

English (GB)

2008

SHIMANO

ROAD BIKE
COMPONENTS
SYSTEMS

Proven in your neighborhood

We apply extensive ergonomic research to the design of our road components with the purpose of reducing any stresses that the bicycle's control functions impose on the rider. For example, our STI Dual Control Levers let you shift gears quickly and precisely without repositioning your grip on the hoods or drops. Our Dual-Pivot caliper brakes are more powerful, responsive and easier to modulate than conventional brakes. And then there's our HOLLOWTECH II crank technology that actually increases strength and stiffness while reducing weight. ULTEGRA series is now available in an additional color option: Ice Grey Finish. SORA underwent

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and the world's great road races

a full model change upgrading to a 9-speed drivetrain and the latest in ergonomics and functions. A compact crankset and new style SPD-SL pedals are added to the 105 series. New high performance wheel sets include WH-7850-C50-TU carbon high-profile tubular and WH-7850-C24-CL carbon-alloy composite clincher. The powerful new line-up of Shimano road components will meet diverse rider demands.

Spirit of the sports

Ultegra components will be available in an additional color option (Ice Grey Finish). This new beautiful finish will give the opportunity of even more beautiful and stylish road bikes. Ultegra's ice grey finish is not only a cosmetic addition, but also features a weight saving over 90 grams compared to the regular Ultegra package. Furthermore an Ultegra branded compact crankset will be available.



SHIMANO
ULTEGRA SL

SHIMANO
ULTEGRA

DURA-ACE

2/3 X 10-speed



Performance without compromise

ST-7801 STI Dual Control Lever

- **Robust internal mechanism**
- **Refined lever hood for improved ergonomics**
- **Ergonomically improved shift stroke movement**
- **Short stroke shifting** / Inward shift stroke distance is reduced by 10mm.
- **Weight** : 420g

SL-7800 Shift Lever for down tube

- **SL-BS78** Shift Lever for bar end
- **10-speed compatible**

RD-7800-SS Rear Derailleur

- **Wide link design**
- **9 & 10-speed compatible**
- **Max. front difference** : 16T
- **Total capacity** : 29T • **Weight** : 180g

CS-7800 Cassette Sprocket

- **Titanium sprockets** / increased wear resistance 30% by surface treatment.
- **9-speed freehub compatible**
- **Usable with Super Narrow Chain for 10-speed**

• Combinations :

- 11-12-13-14-15-16-17-18-19-21T
 - 11-12-13-14-15-16-17-19-21-23T
 - 12-13-14-15-16-17-18-19-20-21T
 - 12-13-14-15-16-17-18-19-21-23T
 - 12-13-14-15-16-17-19-21-23-25T
 - 12-13-14-15-16-17-19-21-24-27T
- Underlined large sprockets are made from titanium.
- **Weight** : 173g (11-23T)

FC-7800

Crankset with Integrated Bottom Bracket
Crankset with BB cup unit (SM-FC7800) also available

- **HOLLOWTECH II crankset**
- **Q-factor remains same as FC-7701/BB-7700.**
- **Minimal bearing interface for smoother rolling.**
- **SG-X chainrings**
- **Gearings** : 52-39T, 53-39T, 53-42T, 50-39T
- **Triathlon spec** : 54-42T, 56-44T, 55-42T
- **Crank arm length variations** :
165 mm, 167.5 mm, 170 mm, 172.5 mm,
175 mm, 177.5 mm, 180 mm
- **Weight** : 740g (53-39T, 170 mm)
Total weight including BB

The DURA-ACE Carbon crankset

NEW

FC-7800-C Carbon Crankset with Integrated Bottom Bracket

SM-FC7801 BB Cup Unit

- **HOLLOWTECH II crankset**
 - **Q-factor remains same as FC-7800**
 - **SG-X chainrings** • **Gearings** : 53-39T, 52-39T
 - **Crank arm length variations** : 170mm, 172.5mm, 175mm
 - **Weight** : 709g (52-39T, 170mm)
- * Available in spring 2008



BR-7800 Dual-Pivot Caliper Brake

- **100% improved brake pad durability**
- **Convex washer adjustable brake shoe**
- **25% increased rigidity** : front brake focuses braking power where most needed
- **Weight** : 314g

FD-7800 Front Derailleur

- **High rigidity**
- **Pivot locations for less cage deflection**
- **Narrower chain cage**
- **Capacity** : 16T
- **Weight** : 74g (Brazed-on type)

FH-7850 Rear Freehub

NEW

HB-7800 Front Hub

- **New freehub body design for quicker pawl engagement**
- **Titanium freehub body and aluminum axle for super lightweight.**
- **8/9/10-speed compatible**
- **Front hub radial lacing compatible**
- **Smooth rolling**
- **Double contact sealing**
- **Junior gear combination compatible (FH-7850)**
- **Regular hole** : 24/28/32/36H
- **Aero spoke hole** : 24/28H (FH-7850)
18/24/28/32H (HB-7800)
- **Weight** : 267g (FH-7850), 64g (Rear QR)
129g (HB-7800), 59g (Front QR)

CN-7801 Chain

- **Super Narrow Chain for 10-speed**
- **Weight** : 280g



DURA-ACE 7800 triple version

PD-7810 SPD-SL Pedal

- **Low profile and stable platform design**
- **Pedals** : 278g / **Cleats** : 70g

DURA-ACE WH-7850 Wheel Sets

- **WH-7850-C50-TU/WH-7850-C50-CL/WH-7850-C24-TU/WH-7850-C24-CL/WH-7850-SL** are lined up. (See page P12)



10-SPEED
DRIVE TRAIN

WH-7850-C24-CL





SHIMANO
ULTEGRA SL

NEW

Spirit of the sport

Ultegra components are available in an additional color option (Ice Grey Finish). Ultegra's ice grey finish is not only a cosmetic addition, but also features a weight saving of over 90 grams compared to the regular Ultegra package. Furthermore an Ultegra branded compact crankset is available.



ULTEGRA
(Current color) is
also available.

ST-6600-G/6603-G Dual Control Lever

- **Lighter weight design :**
43g lighter than ST-6600-S/6603-S
- **Ergonomic design** • **Robust internal mechanism**
- **Same lever response as ST-7800 (ST-6600-G)**
- **Effortless shifting** • **Short stroke shifting**
- **Weight :** 447g (ST-6600-G, pair),
200g (ST-6603-G, for front)

RD-6600-G-SS/GS Rear Derailleur

- **Lighter weight design :** 9g lighter than RD-6600-S
- **Wide link design** • **9 & 10-speed compatible**
- **Max. front difference :** 16T (SS), 22T (GS)
- **Total capacity :** 29T (SS), 37T (GS)
- **Weight :** 200g (SS), 210g (GS)

FC-6601-G/6604-G

Crankset with Integrated Bottom Bracket

FC-6650-G

Compact Crankset with Integrated Bottom Bracket
Crankset with BB cup unit (SM-FC6601) also available

- **HOLLOWTECH II crankset /**
Optimum balance of lightweight and rigidity
- **FC-6601-G :** 35g lighter than FC-6600
- **2 tone color chainrings**
- **Gearings :** 53-39T / 52-39T (FC-6601-G),
52-39-30T (FC-6604-G)
50-34T (FC-6650-G)
- **Crank arm length variations :**
165mm, 170mm, 172.5mm, 175mm
- **Weight :**
788g (FC-6601-G, 53-39T, 170mm integrated BB)
893g (FC-6604-G, 170mm integrated BB)
808g (FC-6650-G, 170mm integrated BB)

FD-6600-G/6603-G Front Derailleur

- **Wide link design /** 20% increased rigidity
- **Pivot locations for less cage deflection**
- **DUAL SIS front index shifting**
- **Light action spring**
- **Capacity :** 16T (FD-6600-G), 22T (FD-6603-G)
- **Weight :** 89g (FD-6600-G-F), 113g (FD-6603-G-F)

CS-6600 Cassette Sprocket

- **Wide range of sprocket combinations**
- **16-speed freehub compatible**
- **Usable with Super Narrow Chain for 10-speed**
- **Combinations :**
Standard model : 11-23T,12-23T,12-25T,12-27T
Junior model : 13-25T,14-25T,15-25T,16-27T

Note1 : Junior models that have 13-16T top gears might interfere with the chain stays or the seat stays of specific frames. Make sure it can be mounted on your frame properly before you actually use it. Junior models that have 13-16T top gears cannot be used with the WH-6600/WH-R601.

Note2 : CS-6600 (14-25, 15-25, 16-27) cannot work with triple front drive system. If combine, bad shifting performance could be happened.

- **Weight :** 235g (12-23T)

BR-6600-G Dual-Pivot Caliper Brake

- **Lighter weight design :**
10g lighter than BR-6600-S
- **Convex washer adjustable brake shoe**
- **100% improved brake shoe durability under wet condition (compared to BR-6500)**
- **Compact & lightweight Dual-Pivot design**
- **Weight :** 320g

HB/FH-6600 Hub Set

- **Both 10-speed and 9-speed cassette sprockets compatible**
- **Front hub radial lacing compatible**
- **Smooth rolling**
- **Internal Grease Sleeve**
- **Weight :** 140g (HB-6600), 60g (QR)
347g (FH-6600), 64g (QR)

CN-6600 Chain

- **Super Narrow Chain for 10-speed**
- **Not compatible with 9-speed system**
- **Weight :** 280g (116 link)

SP-6600 Seat Post

- **Lightweight design** • **Weight :** 214g

PD-6620-G SPD-SL Pedal

- **Low profile and stable platform design**
- **Pedals :** 317g / **Cleats :** 70g

WH-6600-G Wheel Set

- **10-speed compatible only**
- **Balanced combination of 16 front and 20 rear bladed & butted spokes**
- **Weight :** 1696g pair (clincher)



10-SPEED
DRIVE TRAIN

2/3 X 10-speed

WH-6600-G





WH-5600

SHIMANO **105**

2/3 x 10-speed

Sports and fitness — Shimano 105.

The Shimano 105 is lighter and more efficient, and makes "pro-level" technology more accessible to part time racers and fitness enthusiasts. Shimano 105 is a by-product of our premier engineering range but has its own unique identity, offering a greatly enhanced feeling and sleek design that's backed by a high performance. The Shimano 105 design concept of "Smooth, Round and Natural" is consistently demonstrated in every component, giving it's user a sense of satisfaction and pleasure and fulfillment.

ST-5600 Dual Control Lever

- **Ergonomic design**
- **Robust internal mechanism**
- **Front double/ triple compatible design**
- **Effortless shifting**
- **Short stroke shifting** / Inward shift stroke distance is reduced by 10mm.
- **10-speed compatible**
- **FLIGHT DECK cycle computer compatible**
- **SIS-SP41 cable housing**
- **Weight** : 500g (pair)

RD-5600-SS/GS Rear Derailleur

- **Wide link design** / Wide outer link design increases rigidity.
- **9/10-speed compatible**
- **Max. front difference** : 16T (SS), 22T (GS)
- **Total capacity** : 29T (SS), 37T (GS)
- **Weight** : 221g (SS), 232g (GS)

FD-5600/5603 Front Derailleur

- **Wide link design** / 20% increased rigidity
- **Pivot locations for less cage deflection**
- **Capacity** : FD-5600 : 16T, FD-5603 : 20T (specially-designed for FC-5603)
- **Weight** : 95g (FD-5600-F), 112g (FD-5603-F)

FC-5600/5603

Crankset with Integrated Bottom Bracket

FC-5650

Compact Crankset with Integrated Bottom Bracket Crankset with BB cup unit (SM-FC5600) also available

- **HOLLOWTECH II crankset** / Optimum balance of lightweight and rigidity
- **Q-factor remains the same as FC-5502 / 5505 / BB-5500.**
- **Smoother rolling**
- **Sleek design** / Special surface treatment for the Shimano 105 chainring.
- **Gearings** : 53-39T / 52-39T / 50-39T (FC-5600), 50-39-30T (FC-5603), 50-34T (FC-5650)
- **Crank arm length variations** : 165mm, 170mm, 172.5mm, 175mm
- **Weight** : 836g (FC-5600, 52-39T, 170mm) 922g (FC-5603, 50-39-30T, 170mm)

CS-5600 Cassette Sprocket

- **10-speed cassette sprocket**
- **Alloy sprocket carrier**
- **Combinations** : 11-23T, 11-25T, 12-25T, 12-27T
- **Weight** : 219g (11-23T)

CN-5600 Chain

- **Super Narrow 10-speed HG Chain**
- **Not compatible with 9-speed system**
- **Weight** : 280g (116 link)

BR-5600 Dual-Pivot Caliper Brake

- **Convex washer adjustable brake shoe** / Adjusting toe-in makes braking smoother and more controllable.

- **100% improved brake shoe durability under wet condition (compare to BR-5500)**
- **Compact & lightweight Dual-Pivot design**
- **Weight** : 359g

FH-5600 Rear Freehub

HB-5600 Front Hub

- **9/10-speed compatibility**
- **Front hub radial lacing compatible**
- **Smooth rolling**
- **Internal Grease Sleeve**
- **Weight** : 150g (HB-5600), 60g (QR) 353g (FH-5600), 64g (QR)

NEW

NEW

PD-5610 SPD SL Pedal

- **Wide and stable body**
- **Matches the color of the 105 groupset.**
- **Pedals** : 322g / **Cleats** : 70g

WH-5600 Wheel Set

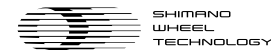
- **8, 9 & 10-speed* compatible**
- **16 butted and bladed spokes front, 20 rear**
- **Weight** : 1777g pair (clincher)
- * 10-speed : Use with a 1mm spacer



10-SPEED
DRIVE TRAIN



Road Wheel Systems



WH-7850-C50-TU ^{NEW} Carbon hi-profile tubular

- The choice of Pro-Tour Sprinters and TT specialists
- Proprietary Shimano carbon construction
- Aerodynamic 50mm deep section rims
- Straight spokes and 2-cross lace for increased torsional rigidity and spoke life
- New titanium freehub body w/quick engagement
- Shimano quality proven angular contact bearings with oversize 7075 alloy axles
- Weight : 1467g pair

WH-7850-C50-CL ^{NEW} Carbon hi-profile clincher

- Proprietary Shimano carbon construction
- Aerodynamic 50mm deep section rims
- Straight spokes and 2-cross lace for increased torsional rigidity and spoke life
- New titanium freehub body w/quick engagement
- Shimano quality proven angular contact bearings with oversize 7075 alloy axles
- Weight : 1580g pair

WH-7850-C24-TU ^{NEW} Carbon tubular

- Special Shimano construction for a high level of carbon-rim strength/weight : Target weight : 310g rim
- Performance specific rim profiles — 28mm aero front & 24mm asymmetric rear
- Straight spokes and 2-cross lace for increased torsional rigidity and spoke life
- New titanium freehub body w/quick engagement
- New wider flange hub and offset rim for rigidity and increased power transmission
- Shimano quality proven angular contact bearings with oversize 7075 alloy axles
- Weight : 1257g pair

WH-7850-C24-CL ^{NEW} Carbon-alloy composite clincher

- Patent Pending Shimano construction for a new level of carbon-alloy strength/weight
- Straight spokes and 2-cross lace for increased torsional rigidity and spoke life
- New titanium freehub body w/quick engagement
- New wider flange hub and offset rim for rigidity and increased power transmission
- Shimano quality proven angular contact bearings with oversize 7075 alloy axles
- Aluminum axles front and rear-oversized front to reduce fork flex
- Weight : 1380g pair

DURA-ACE

WH-7850-C50-TU



DURA-ACE

WH-7850-C24-CL



WH-7850-SL ^{NEW} Scandium Road Tubeless

- The road tube & tubeless tire compatible wheels
- Ultra thin wall extrusion reinforced at spoke hole
- Patent Pending light, strong & durable Scandium
- Straight spokes and 2-cross lace for increased torsional rigidity and spoke life/alloy rim
- New titanium freehub body w/quick engagement
- New wider flange hub and offset rim for rigidity and increased power transmission
- Shimano quality proven angular contact bearings with oversize 7075 alloy axles
- Weight : 1514g pair



SHIMANO
ULTEGRA SL

WH-6600-G



SHIMANO **105**

WH-5600



WH-RS20 (Silver)



Rim Tape

High-pressure rim tape for 700C/650C rims except tubeless compatible type rims

WH-6600-S

Ultra wheels featuring DURA-ACE technology

WH-6600-G Ice-Grey color option **NEW**

- 10-speed compatible only
- Clincher tire compatible
- Silver aerodynamic 24mm profile 6061 alloy rims (WH-6600-S)
- Offset rear rim designed to increase rear wheel rigidity
- Balanced combination of 16 front and 20 rear bladed & butted spokes
- Aluminum rear axle and ultra-light aluminum Shimano quality freehub body
- Weight : 1696g pair

WH-R601

- 10-speed compatible only
- Clincher tire compatible • Black anodized rim
- Aluminum rear axle and freehub body
- Wide flange design and offset rim increases rear wheel rigidity
- Balanced combination of 16 front and 20 rear bladed & butted spokes
- Weight : 1696g pair

WH-5600 Shimano 105 race-ready wheels

- Clincher tire compatible
- Shimano 105 color matched 24mm profile rims
- Lightweight 6061 alloy rims with anodized steel spokes
- Balanced combination of 16 front and 20 rear bladed & butted spokes
- Radial lace front, radial drive side, cross-lace on opposite side
- 8, 9 & 10-speed* compatible
- Weight : 1777g pair
- * 10-speed : Use with a 1mm spacer **NEW**

WH-RS20-L/S New mid-level price point wheels

- Black or Silver options alloy rims and hubs with double butted aero spokes
- Smooth high polish finish hub shells
- Straight spokes and 2-cross lace for increased torsional rigidity and spoke life
- New wider flange hub and offset rim for rigidity and increased power transmission
- 16-spoke front, 20-spoke rear butted bladed spokes
- 8, 9 & 10-speed* compatible • Weight : 1773g pair
- * 10-speed : Use with a 1mm spacer

WH-RS10-L/S New mid-level price point wheels **NEW**

- Black or Silver options alloy rims and hubs with aero spokes
- Matte finish on hub shells
- Straight spokes and 2-cross lace for increased torsional rigidity and spoke life
- New wider flange hub and offset rim for rigidity and increased power transmission
- 16-spoke front, 20-spoke rear bladed spokes
- 8, 9 & 10-speed* compatible
- Weight : 1807g pair
- * 10-speed : Use with a 1mm spacer

WH-R500

Entry-level price point wheels

- Clincher tire compatible
- All black alloy rims and hubs with anodized steel spokes
- 20 spoke front, 24 spoke rear spokes
- Radial lace front, cross-lace rear
- 8, 9 & 10-speed* compatible
- Weight : 1900g pair
- * 10-speed : Use with a 1mm spacer



WH-3N71-road

WH-3N71-road

Front road wheel with hub dynamo

- Power is available whenever the front wheel is turning.
- Lower drag and more functional in all-weather conditions compared to sidewall dynamos
- No need for recharging or replacing batteries
- 6V-3.0W output; can power either a single headlight with a 3 watt bulb, or a 2.4 watt headlight and 0.6 watt taillight combination
- Weight : 1305g



- FC-4500** Double Crankset
- FC-4550** Compact Double Crankset
- FC-4503** Triple Crankset
 - Iconic Shimano cap-free design
 - 2-piece crankset with integrated BB design
 - 2 alloy chainrings for double and triple
 - Anodized surface treatment
 - Hyperdrive SG-X chainrings
 - Gearing : 52-39T (FC-4500)
50-34T (FC-4550)
50-39-30T (FC-4503)
 - Crank arm length variations :
165mm, 170mm, 175mm



- BR-4500** Dual-Pivot Caliper Brake
 - Shimano exclusive Super SLR system
 - Anodized surface



- Adjustable shoe
- Functional, durable quick release

- FD-4500** Front Derailleur (for double crank)
- FD-4503** Front Derailleur (for triple crank)
 - Improved surface treatment
 - Wide link design
 - 9-speed compatible
 - Multi clamp : 28.6, 31.8mm, 34.9mm
(28.6mm : 31.8 w/ adapter)
 - Capacity : 16T(FD-4500), 20T(FD-4503)



- ST-4500** Dual Control Lever
 - Integrated Optical Gear Display
 - Ergonomic and smaller bracket shape
 - Reach adjustable through shims
(4 or 8 degree spacers)
 - SLR for linear response

- RD-4500-SS/GS** Rear Derailleur
 - Improved surface treatment
 - 9-speed compatible
 - Lighter weight • Wide link design
 - SS model compatible with compact cranksets
 - Total capacity : 31T(SS), 37T(GS)

SHIMANO TIAGRA

2/3 X 9-speed

Advanced functions for sport and fitness riders

Tiagra has been completely reengineered and remastered with a more refined, more ergonomic design. Tiagra shares our top groups' engineering lineage but has its own unique identity, offering greatly enhanced feel and sleek design that's backed by a new level of performance.

Flat Handlebar Components

Shifters are available for 8, 9 and 10-speed road-sport bikes with flat handlebars. 10-speed shifters can be used with DURA-ACE, ULTEGRA and 105 derailleurs. 9-speed shifters are for TIAGRA and SORA derailleurs.

For 10-speed

SL-R770 10-speed Shift Lever

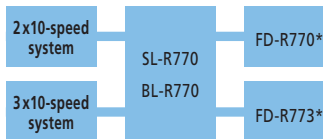
FD-R770 Front Derailleur
(double crankset/for use with SL-R770 shift lever)

FD-R773-2/0 Front Derailleur
(triple crankset/for use with SL-R770 shift lever)

- Double or triple cranks compatible
- RAPIDFIRE Plus shifter

BL-R770 Brake Lever

- Compatible with road calipers, canti and road disc brake
- 2.5-finger lever
- SLR system for linear response



*Compatibility

FD-R770 : For FC-7800/6600/5600

FD-R773-2 : For FC-7803/6603 (52T top chaining)

FD-R773-0 : For FC-5603 (50T top chaining)



For 9-speed

SL-R660 9-speed Shift Lever

SL-R440 9-speed Shift Lever

FD-R440 Front Derailleur for 52T top
(double crankset/for use with SL-R440 shift lever)

FD-R443 Front Derailleur for 50T top
(triple crankset/for use with SL-R440 shift lever)

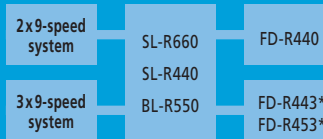
FD-R453 Front Derailleur (triple crankset)

- Wide pivot link
- SG-X chainrings compatible

- DUAL SIS front index shifting
- Color options : Black, silver (SL-R440)

BL-R550 Brake Lever

- Compatible with road calipers, canti and road disc brake
- 2.5-finger lever
- SLR system for linear response
- Color options : Black, silver



*Compatibility

FD-R443 : For FC-4500 (52T top chaining)

FD-R453 : For FC-4503 (50T top chaining)

Note : SL-R660/R440 shift lever must be used with FD-R440, FD-R443 or FD-R453 front derailleur.



For 8-speed

SL-R440-8 8-speed Shift Lever

FD-R440A Front Derailleur
(double crankset / for use with SL-R440-8 / ST-R221 shift lever)

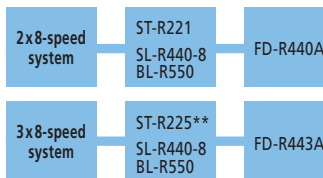
FD-R443A Front Derailleur
(triple crankset / for use with SL-R440-8 / ST-R225 shift lever)

- Wide pivot link
- SG-X chainrings compatible
- DUAL SIS front index shifting
- Color options : Black, silver (FD-R440A/R443A/SL-R440-8)

ST-R221/R225

EZ FIRE Shift / Brake Lever

- Upgraded appearance, black or silver
- Compatible with V-BRAKE/calipers/canti and disc brakes
- 4-finger lever
- ST-R225 : Left hand shifter for triple
- ST-R221 : Left / double, Right / 8-speed
- Color options : Black, silver



**ST-R221 for rear

Note : SL-R440-8 shift lever must be used with FD-R440A or FD-R443A front derailleur.



High-quality Road Components

50-34T Compact Crankset

FC-R700 (for 10-speed)

FC-R600 (for 10-speed)

Crankset with Integrated Bottom Bracket

Dual Control Lever

ST-R700 (10-speed, Double/Triple)

ST-R600 (9-speed, Double/Triple)

ST-R500 (8-speed, Double/Triple)

- Adjustable lever reach (ST-R700/R600)

Seat Post

SP-R600

- Lightweight design (250 grams)
- Size : 27.2mm x 330mm

Brake Lever

BL-R600 Brake Lever

- Aerodynamic lever design
- Super SLR (Shimano Linear Response)
- Compatible with all Dual-Pivot brakes

Brakes

BR-R650

57mm reach type Dual-Pivot Caliper Brake

- Dual-Pivot design
- Cartridge shoe holder
- Shimano Super SLR system

BR-R550 Cantilever Brake for road levers

- Road STI lever compatible
- BL-R440 brake lever compatible
- Not compatible with V-BRAKE lever
- For cyclocross and flat handlebar bikes with wide tires

Disc Brake System

BR-R505

Mechanical Disc Brake for road levers

FH/HB-R505

Hub Set for Disc Brake

- Center Lock rotor mount system



Shimano Original Functions

Thanks to the constant challenge to the evolution of bicycle and its functions, the bicycle has become faster, safer, and more comfortable. At Shimano, we have continued to pursue basic performances and advanced functions of bicycle components from the viewpoint of understanding the bicycle as an integrated system. Sometimes we have developed unique functions that were way beyond the bounds of common sense. At other times we have created new functions by analyzing the psychology of cyclists including the professional racers under stress. And now we are working on the further futuristic development themes such as originating products that are easy and more comfortable for everyone and also good for the ecology. The development themes are "Best Shifting Performance" and "Best Braking Performance".

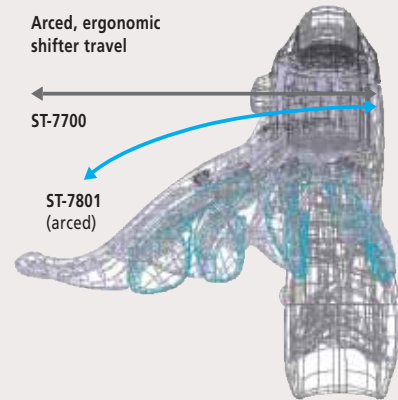
We have created all of Shimano original functions introduced here in search of better relationship between bicycles and people.



Best Shifting Performance

Dual Control Lever

Ergonomic innovation is probably more critical to the higher standard of DURA-ACE/ULTEGRA/105/TIAGRA/new SORA performance than the added gearing. The narrower cradle-style perch welcomes the high-on-the-hood racing style, and accommodates all sizes of hands and grip. The shift internals borrow the robustness from our MTB technology and are so smooth and effortless that one finger shifts front and rear are possible. "It's so easy, I just rest high on the lever and shift with my finger" is a comment that echoed throughout the pro circuit. Indeed, shifting DURA-ACE/ULTEGRA/105/TIAGRA/new SORA is the ultimate act of Shimano Total Integration, and simply has to be experienced to be understood.



New integrated Optical Gear Display (ST-3400)



5mm smaller circumference (ST-7801/ST-6600/ST-5600/ST-4500/ST-3400)



Ergonomic shape (ST-6600-G)

■ Wide link front and rear derailleur

The wide pivot link design boosts strength and rigidity. Flex is suppressed, creating sharp, precise shifts that are faster and smoother, even from low to high gears, off the saddle.



FD-6600-G



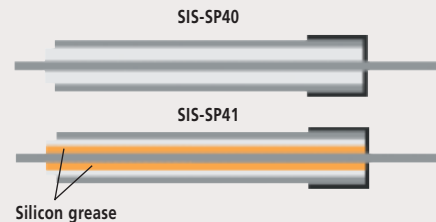
RD-6600-G

■ DUAL SIS front and rear index shifting

The SIS Rear Index Shifting System, which has been noted for its accurate, precise and smooth shifting system, was adopted to the front. The front with the index system makes shifting operation easier and more comfortable.

■ SIS-SP41

Special silicon-base grease is injected into the shifting outer casing to significantly decrease cable resistance. Combined with the wide link derailleur designs (RD-7800/6600/5600/4500/3400) adds key advantages: crisp, instantaneous shifts that are 10% more efficient from lever to rear derailleur.



■ Advanced Light Action rear derailleur

Low-friction link pivots and the use of a low-tension extension spring significantly lower the effort needed to shift the derailleur regardless of gear position.



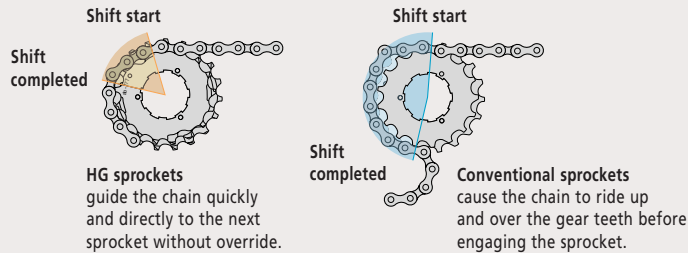
RD-6600-G

Best Shifting Performance

■ HG sprockets



Special designed HYPERGLIDE sprockets incorporate specifically positioned shift ramps and tooth profiles for improved chain control during shifting. Fast and responsive indexed shifting is the result.



■ Hyperdrive front drive system

With Hyperglide, Shimano pioneered the use of a variety of gear profiles and shift ramps to improve shifting performance. Front drivetrain components are engineered as a system, working together towards a single goal: Provide quiet, easy and trouble free shifting. The leading teeth, the spike pins of the SG-X chainrings, the super rigid Wide-link front derailleur and the special profiles of the HYPERGLIDE chain links are combined to create a smooth, quiet and precise shifting system, even under load.

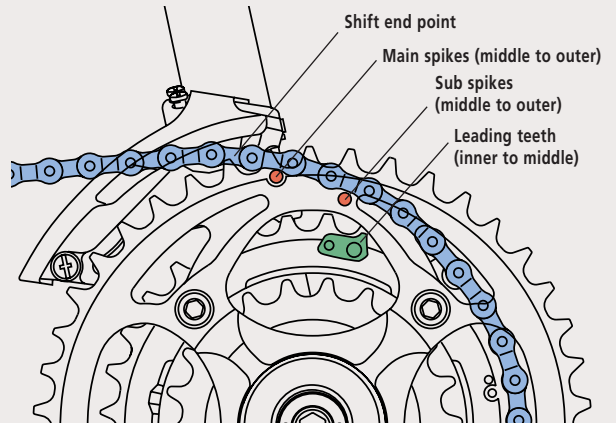


■ Optical Gear Display

The Optical Gear Display tells you which gear position is selected while riding your bike. You can see how many gears you can select either on low side or top side, which makes shifting control easier.



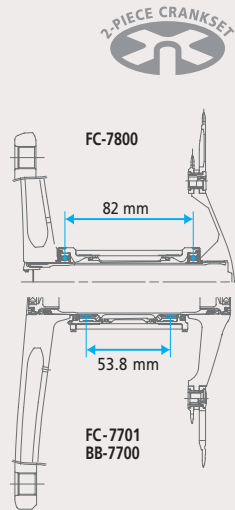
ST-3400



Best Pedaling Performance

■ 2-Piece Crankset with Integrated BB Design

Our race proven advanced technology, the 2-piece crankset with the integrated bottom bracket. Number of parts is reduced. Weight is reduced. Rigidity and power transfer are radically increased. In addition, it allows the bottom bracket bearings to be spaced wider apart (outboard bearings) and the axle and bearings themselves to be larger. The net result is a more effective load distribution, increased rigidity and stability.



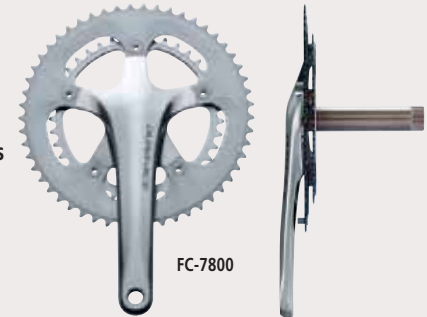
■ Iconic Shimano Cap-Free Design

The "cap-free design" was adopted for the first time to the crank when DURA-ACE HOLLOWTECH II crankset was developed. This design was not just for covering up the bolthole, but it was born out of the bold idea to integrate the BB axle to the crankarm.

"Cap-free design" was adopted to 7800 DURA-ACE crank in 2004.

■ HOLLOWTECH II Crankset

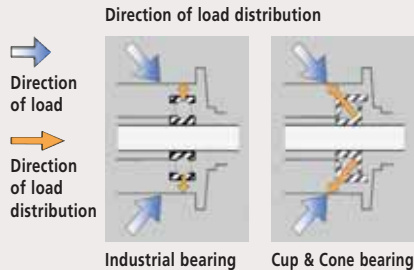
The cranksets of DURA-ACE, ULTEGRA, 105, XTR, XT, LX, SAINT and HONE have adopted the "2-piece crankset with integrated BB design" as well as "race-proven hollow forged crankarm" that was created by Shimano's original technology. Those HOLLOWTECH II cranksets realized the high-level balance between lightweight and rigidity.



Best Pedaling Performance

Cup & Cone bearing hubs

Cup & Cone bearings offer greater strength than sealed cartridge industrial bearings due their ability to displace lateral and vertical loads more effectively for super smooth rotation and longer durability. Cup & Cone bearings also allow easier maintenance, adjustability and serviceability.



OCTALINK BB mount

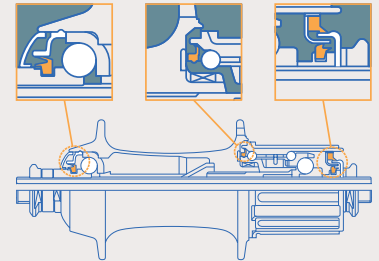
The bottom bracket plays an important role in regard to crank rigidity. The crank arms don't mount to the bottom bracket through the conventional square taper, but use a larger 8-spline interface that connects to a hollow bottom bracket spindle. It's called "OCTALINK". The result is greater strength and rigidity for the entire crankset/bottom bracket assembly.



8-spline interface

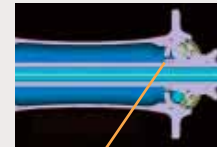
Labyrinth and contact sealing

Specifically designed seals inside the hub shutout mud, dust, dirt and moisture and protects the bearing mechanisms, realizing low maintenance as well as longer service life. This maintains the original performance for a longer period of time under unfavorable environmental conditions.

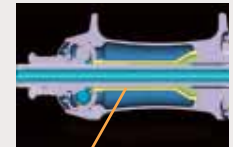


Internal grease sleeve

ULTEGRA, 105 and TIAGRA freehubs feature internal o-rings and grease sleeve that help maintain grease levels and increase service life.



O-ring



Internal grease sleeve

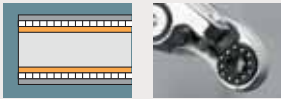
Best Braking Performance

■ Super SLR brake system

SLR stands for Shimano Linear Response. The Super SLR design makes use of friction-reducing mechanism in the caliper, lever and cable that improve response. SLR is the essential factor in the Shimano Dual-Pivot calipers that deliver more braking power than conventional side-pulls.



SLR system realizes the reduction of friction in the caliper, lever and cable.



Coated bush and thrust bearing of pivots reduce friction in the caliper. (DURA-ACE)

Outer casing with liner

■ Center Lock system

The Center Lock system makes an easy rotor installation possible with spline mount and a lock ring. The lock ring mounting system reduces the total hours of work by shortening the amount of time of both installation and de-installation. In addition, the secure fixing by the spline mount enhances precision and rigidity while improving braking efficiency.



■ Compact and durable brake system

The Dual-Pivot design realized a lightweight, compact and durable braking system. Especially the DURA-ACE, ULTEGRA and 105 brakes have made considerable progress in reduction of tolerance and deflection as well as in durability. They have achieved firm and instantaneous braking response while assuring longer service life. Moreover, the brake pads of DURA-ACE, ULTEGRA and 105 have an improved durability by 100% to help to enjoy the high-response braking over long periods.



BR-7800

■ Toe-in adjustable brake shoe (DURA-ACE, ULTEGRA, Shimano 105)

Optimum braking response is achieved with a slight toe-in (around 0.5mm) of the brake shoe, by integrating a convex washer to the fixing bolt makes adjustment of toe-in much easier.



Convex washer

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