X				X	X
Rendezvous	X	X	X				X
PONTIAC							
Aztek		X	X				X
Bonneville		X	X			X	X
Grand Am		X					X
Grand Prix		X	X			X	X
Montana	X	X					X
Sunfire							X
OLDSMOBILE							
Alero		X					X
Aurora			X				
Bravada		X				X	
Silhouette	X	X					X
GMC							
Canyon		X					
Envoy		X				X	
Safari			X				
Savana			X				
Sierra 1500/2500/3500		X	X	X			X
Yukon 4-door		X	X			X	X
Yukon XL1500		X	X			X	X
Yukon XL2500		X	X				X
HUMMER							
H2		X	X				
SATURN							
Ion		X	X				X
LS/LW		X	X			X	X
Vue		X	X			X	
	diodes, driver assist, relays, restraint system electronics, navigation systems, horns	air condition components, engine thermomanagement, generators, electronic and body networks, seat comfort systems, side-door and roof mechanics, starters, wiper systems	master cylinders, vacuum and hydraulic boosters, hubs, hub and bearing assemblies, rotors, drum brakes, brake drums, front & rear disc brake caliper assemblies, drum-in-hat parking brakes, rear disc brake calipers with integrated parking, corner module, ABS, TCS, ESP, EHB, sensors	common rail systems, electronic diesel control, unit injector systems, in-line fuel injection pumps, distributor pumps, nozzle and nozzle holder		gasoline systems for manifold and direct injection, electric fuel pumps, engine management systems and components, automatic transmission control	transmission control products

IV. NEW BOSCH SYSTEMS IN LATEST DOMESTIC MODELS

Exciting new developments for the latest-model domestic vehicles include:

- The pioneering "integrated" intake manifold module, introduced on the new model year 2004 Cadillac CTS. This unit brings together in one light, durable module many of the Motronic fuel and ignition system components. Motronic includes an engine management computer, telemetry, data storage and analysis. The Motronic system monitors and controls the power supply, telemetry systems, ignition system and spark plugs, injectors, the fuel pump, throttle position, camshaft and crankshaft position sensors, O₂ (Lambda) sensors, knock sensor, and intake air temperature and water temperature.

CADILLAC CTS WITH HFV6 ENGINE

As Engine Management Supplier for the 2004 CTS, Bosch supplies original equipment integrated intake modules, ignition parts, engine control units and various sensors to General Motors.



(1) Temperature sensor (2) Cam position sensor (3) Barometric sensor (4) Knock sensor
 (5) EV6 Injector (6) Oxygen sensors (7) Evaporative valve (8) Pencil coil (9) Speed sensor
 (10) Spark plug (11) Air mass meter (12) Wiring harness/connector (13) Electronic throttle body
 (14) Electronic control unit

- Highly sophisticated electronic stability systems (ESP) such as that installed on the 2004 Pontiac Grand Prix. These systems greatly enhance vehicle stability and resist rollover in severe cornering situations, counteract when a vehicle starts to skid, and take driving safety to new levels.
- Strong, durable and compact new alternators installed as original equipment on many new BMW and Mercedes-Benz vehicles.
- Advanced new ABS braking systems on domestic vehicles, such as that on the new from the ground up 2004 Ford F-150 truck. The Bosch integrated brake system includes Bosch content from all three product lines (actuation, foundation and chassis system management), and includes the new Bosch high response vacuum booster, master cylinder, front disc brake calipers and hubs, rotor and bearing assemblies, rear disc brake calipers and rotors, and drum-in-hat parking brake. Faster response time – especially key during panic stops – is made possible by increasing the diameter of the booster's plunger to allow more air into the booster when the valve opens. The long-

stroke concept (which reduces pedal effort via a smaller master cylinder bore) allows the booster on the F-150 to be reduced from a 10-inch to 9-inch diameter, providing cost and weight savings and performance advantages.

➤ Highly advanced planar oxygen sensors that significantly improve fuel management and help reduce emissions. Now being installed in a growing number of domestic and import vehicles, heated "planar" sensors use a flat ceramic zirconia element, 1.5-mm thick, rather than the tubular ceramic 'thimble' used in previous O₂ sensors. The two electrodes, conductive layer of ceramic, and heater are all laminated together on a layered strip. The planar sensor heater element uses less power (approximately 50% less, due to size reduction and integrated heater) while reducing the time to reach operating temperature (625-650⁰ F) to within 10 seconds. This allows it to send accurate air/fuel ratio readings shortly after start-up.



V. EXCITING AUTOMOBILES EMERGE TOMORROW

The near future will see a growing number of sophisticated, advanced new products, systems and technologies incorporated into the automobiles we make, sell, drive and service. This new technology will alter the motor car forever, and have a strong and hopefully positive impact on the aftermarket. Some of what is just over the horizon includes:

- Gasoline direct injection. High-pressure injection directly into the combustion chamber provides up to 15% fuel savings, increased torque, quick response and less complexity.
- Direct starting. In this system, the engine is actually started by the fuel injecting into one cylinder with the piston in just the right position for additional fuel savings.
- Electric battery management. Controlling the entire onboard electrical network, this system goes into action if needed to ensure a reliable source of electrical power.
- Innovative new windshield wipers. Bosch's new "Aerotwin" wiper blade is virtually "the reinvention of the windshield wiper." First introduced as original equipment on vehicles in Europe, "Aerotwin" has now entered the U.S. aftermarket as a part of Mercedes-Benz and Volkswagen vehicles, and is expected to be adopted by US automakers soon. This all-new wiper has no joints, brackets, or articulated parts. It consists of a unique dual-rubber element that works in unison with an advanced tensioning spring and an integrated wind spoiler. The reduced height and unique integrated wind spoiler improve the Bosch Aerotwin's aerodynamics and significantly reduce wind noise. The unique tensioning spring technology provides customized wiping performance as it distributes pressure evenly over the entire width of curved windshields.
- Electro-hydraulic brake systems. Brake by wire with individual wheel braking, hydraulic back-up and no mechanical link between the brake pedal and the wheel brakes, these systems provide shorter stopping distances, brake disc wiping, and improved stopping in the wet.
- Compact alternators. The LI-X compact alternators save space and feature a high density of copper wire in the stator winding and improved electrical output. They reduce emissions and fuel consumption due to increased efficiency over standard alternators
- Advanced diesel glow plugs. Glow plugs function as an additional heat source to assist in the combustion process during cold start conditions, but many late model diesels get more from glow plugs than just getting the engine up and running -- it's called "post-glow." Since the late 1990's, most diesel engine control systems are designed to keep the glow plugs 'turned on' while the engine is cranking and for a brief period after the engine begins to run. This feature enhances engine combustion for improved emissions and provides for a smoother idle during initial cold weather start conditions. Bosch's Duraterm© technology and glow plug construction utilize a self regulating system that reduces glow wait time by more than 50% and allows the glow plug to stay "on" longer for more efficient diesel start-up. The patented Bosch dual

control regulating and heating coil system effectively directs current draw, enabling the glow plug to reach critical start temperatures more quickly for faster engine start-up. With Duraterm technology, glow plug damage due to over voltage and heating is greatly reduced, for maximum service life.

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VI. AFTERMARKET KEY TO OVERALL AUTOMOTIVE EFFICIENCY

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As Bosch expands its ever-growing domestic original equipment involvement, the company continues its already dominant position as a leading supplier of replacement components and services to the aftermarket. Virtually every vehicle operating on American roads today can be maintained with Bosch replacement parts. Bosch supplies spark plugs, oxygen sensors, ignition products, gasoline and diesel fuel injection components, starters, alternators, braking products and wiping products to name but a few.

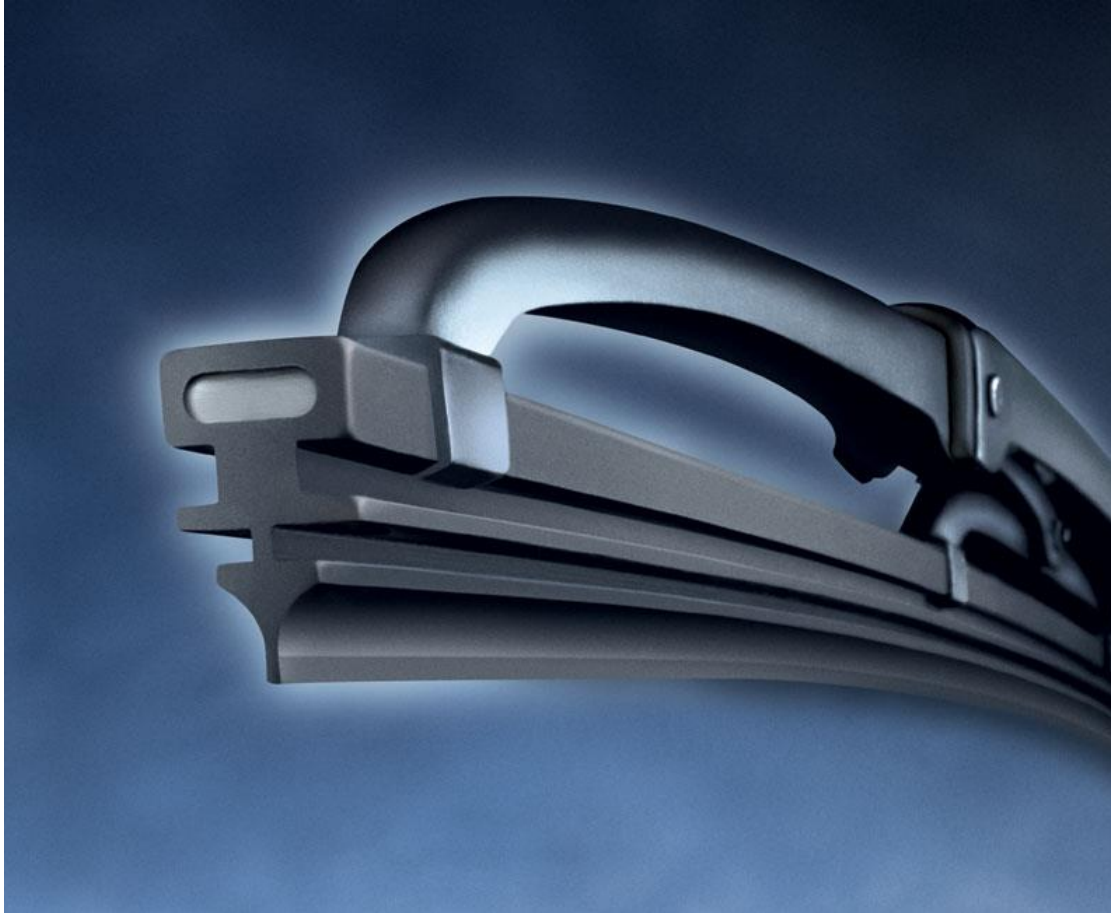
To help improve safety, efficiency and driveability for the millions of existing vehicles, Bosch provides a variety of advanced and premium performance products including:

➤ Platinum Series Spark Plugs. Bosch platinum-core spark plugs out-performed conventional spark plug designs in racing in the '60s, leading directly to platinum-core plugs for street use. The most complete line-up of premium platinum spark plugs available, Bosch Platinum, Platinum2, and Platinum+4 provide the motoring public with a clear choice at all levels of premium performance. It's the most powerful spark plug series available today.

➤ "Enhanced capacity," high output alternators. Bosch's all-new HO (high-output) alternators cover 51 models spanning model years 1988-2000 for Chevrolet, Cadillac, Chrysler, Dodge, Ford, and GMC domestic cars and trucks, and imports from Acura Legend to Honda Civic to Mitsubishi Eclipse. These all-new alternators provide maximum amp ratings from 140 to 200 amps and offer extreme resistance to heat and vibration. They are direct, bolt-in replacements for original alternators, which often were not intended for the severe conditions many drivers place on them. They produce strong amperage at idle as well as high rpm. They provide the sport compact driver the amperage he needs whether at maximum output or idling for extended periods.



- Cabin air filters. Bosch has introduced a brand-new line of cabin filters that offers 85 percent coverage of all light vehicles equipped with cabin filters from 1991 forward. Bosch cabin filters screen the air coming through a car's HVAC system to remove road dust, smoke, bacteria, mold spores, pollens and exhaust residues (pollution). They also protect downstream components in the HVAC system, such as blower motors. Bosch offers both regular particulate filters and combination cabin filters, which add a layer of activated charcoal to scrub out odors and fumes. Based on SAE J1669 standard, Bosch cabin filters screen out virtually 100 percent of particles three microns in diameter and larger. Bosch filters feature premium non-woven multi-stage media, electrostatically charged synthetic media, glued-in-place frames, and precision banding and gasketing to ensure an airtight fit in every installation.
- Premium dual-rubber wiper blades. Bosch's Micro Edge Excel created, defined and now dominates the Ultra Performance segment of the wiper market. Micro Edge Excel was first to introduce a dual-rubber wiper design employing two different types of rubber for a longer service life, better flip-over and resistance to chatter and wiper "set." Its companion Micro Edge wiper blade features the same fully enclosed metal tension spring and DirectConnect™ installation system as Micro Edge Excel. They cover 99 percent of vehicles on the road with just 12 SKUs, and over 90 percent of those require no extra attachments for mounting.



All Bosch OE innovations for domestic automobiles will also affect aftermarket service, and with a host of new products and programs Bosch stands committed to helping service and maintain these automobiles and keep them operating efficiently.





VII. TRAINING IS VITAL

Automotive service today requires great skill and broad knowledge – and effective training is vital to ensure that qualified professionals keep our vehicles running, as they should. Acknowledging the great importance of training and professionalism, Bosch has launched its new Diesel Service Center (DSC) program to bring qualified automotive service facilities into the growing market for diesel service specialists. And Bosch has expanded and is actively promoting its nationwide Bosch Service Center (BSC) and Bosch Automotive Parts Specialist (BAPS) programs.

- Diesel Service May Soon Boom

- A pioneer in developing much of the diesel technology we take for granted today, Bosch developed the comprehensive Diesel Service Center (DSC) program to enhance the level of diesel service throughout North America.

The new DSC program is especially tailored for participation by independent service dealers, and offers significant growth and profit potential for automotive repair shops willing to join up and take advantage of this comprehensive program. The diesel-equipped passenger car and light duty market is growing rapidly. This market is expected to grow from approximately 430,000 units produced annually today to an annual production of 1.5 million units by year 2010. Also, there is renewed interest in diesel automobiles with new models soon to be available to domestic motorists.

Class 1-3 & Passenger Car Market				
Segment	Class	Today	2010 *	Product Example
<i>HD Pick up</i>	2.5	400,000	500,000	
<i>MDPV</i>	2.5	-	100,000	
<i>Pass Car</i>	1	30,000	300,000	
<i>Lt SUV & Truck</i>	1	-	600,000	
TOTAL		430,000	1,500,000	<small>* Annual domestic & import production for NAFTA market</small>

Specific knowledge and training is essential to diagnose, repair and properly service diesel fuel systems and other components on these modern diesels and Bosch can provide it. As the recognized diesel fuel system leader worldwide for more than 75 years, Bosch supplies major auto and truck manufacturers around the world with technologically advanced diesel fuel injection systems and other diesel components. Bosch is also a major supplier of diesel glow plugs to the aftermarket.

This OE and aftermarket relationship gives Bosch unique insight to provide the training and expertise needed to make Diesel Service Center operators diesel experts.

Service dealers who successfully become members of the Bosch DSC program are chosen on the basis of location and accessibility, appearance, customer waiting area, technician training, number of service bays, tools and diagnostic equipment on site and Bosch product inventory on hand. The DSC program is intended to augment an existing shop's operations and DSC shops continue to operate as independent facilities under

their own name – they just add the Diesel Service Center capabilities and identification to their operations.

The DSC program provides extensive training and technical support for diesel service, and Bosch DSCs also have ready access to toll-free technical support, manuals, diagnostic and troubleshooting guides. They can access applications lists, where-used listings, OE-Bosch parts cross references and part number interchanges, and www.boschservice.com web site for technical assistance and support.

BSC and BAPS Programs Grow Stronger

The Bosch Service Center network, which began in 1985, seeks to enroll and authorize the premier independent automotive service dealers across the U.S. The Bosch Auto Parts Specialist program signs and aids service dealers who sell Bosch aftermarket service parts but may not be of a level to attain BSC status.

The high-visibility program is actually international in scope. Including Bosch Diesel Service Dealers and Electrical Service Dealers, it has authorized over 1,200 service dealers in the U.S. and almost 10,000 shops worldwide.

The initial goal when the program began in 1985 was to sign up the best, most professional independent shops working on European cars. As Bosch became more and more an original equipment and aftermarket force, adding systems and components for domestic and Asian vehicles over the years, the programs were broadened to include shops working on domestic and Asian vehicles as well. Technician training was changed and broadened accordingly.

Current enrollment goals are to increase the network to 700 facilities in North America. Key assets of the Bosch Service Center program for a service dealer include:

- Multiple factory training courses leading to Bosch Master Technician status offered without charge except for travel costs. Two new automotive-based electronics courses have just been added to the curriculum.
- Access to a toll-free hotline for service information.
- Authorization to perform warranty repairs on Bosch systems.
- A subscription service information system, which was switched from CD-ROM to DVD format at the beginning of 2003.
- A Bosch identity program, including a lighted Bosch Service Center sign, use of Bosch's name and logo and some advertising support.
- The "Service Excellence Program," in which BSC's are evaluated and rated from one to four stars on equipment, proficiency, training, facility and customer service and earn incentives toward product and training costs.

The Bosch Auto Parts Specialist (BAPS) program zeroes in on service dealers who sell and install Bosch aftermarket parts but may not have attained BSC status. BAPS

facilities receive valuable marketing and product information, point-of-purchase (POP) merchandising material and a Bosch identity program. They also gain access to toll-free service information and training courses similar to, but more condensed than, those offered to BSC's.



About 7,600 Bosch Auto Parts Specialists have been registered in the U.S. alone since the program's launch in 1989. Bosch is shooting for about 8,600 shops by the end of 2004.

VIII. EPILOGUE: THE 21ST CENTURY AUTOMOBILE

For over a century, the name Bosch has been linked to innovative products for the automobile. Today the company counts all major makers of automobiles among its customers. The company goal is to make vehicles cleaner, safer and more efficient. This goal will continue to lead Bosch developments.

As Bosch works increasingly with domestic and import automakers to help develop the automobiles for this century, new technology will be explored as we refine and advance

existing technology – automobiles of tomorrow are poised to leap forward into new regions of efficiency and driving pleasure.

From Bosch's point of view, three areas of development are of essential importance: *drive train, chassis, and driver assistance*. Bosch has introduced milestone innovations in all three areas, and is hard at work in all areas. From a powerplant perspective, it appears clear that the classic, optimized internal combustion engine will remain the dominating power source for passenger cars for some time to come – with market shares of more than 95 percent until 2015 and with still 85 percent up to 2025. Bosch will continue to make significant contributions to maximize the efficiency of the internal combustion engine, while Bosch and the industry explore alternatives.

And these alternatives for the automobile might well include diesel automobiles as a factor in North America.

Today's diesel automobiles are a far cry from the noisy, underpowered diesel vehicles of only a few decades ago. Diesels, in fact, are quite popular and in widespread use elsewhere in the world with diesel automobiles accounting for more than 40% of all new vehicles on the road throughout Europe.

Currently, U.S. consumers can purchase Bosch-equipped diesel light trucks from GM, Ford, and DaimlerChrysler and passenger cars from Volkswagen. Consumer interest is growing in the United States as motorists become aware that clean, quiet fuel-efficient diesel power is available. One of the main reasons for awakened interest is diesel performance. Today's clean, quiet diesel engines are quite powerful. Automotive diesels today produce up to 50% more torque than a gasoline engine of the same displacement, providing an energetic driving experience while achieving better fuel economy and reduced emissions.

Bosch has been the recognized world leader in diesel technology and development for three-quarters of a century, and will continue to help the world's automotive manufacturers provide all viable alternatives to our conventional ways of driving.

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