

FHI Introduces All-New Subaru Impreza WRX STI

Tokyo, October 24, 2007 – Fuji Heavy Industries Ltd. (FHI), the maker of Subaru automobiles, has announced the introduction of its all-new Subaru Impreza WRX STI in Japan. The new WRX STI went on sale nationwide through Subaru dealerships today.

Advancing FHI's theme of producing the complete driver's car and embodying the essence of total driving control, the third-generation Impreza WRX STI has debuted with complete makeovers in its design, engine, chassis and features. Benefiting from Subaru's signature Symmetrical AWD and the Horizontally-Opposed Boxer engine, the new WRX STI is an innovative AWD sports model that delivers a combination of joy of driving and pride of ownership.

The new five-door model features not only a greatly refined engine and suspension but new mechanisms such as the multi-mode Driver's Control Center Differential (DCCD) and multi-mode Vehicle Dynamics Control (VDC). Also, *the Subaru Dynamic Chassis Control Concept (Subaru DC³)* has been further developed for the WRX STI in order to maximize performance and driving pleasure and to ensure high levels of driver satisfaction through total control of the vehicle.

The vehicle's interior and exterior design expresses sophistication and refined functionality. The widened body flares give an irresistible presence, integrating function and beauty, while the interior design stresses high quality and a sporty image. In addition, the Impreza WRX STI features advancements in the areas of environment, safety, and comfort, all of which match FHI's goal of delivering exceptional performance and enjoyable and dependable drivability with environmental considerations in all Subaru.

The first-generation WRX STI model was based on the first Impreza WRX and was developed by Subaru Tecnica International (STI), an FHI subsidiary specialized in motorsports activities. Since its introduction in 1994, the WRX STI has established a solid reputation as a high-performance sports model. In the FIA World Rally Championship (WRC) that requires participants to compete with production-based models, Subaru WRX STI models have proven their credentials by bringing Subaru three consecutive Manufacturers' championship titles from 1995 to 1997. In this context, FHI plans to submit a Group N homologation application effective as of January 1, 2008 for the new WRX STI to FIA.

The introduction of the new WRX STI has completed the full lineup of the Impreza series in Japan. The Impreza 15S, 20S and S-GT models have been available since June 2007, each offering individual strengths in performance and comfort.



Major Features

1. Design

[Exterior design]

Styled around the concept of “*Pure Form for Driving*”, the widened body flares accentuate the 5-door body taken from the new Impreza. A deep-set character line, running along the side from the front bumper to the rear end, and a pronounced edge shape reflects light and shadows and gives the car a different look depending on the time of day. While retaining a consistent flow from front to rear bumper, the front and back fenders are prominently projected, creating a distinctive identity and gives the WRX a unique road presence.

Aerodynamically improved body styling with a large rear spoiler optimizes the balance between the front and the rear quarter panels by reducing wind resistance. An aerodynamically curved form from the front bumper to the front fenders helps minimize lift forces and contributes to maintaining vehicle stability at high speeds. Engine compartment ventilation is provided on both sides of the front bumper and along the rear edges of the fenders.

The strong front grille employs a sharp wing shape with metallic mesh, suggesting the car’s inherent sportiness. The rear garnish is painted in the body color, enhancing the widened body shape. The rear edges of the front fenders are embellished with STI logo plated in cherry red.

The muffler comes with twin dual-tail pipes. Eye-catching 18-inch aluminum-cast wheels, distinguished by their five spokes and highlighted by dark-tone high-luster paint, are standard. These wheels enhance the vehicle’s bold and commanding presence while expressing high quality and streamlined beauty. BBS-brand cast wheels with spokes and sharp lines are also available as an option.

Seven exterior colors are available: *Obsidian black pearl; pure white; spark sliver metallic; dark gray metallic; lightning red; midnight blue pearl* (only for the WRX STI); *WR blue mica*.

[Interior design]

The interior is finished in black and silver to highlight its streamlined design, as well as to create an impression of elegance and sportiness. Dynamic designs with decorative insets in the center panels and door trim express roominess in the cabin. The vehicle information display, which constantly shows outside temperature, average mileage and time, as well as a navigation screen and audio display, are placed nearer the top of the dashboard for improved visibility and functionality.

The front bucket seats use a combination of Alcantara fabric and leather and are designed to offer easy access into and out of the vehicle and to hold the driver and passenger in comfortably and securely. Jointly developed by RECARO, custom bucket seats are also available as a manufacturer’s option. The RECARO seats offer fuller side support and excel in maintaining a comfortable position for sporty driving. Their height adjustment enables the further lowering of the hip point setting in the seats.

Power tilt and telescopic steering comes with a three-spoke genuine leather wheel embossed with the STI logo in its center. The instrument panel combines three meters, a tachometer between a speedometer and fuel gauge, in a single module illuminated in red. Each meter’s dial is colored cherry red, the STI brand color, emphasizing a quality feel and sportiness. When the ignition key is turned on, the needles of the three meters swing up to their maximums and quickly fall back to their original positions, imparting a boost of excitement for the driver. The meter module also comes with a REV Indicator, DCCD Torque Indicator, and Shift-up Indicator. In addition, red LED lights are used for interior door step lights, and they are also provided for the console tray. The center console is embellished with the STI logo, which illuminates when the car’s headlights are on.

2. Packaging

An extended wheelbase and widened track provide optimal dimensions for the new model to ensure its outstanding driving stability and straight-line maneuverability. (The wheelbase is wider by 85 mm, the front track is 40 mm wider, and the rear track is 45 mm wider, than the previous model.) The 5-door body style excels in balancing lift forces in the front and desirable downward forces in the rear, achieving optimal aerodynamic characteristics.

Shortening of the front and rear overhangs has reduced yaw moments of inertia, and enabled highly stable handling, while interior roominess has been preserved. The body structure has been enhanced for improved performance and upgraded specifications. However, the gross weight has remained nearly the same as in the previous model through streamlined body construction.

3. Powertrain

[2.0-litre turbo Boxer engine]

An electronically controlled throttle enables finely adjusted control of the 2.0-litre turbo Boxer engine and ensures acceleration that is linearly responsive to pedal movement. The Dual Active Valve Control System (Dual AVCS) hydraulically controls timing in both the intake and exhaust valves, which helps improve low-end torque while providing a strong power boost at high rotations. Dual AVCS also increases combustion efficiency, thereby reducing exhaust emissions. Changes made in the intake and exhaust ports promote smoother air in- and outflow, contribute to enhancing power output, and improve combustion efficiency, which reduces emissions and improves fuel mileage. In addition, changes in the shape of the turbocharger compressor have increased the efficiency of the air intake and enabled more responsive and smoother acceleration.

Also, the layout of the exhaust pipes greatly facilitate overall air outflow by canceling interference and increasing airflow between the exhaust port and the turbo charger to deliver optimal torque and engine response at various speeds.

A tumble generated valve (TGV) has been installed in the intake manifold, boosting combustion efficiency by controlling the intake flow. It improves efficiency particularly at the time of engine ignition. Also adopted is a secondary air system that forces air into the exhaust port to burn out any gasoline remaining in it. The system helps eliminate harmful substances when the powertrain is still cool, and it promotes early activation of a catalytic converter.

The muffler is placed horizontally, which lowers resistance in the exhaust flow, results in improved noise cancellation, and contributes to smooth power output.

[Transmission]

A 6-speed manual transmission, Subaru's own development, has been further perfected for faster, more accurate and responsive shifts. Friction is substantially reduced through the adoption of a triple-cone synchromesh in the first gear and design changes in the shift sleeves.

4. Drivetrain

The front differential gear adopts a torque-sensitive LSD (limited slip differential) that excels in response to input torque; the rear differential employs the Torsen LSD that supports distribution of torque. The SI (SUBARU Intelligent)-Drive system offers three different modes of driving for the driver to enjoy: Intelligent; Sport; and Sport Sharp. For example, when a driver continues to heavily depress the accelerator pedal in the Intelligent mode, engine output is automatically boosted to the level of maximum torque.

The multi-mode Driver's Control Center Differential (DCCD) enables the driver to choose from different modes of control for the center differential. This feature allows the driver to enjoy handling and maneuvering as he desires, and it provides high levels of vehicle straight-line stability unique to the AWD configuration. The multi-mode Vehicle Dynamics Control (VDC) also provides three different modes that the driver can choose from to experience a wider range of driving enjoyment, while always maintaining the safety features of VDC.

[Multi-mode DCCD]

AUTO mode: The standard mode automatically controls the differentials under all kinds of driving conditions.

AUTO [+] mode: This mode is suited for driving on slippery or icy roads, which requires higher levels of road traction, achieved by elevating differential control.

AUTO [-] mode: This mode enables agile driving whereby the vehicle responds swiftly to steering by the driver.

MANUAL mode: This mode allows the driver to control the center differential manually.

[Multi-mode VDC]

NORMAL mode: The standard mode controls ABS, TCS and VDC.

TRACTION mode: Adjusting both TCS and VDC, this mode extends the time period until the VDC kicks in. This mode is suited for sporty driving as it does not control torque-lowering in the engine.

OFF mode: This mode only controls ABS. It is used in emergencies like getting the vehicle out of deep snow or mud.

*Though the multi-mode VDC is the vehicle stability control device that offers a superior function, it is a driving assist system.

5. Chassis

The WRX STI boasts a state-of-the-art chassis design that reflects *the Subaru DC³*. Equipped with a strut-type front suspension and the newly designed double-wishbone rear suspension, and combined with its widened track, this model achieves outstanding cornering stability. Optimized suspension geometry settings with adjusted camber angles have made substantial improvements in road-hugging traction and riding comfort. Aluminum cast lower arms and a stabilizer bar in the front suspension help raise torsional and rolling rigidity, providing accurate response in steering. In the rear suspension, suspension links are attached to the body through the sub-frame, which enhances riding comfort and further lowers noise levels.

The Boxer engine is mounted lower on the chassis, further advancing vehicle stability already ensured by its low center of gravity: 22 mm lower at the front end of the engine, compared to the previous model.

The Brembo-made ventilated disk brake system employs an ultra-low expansion brake hose and tie rods for the brake booster. The brake system, coupled with the SuperSports ABS (antilock brake system) with EBD (electronic brake distribution), processes information fed from the G sensor, steering angle sensor, yaw rate sensor, and pressure sensor to deliver steady braking and control. It also works with the DCCD to ensure accurate braking on all four wheels independently, while minimizing deviations from the driver's intended path. Bridgestone RE050A (245/40R18) tires are standard.

The hill-start assist function maintains the braking function one second after the brake pedal is released in case of starting a car on a hilly road.

6. Body construction

The WRX STI uses an advanced form of Subaru's legendary and proprietary Ring-Shaped Reinforcement Frame Body Structure, reinforcing each pillar with frames that circle around the body in a ring shape. Reinforcements are now provided to connect firmly between the lower part of the front pillar and upper frames, increasing the strength of the strut attachment onto the body frame. Reinforcements are also added to the upper part of the opening of the rear gate.

Through streamlined body construction and the extensive use of high-tensile steel, including 590 MPa-level steel for major body frames, the new model has achieved both high body rigidity and a weight reduction of 11 kg.

7. Safety

Advancing the Ring-Shaped Reinforcement Frame Body Structure, the new WRX STI has realized high levels of safety and crash worthiness through effectively absorbing and dispersing crash impact in frontal, side, or rear impact crashes. The hood, for example, is specifically designed to disperse frontal impact. The new model boasts low-impact features for pedestrians and other vehicles in collisions.

All models are equipped with dual SRS airbags, side SRS airbags and curtain airbags, as well as 3-point seat belts in the rear seats. A collapsible brake pedal is available on all models to reduce the risk of foot injuries in accidents.

8. Environmental friendly features

The new model achieved an additional 50% reduction in emissions from the levels of the 2005 exhaust emission regulations set forth by Japan's Ministry of Land, Infrastructure and Transport. This was accomplished primarily owing to reduced weight and performance improvements.

9. Utilities

The all-new double-wishbone rear suspension makes room for a wider and deeper luggage compartment, improving the utility of the car. The wide and flat load floor can accommodate two Tour-size golf bags or five carry-on bags. Larger door openings afford improved ingress and egress, and the rear doors open 75 degrees to allow for better rear seat access. The door pocket serves also as a beverage holder that can hold a 500-mL PET bottle. In addition, the center console box accommodates 8 CDs, while the console tray provides space for placing small items.

10. Others

Standard features on the WRX STI include retractable headlight washers; an anti-theft alarm system and immobilizer; a hood damper; and a keyless entry system with a push-bottom starter.

An HDD navigation system with audio capability (compatible with Subaru G-Book Alpha telematics service) is offered as a manufacturer's option.

Specifications:

Body Size	
(length/width/height)	4,415 X 1,795 X 1,475 mm
Wheel Base	2,625 mm
Track (front/rear)	1,530/1,540 mm
Kerb Weight	1,480 kg
Engine Type	Horizontally-Opposed, 4-cylinder Dual AVCS*** 16Valve DOHC Intercooled twin scroll Turbo Engine ***AVCS:Active valve control system
Bore/Stroke	92.0 X 75.0 mm
Displacement	1,994 cc
Max. Output	227kW(308PS)/6,400 rpm
Max. Torque	422Nm(43.0kgfm)/4,400rpm
Fuel System	EGI(Multi point sequential injection)
Fuel tank capacity	60 litre
Transmission Type	6MT:Forward 6-speed/Reverse 1-speed
Gear Ratio	3.636 (1 st) 2,375 (2 nd) 1.761 (3 rd) 1.346 (4 th) 1.062 (5 th) 0.842 (6 th) 3.545 (Reverse)
Final drive axle ratio	3.900
Suspension(front/rear)	Independent, MacPherson strut type/Double wishbone type
Tyres	245/40R18

About Fuji Heavy Industries Ltd.

Fuji Heavy Industries Ltd. (FHI), the maker of Subaru automobiles, is a leading manufacturer in Japan with a long history of technological innovations that dates back to its origin as an aircraft company. While the automotive business is a main business pillar, FHI's Aerospace, Industrial Products and Eco Technologies divisions offer a diverse range of products from general-purpose engines, power generators, and sanitation trucks to small airplanes, crucial components for passenger aircrafts, and wind-powered electricity generating systems. Recognized internationally for its AWD (all-wheel drive) technology and Horizontally-Opposed engines in Subaru, FHI is also spearheading the development of environmentally friendly products and is committed to contributing to global environmental preservation.