

# Differences between each year of STi

by STi FR3AK

The Subaru Impreza STi, (formerly WRX STi, officially changed in 2006 to STi) is the highest standard-edition trim in the Subaru Impreza compact car line, produced by Japanese automaker Subaru.

In the late 1980s, Subaru created the Subaru Tecnica International (STI) division to coordinate development for the FIA World Rally Championship and other motorsports activities. After the company had grown, the division was used to create high-performance consumer versions of the Subaru Impreza WRX, an all-wheel drive car with a turbocharged boxer engine, leading to the development of the Impreza WRX STi. The Subaru World Rally Team has used a race-prepared version of the WRX STi as its rally platform since the model trim's creation.

## First generation (1992 - 2000)

First generation (GC)

Production 1992-2001

Body style(s) 2-door coupé

4-door sedan

5-door station wagon

Engine(s) 2.0 L H4

Wheelbase 99.2 in (2520 mm)

Related Subaru Impreza

Subaru Impreza WRX

Subaru Forester

There were six versions of the STi. The different versions were marketed with consecutive numbers. Another way to tell the version of a WRX STi was to look at the chassis code. Sedan STi Model Codes were GC8, Coupes were GM8 and Station Wagons were GF8, followed by a letter from A to G. There was a GC chassis version of the RS released in 2001 as well in the United States.

One common misconception is that every Impreza between 92-01 were "GC8's". The code breakdown is as follows; G - stands for Impreza, C - sedan, M - coupe, F - station wagon, The 8 stands for the 2.0 L turbo motor. So really, there are many combinations. A coupe STi would be GM8, sedan GC8, wagon GF8. Also, the code for the coupe American 2.5RS's were GM6 (6 standing for the 2.5 L N/A motor)

A JDM STi Coupe has the code GC8. For example, a version 4 STi coupe has the code GC82DD, with the 2 representing 2-doors.

### Japanese-spec

#### Version I (10/92 – 08/94) - GC8A/B

The first STi was known simply as WRX STi (there was no "version" moniker added to the name until the version II). 100 Imprezas per month were produced starting from February 1994. In March, production was stabilized to 100 STis a month. It had 250 PS (184 kW; 247 bhp) at 6500 rpm and 31.5 kgf·m (309 N·m, 228 ft·lb) at 3500 rpm and weighed 1230 kg (2,710 lb). Before the STi, the highest trim line of the Impreza was the WRX and the WRX RA, first manufactured in November 1992. This version of the STi was the only version where the standard cars were taken at the end of the assembly line and replaced by STi parts. After this version, the standard STi was built alongside the WRX on the production lines.

The WRX STi Type RA (marketing has made usage of the RA acronym in various ways; Record Attempt[6] is the current usage. "R = Racing, A = Group A, FIA the racing class the WRC Impreza competes in" has also been confirmed by Subaru of Japan; the correspondence can be seen on the discussion board for this article) produced 275 PS (202 kW; 271 bhp) and 32.5 kgf·m (319 N·m, 235 ft·lbs) of torque. This version of the WRX STi was a stripped out car that had no sound-deadening, radio or air-conditioning. It came sparsely equipped as it was to be sold to racing teams that would throw out the cheap parts for racing parts. This version of the WRX came with a Driver

Controlled Center Differential (DCCD). This device was an electromechanical differential that could lock the differential. The DCCD would be beneficial to people who used it in various rally conditions.

### **Version II (09/94 – 08/96) - GC8C**

The regular STi's engine output stood at 275 PS (202 kW; 271 bhp) and 32.5 kgf·m (319 N·m, 235 ft·lb) of torque. This was the year that STi started painting the intake manifold red. The car weighed 1,240 kg (2,734 lb) and had gold wheels like those on the World Rally Championship Impreza.

The V-limited STi edition was produced. It was a limited edition that was often used to celebrate a Manufacturer or Driver title award to Subaru's World Rally Team. The interior is colored blue on the seat inserts and carpeting. The WRX Type RA STi received a radio and air-conditioning in the V-limited form. 1000 WRX STi Version 2 V-limited were produced. 555 (the cigarette brand that was the premier sponsor of the Subaru World Rally Team and became synonymous with the Impreza WRC livery) WRX Type RA STi Version 2 V-limited were produced.

### **Version III (09/96 – 08/97) - GC8D**

The engine was vastly updated and was given the name Boxer Master 4. It developed about 300PS but output was reported at the then-established gentlemen's agreement power limit of 280 PS (210 kW; 280 hp). Torque peaked at 4000 rpm with a value of 35.0 kgf·m (343 N·m, 253 ft·lb). In standard form, this version has a top speed of over 240 km/h. The car gained 10 more kilograms and weighed at 1,250 kg (2,756 lb). The STi shared the same face lift that the rest of the Impreza line received.

With Version III came the start of the coupe version of the WRX STi. It is called the WRX Type R STi. The coupe was chosen by Prodrive for use in the WRC because it was smaller, lighter and stiffer than the 4-door version. It was essentially a 2-door version of the WRX Type RA STi meaning it had DCCD, minimal sound insulation, close-gear ratios and hardened gearbox. This car also has a water-spray nozzle to dampen the top of the intercooler. The water will then evaporate, taking heat away from the intercooler and cooling the intake charge. This car was produced on an order-only basis.

Also, there was a WRX STi type RA (4-door) available in Version III. These have the same motor, gearbox and R180 diff as the Version III WRX STi Type R, including DCCD, aluminum bonnet and front guards, no sound deadening and thinner glass. The ECU is also an exclusive tune. The Type R tends to be a bit stiffer and weighs 1,190 kg (2,600 lb). The DCCD has been known to bite new drivers in the wet. The RA gets a roof vent instead of map lights, and wind up windows, although electrics are an option from factory.

Also available was a WRX Type R V-limited, in version III. It has a WRX motor with no forged internals like the STi, and it misses out on the 4 pot front brakes as they are to be installed by rally teams. It has a roof vent and is lightweight, making a good base for a rally car.

Version III STi runs a VF23 IHI ball bearing turbocharger while the JDM non-STi gets a VF22.

### **Version IV (09/97 – 08/98) - GC8E**

Power remained at 280 PS but torque was raised from 253 lbs./ft of torque to 260. Forged pistons were also added.

The interior and the cockpit were changed into a newer design along with the new "White colour" gauges.

### **Version V (09/98-08/99) - GC8F**

The power stayed the same as the previous version 280 PS . The engine layout and design was made cleaner and was dubbed as the Boxer Phase 2 engine. The facelift the rest of the Impreza line had was also applied to the STi. The WRX STi weighed 1,270 kg (2,800 lb). There were 1000 WRX Type RA STi Version 5 Limited cars and the WRX Type R STi Version 5 Limited cars had a 4 month waiting period for each order. The interior was also changed slightly from the Version 4 including seats and steering. This model was also produced as a 555 limited edition.

## Version VI (09/99-08/00) - GC8G

GC8G

Production 1999-2000

Body style(s) 2-door coupé

4-door sedan

5-door station wagon

Engine(s) 2.0 L H4

Wheelbase 99.2 in (2520 mm)

Related Subaru Impreza

Subaru Impreza WRX

Subaru Forester

Again the power stayed the same. Most of the changes were cosmetic. The wing was sculpted to be more aggressive.

There were 2000 WRX STi Version 6 Limited, 1000 WRX Type R Version 6 Limited and 2000 WRX STi RA Version 6 Limited cars produced. Also 500 WRX STi Version 6 Limited Hatchback models.

# Japanese special variants

## 22B STi (03/98 – 08/98)

In 1998, Subaru of Japan produced a wide body, 2-door, Impreza called the 22B STi. The 22B was used to commemorate both Subaru's 40th anniversary as well as the 3rd consecutive manufacturer's title for Subaru in the FIA World Rally Championship. On the release of the sales, all 399 sold out from 30 minutes to 48 hours, depending on the report.[7] The cars had the starting VIN code of GC8E2SD. Another 25 were produced for export markets - see the 22B Type UK below.

The 22B had the EJ22 engine as opposed to the regular EJ20 engine. (Note internal Subaru material states the block comes from a V3 EJ20G NOT the EJ22G as most think. Also the intake manifold and heads were for the V4 EJ20K) This means the displacement was increased from 1994 cc to 2212 cc. The block is a closed-deck design. The heads (valves, valve train and such) were lifted from the STi Version 4 engine. It produce 350 PS (260 kW; 350 hp) at 6000 rpm and 363 N·m (267 ft·lb, 37.0 kgf·m) of torque at a lower engine speed of 3200 rpm. The redline was lowered from 8000 rpm to 7000 rpm. The compression is an 8.0:1. The turbocharger is an IHI RHF 5HB (the internal company usage code is VF23).

This car was given a unique color of blue and had fender flared wide body taken from the Peter Stevens designed WRC car, thus widening the width by 80 mm (3.15 inches) for a total of 1,770 mm (69.7). During assembly, a WRX Type R chassis was taken off the line. The fenders were replaced with the 22B STi fenders. The car's curb weight is 1,270 kg (2,800 lb). The suspension is provided by Bilstein. The brakes were standard 4-piston/2-piston brakes. However, the color is red and the Subaru name cast on the brake calipers and painted white. The wheels were increased in size from the standard WRX Type R STi from 16x7" to 17x8.5" BBS Elektra wheels. The car is shod with 235/40 ZR17 Pirelli P Zeros. The clutch was upgraded to a sintered twin clutch with a ceramic disk. The transmission ratios are the same as the standard WRX Type R, but the gears were shot-peened for added reliability. The car has a unique hood, a WRC-inspired front bumper and a unique adjustable rear wing.

The origin of the name 22B has often been debated. Many assume 22 referred to the 2.2 liter displacement and the B was for the Bilstein suspension. This would correlate with the idea that Subaru sells a Legacy Spec B, where the B represents the Bilstein suspension. Others believe that 22B was meant to represent the much recognized 555 decal (555 is a tobacco company that was a major sponsor for Subaru in the WRC) on the WRC car as 22B is a hexadecimal representation of the decimal number, 555.

It must be noted that the 22B STi that is supposed to be #13 was never given the plaque. Subaru of America imported #13 to be used as a press car. Three 22B STis were given the #000 plaque, 2 went to the World Rally car drivers for Subaru at the time Colin McRae and Nicky Grist, with the third being used by Subaru Japan as their press car. It was widely rumored David Lapworth of Prodrive owned the third #000 car, however he actually owned #400.

## **S201 STi (2000)**

Subaru Tecnica International started the S-series of special Imprezas. This series is a limited production series that sports an engine output of greater than 280 PS (210 kW; 280 hp) [had 224 kW (305 PS)] (special variant cars were excluded from the gentlemen's agreement). The car was decked with nearly every single part from the STi catalogue.

The S201 was a 4-door STi that sported the only body-kitted S-series WRX STi. It had a tri-planar wing and a massive front airsplitter. The entire suspension was composed of STi parts.

There were 300 S201s produced, they used a VF28 spec turbo, with max boost at 1.2 BAR and produced 224 kW (305 PS) and 353 Nm, weighing in at 1270 kg these are a highly desirable variant.

# United Kingdom special variants

## **22B Type UK (1998)**

16 of the 'export' 22Bs (see above) were modified by Prodrive, with longer gear ratios, UK specification lights and an official 3 year warranty. Because 50 22Bs had already been imported privately into the UK, Subaru UK had to wait until 1999 to register the 22B Type UKs under the VCA's Single Vehicle Approval scheme. The price was £39,950, approximately the same price that grey import 22Bs were being sold for.

## **P1 (2000)**

To counter the grey imports of high-performance Japanese variants, Subaru UK commissioned Prodrive to produce an 'official' limited edition of 1,000 two-door cars in Sonic Blue.[9] The chassis was a 2-door coupe. They were taken from the STi Type R lines and used for the P1. The car was the only coupe version of the WRX STi GC chassis to receive ABS. In order to allow for ABS, the DCCD was dropped. Engine output was boosted to 276 bhp (206 kW; 280 PS), and the suspension optimized for British roads. Options were available from Subaru consisting of 6 piston front brake calipers, electric Recaro seats, 18" OZ alloys and a P1(Prodrive) stamped backbox. The P1, or Prodrive One, is echoed in the name of the Prodrive P2 concept car.

# Second generation (2001 - 2007)

## **Second generation (GDB-F)**

Production 2001-2007

Body style(s) 4-door sedan

4-door station wagon

Engine(s) 2.0L H4

2.5L H4

Transmission(s) 6-speed manual

5-speed semi-automatic

Wheelbase 2004-05: 100.0 in (2540 mm)

2006-08: 99.4 in (2525 mm)

Length 2004-05: 173.8 in (4415 mm)

2006-08: 175.8 in (4465 mm)

Width 68.5 in (1740 mm)

Height 56.3 in (1430 mm)

Curb weight 3,296 lb (1,495 kg)

Related Subaru Impreza

Subaru Forester

Subaru Impreza WRX

Saab 9-2X

In 2001, the Impreza line received a complete update. The chassis was stiffened so that it had 120% torsional stiffness increase. The WRX STi gained 17" x 7.5" alloy wheels over the previous 16" x 7" wheels. The 5 speed manual transmission (reputed to be one of the car's weak points) was changed to an STi engineered 6 speed manual transmission. The engine was retained from the Version 6 STi and still retains the semi-closed deck block and is still labeled as the EJ207, However, the turbochargers are IHI models. The interior was updated with a STi logo on the gauge. The STi's tachometer also has a red shift light. The STi's and optioned Type RA STi have received Brembo 4 piston front and 2 piston rear brakes while the bare-bones Type RA STi still carried the Subaru 4 piston front and 2 piston rear brakes. Externally, the STis had larger hood scoops and had fog light covers with STi embossed on them. The DCCD was updated so it can work with anti-lock brakes. During braking, when the ABS is on, the DCCD will set itself to open-mode (no locking).

The version nomenclature was dropped from the name. Japanese and other auto-enthusiasts often refer to the chassis as GDB/GDF (the STi has a 'B' or 'F'(for USDM models) where as the regular WRX had an 'A'). The fourth character of the VIN gives the revision (A to F where G is the 2007 version).

For quick and easy reference to the different exteriors, Subaru Impreza owners use nicknames based on the headlights. Each relates to a creature that has similar looking eyes: 2002-2003 are 'bug eyes' / 2004-2005 are 'Tear Drop' or 'blob eyes' / 2006-2007 are 'hawk eyes'.

### **Japanese-spec**

#### **Rev. A (2001)**

In 2001, the WRX STi received the aforementioned updates. The WRX Type RA STi was produced. The STi wagon was still produced but its engine only produced 275 PS (202 kW; 271 bhp) . The STi fog light covers had white STi lettering on them.

The WRX Type RA STi was used for the Group N homologation.

#### **Rev. B (2002)**

Along with the rest of the Impreza line, the grille and body of the WRX STi was lightly updated by Peter Stevens to give it a more angular look when seen from the side. The fog light covers had pink STi lettering. Not much else besides minor suspension improvements and a small increase in torque output was done.

The WRX Type RA STi was dropped for a new WRX STi Spec C. This model was much lighter than the WRX Type RA as it received lighter glass and body panels. The Spec C's handling was much improved due to an increase in caster (from 3.5 degrees to 5 degrees). This was achieved not by changing the suspension mounting point, but by lengthening the wheelbase (15 mm). This was done by including different control arms. This increased caster significantly helped the turn-in capabilities of the car. The Spec C also has a steering rack ratio of 13:1. The transmission is supplied with its own oil cooler.

The WRX STi wagon had ceased to be produced.

#### **Rev. C (2003)**

Little change from Rev. B.

The WRX STi was used for Group N homologation.

#### **Rev. D (2004)**

The WRX STi received the same Peter Stevens-designed facelift that rest of the Imprezas received. The WRX STi is now capable of being ordered with DCCD.

The WRX STi Spec C Type RA was released. It sported a carbon-fiber wing and a carbon fiber lip. It also had a new set of BBS wheels as well as a newly tuned engine.

The WRX STi V-Limited was released. It sports 4-way dampers tuned by Subaru World Rally Team's Group N driver Toshi Arai.

The WRX STi was used for Group N homologation.

#### **Rev. E (2004)**

This was the first Impreza STi model to be offered in the United States. Subaru unveiled this model in the Detroit International Auto Show, only 1 month after Mitsubishi announced the arrival of the 271 horsepower Lancer

Evolution 8, which out-performed the 2.0L WRX.

The 2004 WRX STi is considered to be the lightest (3263 lbs, official brochure and tested by Car & Driver Magazine) and rawest among 2004-2009 models. The car was sold without a radio or floor mats. The car was rated at 300 bhp and 300 lbs-ft torque, although many feel it was under-rated on purpose. What made the car so special to most is the level of performance offered for a mid 30 thousand dollars car, that still has a back seat and a big trunk.

Since its launch, many upgrades became available to increase power, handling and braking capabilities.

Some weak links were discovered in most 2004-2007 models since the 2004 debut. The IHI VF39 turbocharger wastegate may develop cracks that may or may not affect performance.

The oil pickup line inside the oil pan was shown to develop a crack leading to oil starvation and engine damage due to the lack of lubrication when the part fails. Several aftermarket vendors have addressed this issue by re-designing factory oil pickup units with beefier welds/materials.

#### **Rev. F (2005)**

The WRX STi receives the same increase in wheelbase as the Spec C. All STis received additional rear fender flaring in order to allow an increase in wheel size. The wheel size went from 17" x 7.5" to 17" x 8". In accordance with the increased wheel width, steering lock-to-lock turns have been reduced. Wheel hub strength was improved. The P.C.D. was changed from 5 x 100 mm to 5 x 114.3 mm. The interior was vastly improved as well. A whole new center console now brings out a very high grade interior feel.

The WRX STi continues on relatively the same. The Impreza line's looks have been updated.

The WRX STi Spec C's receives the Arai tuned dampers and a 21 mm (0.8 in) swaybar. The rear suspension is changed from rubber bushings to pillow ball bushings. The strut tower was further stiffened for improved handling and stability. The strut towers were reinforced for better handling and better ride characteristics. The engine mounts were changed from metal to liquid-filled plastic mounts to reduce vibrations into the car's cabin. Some 2006 owners have had issues with these plastic engine mounts. The manufacturer will replace them, under warranty if broken, with the 2005 rubber mounts.

The DCCD is updated with the use of a torque-sensing mechanism inside the DCCD. The torque split is changed to 41/59.

The WRX STi Spec C was used for Group N homologation.

The WRX STi Spec C Type RA was released in November 2005, with 350 units produced. The Type RA added the following to the Spec C model from the STi parts catalogue: 4-way STi adjustable inverted struts, STi Japan-spec pink springs, STi rear lateral links, STi rear trailing links, STi 21 mm (0.8 in) rear sway bar, STi rear pillow ball suspension, STi 110 mm (4.3 in) opening rear axle back exhaust, STi 17" x 8" Enkei-made wheels and STi V-lip front spoiler.

#### **Rev. G (2007)**

The WRX STi and STi Spec C is mechanically similar to the previous revision.

Changes include a different turbocharger VF43 equipped with a slightly larger wastegate port to prevent boost creep (VF43, as opposed to VF39 in the older version) and revised gearing on the 6 speed manual transmission. They also use top feed injectors instead of side feed injectors like the previous STi models(04-06USDM). This means the intake manifold is a bit different as well as the TVG (Tumble Valve Generators) used for emissions on cold start-ups. Subaru also significantly reduced the size of the restrictor pill in the boost control system.

## Japanese special variants

### **S202**

This car was an S-series Impreza based on the Spec C. All of the suspension and powertrain parts included STi parts from the STi part catalogue. The interior included special edition yellow seats with red STi logo stitching. A smaller, lightweight AC compressor was fitted to save weight. The brake rotors were gas slotted. The wheels were STi labeled Rays Volk alloys.

### **S203**

This limited edition Subaru was an S-series Impreza based on the WRX STi. Again it is basically a car with all the STi parts available. It was sold with custom made 18-inch (460 mm) BBS alloys with Pirellis.

### **S204**

The new S204 was released at the end of 2005. It is based on the WRX STi and similar to the S203. It does away with the roof spoiler and has a different grille from the rest of the Impreza line. The S204 has a two-litre (EJ20) H4 engine capable of developing 235 kW (320 PS; 315 bhp) and a six-speed manual gearbox. When cruising the S204 achieves 100 km/h (62 mph) at 3000 rpm in top gear and can reach 220 km/h (137 mph) at 6000 rpm.

Suspension can be described as 'stiff' with torsional rigidity enhanced by the inclusion of laterally mounted items described as "performance dampers" bearing both the STi logo and Yamaha. As a result cornering can be described as excellent. The addition of a carbon fibre front-lip spoiler and a rear diffuser on an already low suspension setup plus the use of low-profile Pirelli P Zero (Corsa) tyres implies the S204 is intended mostly for sealed road use.

Recaro has used carbon-fibre extensively in the manufacture of the driver and front passenger seats available in the S204. The high side bolsters provide significant support to the driver during maneuvers that induce lateral forces and are considered to be an integral feature to the cornering performance of this vehicle. The seats are rigid in design and have relatively little cushioning compared to other Impreza Models.

Internal rear view of Recaro Seats in the Subaru S204. Note: Use of carbon fibre in construction.

Internal front view of Recaro Seats in the Subaru S204. Note: High side bolsters for lateral force support.

Advertising material produced by Subaru for the S204 indicate that a limited run of 600 S204's were made. Individually numbered badges for each car are located within the engine bay and repeated as a small plaque situated at the base of the gear lever. However, five (5) WRX STi S204 were made available to Subaru enthusiasts in New Zealand <[http://www.subaru.co.nz/About\\_Subaru/News/index.php?article=887](http://www.subaru.co.nz/About_Subaru/News/index.php?article=887)>. Unlike other S204s sent to other nations (for example Singapore) these five cars do not display either the in-cabin or in-engine bay badging that uniquely identifies each of the reported 600 vehicles manufactured. The lack of individual badging for these five cars brings into question the real number of S204s manufactured.

### **WRX STi Spec C Type RA-R**

At the end of October, 300 2007MY WRX STi Spec C Type RA-Rs were open for ordering. These cars are based on the WRX STi Spec C. The wheels are changed for 18-inch (460 mm), STi-branded, Enkei-made, white wheels. The engine has been blueprinted and balanced. It produces 320 PS (235 kW; 316 hp) of power. The suspension is built with the latest STi parts from the STi catalogue. The front brakes are 6-piston Brembo brakes. The brakes are made so that they change from silver to gold when heated from usage. The rotors are slotted. The 2nd R in "RA-R" is stated by an STi engineer to mean "Radical". February 2007 Edition Best Motoring Interview of STi engineer at 7:00

### **WRX STi A-Line**

This WRX STi A-Line is mechanically the same as the Japan-spec STi. The exterior has been toned down with the removal of large rear spoiler, black Brembo brakes, titanium colored Enkei wheels, a black STi front lip and leather seats in order to target the more mature market.

### **Asia, Oceania and European specifications**

In 2001, most of Asia, Oceania and Europe received the new STi. The engine was detuned to meet emission standards. Engine output was variously rated from 265 PS (195 kW; 261 hp) to 280 PS (210 kW; 280 hp) depending on market.

2005 STis received the long awaited DCCD control available in other markets, as well as a slight wheelbase increase to match the Japanese-spec WRX STi Spec-C and has 280 PS (210 kW; 280 hp).

In 2006, the model was face lifted like all STis and the engine was changed to the EJ257 producing 280 PS (210 kW; 280 hp).

## **United Kingdom special variants**

THE UK version of the WRX STi, taken at the Canary Wharf motor expo in June 2007. WR1 (2004)

A limited edition of 1000 Japanese MY04 WRX STi's with DCCD were exported to celebrate victory in the 2003

WRC drivers' championship. 500 were sold in Europe, Australia and South Africa as the Petter Solberg edition; the other 500 were further modified by Prodrive and sold in the UK as the WR1. They had 316 bhp (236 kW) and 309.8 ft-lb (420.0 N·m), an incredible 0-60 mph time of only 4.25 seconds and a top speed of 155 mph (249 km/h) (electronically limited). They were equipped with Prodrive WRX STI springs, Pirelli PZero Nero tires, mesh grilles, special Ice Blue metallic paint and Prodrive PFF7 Pewter wheels. The new ECU and exhaust were not EU-homologated, so they were fitted after registering the car. The retail price was £29,995.

#### **Spec D (2006)**

A 'discreet' version of the STI was made for a more conservative market. It is similar to the Japanese-spec A-Line except it had a regular WRX spoiler on the boot, silver wheels (not Gold) and no rear roof vane. As standard it has projector-style fog lights, Smartnav with touch screen operation, Vehicle Tracker, and safe speed system. A 200W Pioneer DEH-P70BT head unit, iPod adapter and Bluetooth phone connection were also included. The interior featured standard leather trim on the seats and doors, Auto climate control and extra sound insulation. It was limited to a run of 300 cars in only Crystal Grey Metallic so therefore is even rarer than the RB320. Power on this model is rated at 276 bhp (206 kW). It has a 0-60 time of 5 seconds and a top speed of 155 mph (electronically limited). New retail price was £28,450.

#### **RB320 (2007)**

Subaru Impreza RB320 Echoing the RB5 a limited edition of 320 2007MY cars in Obsidian Black Pearl were released "in memory of Richard Burns", the 2001 WRC World Champion who died in 2005 due to a brain tumor. The car produces 320 PS (235 kW; 316 hp) of horsepower and 450 N·m (332 lb·ft) of torque due to tuning by Prodrive. The suspension has been upgraded with Eibach springs, an Eibach rear stabilizer bar and Bilstein struts. It rides on 18" anthracite alloys. A £1500 option on the car was to have the interior changed to a black leather/alcantara with RB320 stitching on the seat and a new gear (shift) knob. The car has special silver mesh grilles. New retail price was £29,995.

#### **United Kingdom unofficial variants**

##### **Litchfield Type 25 (2004)**

Litchfield Imports initially imported Japanese specification Subarus, including the Spec C, into the UK. The motivation for them to create a new version of the Impreza came when Subaru removed creature comforts like air conditioning and electric windows from the Spec C at the end of 2003. Iain Litchfield wanted to continue to offer an 'everyday' Impreza as fast as the Spec C. Litchfield saw the potential of the newly released USDM EJ257 and imported it. He modified the heads, tuned it to produce 350 bhp (261 kW). The engines were installed into a Japanese specification STI and upgraded the suspension with rebound adjustable AST Sportline I coilovers, Whiteline anti-roll (stabilizer) bars and an anti-lift kit. The May 2004 edition of EVO magazine called it the 'Best Impreza Ever' when tested against the WR1, Spec C and P1.

##### **Litchfield Type 25 (2007)**

The new Type 25, like the previous Type-25, used a modified EJ257 block but it was built by the US arm of Cosworth. They used Cosworth's own forged pistons and conrods balanced to within 0.5 grams. A modified STI crankshaft and STI engine casing were used and the 'short' engine was assembled by hand. This 'short' engine was sent to Litchfield to be finished. Cosworth honed, big-valve, ported cylinder heads and cams were used and the engine was installed into a 2007 Japanese specification Spec C. The engine produces over 415 bhp (309 kW) and 420 lb·ft (569 N·m), for a power/weight ratio 1 hp higher than a Porsche 997 Turbo. It costs \$10,000 more than the normal 2006 Subaru Impreza WRX STI.

## US-spec

#### **Rev. D (2004)**

In 2004, Subaru of America announced it would sell the WRX STi. Subaru Tecnica International's president said in an interview with Road & Track magazine that he wished to beat the Mitsubishi Lancer Evolution in the US. Thus, each iteration of the US-spec WRX STi is essentially the same as the respective J-spec STi Spec C. All part numbers matched up, including the part-numbers for the glass windows and dampeners. However, instead of the EJ207, the USA receives the first EJ257, a 2.5 liter version of the EJ207. Unlike the EJ207, it features hypereutectic cast pistons as opposed to the forged pistons in the EJ207. The steering rack is the standard STi's 15.2:1 instead of the Spec C's 13:1

#### **Rev. E (2005)**

As with the Japanese-spec C models. US-spec STis received additional rear fender flaring in order to allow an



increase in wheel size. The wheel size went from 17" x 7.5" to 17" x 8". In accordance with the increased wheel width, steering lock-to-lock turns have been reduced. Wheel hub strength was improved. The P.C.D. was changed from 5 x 100 to 5 x 114.3. The Suretrac front LSD in the 04 model was replaced with a helical unit, the rear differential remains the same clutch type unit. Torque split is set at 35/65. In the interior, the Stereo became standard. The badging has been revised and different look was given to the steering wheel, shift knob, HVAC controls, and center console.

### **Rev. F (2006)**

The US-spec STis receive the same facelift as the Japanese-spec STis. Mechanically speaking, the DCCD (Driver Controlled Center Differential) and the engine mounts have been changed. Like the Japanese-spec STI's engine mounts were changed from metal to liquid-filled plastic mounts to reduce vibrations into the car's cabin. On the largest Impreza forum, North American Subaru Impreza Owners Club (NASIOC), 2006 owners have had issues with these plastic engine mounts. The manufacturer will replace them, under warranty, if broken, with the 2005 rubber and metal mounts. Later 2006 vehicles were equipped from the factory with 2005 mounts. The center differential is updated with the addition of a mechanical limited slip mechanism to supplement the electromagnetic DCCD. The torque split is changed to 41/59. The 2006 STI weighs approximately 3,350 lb (1,520 kg).

### **Rev. G (2007)**

2007 US-spec Subaru Impreza WRX STi Limited. Only 800 were produced. In 2007, quite a number of changes were made to the US-spec model. Due to Subaru's decision to reduce costs by cutting the amount of aluminum used, the US-spec STI no longer receives the J-spec Spec C control arms. The control arms are now the aluminum ones used on the Japan-spec revision A and B non-Spec C STis. The high caster angle has been reduced, which in turn reduces the wheelbase from 100" to 99.4". The rear sway bar has decreased in size from 20 mm (0.8 in) to 19 mm (0.7 in). The gear ratios of second, third and fourth gears have been made longer (higher ratio) in order to improve fuel economy and drivability, which inadvertently reduces 1/4 mile drag racing times due to the ability to trap 114 mph (183 km/h) in 4th gear, without the shift to 5th. The EJ257's cylinder heads have been redesigned to improve cooling, and the sodium-filled exhaust valves have been deleted. Pistons are the same as previous years. The alternator is changed from a 90A rating to 110 amps. The rear Limited Slip Differential is now a Torsen unit, considered an upgrade over the previous model's clutch type unit. The turbo has also been changed to the VF43, which has a different wastegate actuator than the VF39. The side cowl braces are stiffer than the 2006MY. The engine mounts are once again the hard rubber mounts used prior to 2006. On the interior, there is an audio jack that replaces the ashtray, a rear center armrest with trunk pass-through and a 120 W audio system.

The ECU was completely re-engineered in order to meet US LEV2 emissions requirements, which has caused throttle and timing issues. A secondary air pump was also added to help meet LEV2. Top Feed injectors replaced the Side Feed from the previous models.

The WRX STI Limited was introduced with fog lights, leather interior, lip trunk spoiler, and optional moon roof. It is similar to the Japan-spec WRX STI A-line, except the mechanicals of the car are based on the 2007MY US-spec WRX STI.

## **GC chassis comparison to the GD chassis**

### **Pros**

Subaru claims that the GD chassis is 10 percent and 82 percent stiffer in torsional and beam rigidity, respectively, than the GC chassis. Due to the increase in stiffness, the car has much better stability in corners and is easier to control at the limit.

In terms of safety, the GD chassis scored much higher than the GC chassis and earned a "Good" rating (highest mark) from the IIHS's offset crash test. 4 stars front driver, 5 star front passenger and 4 star side safety ratings from the NHTSA. In a magazine article from the December 2005 Firehouse magazine (a periodical written by and made for firefighters), Ron Moore writes how it is well-known that the Impreza chassis has great protection in its B-pillars. This side structure has 8 layers of high-strength, high-tension steel including a round steel bar running through the middle. The author notes how drivers simply walk away from horrific side-impact accident.

### **Cons**

One of the biggest complaints with the GD chassis is that it gains nearly 200 kg (441 lb) in weight over the GC chassis. Much of this weight came in the form of chassis stiffening as the car was made to meet every country's crash standards. The weight also hampers the cars maneuverability, transitions and turn-in capabilities. The GC Imprezas were notable for being very lightweight despite having AWD, the WRX Type STi Version VI, at 1,260 kg (2,778 lb), was lighter than the concurrent Mazda RX-7 type RZ (1270 kg) and Honda NSX type S Zero (1270 kg).

In this fashion, the GC chassis has a better advantage. However it still remains at a slighter weight by shaving 200 pounds off of its biggest competitor, the Mitsubishi Lancer Evolution.

The author mentioned above also notes that the Jaws of Life need to cut the Subaru's B-pillars at certain points in order to cut through the car frame.

## Third generation (2008-present)

### **Third generation (GR)**

Production 2008-present

Body style(s) 5-door hatchback

4-door sedan(2011-)

Engine(s) 2.0L 304 hp (227 kW) H4

2.5L 305 hp (227 kW) H4

Transmission(s) 6-speed manual

5-speed automatic (w/SPORTSHIFT manual mode) (Japan, Hong Kong, Singapore, Indonesia, and Australia only)

Wheelbase 103.3 in (2,624 mm)

Length 173.8 in (4,415 mm)

Width 70.7 in (1,796 mm)

Height 58.1 in (1,476 mm)

Curb weight 3,373 lb (1,530 kg)

Related Subaru Forester

Subaru Impreza

Subaru Impreza WRX

Subaru Impreza WRX STI 2008The 2008 STI has received a higher degree of parts to differentiate it from its Impreza WRX brethren. Unlike the Impreza WRX, the STI uses aluminum suspension components, is only available as a 5-door hatchback, and has different fenders that are 2.2 in (56 mm) wider. It adopted "Subaru Intelligent Chassis Design" and "Dynamic Chassis Control Concept". The turbo forces air through a larger top-mount-intercooler which has lost the red "STI" that was on previous generations. It is the first generation of this model with an automatic transmission which is able to import to outside Japan.

Like other 2008 Impreza models, the 2008 STI benefits from a lower polar moment of inertia due to smaller overhangs, and also features a double wishbone rear suspension.[16] The car also borrows new intake and exhaust components from the Legacy GT platform.

The latest Impreza WRX STI features Multi-mode Vehicle Dynamics Control (VDC) with "Normal", "Traction", and "Off" modes, Subaru Intelligent-Drive (SI-Drive) with 3 modes: Intelligent, Sport, and Sport Sharp (S#), and Multi-mode Driver's Controlled Centre Differential (DCCD). The DCCD enables driver to select the manual or auto: "auto", "auto+", and "auto-" mode in order to distribute the torque based on driving preference or conditions.

Subaru Impreza WRX STI (Japan)The JDM version has a 2.0L 308 PS (227 kW; 304 bhp) EJ207 engine with a Twin scroll turbocharger, while other versions of the car have a 2.5L 300 PS (221 kW; 296 bhp) EJ257 engine with a single-scroll VF48 turbocharger.

At the New York Auto Show, a Subaru spokesman confirmed that the Impreza WRC will be based on the hatch platform, due to its lower polar moment of inertia.

The latest US model of the STI has 305 bhp (227 kW; 309 PS) and 290 ft-lb (390 N·m) of torque and range in price from \$35,640 to \$39,440, depending on the options included. The 2008 Impreza STI has the model code GR, reflecting the different "wide body" 5-door Hatchback compared to the GH standard body 5-door Hatchback used for the 2008 Impreza WRX and non-turbo models. The new "wide body 5-door" chassis is 70.7 in (1796 mm) wide compared to 68.5 in (1740 mm) for the regular WRX 5-door chassis. Curb weight varies from 1,505 kg (3,318 lb) to 1,540 kg (3,395 lb) depending on the options.

In 2008, a Subaru WRX STI spec C was in the works for production. It had been spotted lapping the Nurburgring. It is expected to shed 70 kg (154 lb) in weight, have minor engine tweaks, have an updated aero kit, and bigger brakes.

A possible precursor to the WRX STI spec C had surfaced at the MotorSport Japan 2008 auto show, named the

Subaru Takumi concept. The only visual cues to differentiate this car from the regular STI are a blacked-out rear spoiler, front lip spoiler, and 12-spoke wheels that are strikingly similar to the ones featured on the spec C test mule

spotted around the Nurburgring. The upgraded parts included on the car are drivetrain and suspension modifications. There is no word on performance figures or power output. It was later confirmed by Autoblog that the Takumi concept was in fact just an unveiling of the 20th Anniversary Edition WRX STI and not the spec C. All 300 examples will be exclusive to the Japanese market.

Subaru launched the Impreza WRX STI A-Line with a five speed semi-automatic gearbox on February 24, 2009. Available initially only in Japan and Singapore, the A-Line features include "Downshifting Blipping Control" and steering wheel-mounted paddles. The engine and transmission in the A-Line are very similar to 2007-2009 Legacy 2.5 GT models. However, the A-line has less torque (35.7kgfm) and slower acceleration (0 to 100 km/h takes 6.1 seconds) compared to the manual STI version. The A-Line is also offered in Hong Kong, and later in Indonesia with debut at the 2010 Indonesia International Motor Show in July 2010, and will be exported to Australia in 2011.

Finally, on July 23, 2009, the Subaru Impreza WRX STI spec C was released in Japan. The 900 units limited edition WRX STI spec C has engine, suspension, and body parts improvement over the regular model. The ball bearing on the turbine axle had been modified to reduce friction, the ECU had been retuned for better response, and an intercooler water spray was fitted to prevent rise in the air temperature. The cross member, suspension and power steering were also improved for better handling and body rigidity. Aluminum hood, laminar window glasses, and lighter battery helped to reduce weight.

Subaru (UK) Limited introduced two new WRX STI models at the British Auto Show that have specific tuning by Prodrive. The first is WRX STI 330S, intended to compete with the UK-spec Lancer Evolution X FQ-330. It produces 330 PS (243 kW; 325 bhp) and has a 0-60 mph time of 4.4 seconds. The last of the two would be the WRX STI 380S. It could make it into production within 6 months, pending positive consumer reception. It sports new wheels and an upgraded body kit. It is expected to produce 380 PS (279 kW; 375 bhp). Currently, there are no other specs for the car. Subaru announced, on September 10, 2008, that the 380S variation will not be produced, due to homologation and specification difficulties. The regular model is called WRX STI Type UK.

2010 Subaru Impreza WRX STI with optional BBS wheels The Singaporean, Indonesian, and Australian (all RHD countries) markets received the 2.5 liter Euro-spec version instead of the J-spec version, producing 296 horsepower (221 kW) and 407 N·m (300 lb·ft) of torque.[20] Some of Impreza WRX STI's sold in Indonesia are the 2.0 liter JDM spec brought by the general importers before Subaru officially introduced the 2.5 liter model. In Australia the regular WRX STI is sold alongside the WRX STI spec.R which comes with BBS wheels and Recaro seats.

For 2010 model year, Subaru of America introduced the Impreza WRX STI Special Edition. Similar to JDM WRX STI Spec C, this model came with stiffer suspension and thicker stabilizer bar for better handling. It also has 7 twin-spokes dark gray 18 inch alloy wheels. Inside, the limited-run Special Edition STI got manual air conditioner and 4-speaker stereo instead of automatic climate control and 10-speaker premium audio on the regular WRX STI.

### **Cosworth Impreza STI CS400**

Available for the UK market only, the Cosworth Impreza STI CS400 was announced in late May 2010. Only 75 units built, the STI CS400 is powered by a 400 PS (394Hp) 2.5 liter turbocharged engine which has Cosworth engineered forged connecting rods, racing pistons, heavy duty cylinder head studs, multi-layered head gasket, and high pressure oil pump. The ECU had been remapped, and the new compressor design and wastegate actuator had been applied to the turbo. The exhaust system features larger capacity tubular manifold and bigger diameter downpipes. Clutch was also upgraded.

The Cosworth Impreza STI CS400 can be distinguished from the regular STI from its upper mesh grille with piano black finish on the top frame, modified front bumper with "Cosworth" emblem on the lower mesh grille, and lip spoiler, 18 inch Pro-Race alloy wheels in Anthracite Gray, and trunk waist spoiler.

To match its performance, the CS400 comes with Bilstein struts and Eibach springs for better quality ride, and better handling with less pitch and roll during cornering. Braking was updated by AP Racing's larger diameter ventilated front brakes with six-pot calipers.

Inside, the CS400 has Recaro leather seats with "Cosworth" label, piano black center console panel, and "Cosworth"-badged floor mats.

# Facelift models (2011-)

The 2011 model year Impreza WRX STI will be offered in the 4 door Sedan body style once again after a three year absence from the STI line-up since the introduction of third generation model. The new WRX STI Sedan is built as "wide body" with flared fenders, front skirts, and rear valance, while the Hatchback model also come with similar treatments. The most noticeable feature on the STI Sedan is a large rear wing, characteristic of the last generation Impreza STI Sedan. With the new front bumper, the 2011 Impreza WRX STI is more aggressive compared to 2008-2010 models. The 2.5 flat four turbocharged engine with 305 horsepower is carried over, while tweaks in suspension will improve handling. The 2011 model year STI has stiffer spring, bigger anti roll bar, and new pillow ball bushings on the front lower arms. Also, US dealers are now requiring synthetic oil for 2011 models. It will now do 0-60 in 5 seconds and the quarter mile 13.7 seconds It should also be noted that, in Japan, the WRX STI models lack the Impreza name. They are officially referred to as the Subaru WRX STI 4-door and Subaru WRX STI 5-door. The 2011 Subaru Impreza WRX STi 4-door went around the nurburgring in 7:55 which is faster than the Porsche Panamera Turbo. However, it was actually the MY2011 Prototype.

Australia also received the 2011 model year Impreza WRX STI as 4 door Sedan and 5 door Hatch in the regular STI sedan luxury STI spec.R. Electric sunroof, Leather seats, Navigation system, and BBS wheels are standard on the STI spec.R, while Recaro seats are optional.

## Specifications

Japanese version Export version A-Line (JDM)

Turbo twin-scroll turbo single-scroll turbo single-scroll turbo

Displacement 1994 cc 2457 cc 2457 cc

Power 308 PS (227 kW; 304 hp) 300 PS (220 kW; 300 hp) 300 PS (220 kW; 300 hp)

RPM 6,400 6,000 6,200

Torque 43.0 kg·m (311 lb·ft) 41.5 kg·m (300 lb·ft) 35.7 kg·m (258 lb·ft)

RPM 4,400 4,000 2,800-6,000