English (E)

'96 SHIMANO BICYCLE SYSTEM COMPONENTS

Dealer Sales
& Support Manual



SHIMANO



Staying tuned to the needs of the cycling scene.





At Shimano, we are committed to developing and manufacturing bicycle components that offer the cyclist more quality, function, and value. To do this, we make every effort to stay in close contact with cyclists, bicycle shops, distributors, and various cycling organizations around the world. We are also deeply involved in amateur and professional bicycle competition. Only in this way can we stay tuned to the real needs of the ever diversifying cycling market. Every Shimano-equipped bicycle, whether used for competition, fitness, or recreational cycling, provides cyclists with a lighter and more precise feeling of control. The result is a better cycling experience for everyone.





Shimano components ... engineered for the cyclist.

Shimano is committed to the continual improvement of bicycle components that provide cyclists with the optimum balance of performance and function.

Ride Light & Sensor Technology

Each Shimano component is developed as part of an integrated component system that reflects the latest advances in ergonomic design. Our Ride Light concept, for example, stresses that the components provide a light and responsive feeling of control that makes the bicycle feel lighter and easier to operate. Sensor Technology, a further evolution of the Ride Light concept, represents our attempt to develop components that provide precise visual, aural, and tactile responses that make a more intimate interface between the cyclist and the bicycle. This ergonomic approach results in precision, low-effort gear shifting, strong and responsive braking, and an overall higher level of control that demands less attention from the cyclist. This not only improves the performance of competitive cyclists, but make cycling more enjoyable for anyone who rides a Shimano-equipped bike.





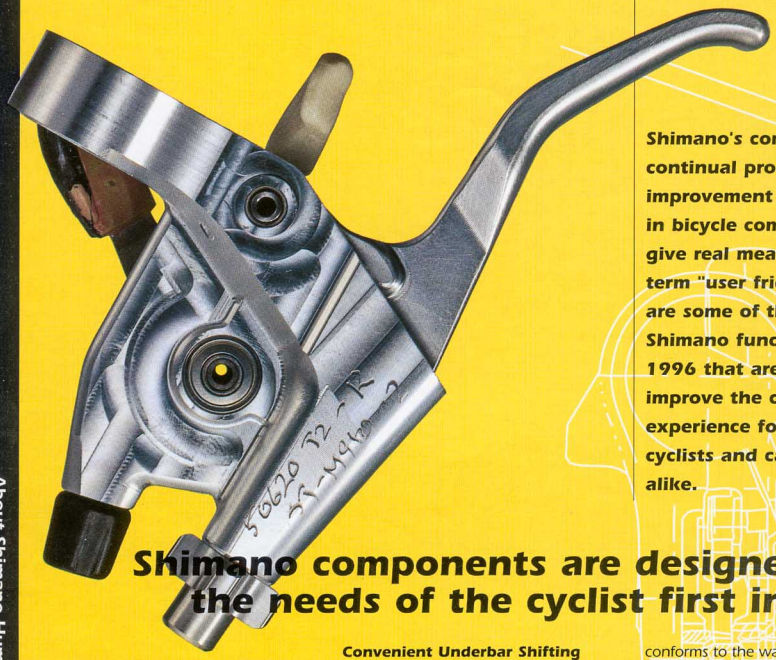
Advanced Shifting Systems

The Shimano Index System has been improved to the point where virtually anyone can shift the derailleurs quickly and smoothly, even if they've never done it before. Both the Dual Control Lever and Rapidfire lever sets combine the shifting and braking functions so you never have to take your hands off the bars to shift. One touch of the low-effort shift lever and the chain moves instantly to the desired gear without noise or hesitation. HG sprockets, the IG system, SGX-II chainwheels, and other component upgrades have further improved Shimano shifting performance. Our new Nexus series internally geared hubs take indexed gear shifting one step further by eliminating the derailleur altogether.

Better Braking Performance

Shimano is making continual improvements to the bicycle's braking system. The original SLR (Shimano Linear Response) design reduced friction in the lever, cable, and caliper to provide a light and sensitive feeling of response that resulted in more braking power and improved control. The improved Dual-Pivot caliper used on the road groups provides even more braking power. The development of M-System finally gave cyclists the ability to stop with confidence in wet or muddy conditions. You can always depend on better braking performance from Shimano.





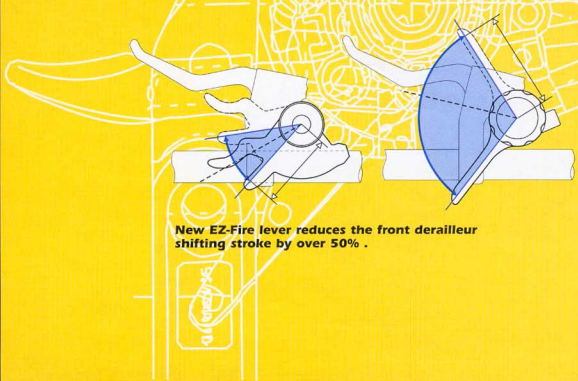
Lever unit shown is a prototype. Production model may vary in appearance.

Shimano's commitment to continual product improvement has resulted in bicycle components that give real meaning to the term "user friendly." Here are some of the advanced Shimano functions for 1996 that are helping to improve the cycling experience for competitive cyclists and casual riders alike.

Shimano components are designed with the needs of the cyclist first in mind.

Convenient Underbar Shifting

The underbar shifters used in the Shimano mountain bike groups were specifically developed to provide optimum control under all cycling conditions. The main advantage of the underbar shifter is that it lets you shift gears without changing your hand position on the grip. The levers are positioned directly in front of the thumb and forefinger, so there's no reaching to shift. And the shifting action is extremely natural because it conforms to the way that the thumb and forefinger are normally used. Just push one lever with the thumb, and pull the other with the index finger. Unlike twist-grip designs, Shimano's Rapidfire thumb-and-index finger action lets you keep a stable grip on the bar, and even brake while you shift. There's no need to sacrifice control by flexing the wrist or sliding your hand on and off of a shift ring. The new Rapidfire SL lever set is a lighter, more compact version that also offers a shorter stroke and a quicker low-effort shift action. The EZ Fire shift lever was developed to give the lower line MTB groups the same type of convenient underbar shifting provided by Rapidfire.

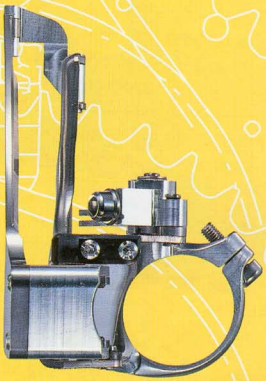


New EZ-Fire lever reduces the front derailleur shifting stroke by over 50% .



The Differential Plate Front Derailleur ... A new concept in chainwheel shifting.
One of the problems of front derailleur shifting is that it takes more effort than the rear because the chain must be shifted under load. Shimano's Top-Swing front derailleur offers an innovative linkage which significantly reduces friction by decreasing the number of moving parts needed to operate the derailleur, and by only loading one link with return spring pressure. The result is a 30% reduction in friction and a lighter and easier feeling at the lever.

The Top-Swing design was applied to the development of XTR's radically new differential plate front derailleur. This derailleur uses a chain guide which moves with an articulated action in which the angle and spacing between the inner and outer plates actually change as the derailleur moves through its stroke. This unique action, plus the special configuration of the inner plate, provides improved chain control to deliver faster and more positive up-shifts than ever before.



Continuing advances in front derailleur design.



Front derailleur shown is a prototype. Production model may vary in appearance.



V-Brake shown is a prototype. Production model may vary in appearance.

Easy-Set cantilever brakes feature automatic toe-in adjustment.

More braking power with greater control.





Improving brake performance for competition.

Shimano has responded to the needs of off-road racers with a new type of brake that offers significantly improved performance. The XTR and Deore XT groups incorporate the new Shimano V-Brake for 1996. The V-Brake is an improved cantilever design which fits standard cantilever bosses. The V-Brake uses longer cantilever arms to increase the power multiplication factor, but the arms are angled vertically so they actually protrude less than conventional cantilevers. The cross-cable linkage not only eliminates the need for a bridge cable, but also maintains a 90° cable-arm angle for maximum operating efficiency and braking power. The V-Brake also incorporates a "parallel push" pad linkage which prevents dive-in to maintain uniform pressure along the entire surface of the brake pad. The V-Brake is the new standard for off-road braking performance.

Improved Cantilever Brakes

The biggest problem with cantilever brakes has always been the difficulty of installing and adjusting them correctly. The new Easy Assemble Cantilever Brake, included in all MTB groups for 1996, makes installation and adjustment extremely easy. The headphone tool holds the pads against the rim to assure perfect alignment when tightening the brake pad locknuts. The self toe-in feature automatically sets the optimum amount of toe-in when the locknuts are tightened. It couldn't get any easier.

A more pleasant cycling experience.

Shimano continues to develop components that improve the cycling experience. The Silent Clutch Freehub is one example. It replaces the conventional ratcheting pawl freewheel mechanism with a ramp and roller clutch which not only engages more smoothly, but eliminates shock and the "clicking" freewheel noise as well.

Another example is the Nexus component system which offers the ease and convenience of multiple gear cycling without the need for a derailleur. The heavy-duty Inter-4 and Inter-7 hubs deliver a new level of performance and dependability from an internally geared hub. They are the first of their type that can be used with complete confidence for touring and sport cycling as well as recreational riding. The Nexus system is ushering in the new age of sophisticated adult bicycles that offer more quality, comfort, and performance.

Component systems custom-tailored to the needs of individual cycling styles.

The functional performance of each Shimano component group is carefully determined in terms of how the bicycle is used, who will ride it, and how the bicycle should look and feel in regard to its intended use. For example, the XTR, Deore XT, and Deore LX mountain bike groups have been designed according to the unique performance demands of off-road competition. XTR, however, offers a highly functional look as an expression of its pure competitive application. Deore XT and LX have a softer, more stylish appearance which expresses a feeling of fun, excitement, and the great outdoors. As the application moves away from competition, each Shimano group offers functions and appearance designed to respond to more relaxed cycling styles and the needs of cyclists with varying levels of skill and experience.

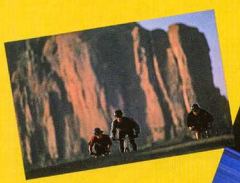
But function isn't the only concern. It's important to understand what kind of person will be riding the bicycle and how that person will respond to the operation and feel of the bicycle. This is why we apply our research and development resources toward custom tailoring each component function to the needs of the specific component group and cyclist who will use it. As an example, the EZ-Fire shifter of the Acera-X and Altus groups provides a softer, easier shifting action than the heavier but highly precise action of the XTR and Deore Rapidfire shifters. Other components are developed from this same perspective.

The design of each component and its function is approached in this way in an effort to match the bicycle to the cyclist, to create the optimum control interface for a certain level of skill and experience. Each cyclist is provided with functions designed not only to offer a high level of control, but to provide a light and responsive feeling that builds confidence and makes the cycling experience that much more enjoyable.



Silent Clutch Freehub eliminates ratchet noise and engages instantly as a result of its ramp and roller clutch.

The Shimano design puts the cyclist first.







'96 Mountain Bike Racing Components
XTR
DEORE XT
DEORE LX
STX-RC
'96 Mountain Bike Components
STX
ALIVIO
ACERA-X
ALTUS
SHIMANO IG
Differential Plate Front Derailleur
SHIMANO XTR
SHIMANO DEORE XT
SHIMANO DEORE LX
SHIMANO STX RC
SHIMANO STX
ALIVIO SHIMANO
SHIMANO ACERA X
New Function For 1996
Existing Function applied to new component group
Existing Function

Rapidfire SL

A more compact Rapidfire shift lever set with a new short stroke action. Used on XTR, Deore XT, Deore LX, STX-RC, and STX.



EZ-Fire

Rapidfire-type shift lever set featuring a new low-effort short-stroke action. Used on the Acera-X and Altus component groups.

IG System

Improved chain control from integrated drivetrain design. XTR, Deore XT, and Deore LX use front IG system. STX-RC, STX and Alivio use full front and rear IG system.



Top-Swing Front Derailleur

Compact lever-action linkage eliminates parallel links to reduce shifting effort by 30%. Now used on all MTB groups.

Differential Plate Front Derailleur

Chain cage configuration changes as the shift is executed to provide faster front chainwheel shifting. Used on XTR group.

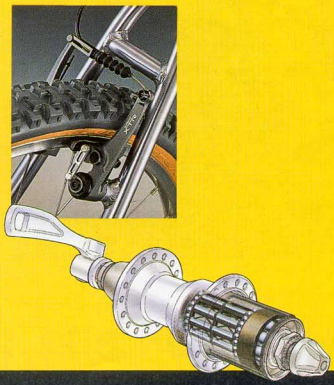


V-Brake

Modified cantilever design provides more braking power and control. Used on XTR and Deore XT off-road groups.

Easy Set Brakes

Headphone tool and auto toe-in adjustment make cantilever brake setup fast and easy. Used on Deore LX, STX-RC, STX, Alivio, Acera-X, and Altus group.



Silent Clutch Freehub

A ramp-and-roller clutch replaces the standard pawl-type freewheel to provide softer engagement and silent freewheeling. Used on the STX-RC, STX, and ALIVIO group.

SHIMANO ALTUS

Where the new functions are being applied for 1996.



SHIMANO
XTR
Completely re-designed for 1996, XTR sets an even higher standard of performance for off-road competition.

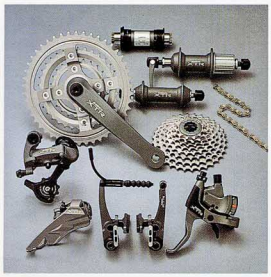
SHIMANO
DEORE XT
Great new features in the classic high-performance off-road component group.

SHIMANO
DEORE LX
High-performance off-road cycling components you can depend on.

SHIMANO
STX RC
Real racing performance from a high-value off-road component group.

'96 Mountain Bike Racing Components
More control when you go off the road.

The Shimano off-road component groups for 1996 feature an even higher level of performance and function that help to keep you in control when you go off road.



'96 NEW

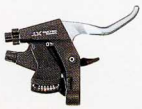
- Titanium sprockets
- Titanium axle and freewheel body (freehub)
- Differential plate front derailleur
- Powerful new V-Brake
- Rapidfire SL Lever set
- Splined pipe bottom bracket axle
- Hollow forged crank arms

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'96 NEW



'96 NEW



'96 NEW



- Powerful new V-Brake
- Quick-shifting front IG System
- Rapidfire SL lever set
- Top-Swing front derailleur

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'96 NEW



'96 NEW



- Quick-shifting front IG System
- Top-Swing front derailleur
- Rapidfire SL lever set
- Easy-Set cantilever brakes

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'96 NEW



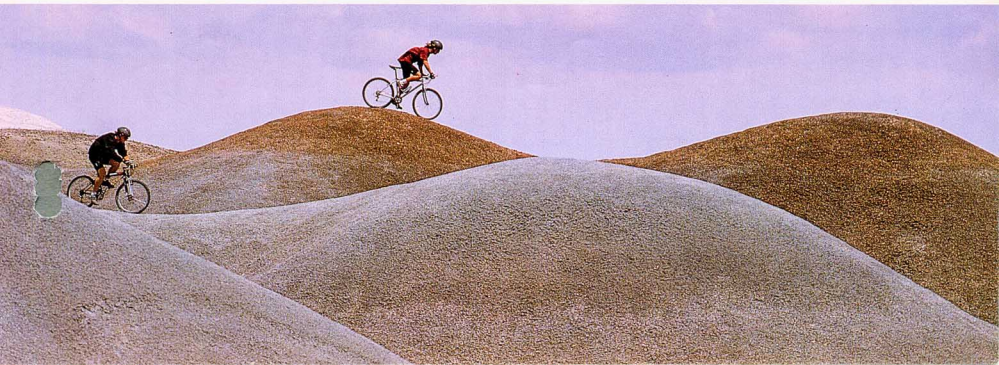
'96 NEW

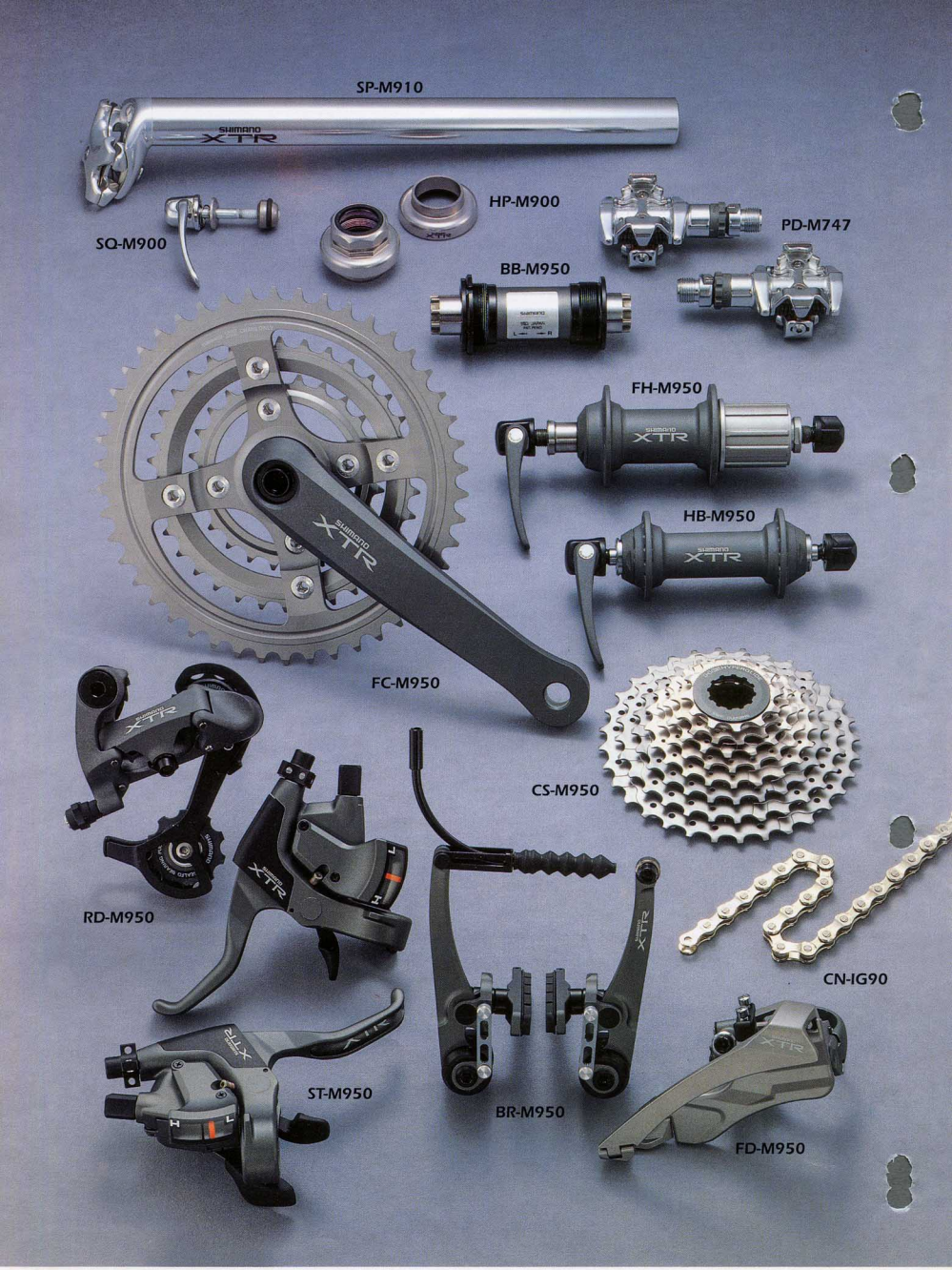


- Quick-shifting front IG System
- Top-Swing front derailleur
- Rapidfire SL lever set
- Easy-Set cantilever brakes

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Specifications and features of XTR, Deore XT, Deore LX, and STX-RC groups are listed from pages 22 to 27.




SP-M910
HP-M900
SQ-M900
PD-M747
BB-M950
FH-M950
HB-M950
FC-M950
CS-M950
RD-M950
CN-IG90
ST-M950
BR-M950
FD-M950

ST-M950 Rapidfire SL Lever Set

New Rapidfire SL lever set is 90g lighter than old unit. SL design provides short-stroke light-action shifting with ball bearing action to assure precision operation and long service life. Adjustable cable pivot lets you set braking power to personal preference. Separate BL-M950 brake lever features forged construction and super-light-weight design.

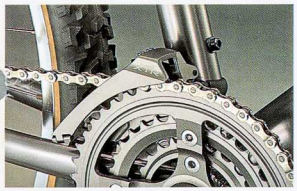


FD-M950/FD-M950-E Front Derailleur

All-new differential plate front derailleur features inner and outer plates that move independently for faster, crisper chainwheel shifting. E-type uses a carbon graphite support plate that mounts directly to bottom bracket.



FD-M950-E



FC-M950 Crankset

New XTR crankset is compatible with IG chains. Forged crank arm is a new hollow design that reduces weight with no sacrifice in strength. New splined chainring mount eliminates crank spider to reduce weight. (FC-M950 crank must be used with BB-M950 bottom bracket.)

BB-M950 Bottom Bracket

New pipe billet axle makes the BB-M950 bottom bracket 70g lighter than the BB-UN91 unit. Needle bearings replace balls for better load dispersion and increased durability. Taper-spline axle ends form a stronger joint with the crank arm.

BR-M950 V-Brake

More braking power and control from a new cantilever design with direct cable action. Self-lubricating pivot bearings maintain precision operation in all environments. Parallel Push mechanism prevents dive-in to assure even pad wear. Mounts to standard cantilever bosses. Conventional cantilever brake (BR-M900-C) is also available.



RD-M950 Rear Derailleur

Ball bearing pulleys reduce friction. Adjustable guide spring and pulley tension allows fine-tuning to terrain conditions. Advanced Light Action design uses four Teflon coated link bushings. Titanium pivot bolt, light alloy pulley pivot and chain cage are used to reduce weight.

CS-M950 Cassette Sprockets

Liberal use of titanium and light alloy reduces weight. P-group cluster has 24, 28, and 32T titanium sprockets while the ak-group cluster has 26 and 30T titanium sprockets. Forged light alloy spider arm boss further reduces weight. Cassette sprockets are compatible with IG chain.



P group sprockets

FH-M950 Freehub

New high-strength Parallax freehub features a titanium freewheel body and axle to reduce weight. Aluminum sealing caps, quick-release lever, lever housing, and adjuster nut reduce weight while providing a functional high-tech appearance.

HB-M950 Front Hub

Front hub features heavy-duty aluminum axle with 11mm diameter at bearing support area and 9mm diameter ends to fit in standard fork dropouts. Sealing caps, quick-release lever, lever housing, and adjuster nut are also aluminum.

SHIMANO XTR

All-new lightweight design delivers more performance than ever.



Specifications and features of XTR group are listed from pages 22 to 27.


HP-M741
SQ-M730
SM-SP18
BB-UN72
SP-M730
DF-M730
HB-M738
HB-M737
FH-M737
CS-M737-I
FC-M737-IG
RD-M739
CN-IG90
ST-M739
ST-M738
BL-M739
ST-M008
BR-M737
FD-M738
Brake cable
(W -Type)
PD-M747
FD-M739
BR-M739

ST-M739 Rapidfire SL Lever Set

Precision Dual SIS shifting for eight rear sprockets and three chainwheels. SL mechanism reduces shifting effort with a shorter and lighter stroke. Brake lever features adjustable 3-stage cable action. Easy-to-read Optical Gear Display and stainless steel shift cables. Separate BL-M739 brake lever also available.



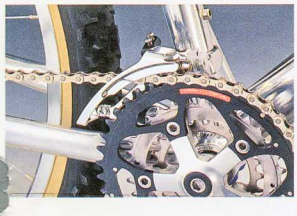
BR-M739 V-Brake

More braking power and control through longer cantilever arms and direct 90° cable action. Parallel-Push mechanism prevents dive-in for more uniform pad wear. Fits standard cantilever bosses.



FD-M739 Front Derailleur

Top Swing mechanism and Advanced Light Action design significantly reduce shifting effort to make chainwheel shifting easier. Compatible with 44 or 42-teeth chainwheels.



FC-M737-IG Crankset

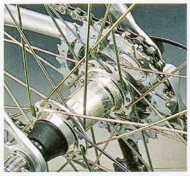
Low-profile crank is now compatible with IG system to provide improved chain control and shockless down-shifting. Compact HyperDrive-C chainrings are made from durable 7075 aluminum alloy (top and middle).

RD-M739 Rear Derailleur

Advanced Light Action design features extension spring action and four Teflon coated pivot pin bushings for reduced friction. Sealed pivots and pulleys keep out dirt and water. Aluminum alloy pulley cage.

CS-M737-I Cassette Sprockets

New I-type 8-speed HG cassette sprockets are compatible with IG chain. Sprockets mount to aluminum alloy spider arm for reduced weight and greater rigidity.



FH-M737 Freehub

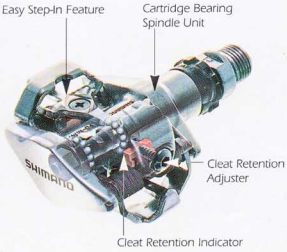
Parallax freehub features oversize body and heavy-duty spoke flanges. Aluminum alloy spider arm mounts eight sprockets (compatible with IG chain) for greater rigidity and less weight. Alloy quick release.

HB-M737/M738 Front Hub

Parallax front hub features oversize body and heavy duty spoke flanges. HB-M738 model has 11mm alloy axle.

PD-M747 SPD Pedal

Top line off-road SPD pedal incorporates Easy Step-Infeature that reduces cleat insertion pressure. Dual binding mechanisms allow easy entry in the rough.



SHIMANO DEORE XT

Great new features in the classic group that defined the high-performance mountain bike.



Specifications and features of DEORE XT group are listed from pages 22 to 27.


BB-UN52
SP-M650
FC-M563-IG
SM-SP18
ST-M566
ST-M008
ST-M565
BR-M565-EL
HB-M564
CN-IG70
HB-M563
CS-HG70-I
BR-M565-EM
FH-M565
Brake Cable
(T -Type)
PD-M535
ST-M567
FD-M567
HP-M563
FD-M566
RD-M567

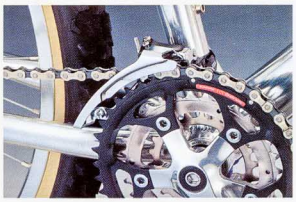
ST-M567 Rapidfire SL Lever Set

Rapidfire SL lever set is smaller and lighter than previous models. Shorter stroke and quicker action make shifting faster and easier. New stainless steel shift cable resists corrosion. ST-M008 shift lever unit (without brake lever) also available.



FD-M567 Front Derailleur

Advanced Light Action design and new Top Swing action reduce chainwheel shifting effort. Compatible with and 42 teeth chainrings.



FC-M563-IG Crankset

Low-profile Deore LX crank and IG-compatible compact HyperDrive-C chainrings reduce drivetrain size, weight, and increase ground clearance. Top and middle chainrings are durable 7075 aluminum alloy.

RD-M567 Rear Derailleur

Advanced Light Action design and two Teflon coated pivot pin bushings assure a light, low-effort shifting action. 8-speed IG compatible.

CS-HG70-I Cassette Sprockets

Compact 8-speed HyperGlide cassette sprockets feature new IG design for greater durability and chain control.

FH-M565 Freehub

8-speed Parallax freehub features oversize body and heavy duty spoke flanges. Double rubber cap sealing keeps out dirt and water. Light alloy quick release reduces weight.

HB-M563/M564 Front Hub

Parallax design front hub now uses more efficient rubber cap sealing and light alloy quick release. HB-M564 model has heavy duty 10mm steel axle.

BR-M565-E Cantilever Brakes

All-weather M-System cantilever brakes use cartridge-type pads. Easy-Set design with automatic toe-in feature makes installation and adjustment fast and easy. Available with medium or large cantilever arms to clear mudguards.

HP-M563 (ø1")
HP-M564 (ø1 1/8")
Cartridge Headset

Sealed bearing cartridge-type headset is easy to install. O-ring seals keeps out dirt and water to extend service life.

PD-M535 SPD Pedal

Compact lightweight SPD pedal incorporates Easy Step-In feature that reduces cleat insertion pressure. Mud resistant cleat plate. Dual binding mechanisms allow easy entry.



SHIMANO DEORE LX

Deore LX takes you off-road with total confidence and great performance.



Specifications and features of DEORE LX group are listed from pages 22 to 27.


FH-MC33
FC-MC36 with Guard
HP-MC30
HB-MC33
HP-MC31
CS-IG60
CN-IG51
BB-UN52
SM-SP18
FC-MC36
PD-M323
RD-MC36
ST-MC33
Brake Cable
(T-Type)
ST-MC36
BR-MC33-EL
FD-MC33
FD-MC36
BR-MC33-EM

ST-MC36 Rapidfire SL Lever Set

New SL design offers a shorter stroke and easier action for Dual SIS shifting (7-speeds rear, 3-speeds front). Improved maintenance from removable Optical Gear Display and easy cable replacement.





FD-MC36 Front Derailleur

Advanced Light Action design and new Top-Swing action reduce shifting effort. Compatible with 42-teeth chainrings.

FC-MC36 Crankset

Beefy low-profile crank is cold forged and uses new IG chainrings for improved chain control and shock-free down-shifting. Light alloy large chainring.

RD-MC36 Rear Derailleur

IG compatible 7-speed rear derailleur features Advanced Light Action design and two Teflon coated pivot pin bushings for a light, low-effort shifting action.

CS-IG60 Cassette Sprockets

Compact 7-speed HyperDrive-C cassette sprockets feature beefed up IG design for smoother, shock-free shifting and improved durability.

FH-MC33 Freehub

Beefy Parallax freehub uses an oversize body and heavy duty spoke flanges for a stronger rear wheel. Efficient rubber cap sealing and light alloy quick release.

HB-MC33/MC33-S Front Hub

Parallax hub design increases front end rigidity for solid or suspension forks. HB-MC33-S model has heavy duty 10mm steel axle for even greater strength.

BR-MC33-E Cantilever Brakes

All-weather M-System cantilever brakes now feature anti-vibration construction that eliminates squealing. New Easy-Set design offers automatic toe-in setting. Brake pads are cartridge type for easy replacement (M65T).

HP-MC30 (ø1")
HP-MC31 (ø1 1/8")
Cartridge Headset

Sealed bearing cartridge-type headset is easy to install. O-ring seals keeps out dirt and water to extend service life.

PD-M323 SPD Pedal

Ride the PD-M323 pedal with our without SPD shoes. It offers a standard pedal cage on one side and an SPD binding mechanism on the other.

SHIMANO STX RC

A higher level of performance and value for hard off-road cycling.



Specifications and features of STX-RC group are listed from pages 22 to 27.

■ Off-Road Component Specifications

Specification \ Series		XTR			DEORE XT				DEORE LX			STX-RC	
REAR DERAILLEUR	Model No.	**RD-M950**			**RD-M739**				**RD-M567**			**RD-MC36**	
	Gears	8-speed			8-speed				8-speed			7-speed	
	Max. Sprocket	32T			32T				32T			28T	
	Min. Sprocket	11T			11T				11T			11T	
	Front Gear Difference	22T max			20T max				20T max			20T max	
	Total Capacity	33T			38T				38T			37T	
	Pivot & Pulley Cage Brackets	cold forged aluminum color anodized			aluminum, polished & clear coated				electrostatic painted aluminum			polished aluminum	
	Outer Link	cold forged anodized aluminum			aluminum				painted aluminum			polished aluminum	
	Inner Link	cold forged anodized aluminum			aluminum				steel			steel	
	Outer Pulley Cage	anodized aluminum			anodized aluminum				chrome plated steel			chromica plated steel	
	Inner Pulley Cage	anodized aluminum			steel				chrome plated steel			black painted steel	
	Weight				250g				285g			293g	
***FRONT DERAILLEUR**	Model No.	**FD-M950**	**FD-M950-E**		**FD-M739**		**FD-M738**		**FD-M567**		**FD-M566**	**FD-MC36**	
	Top-low Capacity	26T	26T		22T		22T		20T		20T	20T	
	Top-middle Capacity	10T	10T		10T		10T		10T		10T	10T	
	Top Gear	48/46T	48/46T		44 / 42T		44 / 42T		42T		42T	42T	
	Cable Routing	top & bottom types available	top & bottom types available		top & bottom types available		top & bottom types available		top & bottom types available		top & bottom types available	top & bottom types available	
	Band Size	28.0 – 28.6 mm / 31.8, 34.9 mm,	—		28.0 – 28.6 mm / 31.8 mm / 34.9 mm		28.0 – 28.6 mm / 31.8 mm / 34.9 mm		28.0 – 28.6 mm / 31.8 mm / 34.9 mm		28.0 – 28.6 mm / 31.8 mm / 34.9 mm	28.0 – 28.6 mm / 31.8 mm / 34.9 mm	
	Mount Type	band type only	bracket type only		band type only		band type only		band type only		band type only	band type only	
	Chain Stay Angle	66 – 69°			66 – 69°		66 – 69°		63 – 66° / 66 – 69°		63 – 66° / 66 – 69°	63 – 66° / 66 – 69°	
	Band	anodized aluminum	carbon bracket		polished clear-coated aluminum		polished clear-coated aluminum		painted aluminum		painted aluminum	polished aluminum	
	Outer Link	aluminum			anodized aluminum		painted aluminum		painted aluminum		painted aluminum	polished aluminum	
	Chain Guide	nickel plated aluminum			chrome plated steel		chrome plated steel		chrome plated steel		chrome plated steel	chrome plated steel	
	Weight				128g				128g			135g	
RAPIDFIRE SL / BRAKE LEVER	Model No.	**ST-M950**	**ST-M910**	**BL-M950**	**ST-M739**	**ST-M738**	**ST-M008**	**BL-M739**	**ST-M567**	**ST-M566**	**ST-M565**	**ST-MC36**	**ST-MC33**
	Rear (Dual SIS)	8-speed	8-speed	brake lever for V-brake	8-speed	8-speed	8-speed	brake lever for V-brake	8-speed	8-speed	8-speed	7-speed	7-speed
	Front (Dual SIS)	triple	triple	triple	triple	triple	triple	triple	triple	triple	triple	triple	triple
	Lever Length	2-finger	2-finger	2-finger	2-finger	2-finger	—	2-finger	2-finger	2-finger	2.5-finger	2-finger	2-finger
	Weight					398g	242g	159g	335g	389g	383g	335g	394g
V-BRAKE CANTILEVER BRAKE	Model No.	**BR-M950**	**BR-M900-C**		**BR-M739**		**BR-M737**		**BR-M565-E**			**BR-MC33-E**	
	Arm Length	V-brake	M		V-brake		M		M	L		M	L
	Link Type	—	special Y-type		—		special Y-type		Y-type			Y-type	
	Weight	368g (F & R)			383g		364g (F&R)		370g (F&R)			366g (F&R)	
CRANKSET	Model No.	****FC-M950**			**FC-M737-IG**				**FC-M563-IG**			**FC-MC36**	
	No. of Teeth	46 - 34 - 24T			42 - 32 - 22T (44T option)				42 - 32 - 22T			42-32-22T	
	Bolt Circle	112 / 68			94 / 58 mm				94 / 58 mm			94 / 58 mm	
	Crank Length	165-170-172.5-175 -177.5-180mm			165 – 170 – 175 – 180 mm				170 – 175 mm			170 – 175 mm	
	Chain Type	IG			IG				IG			IG	
	Chain Guard	not available			available				available			available	
	Weight				694g (175mm / 42-32-22T)				681g / 170 mm			759g / 170 mm	
CARTRIDGE BOTTOM BRACKET	Model No.	**BB-M950**			**BB-UN72**				**BB-UN52**			**BB-UN52**	
	Marking				MM107	LL113			MM107	LL113		MM110	LL113
	Chain Line	47.5mm	50.0mm		47.5 mm	50.0 mm			47.5 mm	50.0 mm		47.5 mm	50.0 mm
	BB shell Width	68 / 73	68 / 73		68 / 70 / 73	68 / 70 / 73			68 / 70	68 / 70 / 73		68 / 70	68 / 70 / 73
	Axle Width	112.5mm	116mm		107 mm	113 mm			107 mm	113 mm		110.5 mm	113 mm
	Weight				272g								
REAR FREEHUB	Model No.	**FH-M950**			**FH-M737-A**				**FH-M565**	**FH-M563**		**FH-MC33**	
	Sprockets	8-speed			8-speed				8-speed	7-speed		7-speed	
	11T top gear	○			○				○	○		○	
	Over Locknut	135mm			135mm				135 mm	130 / 135 mm		130 / 135mm	
	Axle Length	146mm			146mm				146 mm	141 / 146 mm		141 / 146mm	
	Spoke Holes	36 / 32 / 28H			36 / 32H				36 / 32H	36 / 32H		36 / 32H	
	Spoke Hole Circle	45mm			45mm				45 mm	45 mm		45mm	
	Alloy QR Lever	○			○				○	Ø		○	
	Material & Finish	anodized aluminum			anodized aluminum				anodized aluminum	anodized aluminum		anodized aluminum	
	Weight				452g				442g	444g		432g	

*Front derailleur chain stay angle is marked on the back of the chain guide. Component specifications are marked on the box.

model no. FD-M739-DS6
cable routing (D=down, T=top)
clamp band size (S=small, M=medium, L=large)
chain stay angle (6=66-69°, 3=63-66°)

**FC-M950-HG crankset with conventional 5-arm spider is also available.

○ = yes ∅ = no

Specification \ Series		XTR		DEORE XT		DEORE LX		STX-RC	
FRONT HUB	Model No.	**HB-M950**		**HB-M738-A**	**HB-M737-A**	**HB-M564-A**	**HB-M563-A**	**HB-MC33-S**	**HB-MC33**
	Over Locknut	100mm		100mm	100mm	100mm	100mm	100mm	100mm
	Axle Length	108mm		108mm	108mm	108mm	108mm	108mm	108mm
	Spoke Holes	36 / 32 / 28H		36 / 32H	36 / 32H	36 / 32H	36 / 32H	36 / 32H	36 / 32H
	Spoke Hole Circle	38mm		38mm	38mm	38mm	38mm	38mm	38mm
	Alloy QR Lever	○		○	○	○	○	○	○
	Material & Finish	anodized aluminum		anodized aluminum	anodized aluminum	anodized aluminum	anodized aluminum	anodized aluminum	anodized aluminum
	High-Strength Axle	11mm aluminum		11mm aluminum	standard 9mm steel	10mm steel	standard 9mm steel	10mm steel	standard 9mm steel
	Weight			206g	202g	218g	205g	225g	212g
CASSETTE SPROCKETS	Model No.	**CS-M950**	**CS-M900-I**	**CS-M737-I**		**CS-HG70-I**		**CS-IG60**	
	No. of Sprockets	8-speed HG		8-speed HG		8-speed HG		7-speed IG	
	Group Identification	P = 12 - 32T Q = 12 - 28T		R = 11-28T		ah = 11-28T		ag = 11-28T	
	Color	champagne gold & Ti-silver	champagne gold	chrome plated		silver		chromica plating/silver luster	
	Weight	232g (P group)	316g (P group)	256g (with spacers)		326g		254g	
CHAIN	Model No.	**CN-IG90**		**CN-IG90**		**CN-IG70**		**CN-IG51**	
	Type	IG narrow type		IG narrow type		IG narrow type		IG narrow type	
	Inner Link Color	nickel plating		nickel plating		barrel polished		barrel polished	
	Outer Link Color	nickel plating		nickel plating		nickel plating		nickel plating	
	Link Pin	chromizing / polished pin end		chromizing / polished pin end		chromizing / polished pin end		chromizing	
	Weight								
HEADSET	Model No.	**HP-M900**	**HP-M901**	**HP-M902**	**HP-M740**	**HP-M741**	**HP-M742**	**HP-M563**	**HP-M564**	**HP-MC30**	**HP-MC31**
	Cartridge Type	∅	∅	∅	○	○	○	○	○	○	○
	Threading	BC1" x 24TPI	BC1-1/8" x 24TPI	BC1-1/8" x 24TPI	BC1" x 24TPI	BC1-1/8" x 24TPI	BC1-1/8" x 24TPI	BC1" x 24TPI	BC1-1/8" x 24TPI	BC1" x 24TPI	BC1-1/8" x 24TPI
	Stack Height	34.3mm	34.3mm	40.3mm	37.6mm	37.6mm	39.9mm	37.6mm	37.6mm	37.6mm	37.6mm
	Weight	119g	136g	167g	116g	127g	143g	146g	161g	170g	190g
SPD PEDAL	Model No.	**PD-M747**			**PD-M747**			**PD-M535**		**PD-M323**	
	SPD Cleat Binding	both pedal surfaces			both pedal surfaces			both pedal surfaces		one pedal surface	
	Pedal Thread	BC 9/16" x 20TPI			BC 9/16" x 20TPI			BC 9/16" x 20TPI		BC 9/16" x 20TPI	
	Body	aluminum			aluminum			black anodized aluminum		aluminum	
	Plate	chrome plated steel			chrome plated steel			chrome plated steel		chrome plated steel	
	Weight	393g (pair)			393g (pair)			410g (pair)		520g (pair)	
SEAT POST	Model No.	**SP-M910**	**SP-M900**		**SP-M730**			**SP-M650**			
	Outer Diameter	26.8/27/27.2mm	26.6/26.8/27/27.2mm		26.4/26.6/26.8/27.0/27.2mm			26.4/26.6/26.8/27.0/27.2mm			
	Length	330mm	280/330/360mm		280/330/360*mm			280/330/360*mm			
	Material	aluminum	chrome moly steel		chrome moly steel			chrome moly steel			
	Weight	215g	270g (330mm)		296g (330mm)			325g (360mm)			
SEAT QR	Model No.	**SQ-M900**			**SQ-M730**						
	Shaft Length	36–43mm / 26–33mm			36–43mm / 26–33mm						
	Shaft Diameter	6mm / 8mm			6mm / 8mm						
	Material & Finish	chrome plated steel			chrome plated steel						
	Weight	66g			75g						
CHAIN DEFLECTOR	Model No.	**DF-M730**									
	Material	plastic resin									
	Weight	9g									

* 360mm length is available in 27.2mm diameter only.

Cassette Sprockets Availability Chart

Model No.	Chain Compatibility	Group Identification	Gear Combination	Compatible Freehubs
CS-M950 CS-M900-I	IG chain	8-speed P group	12, 14, 16, 18, 21, 24, 28, 32	FH-M950 / FH-M910 / FH-M900 FH-M737 / FH-M565
		8-speed Q group	12, 13, 14, 16, 18, 21, 24, 28	
CS-M737-I	IG chain	8-speed R group	11, 12, 14, 16, 18, 21, 24, 28	FH-M910 / FH-M737 / FH-M565
CS-HG70-I	IG chain	7-speed ah group	11, 12, 14, 16, 18, 21, 24, 28	FH-M565
CS-HG70-C CS-HG50-C	HG chan	7-speed ac group	11, 13, 15, 18, 21, 24, 28	11-tooth top gear compatible freehub
CS-IG60 CS-IG50	HG chan	7-speed ag group	11, 13, 15, 18, 21, 24, 28	for use with IG system only

Important Information on IG and HG Compatibility

Mixing IG and HG-type drive train components may affect performance, and in some cases cause operational problems. If you cannot avoid mixing these components, please be aware of the information in the table above. The IG chain has been improved for 1996, and as a result offers widened compatibility with HG sprockets.

* The new CN-IG chains (CN-IG90, CN-IG70, CN-IG51, and CN-IG31) have a width of 7.1mm and are compatible with HG sprockets. Because the old IG chains (CN-IG50 and CN-IG30) have a width of 7.3mm, they should not be used with HG sprockets. If you use a new IG chain with old 8-speed HG cassette sprockets (CS-M737 and CS-HG70-7/8), the adjustment becomes more critical, so special care must be taken when adjusting the cable.

** This combination should not be used because poor shifting performance will result.

*** This combination is potentially dangerous due to the possibility of accidents caused by the chain being thrown from the chainwheels.

Compatibility between IG and HG chains and cassette sprockets.

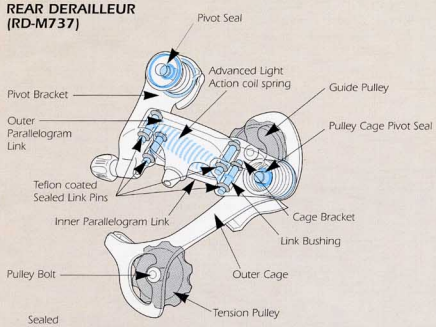
	IG		HG	
	IG Cassette Sprockets CS-IG60/ CS-IG50	**IG Chainwheels** FC-M950/FC-M737-IG/ FC-M563-IG/FC-MC36/ FC-MC34/FC-MC33/FC-MC32/ FC-MC14/FC-MC12	**HG Cassette Sprockets** CS-M950/CS-M900-1/ CS-M737-I/CS-HG70-I/ CS-HG50/CS-HG30	**HG Chainwheels** FC-M900/FC-M737/ FC-M563/FC-M291/ FC-M290/FC-CT91/ FC-CT90
New IG Chains CN-IG90/CN-IG70/ CN-IG51/CN-IG31	compatible	compatible	compatible*	**not compatible****
HG Chains CN-HG91/CN-HG90/ CN-HG70/CN-HG50/ CN-UG50	**not compatible****	**not compatible*****	compatible	compatible

■ Off-Road Component Feature Comparison Chart I

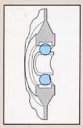
Features \ Series		XTR		DEORE XT		DEORE LX		STX-RC
REAR DERAILLEUR	Model No.	RD-M950		RD-M739		RD-M567		RD-MC36
	Advanced Light Action	○		○		○		○
	IG Compatibility	∅		∅		∅		○
	Rear Sprockets	8-speed		8-speed		8-speed		7-speed
	Guide Pulley	sealed bearing		sealed ceramic bushing		chromized steel bushing		sintered aluminum bushing
	Tensioning Pulley	sealed bearing		sintered aluminum bushing		chromized steel bushing		sintered aluminum bushing
	Bracket Axle	titanium		steel		steel		steel
	Plate Axle	aluminum		steel		steel		steel
	Link Pin Bushings	Teflon coating (4)		Teflon coating (4)		Teflon coating (2)		Teflon coating (2)
	Pivot Bolt Seal	double O-rings		double O-rings		single O-ring		∅
	Pulley Cage Pivot Seal	double O-rings		single O-ring		∅		∅
	Aluminum Pulley Cage	outer & inner		outer		∅		∅
	Aluminum Parallelogram Links	outer & inner		outer & inner		outer		outer
	Guide Spring Adjuster	○		∅		∅		∅
	Pulley Bolts	stainless steel		stainless steel		stainless steel		stainless steel
FRONT DERAILLEUR	Model No.	FD-M950	FD-M950-E	FD-M739	FD-M738	FD-M567	FD-M566	FD-MC36
	Advanced Light Action	○	○	○	○	○	○	○
	Dual SIS	○	○	○	○	○	○	○
	Top-Swing Action	○	○	○	∅	○	∅	○
	Differential Plate Mechanism	○	○	∅	∅	∅	∅	∅
	Front & Rear Bands	forged aluminum	carbon bracket	aluminum	aluminum	aluminum	aluminum	aluminum
	Outer Link	steel	steel	aluminum	aluminum	aluminum	aluminum	aluminum
	Inner Link	anodized aluminum	anodized aluminum	aluminum	aluminum	aluminum	aluminum	aluminum
	Rear Compatibility	8-speed	8-speed	8-speed	8-speed	8-speed	8-speed	7-speed
	Chain Guide	anodized aluminum	anodized aluminum	chrome plated steel	chrome plated steel	chrome plated steel	chrome plated steel	chrome plated steel
	Link Bushing	outer and inner	outer and inner	outer and inner	outer and inner	outer	outer	outer
	Cable Fixing Nut	insert helicoil	insert helicoil	insert helicoil	insert helicoil	standard	standard	standard
	Titanium Clamp Bolt & Cable Fixing Nut	option	option	∅	∅	∅	∅	∅
	Stainless Steel fastener and Adjustment Bolt	○	○	○	○	○	○	○

Note: Chromized links provide a hardened wear surface for long life.

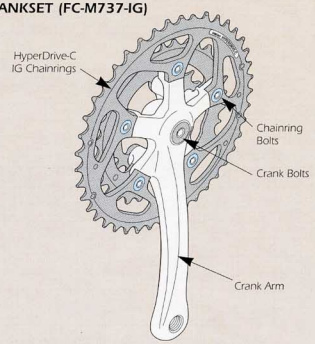
REAR DERAILLEUR (RD-M737)

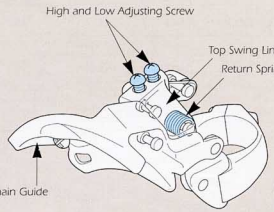


Sealed Bearing Pulley (XTR only)



CRANKSET (FC-M737-IG)





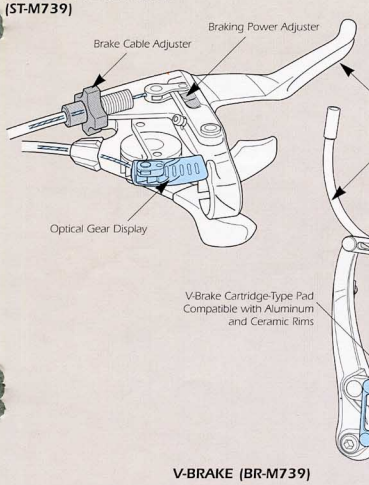
FRONT DERAILLER (FD-M739)

○ = yes ∅ = no

Features	Series	XTR			DEORE XT				DEORE LX			STX-RC	
RAPIDFIRE SL / BRAKE LEVER	Model No.	ST-M950	ST-M910	BL-M950	ST-M739	ST-M738	ST-M008	BL-M739	ST-M567	ST-M566	ST-M565	ST-MC36	ST-MC33
	Advanced Light Action	○	○	–	○	○	○	–	○	○	○	○	○
	Rear Sprockets	8-speed	8-speed	–	8-speed	8-speed	8-speed	–	8-speed	8-speed	8-speed	7-speed	7-speed
	Servo Wave Brake Lever		○	–		○	–	–	○	∅	○	∅	∅
	Optical Gear Display	above bar/ oversize	above bar/ oversize	–	above bar/ oversize	above bar/ oversize	∅	–	above bar	above bar	above bar	○	○
	Removable OGD Module	○	○	–	○	○	∅	–	○	○	∅	○	○
	Lightweight Brake Lever	○	○	○	○	○	–	○	○	○	○	○	○
	Brake Lever Reach Adjust	○	○	○	○	○	–	○	○	○	○	○	○
	Shift Cable Casing	sealed SIS-SP40	sealed SIS-SP40	–	sealed SIS-SP40	sealed SIS-SP40	sealed SIS-SP40	–	sealed SIS-SP40	sealed SIS-SP40	sealed SIS-SP40	sealed SIS-SP40	SIS-SP40
	Inner Shift Cable	stainless steel	stainless steel	–	stainless steel	stainless steel	stainless steel	–	stainless steel			stainless steel (option)	stainless steel (option)
	Brake Cable Casing	M-cable	M-cable	M-cable	M-cable	M-cable	–	M-cable	M-cable			M-cable	M-cable
	Inner Brake Cable	stainless steel (option)	stainless steel (option)	stainless steel (option)	stainless steel (option)	stainless steel (option)	–	stainless steel (option)	stainless steel (option)			stainless steel (option)	stainless steel (option)
	Brake Lever Bushing	low friction	low friction	low friction	low friction	low friction	–	low friction	low friction	low friction	resin	resin	resin
	Dust Cover	∅	○	∅	∅	∅	–	∅	∅	∅	∅	∅	∅
	Stainless Steel Pinch Bolt	○	○	○	○	○	–	○	○	∅	∅	○	○
V-BRAKE / CANTILEVER BRAKE	Model No.	BR-M950	BR-M900-C		BR-M739		BR-M737		BR-M565-E			BR-MC33-E	
	V-brake / Cantilever	V-brake	cantilever		V-brake		cantilever		cantilever			cantilever	
	M-system	∅	M-system		∅		M-system		M-system			Anti-Vibration M-system	
	Cartridge Pads	cartridge V-brake shoe	M-70R (racing)		cartridge V-brake shoe		M-70R (racing)		M-65T (touring)			M-65T (touring)	
	Enclosed Pivot Sleeve	○	○		○		○		○			∅	
	Bushing	bearing, DU type	DU type		hand brass		hard brass		hard brass			steel	
	Spring Tension Adjuster	○	○		○		○		○			○	
	Stainless Fasteners	○	○		○		○		○			○	
	Easy-Access Cable Bolt	○	○		○		○		○			○	
CRANKSET	Model No.	FC-M950			FC-M737-IG				FC-M563-IG			FC-MC36	
	HyperDrive-C	HyperDrive			○				○			○	
	IG-type Chainrings	○			○				○			○	
	Dual SIS	○			○				○			○	
	Crank Material	forged aluminum			semi-forged aluminum				aluminum			forged aluminum	
	Outer Chainring	7075 aluminum*			7075 aluminum*				aluminum			aluminum	
	Middle Chainring	7075 aluminum*			7075 aluminum*				7075 aluminum*			steel	
	Inner Chainring	7075 aluminum*			steel				steel			steel	
	Crank Bolts	M15 (mm) aluminum)			chrome-moly steel				chrome-moly steel			stainless steel	
	Chainring Bolts	7075 aluminum*			stainless steel				stainless steel			stainless steel	
	Chainring Nuts	7075 aluminum*			stainless steel				stainless steel			steel	

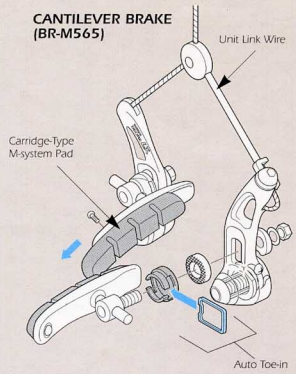
* 7075 aluminum is one of the strongest aluminum alloys.

RAPIDFIRE SL LEVER SET (ST-M739)



V-BRAKE (BR-M739)

CANTILEVER BRAKE (BR-M565)

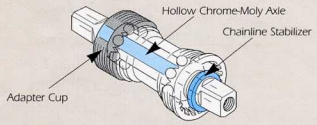


■ Off-Road Component Feature Comparison Chart Ⅱ

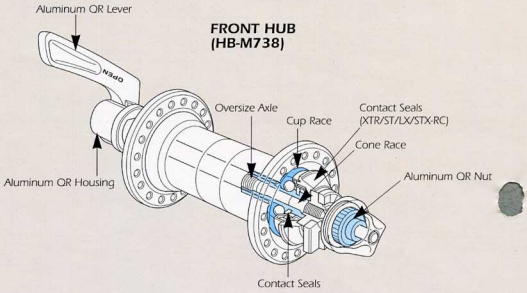
Specification \ Series		XTR	DEORE XT		DEORE LX		STX-RC	
CARTRIDGE BOTTOM BRACKET	Model No.	**BB-M950**	**BB-UN72**		**BB-UN52**		**BB-UN52**	
	Axle	M15mm chrome-moly (hollow)	chrome-moly (hollow)		chrome-moly (solid)		chrome-moly (solid)	
	Adapter	aluminum	aluminum		steel		steel	
REAR FREEHUB	Model No.	**FH-M950**	**FH-M737-A**		**FH-M565**	**FH-M563**	**FH-MC33**	
	Axle (Diameter)	10mm titanium	10mm steel		10mm steel	10mm steel	10mm steel	
	Aluminum QR Lever	○	○		○	∅	○	
	Aluminum QR Housing	○	○		○	∅	○	
	Aluminum QR Nut	○	○		○	∅	∅	
	Stainless Steel Bearings	○	∅		∅	∅	∅	
	Cone Races	Borozon*	Borozon*		Borozon*	Borozon*	Borozon*	
	Cup Races	Borozon*	polished		polished	polished		
	Contact Sealing	double	double		double	double	single	
	Parallax Design	○	○		○	○	○	
	11T Top Gear	○	○		○	○	○	
	Spider Arm Ring	aluminum	aluminum		steel	∅	∅	
FRONT HUB	Model No.	**HB-M950**	**HB-M738-A**	**HB-M737-A**	**HB-M564-A**	**HB-M563-A**	**HB-MC33-S**	**HB-MC33**
	Parallax Design	○	○	○	○	○	○	○
	Stainless Steel Bearings	○	∅	∅	∅	∅	∅	∅
	Aluminum QR Lever	○	○	○	○	○	○	○
	Aluminum QR Housing	○	○	○	○	○	○	○
	Aluminum QR Nut	○	○	○	○	○	∅	∅
	Reinforced Axle	11mm aluminum	11mm aluminum	9mm steel	10mm steel	9mm steel	10mm steel	9mm steel
	Cone Races	Borozon*	Borozon*	Borozon*	Borozon*	Borozon*	Borozon*	Borozon*
	Cup Races	Borozon*	polished	polished	polished	polished	∅	∅
	Contact Sealing	double	double	double	double	double	single	single

* The Borozon polishing process provides an ultra-smooth and precise bearing race surface.

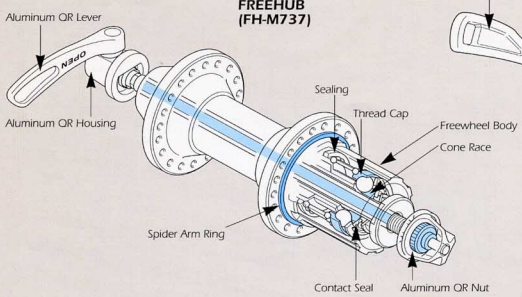
CARTRIDGE BOTTOM BRACKET (BB-UN72)



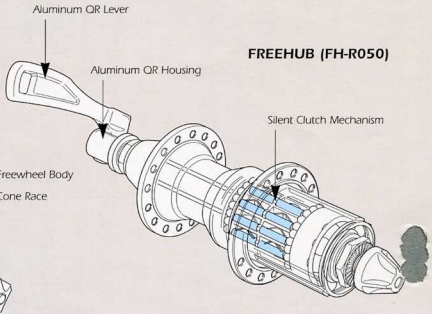
FRONT HUB (HB-M738)



FREEHUB (FH-M737)



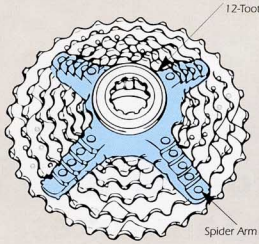
FREEHUB (FH-R050)



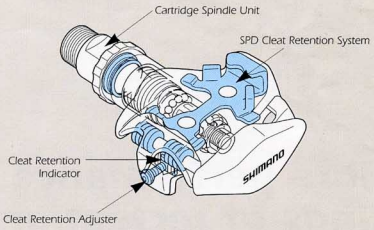
○ = yes ∅ = no

Spacification \ Series		XTR		DEORE XT	DEORE LX	STX-RC
CASSETTE SPROCKETS	Model No.	**CS-M950**	**CS-M900-I**	**CS-M737-I**	**CS-HG70-I**	**CS-IG60**
	Sprocket Type / Speed	HG / 8 speed		HG / 8 speed	HG / 8 speed	IG / 7 speed
	Sprocket	titanium and steel	steel	steel	steel	steel
	Spider Arm	forged aluminum	semi forged aluminum	aluminum	∅	∅
	11T Top Gear	∅ (P) ○ (ak)	∅	○	○	○
	Chain Compatibility	IG chain		IG chain	IG chain	IG chain
HEADSET	Model No.	**HP-M900 / HP-M901 / HP-M902**		**HP-M740 / HP-M741 / HP-M742**	**HP-M563 / HP-M564**	**HP-MC30 / HP-MC31**
	Cartridge Type	∅		○	○	○
	Locknut	aluminum w/O-ring seal		aluminum w/rubber seals	aluminum w/rubber seals	steel w/resin seals
	Lock Washer	stainless steel		stainless steel	stainless steel	stainless steel
	Upper Stem Cone	aluminum		aluminum	aluminum	steel
	Upper Head Tube Cup	aluminum		aluminum	steel	steel
	Lower Stem Cone	aluminum		aluminum	steel	steel
	Cartridge Bearing			rubber seals	resin seals	resin seals
SPD PEDAL	Model No.	**PD-M747**		**PD-M747**	**PD-M535**	**PD-M323**
	SPD Cleat Surfaces	both pedal surfaces		both pedal surfaces	both pedal surfaces	one surface
	Pedal Spindle	chrome-moly		chrome-moly	chrome-moly	chrome-moly
	Cartridge Bearing Axle	○		○	∅	∅
	Cleat Retention Indicator	○		○	○	○
	Cleat Retention Adjuster	○		○	○	○
	Easy Step-In Feature	○		○	○	∅
SEAT POST	Model No.	**SP-M910**	**SP-M950**	**SP-M730**	**SP-M650**	
	Post Material	aluminum	chrome-moly	chrome-moly	chrome-moly	
	One-bolt clamp	○	○	○	○	
	Easy Adjust Feature	○	○	○	○	
	Special Easton® Tubing	○	○	∅	∅	
SEAT QR	Model No.	**SQ-M900**		**SQ-M730**		
	Position Hold Spring	∅		○		

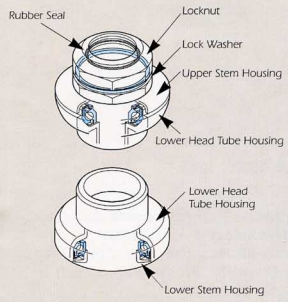
CASSETTE SPROCKETS



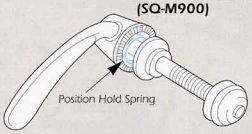
SPD PEDAL (PD-M747)



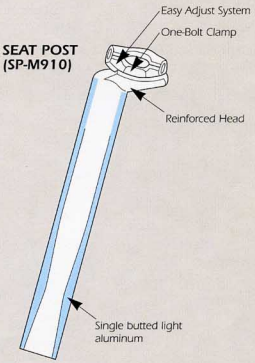
CARTRIDGE HEADSET (HP-M740)



SEAT QUICK-RELEASE (SQ-M900)



SEAT POST (SP-M910)





SHIMANO STX

ALIVIO SHIMANO

SHIMANO ACERA X

SHIMANO ALTUS

More performance and value for all kinds of recreational mountain bikes.

Many mountain bike riders don't go off-road, but they still want a rugged and dependable bicycle that's easy and fun to ride for commuting, fitness, or recreational. The STX, Alivio, Acera-X, Altus, and youth-oriented MJ-II groups were developed with these cyclists in mind. These groups deliver much the same feeling of quality, responsiveness, and precise control found in the higher-priced groups, but in a bike that's affordable to more people.

NEXUS

Nexus is a component system aimed at higher quality recreational and utility bicycles. Nexus eliminates the rear derailleur by utilizing an internally shifting rear hub in 4- and 7-speed versions.

STX features high-end style in a moderately priced MTB group that puts the accent on performance. New features for 1996 include the Rapidfire SL shift lever, Top-Swing front derailleur, and Easy-Set cantilever brake.

page 30

The Alivio-equipped bicycle offers a light and responsive control feeling along with a full complement of advanced Shimano functions. New silent clutch freehub engages instantly and freewheels silently.

page 31

Acera-X delivers great performance and advanced functions with an accent on value. EZ-Fire shift levers use a new balance spring for reduced shifting effort. 7-speed freehub provides a wide gear selection.

page 32

Altus has established the highest level of quality and performance for the entry-level mountain bike. Improvements for 1996 include the new EZ-Fire shift lever and Easy-Set cantilever brake.

page 33

SHIMANO MJII

MJ-II is Shimano's MTB-style component group for children's MTB-style bicycles. Designed with shorter cranks and smaller levers for the specific needs of smaller riders, these groups make youth bicycles safer, easier to control, and more fun to ride.

page 34

SHIMANO TOURNEY

15 22 30 SERIES

Tourney offers the 15, 22, and 30 series of components that bring precision Shimano shifting and braking functions to a wide range of city, recreation, and youth bicycles.

page 35

Specifications for STX, Alivio, Acera-X, Altus, MJ-II, and Tourney components are listed from pages 36 to 39.



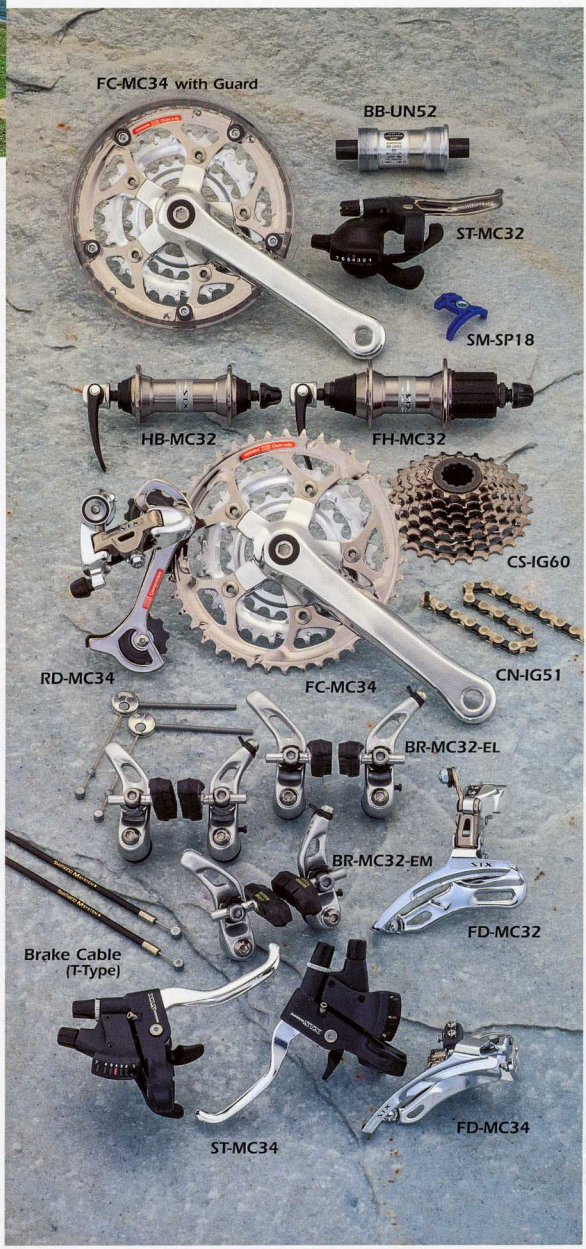
- Choice of 4- or 7-speed internally geared rear hubs
- Front and rear hub-mounted roller brakes
- Choice of Revo-Shifters or Rapidfire-type levers
- Rear coaster brake available
- Shock-absorbing elastomer insert crankset

page 40



SHIMANO STX

An all-purpose MTB group offering the optimum balance of quality, performance, and value.



- **Rapidfire SL** low-effort short-stroke action
- **Easy-Set** fast and easy brake setup.
- **Silent Clutch Freehub** engages quicker, eliminates freewheel noise.
- **Top-Swing** reduced effort chainwheel shifting.
- **IG Drivetrain** provides the best SIS shifting ever.
- **Dual SIS** precise indexed shifting front and rear.
- **Advanced Light Action** low-friction derailleurs.
- **Optical Gear Display** gear position verification.
- **HyperDrive-C** smaller and lighter sprockets and chainwheels.
- **Anti-Vibration M-System** dependable stops without brake squeal.
- **Aluminum QR** reduces weight. eliminates corrosion.
- **Stainless Steel hardware** keeps components looking new.

STX specifications are listed on page 36.





ALIVIO
SHIMANO

A sporty, high-performance feeling of quality and control for the mid-range mountain bike.

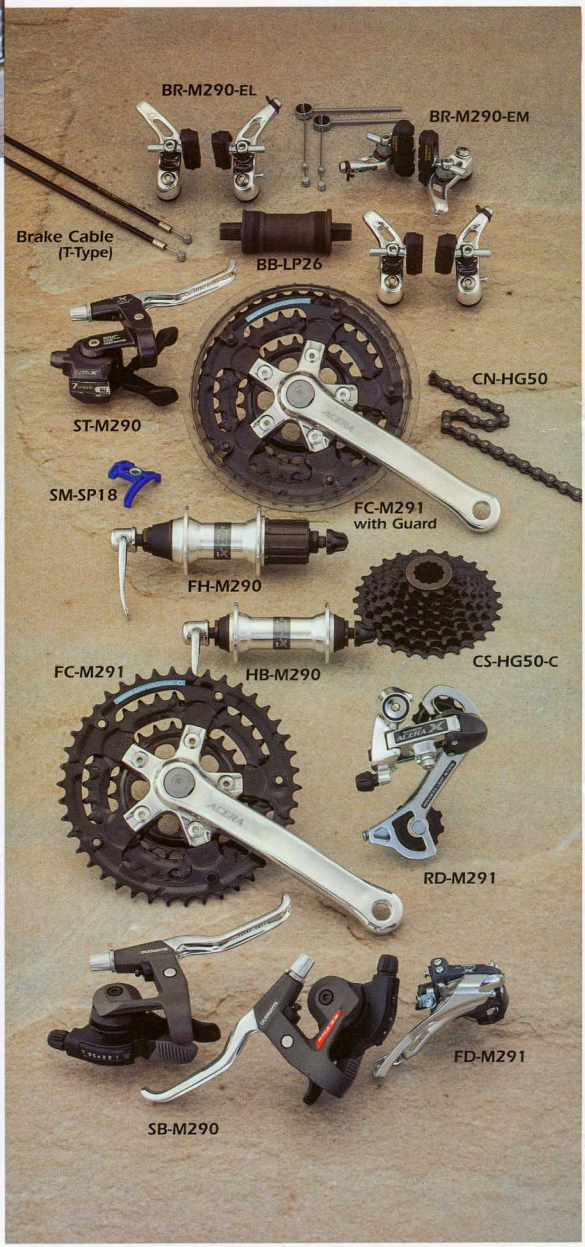
- **Silent Clutch Freehub** engages quicker, eliminates freewheel noise.
- **Easy-Set** fast and simple brake setup.
- **Dual SIS** precise indexed shifting front and rear.
- **Rapidfire PLUS** low-effort short-stroke Rapidfire shifting.
- **IG Drivetrain** better chain control.
- **Advanced Light Action** less friction in front and rear derailleurs.
- **Top-swing Front Derailleur** reduced front derailleur shifting.
- **Optical Gear Display** instant gear position verification.
- **HyperDrive-C** smaller, lighter sprockets and chainwheels.
- **Anti-Vibration M-System** strong stopping power without squealing.
- **Aluminum QR** lighter weight, no corrosion.

ALIVIO specifications are listed on page 36.



SHIMANO
ACERA X

A performance-packed group at an amazingly low cost.



- **EZ-Fire** balance spring reduces shifting effort.
- **Easy-Set** fast and easy brake setup.
- **Dual SIS** precise indexed shifting front and rear.
- **Advanced Light Action** reduced derailleur friction.
- **Optical Gear Display** instant gear position verification.
- **HG Sprockets** smoother and faster shifting.
- **Top-Swing Front Derailleur** reduced front derailleur shifting effort.
- **M-System** all-weather stopping power.
- **HyperDrive-C** reduced weight from smaller sprockets and chainwheels.

ACERA-X specifications are listed on page 37.



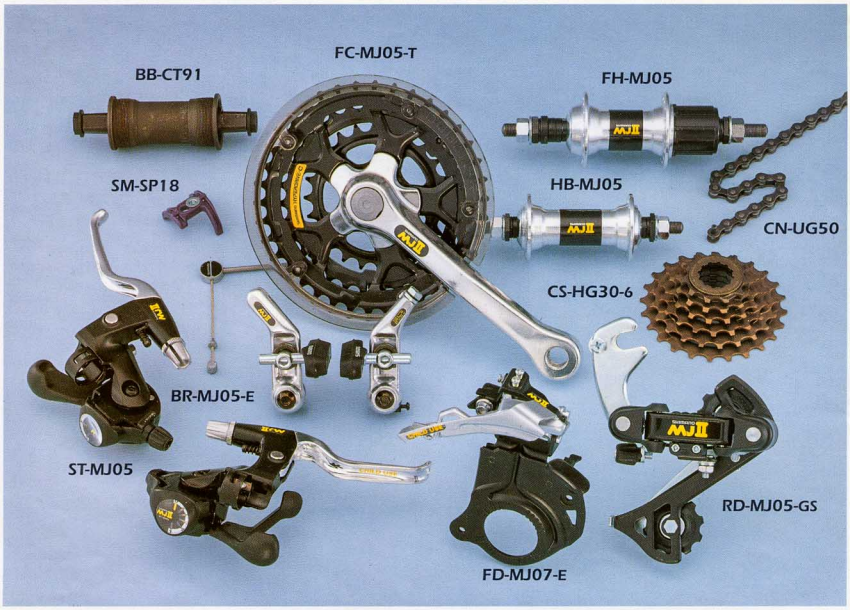


SHIMANO ALTUS

Real mountain bike performance for the entry-level MTB-style bicycle.

- **EZ-Fire** balance spring reduces shifting effort.
- **Easy-Set** fast and easy brake setup.
- **Dual SIS** precise indexed shifting front and rear.
- **Advanced Light Action** reduced derailleur friction.
- **Optical Gear Display** instant gear position verification.
- **HG Sprockets** faster, smoother SIS shifting.
- **Top-Swing Front Derailleur** reduced front derailleur shifting effort.
- **HyperDrive-C** smaller and lighter sprockets and chainrings.

ALTUS specifications are listed on page 37.



SHIMANO MJII

Designed for the special needs of younger cyclists.



SB-MJ05 / SB-MJ06



- **Rapidfire TX Lever** easy operation for smaller hands.
- **Advanced Light Action** easier derailleur shifting.
- **Optical Gear Display** instant gear position verification.
- **Top-Swing Front Derailleur** reduced front derailleur shifting effort.
- **HG Sprockets** faster and smoother SIS shifting.
- **M-System Brakes** all-weather stopping performance.
- **Parallax Hubs** stronger, more rigid wheels.

MJ-II specifications are listed on page 38.







SHIMANO TOURNEY

Upgraded quality and performance for recreational bicycle

- **Optical Gear Display** Convenient visual gear position indicators.*
- **Dual SIS** Indexed shifting for both front and rear derailleurs.*
- **Advanced Light Action** Easy, low-effort shifting action.**
- **M-system Brakes** Dependable stopping in all weather conditions.*
- **HG Sprockets** Fast and precise rear derailleur shifting.**
- **Parallax Hubs** Heavy-duty hub design for dependability.*

*TY-30 series only
**TY-22/30 series only

TOURNEY Series specifications are listed on pages 38–39.

Specifications \ Series			SHIMANO STX			SHIMANO ALIVIO	
REAR DERAILLEUR	Model No.		**RD-MC34**			**RD-MC12**	
	Speed		7-speed			7-speed	
	Max. Sprocket		28T			28T	
	Min. Sprocket		11T			11T	
	F/Difference		20T or less			18T or less	
	Total Capacity		37T			35T	
	Advanced Light Action		○			○	
	IG/HG/UG Chain Compatibility		IG compatible			IG compatible	
	Note		stainless steel fasteners				
FRONT DERAILLEUR	Model No.		**FD-MC34**	**FD-MC32**		**FD-MC14**	
	Top-Low Max. Capacity		20T	22T		18T	
	Top-Middle Min. Capacity		10T	10T		8T	
	Top Gear Teeth		42T	42T		42T	
	Clamp Diameter		28.0–28.6mm/31.8mm/34.9mm	28.0–28.6mm/31.8mm/34.9mm		28.0–28.6mm/31.8mm/34.9mm	
	Chain Stay Angle		63–66°, 66–69°	63–66°, 66–69°		63–66°, 66–69°	
	Advanced Light Action		○	○		○	
	Top-Swing action		○	∅		○	
	Note		stainless steel fasteners	stainless steel fasteners		stainless steel fasteners	
RAPIDFIRE / EZ FIRE	Model No.		**ST-MC34**	**ST-MC32**	**ST-MC35**	**ST-MC12-C**	**ST-MC15-C**
	Dual SIS	Rear	7-speed	7-speed	7-speed	7-speed	7-speed
		Front	triple	triple	triple	triple	triple
	Lever Length		2-finger	2-finger	3-finger	2.5-finger	3-finger
	Advanced Light Action		○	○	○	○	○
	Optical Gear Display		sliding type (above bar)	sliding type (below bar)	sliding type (below bar)	sliding type (below bar)	sliding type (below bar)
	Note		Rapidfire SL type	Rapidfire Plus type	Rapidfire Plus type/ bent handlebar available	Rapidfire Plus type	Rapidfire Plus type/ bent handlebar available
SHIFT/ BRAKE LEVER	Model No.		**not available**			**not available**	
	Speed						
	Lever Length						
	Advanced Light Action						
	Dual SIS						
	Optical Gear Display						
	Note						
CANTILEVER BRAKE	Model No.		**BR-MC32-E**			**BR-MC12-E**	
	Arm Size		M, L			M, L	
	Shoe Type		M65T			M65T	
	M-System/Anti-Vibration M-system		Anti-Vibration M-system			Anti-Vibration M-system	
FRONT CHAINWHEEL	Model No.		**FC-MC34**			**FC-MC14**	
	Gearing		42T–32T–22T			42T–34T–24T	
	Pitch Circle Diameter		94/58mm			67mm	
	Crank Length		170/175mm			170/175mm	
	IG Compatible		○			○	
	HyperDrive-C		w/SGX-II			w/SGX-II	
SEALED CARTRIDGE BOTTOM BRACKET	Model No.		**BB-UN52**			**BB-LP26**	
	Marking/Axle Length		MM110/110.5mm	LL113/113mm		MM110/110.5mm	LL113/113mm
	Chain Line		47.5mm	50.0mm		47.5mm	50.0mm
	Shell Width		68/70mm	68/70/73mm		68/70mm	68/70/73mm
FREEHUB	Model No.		**FH-MC32**	**FH-R050/Silent clutch Freehub**		**FH-MC12**	
	Speed		7-speed	7-speed		7-speed	
	Over Lock Nut Dimension		130/135mm	130/135mm		130/135mm	
	Spoke Holes		36/32H	36/32H		36/32H	
	Aluminum QR Lever		○	○		○	
FRONT HUB	Model No.		**HB-MC32**			**HB-MC12**	
	Over Lock Nut Dimension		100mm			100mm	
	Spoke Holes		36/32H			36/32H	
	Aluminum QR Lever		○			○	
CASSETTE SPROCKETS/ FREEWHEEL	Model No.		**CS-IG60**			**CS-IG50**	
	Speed		7-speed			7-speed	
	IG/HG/UG		IG			IG	
	Group Name		ag (11–28T)			ag (11–28T)	
	Color		chromica/silver luster			silver	
CHAIN	Model No.		**CN-IG51**				**CN-IG31**
	Type		IG narrow				IG narrow
	Inner Link		barrel polished				dark brown
	Outer Link		nickel plating				barrel polished
	Link Pin		chromizing treatment				standard
HEAD SET	Model No.		**HP-MC30**	**HP-MC31**			
	Thread		BC1" x 24T.P.I.	BC1–1/8" x 26T.P.I.			
	Stack Height		37.6mm	37.6mm			

○ = yes ∅ = no

SHIMANO ACERA-X				SHIMANO ALTUS					Series / Specifications		
RD-M291				**RD-CT91**					Model No.		**REAR DERAILLEUR**
7-speed				7 or 6-speed					Speed		
28T				28T					Max. Sprocket		
11T				11T					Min. Sprocket		
14T or less				14T or less					F/Difference		
31T				31T					Total Capacity		
○				○					Advanced Light Action		
HG compatible				HG compatible					IG/HG/UG Chain Compatibility		
									Note		
FD-M291				**FD-CT91-E**					Model No.		**FRONT DERAILLEUR**
18T				14T					Top-Low Max. Capacity		
8T				6T					Top-Middle Min. Capacity		
42T				38T					Top Gear Teeth		
28.0–28.6mm/31.8mm				28.0–28.6mm/31.8mm/34.9mm					Clamp Diameter		
63–66°, 66–69°				63–66°, 66–69°					Chain Stay Angle		
○				○					Advanced Light Action		
○				○					Top-Swing Action		
				bracket type front derailleur					Note		
SB-M290	**SB-M295**	**ST-M290**	**ST-M295**	**SB-CT91**	**SB-CT95**	**ST-CT90-7**	**ST-CT95-7**	**ST-CT90-6**	Model No.		**RAPIDFIRE / EZ FIRE**
7-speed	7-speed	7-speed	7-speed	7-speed	7-speed	7-speed	7-speed	6-speed	Rear	Dual SIS	
triple	triple	triple	triple	triple	triple	triple	triple	triple	Front		
2.5-finger	3-finger	2.5-finger	3-finger	2.5-finger	3-finger	2.5-finger	3-finger	2.5-finger	Lever Length		
○	○	○	○	○	○	○	○	○	Advanced Light Action		
sliding type (below bar)	sliding type (below bar)	digital type	digital type	sliding type (below bar)	sliding type (below bar)	dial type	dial type	dial type	Optical Gear Display		
EZ Fire	EZ Fire, bent handlebar available			EZ Fire	EZ Fire, bent handlebar available		bent handlebar available		Note		
not available				**SB-CT90-7**			**SB-CT90-6**		Model No.		**SHIFT/ BRAKE LEVER**
				rear 7-speed, front triple			rear 6-speed, front triple		Speed		
				2.5 finger			2.5 finger		Lever Length		
				○			○		Advanced Light Action		
				○			○		Dual SIS		
				dial type			dial type		Optical Gear Display		
									Note		
BR-M290-E				**BR-CT90-E**					Model No.		**CANTILEVER BRAKE**
M, L				M, L					Arm Size		
M55T				standard					Shoe Type		
M-system				M-system (option)					M-System/Anti-Vibration M-System		
FC-M291				**FC-CT91**					Model No.		**FRONT CHAINWHEEL**
42T–34T–24T				42T–34T–24T					Gearing		
riveted				riveted					Pitch Circle Diameter		
170/175mm				160/170mm					Crank Length		
∅				∅					IG Compatible		
w/SGX-II				w/SGX-II					HyperDrive-C		
BB-LP26				**BB-CT91**					Model No.		**SEALED CARTRIDGE BOTTOM BRACKET**
MM110/110.5mm		LL113/113mm		YL116/116mm			ZL121/121mm		Marking/Axle Length		
47.5mm		50.0mm		47.5mm			50.0mm		Chain Line		
68/70mm		68/70/73mm		68/70mm			73mm		Shell Width		
FH-M290				**FH-CT90-7**			**FH-CT90-6**		Model No.		**FREEHUB**
7-speed				7-speed			6-speed		Speed		
130/135mm				130/135mm			130/126mm		Over Lock Nut Dimension		
36H				36H			36H		Spoke Holes		
∅				∅			∅		Aluminum QR Lever		
HB-M290				**HB-CT90**					Model No.		**FRONT HUB**
100mm				100mm					Over Lock Nut Dimension		
36H				36H					Spoke Holes		
∅				∅					Aluminum QR Lever		
CS-HG50-C				**CS-HG30-7**			**CS-HG30-6**		Model No.		**CASSETTE SPROCKETS/ FREEWHEEL**
7-speed				7-speed			6-speed		Speed		
HG				HG			HG		IG/HG/UG		
ac (11–28T)				ac (11–28T)			af (11–24T)		Group Name		
black				brown			brown		Color		
CN-HG50				**CN-UG50**					Model No.		**CHAIN**
HG narrow				UG					Type		
black				black					Inner Link		
black				black					Outer Link		
chromizing treatment				chromizing treatment					Link Pin		
not available				**not available**					Model No.		**HEAD SET**
									Thread		
									Stack Height		

Specifications \ Series			SHIMANO MJ-II						SHIMANO TOURNEY 30series	
REAR DERAILLEUR	Model No.		**RD-MJ05-GS**			**RD-MJ05-SS**			**RD-TY30-GS**	
	Speed		6-speed			6-speed			6-speed	
	Max. Sprocket		24T			28T			28T	
	Min. Sprocket		11T			11T			14T	
	F/Difference		20T or less			13T or less				
	Total Capacity		34T			28T			34T	
	Advanced Light Action		○			○			○	
	IG/HG/UG Chain Compatibility		HG			HG			HG	
	Note								dropout hanger type	
FRONT DERAILLEUR	Model No.		**FD-MJ07-E**			**FD-MJ06**			**FD-TY30**	
	Top-Low Max. Capacity		14T			10T			22T	
	Top-Middle Min. Capacity		6T			N/A			8T	
	Top Gear Teeth		38T			38T			48T	
	Clamp Diameter		28.0–28.6mm			28.0–28.6mm			28.0–28.6mm	
	Chain Stay Angle		63–69°			68–73°			66–69°	
	Advanced Light Action		○			○			○	
	Top-Swing action		○							
	Note		easy set adaptor available							
RAPIDFIRE	Model No.		**ST-MJ05-T**			**ST-MJ05-D**			**ST-MJ05**	**not available**
	Dual SIS	Rear	N/A			N/A			6-speed	
		Front	triple			double			N/A	
	Lever Length		child use			child use			child use	
	Advanced Light Action		○			○			○	
	Optical Gear Display		dial type			dial type			dial type	
	Note		clamp diameter=19.1mm							
SHIFT/ BRAKE LEVER	Model No.		**SB-MJ05-T**	**SB-MJ06-T**	**SB-MJ05-D**	**SB-MJ05**	**SB-MJ06**	**BL-MJ05**	**SL-TY30**	**BL-TY21**
	speed		triple	triple	double	6-speed	6-speed		rear 6-speed, front triple	
	Lever Length							child use		3-finger
	Advanced Light Action		○	○	○	○	○		○	
	Dual SIS		○	○	○	○	○		○	
	Optical Gear Display		dial type	dial type	dial type	dial type	dial type		dial type	
	Note		clamp diameter =19.1mm	clamp diameter =22.2mm	clamp diameter =19.1mm	clamp diameter =19.1mm	clamp diameter =22.2mm	M-system compatible brake lever		M-system compatible brake lever
CANTILEVER BRAKE	Model No.		**BR-MJ05**						**BR-TY22**	**BR-TY23**
	Arm Size		M						M	L
	Shoe Type		standard						standard	standard
	M-System/Anti-Vibration M-System		M-system (option)						M-system	M-system
FRONT CHAINWHEEL	Model No.		**FC-MJ05-T**			**FC-MJ06-D**			**FC-TY21**	**FC-TS21**
	Gearing		38T–32T–24T			38T–28T			48T–38T–28T	48T–38T–28T
	Pitch Circle Diameter		riveted			riveted			riveted	riveted
	Crank Length		130/145/160mm			130/145/160mm			170mm	170mm
	IG Compatible		∅			∅			∅	∅
	HyperDrive-C		○			○			∅	∅
SEALED CARTRIDGE BOTTOM BRACKET	Model No.		**BB-CT91**			**BB-CT91**			**BB-CS11**	
	Marking/Axle Length		YL116/116mm	ZL121/121mm		YL116/116mm			D-NL/122.5mm	
	Chain Line		47.5mm	50.0mm		43.5mm			47.5mm	
	Shell Width		68/70mm	73mm		68/70mm			68 / 70mm	
FREEHUB	Model No.		**FH-MJ05**						**not available**	
	Speed		6-speed							
	Over Lock Nut Dimension		130mm			126mm				
	Spoke Holes		36/32H							
	Aluminum QR Lever		∅							
FRONT HUB	Model No.		**HB-MJ05**						**not available**	
	Over Lock Nut Dimension		100mm							
	Spoke Holes		36/32H							
	Aluminum QR Lever		—							
CASSETTE SPROCKETS/ FREEWHEEL	Model No.		**CS-HG30-6**						**MF-HG22 (boss-type freewheel)**	
	Speed		6-speed						6-speed	
	IG/HG/UG		HG						HG	
	Group Name		af (11–24T)						X (14–24T), Y (14–28T), Z (14–32T)	
	Color		brown						black	
CHAIN	Model No.		**CN-UG50**							
	Type		UG narrow							
	Inner Link		black							
	Outer Link		black							
	Link Pin		chromizing treatment							
HEAD SET	Model No.		**not available**						**not available**	
	Thread									
	Stack Height									

SHIMANO TOURNEY 22 series		SHIMANO TOURNEY 15 series		Series / Specifications	
RD-TY22-GS	**RD-TY22-SS**	**RD-TY15-GS**	**RD-TY15-SS**	Model No.	**REAR DERAILLEUR**
6-speed	6-speed	5-speed	5-speed	Speed	
28T	28T	28T	24T–28T	Max. Sprocket	
14T	14T	14T	14T	Min. Sprocket	
20T or less	13T or less	20T or less	13T or less	F/Difference	
34T	28T	34T	28T	Total Capacity	
○	○	Ø	Ø	Advanced Light Action	
HG	HG	UG	UG	IG/HG/UG Chain Compatibility	
				Note	
FD-TY22-GS	**FD-TY22-SS**	**FD-TY15-GS**	**FD-TY15-SS**	Model No.	**FRONT DERAILLEUR**
22T	14T	22T	14T	Top-Low Max. Capacity	
8T	—	8T	—	Top-Middle Min. Capacity	
48T	48T	48T	48T	Top Gear Teeth	
28.0–28.6mm/31.8mm	28.0–28.6mm	28.0–28.6mm	28.0–28.6mm	Clamp Diameter	
66–69°	66–69°	66–69°		Chain Stay Angle	
○	○	Ø	Ø	Advanced Light Action	
○	○	Ø	Ø	Top-Swing Action	
				Note	
not available		**not available**		Model No.	**RAPIDFIRE/ EZ FIRE**
				Rear / Front: Dual SIS	
				Lever Length	
				Advanced Light Action	
				Optical Gear Display	
				Note	
SL-TY22		**SL-MY15**		Model No.	**SHIFT/ BRAKE LEVER**
rear 6-speed, front triple or double		rear 5-speed, front tripleor double		Speed	
—		—		Lever Length	
○		Ø		Advanced Light Action	
○		Ø		Dual SIS	
		Ø		Optical Gear Display	
				Note	
not available		**not available**		Model No.	**CANTILEVER BRAKE**
				Arm Size	
				Shoe Type	
				M-System/Anti-Vibration M-system	
FC-TY21	**FC-TS21**	**FC-TY21**	**FC-TS21**	Model No.	**FRONT CHAINWHEEL**
48T–38T–28T	48T–38T–28T	48T–38T–28T	48T–38T–28T	Gearing	
riveted	riveted	riveted	riveted	Pitch Circle Diameter	
170mm	170mm	170mm	170mm	Crank Length	
Ø	Ø	Ø	Ø	IG Compatible	
Ø	Ø	Ø	Ø	HyperDrive-C	
BB-CS11				Model No.	**SEALED CARTRIDGE BOTTOM BRACKET**
D-NL/122.5mm				Marking	
47.5mm				Chain Line	
68,70,73				Shell Width	
not available		**not available**		Model No.	**FREEHUB**
				Speed	
				Over Lock Nut Dimension	
				Spoke Holes	
				Aluminum QR Lever	
not available		**not available**		Model No.	**FRONT HUB**
				Over Lock Nut Dimension	
				Spoke Holes	
				Aluminum QR Lever	
MF-HG22 (boss-type freewheel)		**MF-Z015 (boss-type freewheel)**		Model No.	**CASSETTE SPROCKETS/ FREEWHEEL**
6-speed		5-speed		Speed	
HG		UG		IG/HG/UG	
X (14–24T), Y (14–28T), Z (14–32T)		14–24T,14–28T		Group Name	
black		brown		Color	
CN-UG50				Model No.	**CHAIN**
UG narrow				Type	
black				Inner Link	
black				Outer Link	
chromizing treatment				Link Pin	
not available		**not available**		Model No.	**HEAD SET**
				Thread	
				Stack Height	

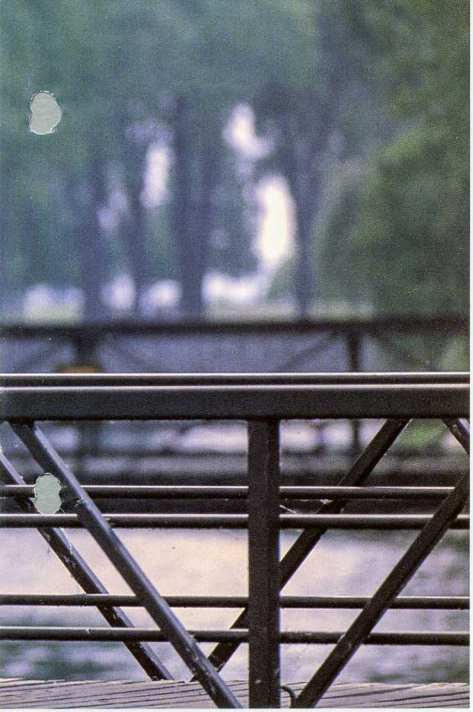


Nexus ushers in a new generation of city and recreational bicycles.

Nexus puts "everything inside" for care-free multiple gear cycling.

Nexus is Shimano's new-concept component group that ushers in the age of the high-performance recreational and utility bicycle. The design concept can be summed up in the phrase, "Nexus puts everything inside." This is because various advantages result if the bicycle's operating mechanisms are inside of the components themselves. For example, Nexus completely eliminates the derailleur by putting the gear shifting mechanism inside of the rear hub itself. Nexus also offers powerful hub-mounted roller brakes that eliminate the need for externally mounted brake calipers. Nexus components make the bicycle look cleaner and more modern. There are fewer exposed mechanical parts. And it's all realized without any sacrifice in multi-speed performance or braking power.

Another advantage of Nexus is that it reduces maintenance and adjustment needs because the



gear changing and braking mechanisms work in sealed environments. The overall result is that people who shy away from the seeming complexity of a derailleur-equipped bicycle find more appeal in the cleaner look and maintenance-free operation of Nexus. The Nexus bicycle makes possible a new generation of sporty, dependable, multi-speed cycling for bicycle commuters, fitness cyclists, and people who just want to ride for fun.

Nexus featured in European Bicycle Design Contest.

For the last three years, Shimano has sponsored the European Bicycle Design Contest, an event which encourages European bicycle companies to dream up new bicycle designs for the future. In the 1995 event, the contestants were asked to design a bicycle around the Nexus component group. The theme stressed the creation of an adult bicycle offering modern design, practicality, ease of maintenance, and a light and responsive ride feeling. Fifty bicycle companies from Belgium, Denmark, Finland, France, Germany, Italy, Norway, Spain, Sweden, Switzerland, Holland, and Turkey took part in the competition. Koninklijke Gazelle B.V. of the Netherlands won the contest with their "Expresso" entry, a bicycle designed expressly for city riders, commuters, and students. Besides being equipped with the full Nexus component group, the Expresso featured curved oversize tubes, chain protector with integral guard, and a pannier bag which can be removed from the bike and used as a ruck sack.





KONINKLIJKE GAZELLE B.V. won the 1995 European Bicycle Design contest with their Expresso city/commuter bike.



BATAVUS captured second place with their Madison model.



J.RECKER+CO.GMBH of Germany took third with their Recker Una light Luxus.



Fourth place went to NÜRNBERGER HERCULES WERKE GMBH of Germany for their Victoria-Kangaroo.

Nexus for the new age of urban cycling.

In the crowded cities and narrow roads of Europe, the bicycle provides a means of clean and efficient transportation for young and old alike. More and more European bicycle makers are turning to Nexus to help them produce reliable, low-maintenance bicycles that offer more performance and appeal to a highly discriminating cycling public. With its dependable multi-speed hubs, elastomer-cushioned crank, and powerful roller brakes, the Nexus bicycle delivers the maintenance-free performance that adults are looking for in their commuting, recreation, and utility bicycles. In addition to advancing the state of cycling technology, Nexus is making a contribution to a healthier public and a cleaner environment.

The Nexus System...
Efficient multiple gear cycling without a derailleur.

The Nexus system delivers a new level of quality and function for utility and recreational bicycles that actually puts them in the sport bicycle category in terms of performance. At the heart of Nexus are the 4-speed Inter-4 and the 7-speed Inter-7 internally geared hubsets. These hubs completely eliminate the need for a derailleur to realize a dependable multi-speed bicycle that is just about maintenance free. Also, there's no need to worry about complicated mechanisms because the hubs feature modular construction in which only 10 mechanical assemblies make up the entire hub. This design makes the hubs easy to disassemble and maintain. There's no bell crank hanging from the axle, wheels can be easily removed from the frame, and there's no need to re-adjust the shifting mechanism when the wheel is re-mounted.

The front and rear Inter-M roller brakes are cable activated and can be mounted to the hubs to provide strong braking performance without the need for externally mounted calipers or cantilever arms. The roller-action provides strong and controllable stopping power. Brakes are completely sealed so operation is unaffected by weather.

Nexus offers two types of shift levers. A twist-type Revo-shift and Rapidfire shifter are both available in 4- and 7-speed versions. Both lever sets feature dial-type Optical Gear Displays.

Nexus also features the Inter-C crankset which uses an elastomer chainring mount that helps absorb pedaling shocks. The Nexus front hub allows installation of the high-performance Inter-M roller brake.



- **Inter-S Shifters**
  SB-7S40
  (7-speed Revo-shift with ODG)
  SB-4S30
  (4-speed Revo-shift with ODG)
  ST-7S20
  (7-speed Rapidfire-type shifter with OGD)
  ST-4S20
  (4-speed Rapidfire-type shifter with OGD)
- **Inter-M Front Hub**
  HB-IM40 + BR-IM41
- **Inter-M Roller Brake**
  BR-IM41 / BR-IM31
- **Inter-C Crankset**
  FC-NX70 / FC-NX40
- **Inter-4 Rear Hub**
  SG-4R31
  (4-speed w/Inter-M brake)
  SG-4C30
  (4-speed w/coaster brake)
- **Inter-7 Rear Hub**
  SG-7R40
  (7-speed w/Inter-M brake)
  SG-7C21
  (7-speed w/coaster brake)

SHIMANO
INTER·S

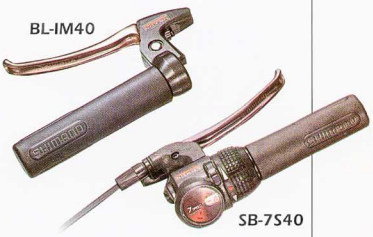
Inter-S Shifters

The Inter-S Revo-Shifts are available in 4-speed (SB-4S30) and 7-speed (SB-7S40) versions. The Revo-Shift is particularly easy-to-use because it operates through a rotating shift ring at the inside of the grip. It lets you change gears with a simple twist of the wrist. Large dial-type Optical Gear Display provides an easy-to-read indication of the currently selected gear. Rapidfire-type lever shifters are also available in 4-speed (ST-4S20) and 7-speed (ST-7S20) versions.



ST-7S20 ST-4S20

BL-IM40



SB-7S40

BL-IM30



SB-4S30

NEXUS

SHIMANO
INTER·7

SHIMANO
INTER·4

Inter-7/Inter-4 Internally Geared Hubs

The Inter-7 internally geared read hub provides seven gears through two heavy-duty planetary gear sets and step-up gearing. Gears are evenly spaced to provide just the right ratio for hill climbing, cruising, or just riding around town. Gear ratios correspond to a 13-15-17-20-24-27-32 sprocket cluster. The Inter-7 hub allows shifting while pedaling too. Inter-4 hub is of similar construction but provides 4 evenly spaced gears along with a silent clutch freewheel. Both hubs are available with coaster brake or high-performance Inter-M roller brake.

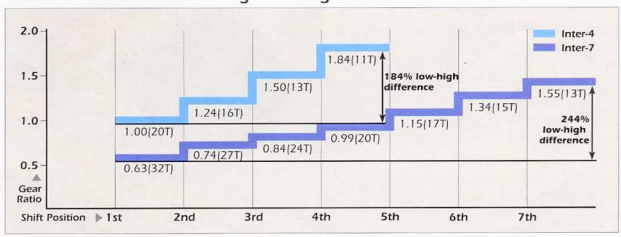


SG-7R40



SG-4R31

Inter-7 and Inter-4 Wide-Range Gearing



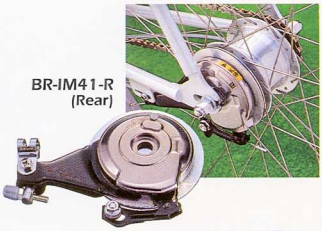
The table above shows the gear ratios for the Inter-7 and Inter-4 hubs when used with a 20T sprocket. The numbers in parenthesis show the sprocket size each gear ratio corresponds to in a derailleur system.

NEXUS

SHIMANO
INTER·M

Inter-M Brake & Coaster Brake

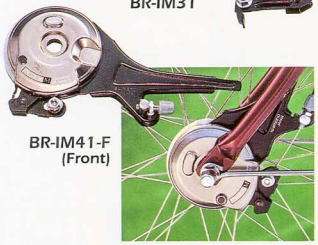
The cable-activated Inter-M hub brake uses a precision cam-and-roller action that delivers strong, controllable braking. Large cooling fins keep temperatures down and reduce fade. Labyrinth channels and O-ring sealing keep dirt and water out to assure top performance and a long service life. BR-IM41-R model is for rear hubs. BR-IM41-F model is for front hubs and features a modulated action that prevents lockup when used with the HB-IM40 hub. BR-IM31 brake is for rear hubs only. A pedal-activated coaster brake (SG-7C21) is also available for the rear hubs.



BR-IM41-R
(Rear)



BR-IM31



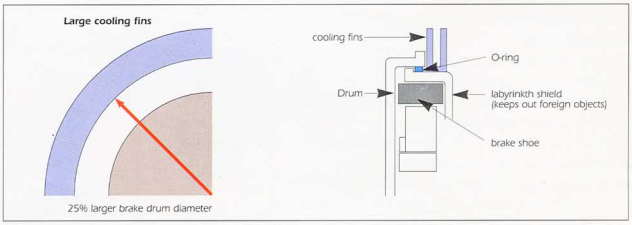
BR-IM41-F
(Front)



HB-IM40



HB-NX40



SHIMANO
INTER·C

Inter-C Crankset

The Inter-C FC-NX70/40 crankset is a stylish solid disc design incorporating an elastomer "power modulator" between the crank and chainring. The power modulator provides a cushioning effect that reduces the shock normally encountered when you begin to pedal. The result is a softer and more comfortable pedaling feeling. The 33-tooth version is recommended to provide the best gear range for general purpose applications. A chain guard is also available.



FC-NX70

INTER-7 / INTER-4 INTERNALLY GEARED HUBS

Model No.		SG-7R40	SG-7C21	SG-4R31	SG-4C30
Speed		7-Speed	7-Speed	4-Speed	4-Speed
Silent Cluch		—	—	○	—
Shifting Power Modulator		○	○	○	○
Shifting Lever		ST-7S20, SB-7S40		SB-4S20, ST-4S20	
Internal Brake	Coaster	—	○	—	○
	Inter M Brake	BR-IM41-R	—	BR-IM31-R	
Corrosion Resist Coating		○	○	Option	Option
Gear Ratio	Total	244%	244%	184%	184%
	1	0.632	0.632	1.000	1.000
	2	0.741	0.741	1.244	1.244
	3	0.843	0.843	1.500	1.500
	4	0.989	0.989	1.843	1.843
	5	1.145	1.145	—	—
	6	1.335	1.335	—	—
	7	1.545	1.545	—	—
Axle Length		192 / 176mm	169.5mm	185.5 / 169.5mm	165.6mm
Over Lock-nut Dimension		130mm	127mm	123.5 / 127mm	123.5mm
Spoke Hole		36H	36H	36H	36H
Spoke Size		#14		#13, #14	
Sprocket Teeth		14T, 16T, 18T, 19T, 20T, 21T, 22T	16T, 18T, 19T, 20T, 21T, 22T		
Chain-Line	14T	45.8mm	—	—	—
	16T	45.3mm	46.5mm	44mm O.L.D. 123.5mm 42.75mm O.L.D. 127mm	44mm O.L.D. 123.5mm
	18T - 22T	40.3 / 45.3mm	41.5 / 46.5mm	39 / 44mm O.L.D. 123.5mm 38.75 / 42.75mm O.L.D. 127mm	39.44mm O.L.D. 123.5mm
Weight	With Brake		1780g	—	1680g
	Without Brake	1520g	—	1330g	—

INTER-S SHIFTERS

Model No.	ST-7S20	SB-7S40	SB-4S30	ST-4S20
Speed	7-Speed	7-Speed	4-Speed	4-Speed
Type of Shift Lever	Rapidfire-L	Revo-Shift	Revo-Shift	Rapidfire-L
Optical Gear Display	Dial-Type	Dial-Type	Dial-Type	Dial-Type
Stainless Steel SL Inner Cable	○	○	○	—
Max. Number of Shift with a Single Stroke	1	7	4	1
Brake Lever Integrated	—	○	○	○
Brake Lever Size	—	3 Finger	3 Finger	—
Left Hand Brake Lever	—	BL-IM40	BL-IM30	BL-TY21
Cassette Joint	CJ-7S20 / CJ-7S40		CJ-7S20 / CJ-7S40 / CJ-4S30	

INTER-C CRANKSETS

Model No.		FC-NX70	FC-NX40
Pedalling Power Modulator		○	—
Integrated Chain Guard		○	○
Chain Ring Teeth		33T	
Chain Ring	Material	Steel	Steel
	Finish	Black	Black
Crank Length		170mm	170mm
Crank Arm	Material	Aluminum	Aluminum
	Finish	Super Finishing	Barrel Finishing
Chain Line		45mm	45mm
B.B.		BB-CT91	BB-CT91
Power Modulator Label		○	—

INTER-M BRAKES

Model No.		BR-IM41-F	BR-IM41-R	BR-IM31
		Front	Rear	Rear
Inter-7 Recommended		○	○	—
Inter-4 Recommended		—	—	○
Cooling Disk	With	○	○	○
	Without	—	—	○
Brake Lever Recommended	Right	—	SB-7S40	SB-4S30
	Left	BL-IM40	—	BL-IM30/ BL-TY21
Sealing Cap Finish		Chromica	Chromica	Chrome
Inner Cable Hooking Type		○	○	○

FRONT HUB & FREEHUBS

Model No.	Front Hub		Freehub
	HB-NX40	HB-IM40	FH-IM40
Over Lock-nut Dimension	100mm	100mm	130mm
Axle Length (Cap Nut)	140mm	140mm	—
Spoke Hole	36H	36H	36H
Spoke Size	#14	#14	#14
Parallax Hub	○	—	○
Brake Power Modulator	—	○	—
Inter M compatible	—	○	○



Developed for the Competitive Edge

Shimano road racing groups bring a higher level of quality, performance, and functionality to pro-level road racing bicycles as well as a wide range of racing-type sport bicycles. It all started with Dura-Ace, the top-line professional component group that's become the standard among professional and amateur road racers all over the world. From entry-level RSX to top-line Dura-Ace, there's a Shimano road group for every cycling style and for everyone who loves road bikes.





DURA-ACE

Designed to give road racers a real functional advantage under the stress of competition, Dura-Ace also appeals to any cycling enthusiast who demands the most advanced racing component technology available today. page 48

SHIMANO 600 ULTEGRA

600 Ultegra provides all the advanced functions of Dura-Ace in a strikingly contemporary design. The 600 Ultegra-equipped bike is a distinctive high-performance machine sure to satisfy the most stringent demands of amateur road racers, road performance enthusiasts, triathletes - anybody who wants a stylish, quality road bike. page 50

SHIMANO 105 SC

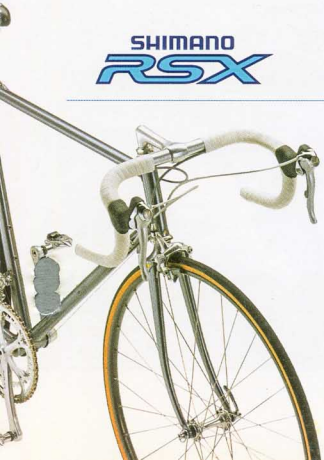
This is an all-purpose sport-racing component group loaded with advanced functions. The 105-SC-equipped bike is a real high-performance machine that can satisfy the demands of amateur racers and triathletes as well as discriminating fitness and recreational cyclists. page 52

SHIMANO RX100

An exceptional cost-performance value for the all-purpose racing-type sport bicycle used for sport cycling, fitness, or recreational riding. Offering the same basic design and functions as the 105-SC group, RX-100 uses a less costly polished surface treatment. As a result, the RX-100-equipped bicycle offers a high level of quality, performance, and value. page 52

SHIMANO RSX

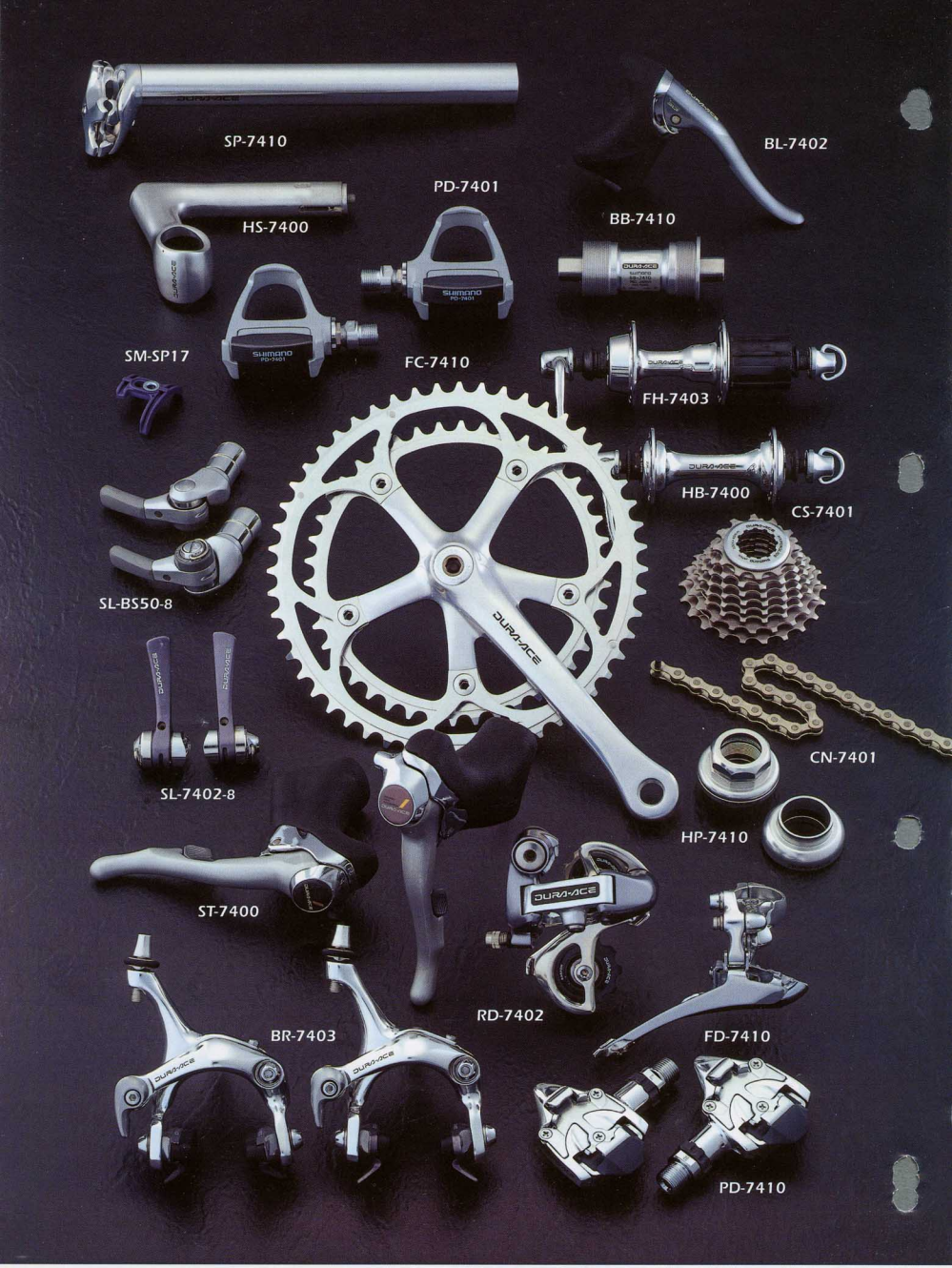
Shimano RSX was especially designed to bring more quality and performance to the entry-level racing-type sport bicycle. Incorporating all the advanced Shimano functions, including a new triple crankset, RSX brings real racing-style response within reach of those looking for an affordable high-performance bicycle. page 54





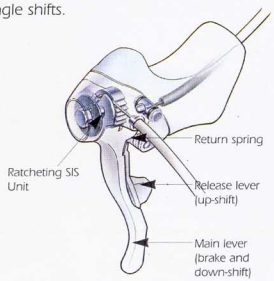
EXAGE 300EX page 54

Specifications and features of Dura-Ace, 600 Ultegra, 105SC, RX-100, RSX, and 300EX groups are listed from pages 56 to 61.


SP-7410
BL-7402
PD-7401
HS-7400
BB-7410
SM-SP17
FC-7410
FH-7403
HB-7400
CS-7401
SL-BS50-8
CN-7401
SL-7402-8
HP-7410
ST-7400
RD-7402
BR-7403
FD-7410
PD-7410

ST-7400 Dual Control Lever

High-performance Dual SIS shifting and braking from the same lever. No need to take your hands off the bars to change gears. Double shifts are now as fast as single shifts.

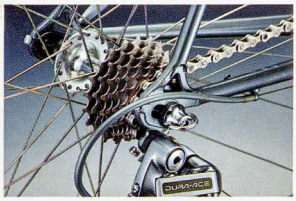


FC-7410 Crankset

Dual SIS compatible crank is made from high grade cold forged 7075 aluminum alloy. Features super low-profile design that increases ankle clearance and reduces weight. BB-7410 bottom bracket uses precision sealed bearing cassettes.

FH-7400 Freehub
CS-7401 Cassette Sprockets

Freehub design integrates the freewheel into the hub body. Bearings are spaced wider to make a more rigid wheel that increases power transfer efficiency. 8-speed champagne gold cassette sprockets provide more gear choices for competitive cyclists.



BR-7403 Dual-Pivot Caliper Brakes

Super SLR dual-pivot brakes use offset caliper pivots to increase the power multiplication ratio. Precision pivot bearings and coated washers reduce friction for a "linear response" feeling.

HP-7410
Cartridge Bearing Headset

Cartridge bearing headset integrates cups, cones, and bearings into a single sealed unit. Self-alignment feature compensates for any differences in upper and lower head tube facings.

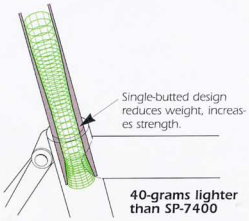
PD-7410 SPD Road Racing Pedal

Compact and lightweight at only 313 grams, this SPD pedal gives you the advantage of clipless pedaling from a walkable racing shoe. Precision bearing-spindle unit.



SP-7410 Seat Post

40 grams lighter and 50mm longer than the previous model. Butted construction reduces weight and puts more metal inside the seat tube where it's needed.



DURA-ACE

Advanced component technology that gives the competitive cyclist a real winning advantage.

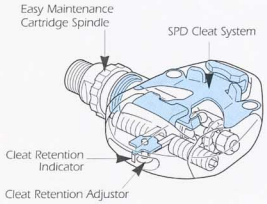


Specifications for Dura-Ace are listed from pages 56 to 61.


SP-6400
HP-6500
BB-UN72
FH-6402
BL-6403
HB-6400
FC-6400
SL-BS64-8
CS-HG90-8
SL-6401
CN-HG90
SM-SP17
PD-6500
RD-6401
FD-6401
BR-6403
ST-6400

PD-6500 SPD Racing Pedal

In addition to the off-bike walkability of the SPD system, the PD-6500 racing pedal features compact design, light weight, chrome moly spindle, cartridge bearing unit, and adjustable cleat tensioning.



HP-6500 Cartridge Headset

Precision cassettes combine bearings and races into a sealed one-piece unit. Extended service life plus fast and simple installation.

CS-HG90-8 Cassette Sprockets
FH-6402 Freehub

Freehub is available in 28, 32, or 36-hole versions and features 8-speed chrome-plated HG sprockets for fast and smooth shifting.



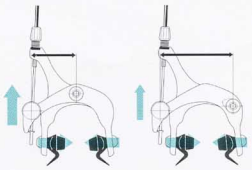
RD-6401 Rear Derailleur

Rear derailleur features lightweight all-alloy design plus hard ceramic guide pulley bushing that eliminates the need for lubrication. Complete sealing keeps derailleur working smoothly in all environments.

BR-6403 Dual-Pivot Brake

Dual-pivot caliper increases the power multiplication advantage for more braking power and control. Friction-reducing mechanisms provide a sensitive "linear response" feeling at the lever.

Single vs. Dual Pivot Caliper



Shorter pivot-cable distance results in less brake application leverage.

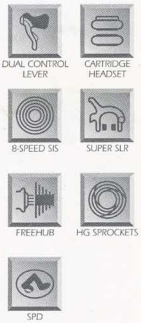
Longer pivot-cable distance increases leverage and braking power.

Stylish Design

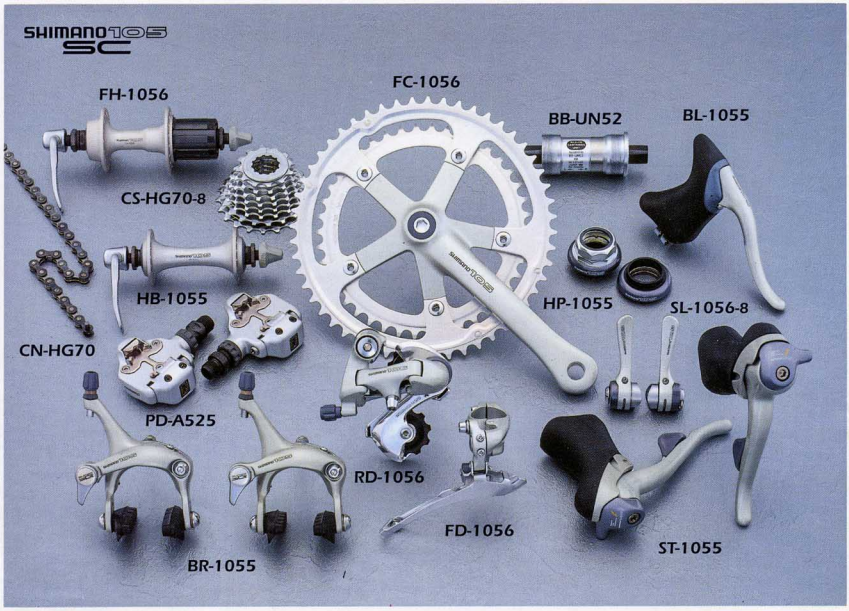
High-tech gray color treatment and seamless contour design give 600 Ultegra an ultra-modern look of functionality and performance.

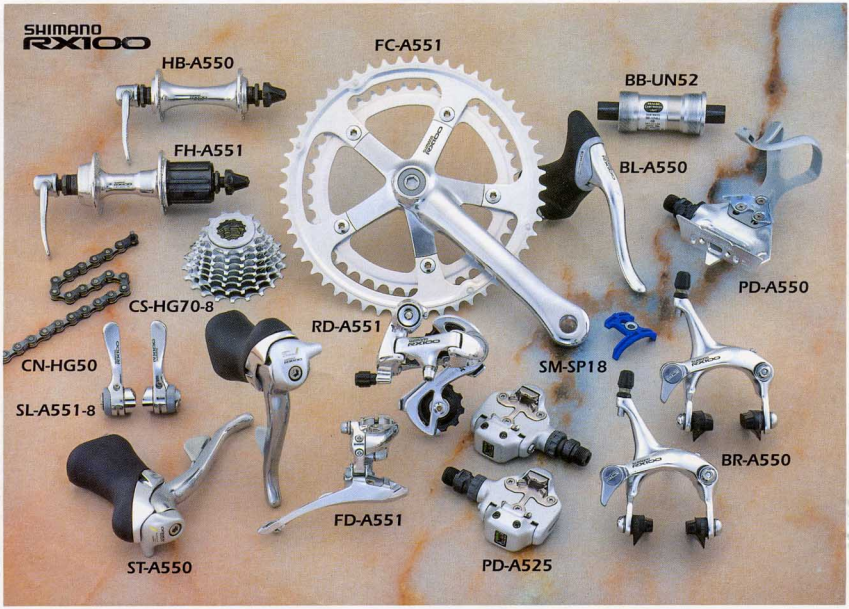
SHIMANO 600 ULTEGRA

Racing performance in a stylish component package.



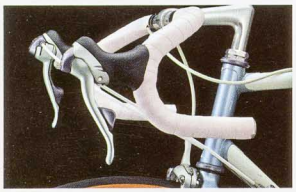
Specifications for ULTEGRA are listed from pages 56 to 61.


SHIMANO 105 SC
FH-1056
FC-1056
BB-UN52
BL-1055
CS-HG70-8
HB-1055
HP-1055
SL-1056-8
CN-HG70
PD-A525
RD-1056
FD-1056
BR-1055
ST-1055


SHIMANO RX100
HB-A550
FC-A551
BB-UN52
FH-A551
BL-A550
PD-A550
CS-HG70-8
RD-A551
CN-HG50
SM-SP18
SL-A551-8
BR-A550
FD-A551
ST-A550
PD-A525

ST-1055/ST-A550
Dual Control Lever

Dual Control levers use an integrated brake-shift lever that provides precision SIS shifting for both rear and front derailleurs. ST-1055-T lever set is compatible with triple chainwheels.



105-SC Triple Crankset

105-SC crank is available in triple chainwheel version for racing and touring. ST-1055-T Dual Control Lever and FD-1057 front derailleur provide precision indexed shifting for the triple crank.



CS-HG70-8
8-Speed HG Cassette Sprockets

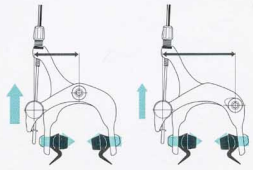
105-SC and RX-100 now feature 8-speed cassette sprockets for an expanded gearing choice. Computer-designed HG sprockets assure fast and smooth shifting.



BR-1055/BR-A550
Dual-Pivot Caliper Brakes

Dual-pivot design delivers more braking power. Low-friction mechanisms in the caliper, cable, and lever provide a highly sensitive "linear response" feeling of control.

Single vs. Dual Pivot Caliper



Shorter pivot-cable distance results in less brake application leverage.

Longer pivot-cable distance increases leverage and braking power.

Style and Performance

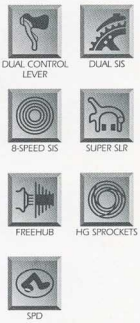
105-SC components have a distinctive light gray matte-finish surface treatment. RX-100 group features anodized and polished surfaces for the classic look of performance.

SHIMANO 105 SC

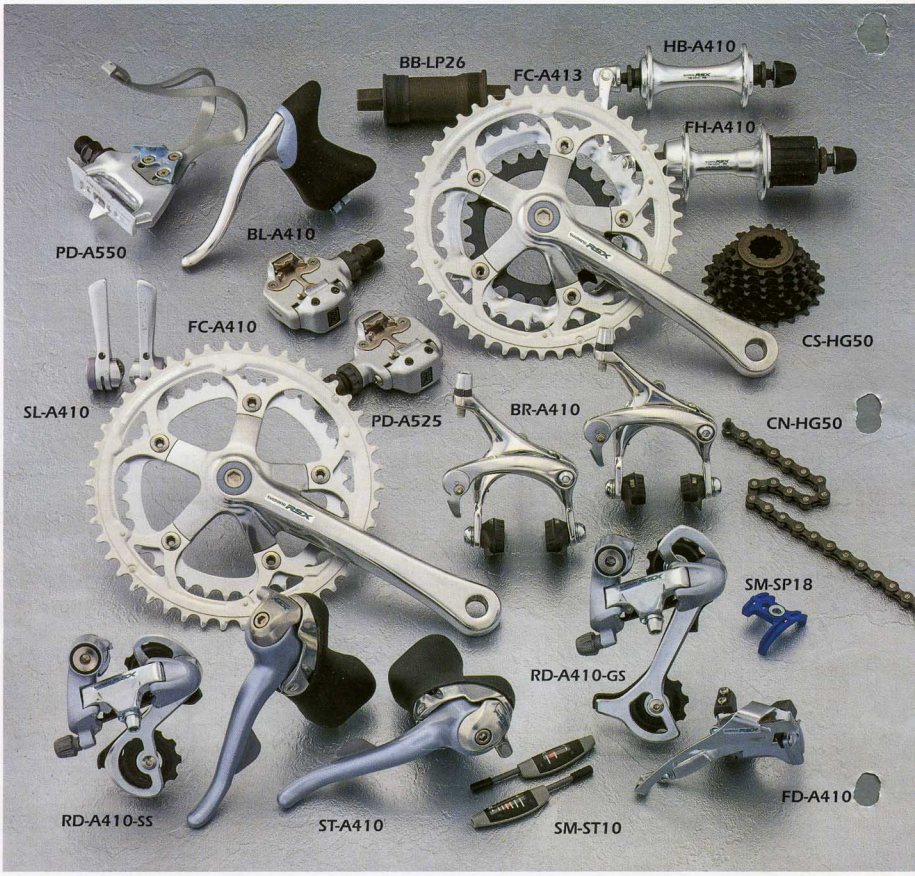
A high-performance sport-racing component group now available with triple crankset.

SHIMANO RX100

Competition level performance for sport, fitness, and recreational cyclists.



Specifications for 105 SC / RX100 are listed from pages 56 to 61.


HB-A410
BB-LP26
FC-A413
FH-A410
PD-A550
BL-A410
CS-HG50
FC-A410
SL-A410
PD-A525
BR-A410
CN-HG50
SM-SP18
RD-A410-GS
FD-A410
RD-A410-SS
ST-A410
SM-ST10

EXAGE 300EX



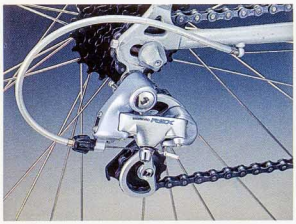
ST-A410 Dual Control Lever

Integrated brake-shift lever provides precision SIS shifting without taking your hands off the bars. Left lever is compatible with both double and triple chainwheels. Optional Optical Gear Display indicators.



RD-A410 Rear Derailleur

Precision indexed SIS shifting for 7-speed cassette sprockets. Advanced light Action design reduces shifting effort. SS and long-cage GS versions available.



CS-HG50-7

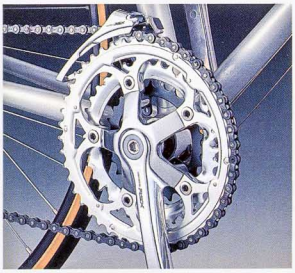
7-Speed HG Cassette Sprockets

7-speed HG sprockets deliver a higher level of chain control for fast and smooth SIS shifting.

FC-A410/A413

HyperDrive Triple Crankset

Triple crankset responds to the demands of touring and recreational cyclists who need a wider gearing range. Smooth-shifting HyperDrive design uses 46/36/26 chainrings and 11-24T cassette sprockets for wide gearing choice with minimum weight.



FD-A410

Top-Swing Front Derailleur

Easier shifting than ever. Advanced Light Action and Top-Swing design significantly reduce the effort needed to operate the front derailleur.

FH-A410 Freehub

Freehub design integrates the freewheel mechanism into the hub body for wider bearing placement and a stronger, more rigid rear wheel.

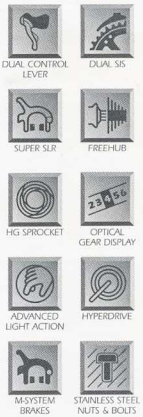
BR-A410 Dual-Pivot Caliper Brakes

Dual-Pivot SLR brakes with M-System pads provide strong, dependable stopping performance in all kinds of weather. Low-friction mechanisms realize a sensitive "linear response" lever feeling.



SHIMANO RSX

More quality and performance for entry-level sport bicycles.



Specifications for RSX / 300EX are listed from pages 56 to 61.

■ Road Component Specifications I

Specifications \ Series		DURA-ACE		600 ULTEGRA		SHIMANO105-SC		
REAR DERAILLEUR	Model No.	**RD-7402**		**RD-6401**		**RD-1056-SS**		**RD-1056-GS**
	Speeds (SIS)	8-speed		7 or 8-speed		7 or 8-speed		8-speed
	Max. Sprocket	26T		28T		28T		28T
	Min. Sprocket	12T		12T		12T		11T
	Front Gear Difference	14T max		13T max		13T max		22T max
	Total Capacity	26T		28T		28T		36T
	Pivot & Pulley Brackets	cold forged aluminum w/color anodized finish		dark gray painted aluminum		painted aluminum		painted aluminum
	Outer Link	cold forged aluminum / epoxy logo, color anodized		silver painted aluminum		painted aluminum		painted aluminum
	Inner Link	anodized forged aluminum		painted aluminum		pearl bright finish steel		pearl bright finish steel
	Outer Pulley Cage	anodized aluminum		anodized aluminum		polished aluminum		polished aluminum
	Inner Pulley Cage	anodized aluminum		polished aluminum		pearl bright finish steel		pearl bright finish steel
	Weight	209g		215g		247g		
FRONT DERAILLEUR	Model No.	**FD-7410-B**	**FD-7410-F**	**FD-6401-B**	**FD-6401-F**	**FD-1056-B**	**FD-1056-F**	**FD-1057**
	Capacity	15T	15T	14T	14T	15T	15T	22T (triple use)
	Mounting	band	braze on	band	braze on	band	braze on	band
	Band Diameter	28.0–28.6mm		28.0–28.6mm		28.0–28.6mm		28.0–28.6mm / 31.8mm
	Chain Stay Angle	61–66°	61–66°	61–66°	61–66°	61–66°	61–66°	63–66°
	Band	forged aluminum/ anodized	forged aluminum/ anodized	gray painted aluminum	gray painted aluminum	painted aluminum	painted aluminum	painted aluminum
	Outer Link	forged aluminum/ anodized	forged aluminum/ anodized	silver painted aluminum	silver painted aluminum	painted aluminum	painted aluminum	painted aluminum
	Chain Cage	chrome plated steel	chrome plated steel	chrome plated steel	chrome plated steel	chrome plated steel	chrome plated steel	chrome plated steel
	Weight	97g		107g		105g		
DUAL CONTROL LEVER	Model No.	**ST-7400**		**ST-6400**		**ST-1055**		**ST-1055-T**
	Rear (Dual SIS)	8-speed		8-speed		8-speed		
	Front (Dual SIS)	double		double		double		triple
	Handle Bar Dia.	23.8–24.2mm		23.8–24.2mm		23.8–24.2mm		23.8–24.2mm
	Body	chrome plated aluminum		polished aluminum		mirror polished aluminum		mirror polished aluminum
	Lever	painted forged aluminum		dark gray painted aluminum		painted aluminum		painted aluminum
	Outer Shift Cable	SIS-SP		SIS-SP		SIS-SP		SIS-SP40
	Brake Cable	SLR outer		SLR outer		SLR outer		SLR outer
	Weight	480g (pair)		542g (pair)		495g (pair)		
SHIFT LEVER	Model No.	**SL-7402-8**	**SL-BS50-8**	**SL-6401**	**SL-BS64-8**	**SL-1056-FCAI**	**SL-1055-FCAI**	**SL-BS50-7**
	Speeds (SIS)	8-speed	8-speed	8-speed	8-speed	8-speed	7-speed	7-speed
	Mount Position	down tube	bar end	down tube	bar end	down tube	down tube	bar end
	Tube Diameter	braze-on	19.0-22.0mm (inside)	braze-on		braze-on	braze-on	19.0-22.0mm (inside)
	Material & Surface	painted aluminum	painted aluminum	gray painted aluminum	gray painted aluminum	painted aluminum	painted aluminum	painted aluminum
	Cable	SIS sealed	SIS-SP sealed	SIS sealed	SIS-SP sealed	SIS sealed	SIS sealed	SIS-SP
	Weight	67g	183g	67g	180g	70g	70g	183g
AERO BRAKE LEVER	Model No.	**BL-7402**		**BL-6403**		**BL-1055**		
	Bar Diameter	23.8–24.2mm		23.8–24.2mm		23.8–24.2mm		
	Lever Stroke	88mm		84mm		84mm		
	Brake Cable	SLR outer		SLR outer		SLR outer		
	Lever	aluminum w/anodized		painted aluminum		painted aluminum		
	Base	chrome plated aluminum		polished aluminum		polished aluminum		
	Base Cover	black or white		black or white		black, white, or gray		
	Weight	240g (pair)		272g		252g		
DUAL PIVOT CALIPER BRAKE	Model No.	**BR-7403**		**BR-6403**		**BR-1056**		
	Reach	49mm		49mm		49mm	57mm	
	Caliper	anodized forged aluminum		forged aluminum / painted		forged aluminum / painted		
	Weight	432g (F&R)		423g (F&R)		360g (F&R)		
CRANKSET	Model No.	**FC-7410**		**FC-6400**		**FC-1056**		**FC-1057**
	Gearing	53-42 / 53-39 / 52-42T		53-42 / 52-42T (round SG)		53-42 / 53-39 / 52-42T		52-42-30T
	Bolt Circle	130mm		130mm		130mm		130 / 74mm
	Crank Length (mm)	165/167.5/170/172.5/ 175/177.5/180mm		165/167.5/170/172.5/175mm		165/167.5/170/ 172.5/175mm		170 / 175mm
	Crank	anodized forged aluminum		anodized aluminum		painted aluminum		painted aluminum
	Chainrings	anodized forged aluminum		anodized aluminum		anodized aluminum		anodized aluminum
	Crank Bolts	titanium alloy		chrome-moly steel		chrome-moly steel		stainless steel
	Weight	589g (170mm/53-39T)		650g (170mm / 52-42T)		686g (170mm / 52-42T)		

SHIMANO RX100			SHIMANO RSX		SHIMANO 300EX	Series / Specifications	
RD-A551		RD-A550-GS	RD-A410-SS	RD-A410-GS	RD-A300	Model No.	REAR DERAILLEUR
7 or 8-speed		7-speed	7-speed	7-speed	6 or 7-speed	Speeds (SIS)	
28T		30T	28T	28T	28T	Max. Sprocket	
12T		12T	11T	11T	12T	Min. Sprocket	
13T max		20T max	13T max	20T max	13T max	Front Gear Difference	
28T		36T	28T	36T	28T	Total Capacity	
polished aluminum			painted aluminum		aluminum & resin	Pivot & Pulley Brackets	
polished aluminum			polished steel		painted steel	Outer Link	
pearl bright steel			painted steel	black steel	painted steel	Inner Link	
pearl bright steel			pearl bright steel		zinc plated steel	Outer Pulley Cage	
pearl bright steel			black steel		steel	Inner Pulley Cage	
		302g		297g	282g	Weight	
FD-A551-B	FD-A551-F	FD-A553	FD-A410		FD-A300-B	Model No.	FRONT DERAILLEUR
15T	15T	26T (triple use)	20T (double & triple use)		14T	Capacity	
band	braze-on	band	band		band	Mounting	
28–28.6mm		28–28.6mm	28–28.6mm / 31.8mm		28–28.6mm	Band Diameter	
61-66°		63-66°	61-66° (double) / 63-66° (triple)		61-66°	Chain Stay Angle	
polished aluminum			painted aluminum		pearl bright steel	Band	
polished aluminum			polished aluminum		zinc plated steel	Outer Link	
chrome-plated steel			chrome-plated steel		chrome-plated steel	Chain Cage	
105g		121g				Weight	
ST-A550			ST-A410			Model No.	DUAL CONTROL LEVER
8-speed			7-speed			Rear (Dual SIS)	
double			double / triple			Front (Dual SIS)	
23.8–24.2mm			23.8–24.2mm			Handle Bar Dia.	
polished aluminum			polished aluminum			Body	
polished aluminum			violet - silver painted aluminum			Lever	
SIS-SP36			SIS-SP36			Outer Shift Cable	
SLR outer			M-System outer			Brake Cable	
495g (pair)						Weight	
SL-A551 FCAI	SL-A550 FCAI	SL-A550-T	SL-A410		SL-A400	Model No.	SHIFT LEVER
8-speed	7-speed	7-speed (Triple)	7-speed		7-speed	Speeds (SIS)	
down tube			down tube		down tube	Mount Position	
braze-on			braze-on		28.6mm or braze-on	Tube Diameter	
polished aluminum			pearl bright aluminum		barrel finish aluminum	Material & Surface	
SIS			SIS		SIS	Cable	
70g					76g	Weight	
BL-A550			BL-A410		BL-A251	Model No.	AERO BRAKE LEVER
23.8 – 24.2			23.8 – 24.2mm		23.8 – 24.2mm	Bar Diameter	
84mm			84mm		88mm	Lever Stroke	
SLR outer			M-System outer		SLR outer	Brake Cable	
anodized aluminum			polished aluminum		polished aluminum	Lever	
polished aluminum			polished aluminum		zinc plated steel	Base	
black or white			black		black or white	Base Cover	
252g					310g	Weight	
BR-A551			BR-A410		BR-A250 (single pivot side pull)	Model No.	DUAL PIVOT CALIPER BRAKE
49mm or 57mm			49mm		49mm or 57mm	Reach	
anodized forged aluminum			polished forged aluminum		polished forged aluminum	Caliper	
348g						Weight	
FC-A551		FC-A550-T	FC-A410	FC-A413	FC-A300	Model No.	CRANKSET
53-42/53-39T/52-42T		52-42-30T	46-36T	46-36-26T	52-42T	Gearing	
130mm		130/74mm	110 / 74mm	110 / 74mm	130mm	Bolt Circle	
165/170/175mm		170 / 175mm	170 / 175mm	170 / 175mm	170 / 175mm	Crank Length (mm)	
mirror polished aluminum			mirror polished aluminum	mirror polished aluminum	polished aluminum	Crank	
anodized aluminum			steel & aluminum	steel & aluminum	painted steel	Chain Rings	
chrome moly			stainless steel	stainless steel	steel	Crank Bolts	
686g (170mm/52-42)			690g (170mm)	788g (170mm)		Weight	

■ Road Component Specifications Ⅱ

Specifications \ Series		DURA-ACE		600 ULTEGRA		SHIMANO105-SC	
CARTRIDGE BOTTOM BRACKET	Model No.	**BB-7410**		**BB-UN72**		**BB-UN52**	
	Crankset	FC-7410		FC-6400		FC-1056	FC-1057
	Chain Line	43.5mm		43.5mm		43.5mm	45mm
	BB Shell Width	68 / 70mm		68 / 70mm		68 / 70mm	68 / 70mm
	Marking	SS 103		D-H		MM107	XL118
	Axle Length	103mm		115mm		107mm	118mm
	Weight	230g		272g		308g	
REAR FREE-HUB	Model No.	**FH-7403**	**FH-7463**	**FH-6402**		**FH-1056**	**FH-1055**
	Speeds	8	8	8		8	7
	Over Locknut	130mm	130mm	130mm		130mm	126mm
	Axle Length	141mm	141mm	141mm		141mm	137mm
	Spoke Holes	36 / 32 / 28	for disc wheel	36 / 32 / 28		36 / 32	36 / 32
	Spoke Hole Circle	44mm		45mm		45mm	45mm
	Material	forged aluminum	aluminum	forged aluminum		forged aluminum	forged aluminum
	Finish	anodized	anodized	anodized		anodized	anodized
	Weight	467g	648g	428g		427g	415g
FRONT HUB	Model No.	**HB-7400**		**HB-6400**		**HB-1055**	
	Over Locknut	100mm		100mm		100mm	
	Axle Length	108mm		108mm		108mm	
	Spoke Holes	36 / 32 / 28		36 / 32 / 28		36/32	
	Spoke Hole Circle	38mm		38mm		38mm	
	Material	forged aluminum		forged aluminum		forged aluminum	
	Finish	anodized		anodized		anodized	
	Weight	235g		212g		228g	
CASSETTE SPROCKETS	Model No.	**CS-7401-8**		**CS-HG90-8**		**CS-HG70-8**	**CS-HG70-7**
	Speeds	8		8		8	7
	Group Identification	S ,T, U, V, W		S ,T, U, V, W		S ,T, U, V, W	E, H, I, J, L, M
	Color	champagne gold		chrome plated		silver	silver
	Weight	258g (S group)		250g		278g (U group)	
CHAIN	Model No.	**CN-7401**		**CN-HG91**	**CN-HG90**	**CN-HG70**	
	Type	HG narrow		HG narrow	HG narrow	HG narrow	
	Inner Link Color	nickle plating		gray	black	gray	
	Outer Link Color	nickle plating		silver	silver	black	
	Weight			335g (114 link)	335g (114 link)	335g (114 links)	
HEADSET	Model No.	**HP-7410**		**HP-6500**		**HP-1055**	
	Sealed Cartridge	○		○		⊘	
	Thread	BC 1" × 24 TPI		BC 1" × 24 TPI		BC 1" × 24 TPI	
	Stack Height	37.6mm		37.6mm		32.7mm	
	Weight	101g		109g		101g	
PEDAL	Model No.	**PD-7410**	**PD-7401**	**PD-6500**		**PD-A525**	
	Cleat Type	SPD	Shimano clipless	SPD		SPD	
	Spindle Thread	BC 9/16" × 20 TPI		BC 9/16" × 20 TPI		BC 9/16" × 20 TPI	
	Body	anodized finish aluminum		polished aluminum		white or silver painted aluminum	
	Spindle Material	nickle chrome moly		chrome moly		chrome moly	
	Weight	317g	416g (+92g w/cleats)	348g		390g	
SEAT POST	Model No.	**SP-7410**	**SP-7400-A**	**SP-7400-B**	**SP-6400-A**	**SP-6400-B**	**not available**
	Post Type	round	round	oval	round	oval	
	Outer Dia. (mm)	26.8/27.0/27.2	25.0/25.8/26.4/26.6/26.8/27.0/27.2/27.4	25.0/25.8/26.0/26.2/26.4/26.6/26.8/27.0/27.2/27.4	25.0/25.8/26.0 26.6/26.8/27.0 27.2	25.0/25.8/26.0 26.6/26.8/27.0 27.2	
	Length	270mm	205mm	205mm	205mm	205mm	
	Material	thin wall aluminum	aluminum	aluminum	aluminum	aluminum	
	Weight	195g	224g	224g		286g	
HANDLE BAR STEM	Model No.	**HS-7400**			**HS-6400**		**not available**
	Stem Dia.	22.2mm			22.2mm		
	Bar Clamp Dia.	25.4 / 26.0mm			25.4 / 26.0mm		
	Extension	70 / 80 / 90 / 100 / 110 / 120 / 130mm			70 / 80 / 90 / 100 / 120 / 120 / 130mm		
	Weight	280g (100mm ext.)			286g (100mm)		

○ = yes ∅ = no

SHIMANO RX-100		SHIMANO RSX		SHIMANO 300EX	Series / Specifications	
BB-UN52		**BB-LP26**		**BB-CS11**	Model No.	**CARTRIDGE BOTTOM BRACKET**
FC-A551	FC-A550-T	FC-A410	FC-A413	FC-A300	Crankset	
43.5mm	47.5mm	43.5mm	45.0mm	43.5mm	Chain Line	
68 / 70mm	68 / 70mm	68 / 70 / 73mm	68 / 70 / 73mm	68 / 70mm	BB Shell Width	
MM107	D-NL	MM110	XL118	D-H115	Marking	
107mm	122.5mm	110.5mm	118mm	115mm	Axle Length	
					Weight	
FH-A551-HG	**FH-A550-7**	**FH-A410**		**FH-HG50**	Model No.	**REAR FREE-HUB**
8	7	7		7	Speeds	
130mm	126mm	130mm	126mm	126mm	Over Locknut	
141mm	137mm	141mm	137mm	137mm	Axle Length	
36 / 32H	36 / 32H	36 / 32H		36 / 32H	Spoke Holes	
45mm	45mm	45mm		45mm	Spoke Hole Circle	
aluminum	aluminum	aluminum		aluminum	Material	
mirror polished	mirror polished	diacut		diacut	Finish	
427g	420g	199g		235g	Weight	
	HB-A550	**HB-A410**		**HB-RM50**	Model No.	**FRONT HUB**
	100mm	100mm		100mm 96mm	Over Locknut	
	108mm	108mm		108mm 104mm	Axle Length	
	36 / 32H	36 / 32H		36 / 32H	Spoke Holes	
	38mm	38mm		38mm	Spoke Hole Circle	
	aluminum	aluminum		aluminum	Material	
	mirror polished	diacut		diacut	Finish	
	202g	199g		235g	Weight	
CS-HG70-8	**CS-HG70-7**	**CS-HG70-7**		**CS-HG50-7**	Model No.	**CASSETTE SPROCKETS**
8	7	7		7	Speeds	
S, T, U, V, W	E, H, I, J, L, M	ai (11-12-14-16-18-21-24)		E, H, I, J, L, M	Group Identification	
silver	silver	black		brown / silver low gear	Color	
278g (U group)					Weight	
CN-HG70		**CN-HG50**		**CN-HG50**	Model No.	**CHAIN**
HG narrow		HG narrow		HG narrow	Type	
gray		black		black	Inner Link Color	
black		black		black	Outer Link Color	
335g		335g		335g	Weight	
HP-1055		**not available**		**not available**	Model No.	**HEADSET**
∅					Sealed Cartridge	
BC 1" × 24TPI					Thread	
32.7mm					Stack Height	
101g					Weight	
PD-A525	**PD-A550**	**not available**		**not available**	Model No.	**PEDAL**
SPD	toe clip type				Cleat Type	
BC 9/16" × 20TPI	BC 9/16" × 20TPI				Spindle Thread	
white or silver painted aluminum	aluminum				Body	
chrome moly	chrome moly				Spindle Material	
390g	407g (w/ L toe clips)				Weight	

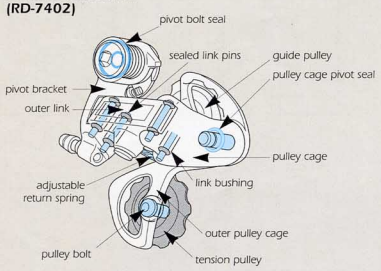
Cassette Sprockets Gear Combinations

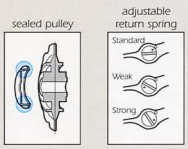
Model No.	Speeds	Group Letter	Gearing
CS-7401 CS-HG90-8 CS-HG70-8	8	S	12, 13, 14, 15, 16, 17, 19, 21
		T	13, 14, 15, 16, 17, 19, 21, 23
		U	12, 13, 14, 15, 17, 19, 21, 23
		V	13, 14, 15, 17, 19, 21, 23, 26
		W	12, 13, 15, 17, 19, 21, 23, 25
CS-HG70-7 CS-HG50-7	7	E	12, 14, 16, 18, 21, 24, 28
		H	13, 15, 17, 19, 21, 23, 26
		I	13, 14, 15, 17, 19, 21, 23
		J	13, 14, 15, 16, 17, 19, 21
		L	12, 13, 14, 15, 17, 19, 21
		M	13, 15, 17, 19, 21, 24, 28

■ Road Group Feature Comparison Chart

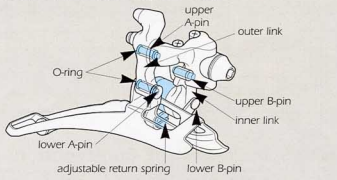
Features \ Series		DURA-ACE	SHIMANO 600 ULTEGRA	SHIMANO 105SC		SHIMANO RX100		SHIMANO RSX	SHIMANO 300EX
REAR DERAILLEUR	Model No.	**RD-7402**	**RD-6401**	**RD-1056-SS**	**RD-1056-GS**	**RD-A551**	**RD-A550-GS**	**RD-A410**	**RD-A300**
	Advanced Light Action	∅	∅	∅	∅	∅	∅	○	∅
	Speeds	8	8	8	8	8	7	7	7
	Guide Pulley Bushing	ceramic (sealed)	ceramic (sealed)	sintered aluminum	sintered aluminum	sintered aluminum	sintered aluminum	sintered aluminum	
	Tension Pulley	ceramic (sealed)	ceramic (sealed)	sintered aluminum	sintered aluminum	sintered aluminum		sintered aluminum	
	Sealed Link Pins	stainless steel (4)	stainless steel (4)	outer link (2)	outer link (2)	outer link (2)		∅	∅
	Link Bushings	hard brass (4)	hard brass (4)	hard brass (3)	hard brass (3)	hard brass (3)			
	Pivot Bracket Seal	double O-rings	double O-rings						
	Pulley Bracket Seal	O-ring	O-ring						
	Aluminum Pulley Cage	inner & outer	outer & inner	outer	outer	∅		∅	∅
	Aluminum Links	inner & outer	outer & inner	outer	outer	outer		∅	∅
	Aluminum Brackets	pivot & pulley	pivot & pulley	pivot & pulley	pivot & pulley	pivot & pulley		pivot & pulley	pivot
	Adjustable Return Spring	○	○	○	○	○		∅	∅
FRONT DERAILLEUR	Model No.	**FD-7410**	**FD-6401**	**FD-1056**	**FD-1057**	**FD-A551**	**FD-A553**	**FD-A410**	**FD-A300**
	Advanced Light Action	∅	∅	∅	∅	∅		○	∅
	Dual SIS	○	∅	○	○	○		○	∅
	Front Band	forged aluminum	aluminum	aluminum	aluminum	aluminum		aluminum	aluminum
	Rear Band	forged aluminum	aluminum	aluminum	aluminum	aluminum		aluminum	steel
	Outer Link	forged aluminum	aluminum	aluminum	aluminum	aluminum		steel	steel
	Inner Link	forged aluminum	aluminum	die cast zinc	die cast zinc	die cast zinc		steel	steel
	Adjustable Return Spring	○	○	∅	∅	∅		∅	∅
	Spring Cover	○	○	○	○	○		∅	∅
	O-ring Seals	upper & lower A-pins							
	Bushings	upper & lower AB-pins	lower A-pin	lower A-pin	lower A-pin	lower A-pin			
	Top Swing Design	∅	∅	∅	∅	∅		○	
DUAL CONTROL LEVER	Model No.	**ST-7400**	**ST-6400**	**ST-1055**	**ST-1055-T**	**ST-A550**		**ST-A410**	**N/A**
	Advanced Light Action	∅	∅	∅	∅	∅		○	
	Speeds	8-speed / double	8-speed / double	8-speed/double	front triple	8-speed / double		7-speed/double or triple	
	Optical Gear Display	∅	∅	∅	∅	∅		Optional	
	Max. Shift Stroke (rear)	3	3	3	3	3		3	
SHIFT LEVER	Model No.	**SL-7402** / **SL-BS50-8**	**SL-6401** / **SL-BS64-8**	**SL-1056-8** / **SL-1055-7**	**SL-BS50-7**	**SL-A550**	**SL-A551**	**SL-A410**	**SL-A400**
	Mount Position	down tube / bar end	down tube / bar end	down tube	bar end	down tube		down tube	down tube
	Light Action Lever (F)	○ / ○	○ / ○	○ / ○	○	○	○	○	○
BRAKE LEVER	Model No.	**BL-7402**	**BL-6403**	**BL-1055**		**BL-A550**		**BL-A410**	**BL-A251**
	SLR (return spring)	○	○	○		○		○	○

REAR DERAILLEUR (RD-7402)

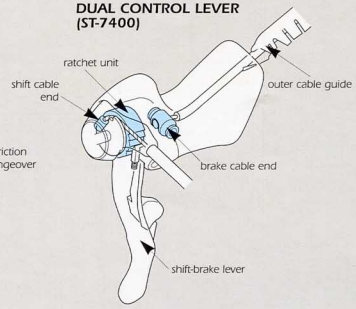


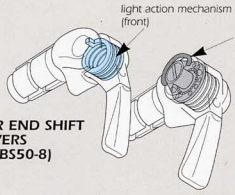


FRONT DERAILLEUR (FD-7410)



DUAL CONTROL LEVER (ST-7400)



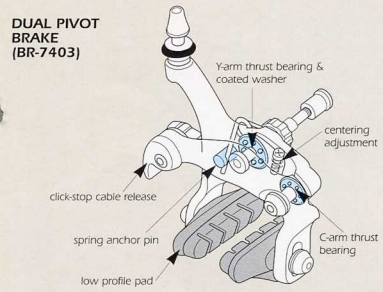


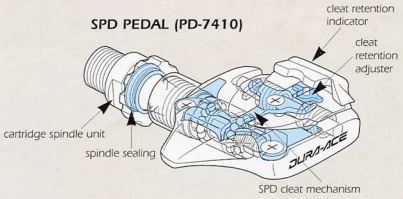
BAR END SHIFT LEVERS (SL-BS50-8)

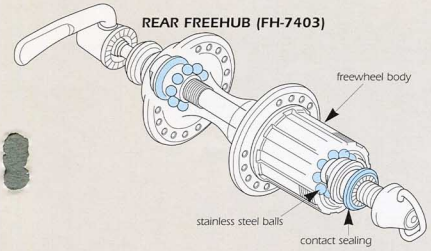
○ = yes Ø = no N/A = not available

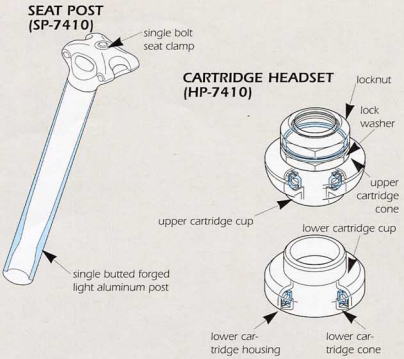
Features	Series	DURA-ACE		SHIMANO 600 ULTEGRA	SHIMANO 105SC		SHIMANO RX100		SHIMANO RSX		SHIMANO 300EX
DUAL-PIVOT BRAKE CALIPER	Model No.	**BR-7403**		**BR-6403**	**BR-1055**		**BR-A550**		**BR-A410**		**BR-A250**
	System	Super SLR		Super SLR	Super SLR		Super SLR		M-System		SLR
	Coated Pivot Washer	Y / C arms		C arm	C arm		C arm				
	Thrust Bearing	Y / C arms		Y arm	C arm		C arm				
	Low Profile Pad	w/pad holder		w/pad holder	one-piece		one-piece		one-piece		one-piece
CRANKSET	Model No.	**FC-7410**		**FC-6400**	**FC-1056**	**FC-1057**	**FC-A551**	**FC-A550-T**	**FC-A410**	**FC-A413**	**FC-A300**
	HyperDrive	○		Ø	○	○	○	Ø	○		Ø
	Dual SIS	○		Ø	○	○	○	Ø	○		Ø
	Reinforced Spider	○		Ø	Ø	Ø	Ø	Ø	Ø		Ø
CARTRIDGE BOTTOM BRACKET	Model No.	**BB-7410**		**BB-UN72**	**BB-UN52**		**BB-UN52**		**BB-LP26**		**BB-CS11**
	Axle	hollow Cr-Mo		hollow Cr-Mo	Cr-Mo		Cr-Mo		Cr-Mo		Cr-Mo
	Adapter	aluminum		aluminum	steel		steel		resin		resin
REAR FREE-HUB	Model No.	**FH-7403**	**FH7463**	**FH-6402**	**FH-1056**	**FH-1055**	FH-A551-HG	FH-A550-7	**FH-A410**		**FH-HG50**
	Contact Sealing	double		double	single		single		single		Ø
	Stainless Steel Balls	○		Ø	Ø		Ø		Ø		Ø
FRONT HUB	Model No.	**HB-7400**		**HB-6500**	**HB-1055**		**HB-A550**		**HB-A410**		**HB-RM50**
	Contact Sealing	double		double	single		single		single		Ø
HEADSET	Model No.	**HP-7410**		**HP-6500**	**HP-1055**		**HP-1055**		**not available**		**not available**
	Cartridge Bearing	○		○	Ø		Ø				
	Locknut	aluminum		aluminum	aluminum w/stem seal		aluminum w/stem seal				
	Upper/Lower Cups	aluminum		aluminum	composite		composite				
	Upper Cone	aluminum		aluminum	composite		composite				
	Lower Cone	aluminum		steel	steel		steel				
PEDAL	Model No.	**PD-7410**	**PD-7401**	**PD-6500**	**PD-A525**		**PD-A525**	**PD-A550**	**not available**		**not available**
	Type	SPD	clipless	SPD	SPD		SPD	standard			
	Road Clearance	36°	34°	34°	31°		31°	32°			
	Spindle	Cr-Mo	Cr-Mo	Cr-Mo	Cr-Mo		Cr-Mo	Cr-Mo			
	Cartridge Spindle	○	○	○	○		○	○			
	Cleat Indicator	○	Ø	○	○		○	Ø			
	Cleat Adjuster	○	○	○	○		○	Ø			
	Step Out	(1)		(1)							
SEAT POST	Model No.	**SP-7410**	**SP-7400**	**SP-6400**	**not available**		**not available**		**not available**		**not available**
	Special Easton® Tubing	○	Ø	Ø							

(1) The PD-7410 and PD-6500 SPD pedals feature fixed or self aligning cleat retention. Choose the appropriate type cleat for the desired retention mode.









The Continuing Evolution of Shimano Component Functions

The icons shown here each represent a specific Shimano function. These icons are included on the component pages to give you a quick reference to the functions offered in each component group. New functions for 1996 include the following:



page 64

Rapidfire SL

New for 1996.
More compact, short-stroke Rapidfire lever.



page 65

EZ-Fire

New for 1996. low-effort short-stroke shift lever (Acera-X and Altus).



Optical Gear Display

Gear position indicator on shift lever set.



Advanced Light Action

Low-friction design rear derailleur.



Dual Control Lever

Shifting and braking functions in the same lever (road groups).



page 68

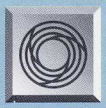
IG System

Integrated design of chainring, chain, sprockets, and derailleurs for improved shifting.



Dual SIS

Front and rear indexed SIS shifting.



HG Sprockets

Computer-designed sprockets for improved shifting.



SLR Plus

Servo-wave lever action for modulated brake application.



page 71

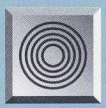
Silent Clutch Freehub

Ram-and-roller mechanism eliminate freewheel clicking.



HyperDrive-C

Compact chainrings and sprockets (MTB groups).



8-Speed SIS

Indexed shifting with 8 rear sprockets.



Super SLR

Low friction brakes with dual-pivot calipers.



Parallax Hubs

Oversize hub body and heavy-duty spoke flanges.



HyperDrive

Smooth shifting chainrings and front derailleurs (road groups).



Spider Arm Sprocket Boss

Aluminum alloy sprocket support reduces weight.



M-System

Effective braking in wet or dry conditions.



Stainless Steel Fasteners

Use of stainless steel fasteners eliminates corrosion.



page 70

Differential Plate Front Derailleur

Articulated chain guide improves chainwheel shifting.



Freehub

Freewheel mechanism integrated into rear hub for greater strength.



page 67

Anti-Vibration M-System

All-weather braking plus non-squeal design.



page 72

Easy-Set Brakes

Cantilever brakes featuring easy-adjustment design.



page 73

Cartridge Bottom Bracket

One-piece cartridge bearing bottom bracket for easy installation.



page 66

V-Brake

Improved cantilever design provides more braking power for competition.



SPD

Shimano Pedaling Dynamics shoe and pedal system.

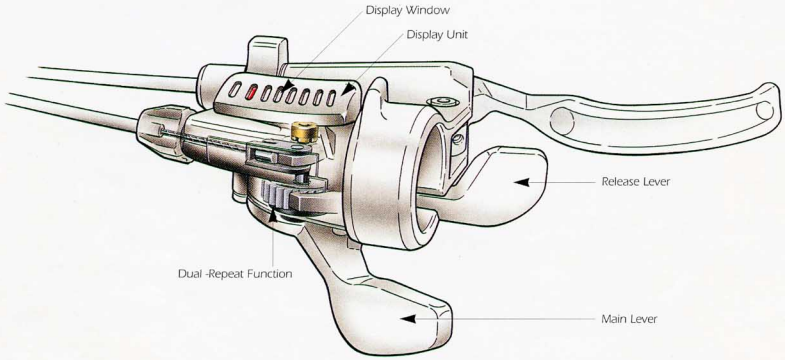


Cartridge Headset

Cartridge bearings make headset installation fast and easy.

"Rapidfire SL"
Rapidfire shifting gets faster and easier than ever.

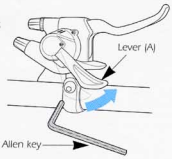
Underbar shifting provides the best control stability by allowing shifting and braking without flexing the wrist or changing hand position on the grip. The new Rapidfire SL lever set for 1996 is lighter, more compact, and features improved ergonomic design. Short-stroke easy-action mechanism reduces shifting effort by 1/3 over previous models. Removable Optical Gear Display unit and simplified design make maintenance easier. New slotted lever housing eliminates the need to thread the cable through the unit when replacing cables. Underbar shifting has never been faster or easier. Rapidfire SL is used on the STX, STX-RC, Deore LX, Deore XT, and XTR component groups.



Installation of the brake lever

Move lever (A) so that the installation bolt can be seen, and then use a 5 mm Allen key to install.

Note: If the brake lever is installed to the handlebar before the inner cable is installed, the handlebars will obstruct the wire end hooking cover and it will become more difficult the install the inner cable. Install the brake lever after installing the inner cable.



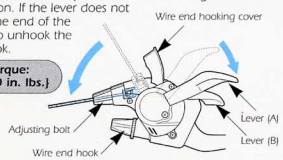
Allen key tightening torque: 6 - 8 Nm {53 - 69 in. lbs.}

Connection and securing of the inner cable

Pull the release lever (trigger lever) at least seven times for 8-speed units, and six times for 7-speed units. After checking on the indicator that the lever is at the lowest position, turn the cable adjusting bolt until the slit is on the same side as the handlebar. Open the wire end hooking cover as shown in the illustration, and then pull the wire end hook toward you (if lever (A) is moved as shown in the illustration to take up the play, the wire end hook will be easier to pull out), and then insert the inner cable from the bottom. Place the inner cable into the slit and then close the wire end hooking cover.

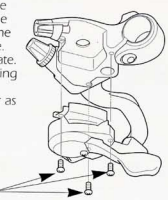
Note: The wire end hook may get hooked inside the lever mechanism, which will stop the lever from moving back to the proper position. If the lever does not return, use the end of the inner cable to unhook the wire end hook.

Tightening torque: 5 - 7 Nm {44 - 60 in. lbs.}



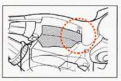
Replacement of the shifting lever unit

1. Loosen the cable fixing bolt (nut) of the derailleur, and then pull the inner cable out of the shifting lever unit in the same way as when installing the inner cable.
2. Remove the indicator unit and cam plate.
3. Remove the three shifting lever mounting screws, and then remove the shifting lever unit and wire end hooking cover as shown in the illustration.

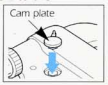


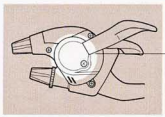
Tightening torque : 0.5 - 0.8 Nm {4 - 7 in. lbs.}

4. To assemble, align the shifting lever unit and the brake lever bracket, install the wire end hooking cover while being careful that the pins at both ends go into their respective holes, and then secure the shifting lever mounting screws.



5. Shift the front lever to the small chainring position and the rear to the smallest sprocket position. Push the cam plate into the hex-shaped hole on the shift unit. Make sure that the front indicator is to its extreme right position, the rear to its extreme left position, and mount the indicator units.

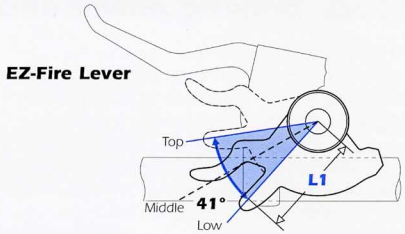


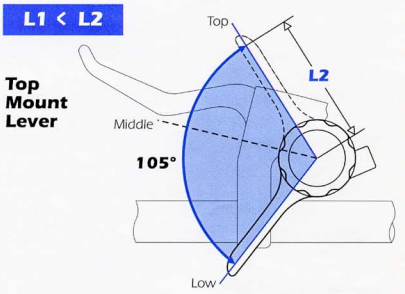


Do not disassemble the indicator and shifting lever unit, as this may damage them or cause mis-operation.

"EZ-Fire Shift Lever" High-performance shifting for entry-level MTB groups.

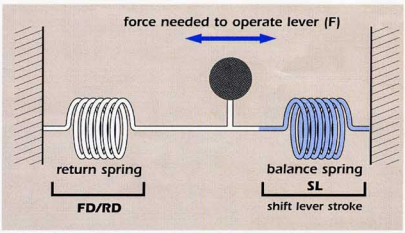
High-performance shifting for entry-level MTB groups.
The EZ-Fire lever set brings the control stability and convenience of Rapidfire underbar shifting to the entry-level Acera-X and Altus component groups. New balance spring mechanism realizes a shorter shift stroke and easier action that significantly reduce shifting effort. Left lever set features identical stroke lengths for small-to-middle and middle-to-large chainwheel shifts. And of course, there's Optical Gear Display for gear position verification at a glance.



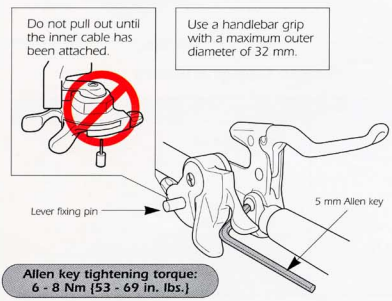


The EZ-Fire Mechanism

The EZ-Fire lever set uses a new short-stroke light-action shifting unit that incorporates an additional balance spring to counteract the force of the lever's return spring and the derailleur spring. Because the balance spring lowers shifting resistance, a larger shift drum can be used to supply the necessary cable travel from a shorter shifting stroke, without any increase in shifting effort. The shifting stroke has been reduced 65% compared to the Altus C90 thumb shifter.

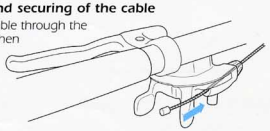


Installation of the brake lever

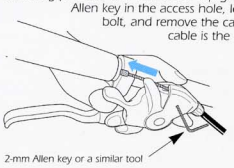


Connection and securing of the cable

Pass the inner cable through the lever hole, and then install the lever.

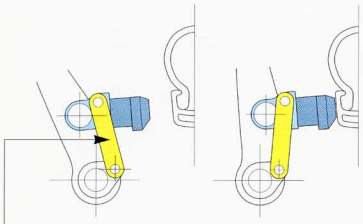


When replacing a shift cable, shift the front lever to the small chainring position, and rear to the top gear position. Insert a 2mm Allen key in the access hole, loosen the cable securing bolt, and remove the cable. Installation of a new cable is the reverse procedure.

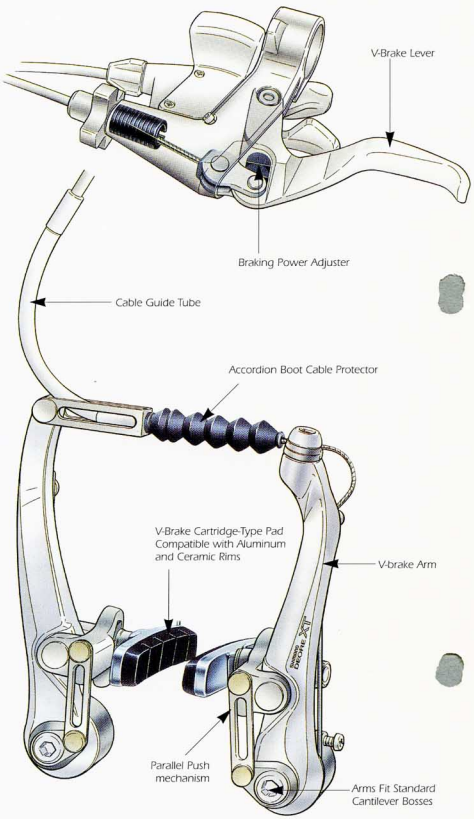


"V-Brake"
Improved cantilever design delivers more braking power and control.

The V-Brake was developed to take further advantage of the cantilever principle in order to deliver more braking power and control.
The V-Brake's longer arms provide a greater power multiplication ratio, and are vertically positioned to maintain a narrow profile.
The cable activates the cantilever arms at a direct 90° angle so power is applied at maximum efficiency. The V-Brake lever incorporates an adjustable cable action mechanism that lets riders set the cable pull ratio to personal preferences.
The V-Brake's "Parallel Push" linkage holds the pads parallel to the rim to prevent dive-in and achieve maximum braking power.
This mechanism results in more even pad wear so a thinner pad can be used without any sacrifice in service life. The V-Brake is part of the XTR and Deore XT groups for 1996.



The Parallel Push linkage keeps the face of the brake shoe in full contact with the rim for maximum braking power and more even pad wear.



Important Information on V-Brake and Cantilever Compatibility

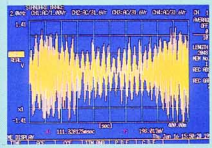
The lever and brake arm operating ratios used with the V-Brake are significantly different from conventional cantilever brakes. Poor and even dangerous braking performance may result if V-Brake components are mixed with standard cantilever components. Because of this, we strongly recommend using V-Brake levers (ST-M950, BL-M950, ST-M739 and BL-M739) and arms (BR-M950, BR-M739) as a set. Refer to the at right.

	V-Brake Arms	Cantilever Brake Arms
V-Brake Lever (variable cable action)	Good braking performance will be obtained	**Avoid this combination** because of weak braking power.
Conventional Lever (standard or servo-wave type)	**Avoid this combination** because of the danger of easily locked brakes and a spongy lever feeling.	Good braking performance will be obtained.

"ANTI-VIBRATION M-SYSTEM"
All-weather stopping performance without squealing or chattering.

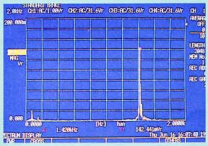
Shimano M-System brakes were designed to keep stop you under any condition you're likely to encounter on your bike. Vibration analysis techniques were employed to find out at what frequencies cantilever brakes tend to squeal. The cantilever arm was then completely redesigned for greater strength and rigidity in order to suppress these squeal-inducing frequencies. A new pad compound was also developed to further aid in suppressing vibration. The result is the Anti-Vibration M-System used on the STX-RC, STX, and Alivio groups. M-System not only stops you in the wet, it stops you quietly as well.

Noise produced by conventional brakes

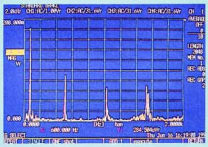


Brake Squeal Analysis

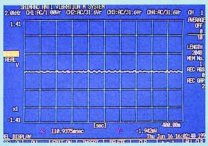
Graph shows frequencies generated during brake squeal.



Graph showing frequency that produces high-pitched squealing.



Graph showing frequency that produces low-pitched squealing.



Graph showing Anti-Vibration M-System brakes operating without producing any squeal-inducing frequencies.

Anti-Vibration Pad Compound

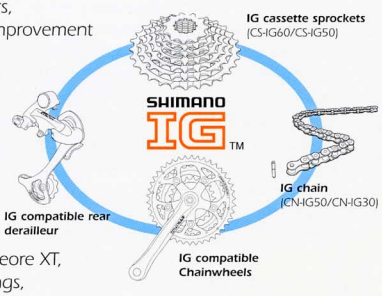
Squeal-inducing vibrations are also suppressed through a new pad compound and a larger pad holder.

Anti-Vibration Cantilever Arm

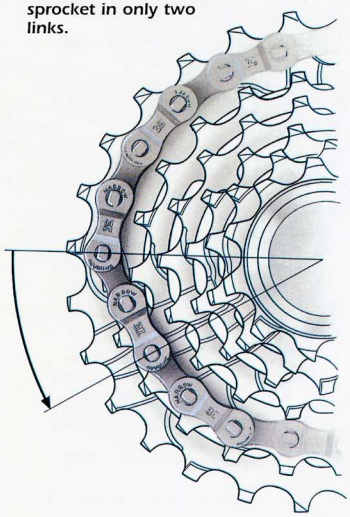
The area around the adjuster screw has been especially strengthened to minimize squeal-inducing vibrations.

"SHIMANO IG"
Reduced shifting shock and improved chain control.

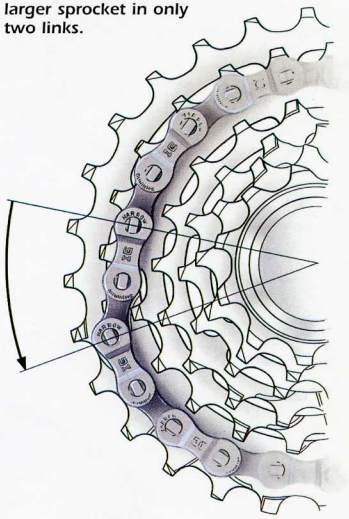
Shimano IG has taken integrated design of the derailleurs, chainwheels, chain, and sprockets to a new level. The improvement in shifting performance offered by the IG system is most noticeable when up-shifting the rear derailleur (larger to smaller sprocket) or down-shifting the front derailleur (larger to smaller chainring). IG prevents the chain from separating from the larger sprocket or chainring at other than the designated release point. As a result, the chain takes the quickest and most direct path from sprocket to sprocket without dropping. Noise and shock are greatly eliminated. The Alivio, STX, and STX-RC groups use the complete IG drivetrain. The Deore LX, Deore XT, and XTR groups use the IG chain, IG-compatible chainrings, and IG chain compatible HG sprockets at the rear.



During an upshift, the IG system transfers the chain to the smaller sprocket in only two links.

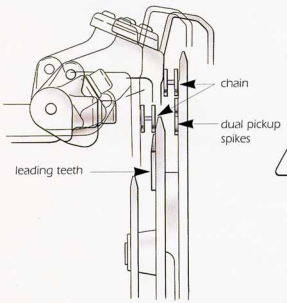


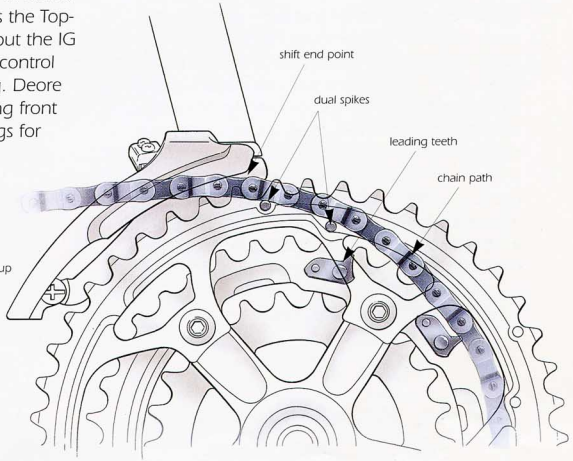
During a downshift, the HG and IG systems transfer the chain to the larger sprocket in only two links.



"Front IG System"
Faster, more precise chainwheel shifting

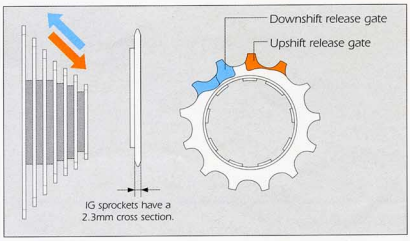
The IG-compatible SGX-II chainring and Top-Swing front derailleur provide improved chainwheel shifting performance when used in combination with the IG chain. Not only does the Top-Swing derailleur reduce shifting effort, but the IG system provides a higher level of chain control for fast and smooth chainwheel shifting. Deore LX, Deore XT, and XTR use the Top-Swing front derailleur, IG chain, and SGX-II chainrings for 1996.

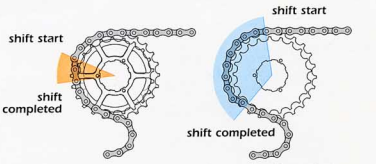




"Rear IG System"
Precision chain control for rear derailleur shifting

IG sprockets feature thicker cross sections plus redesigned tooth profiles and shifting ramps that provide a higher level of control with the IG chain. The IG chain uses new chamfer patterns on the inner and outer plates and was designed in conjunction with the IG sprockets. The IG-compatible rear derailleur incorporates new pulley profiles as well as stronger pulley cage and mounting bracket springs to tension the chain tighter for better shifting. The result is an overall improvement in shifting performance, especially during up-shifting. IG prevents the chain from separating from the larger sprocket at non-designated points, so the chain dropping, noise, and shock commonly associated with up-shifting are largely eliminated. The rear IG system is used on the Alivio, STX, and STX-RC groups.



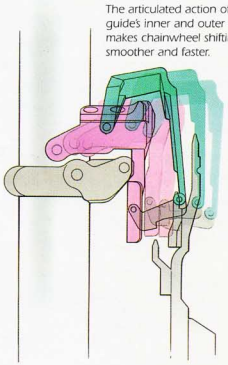


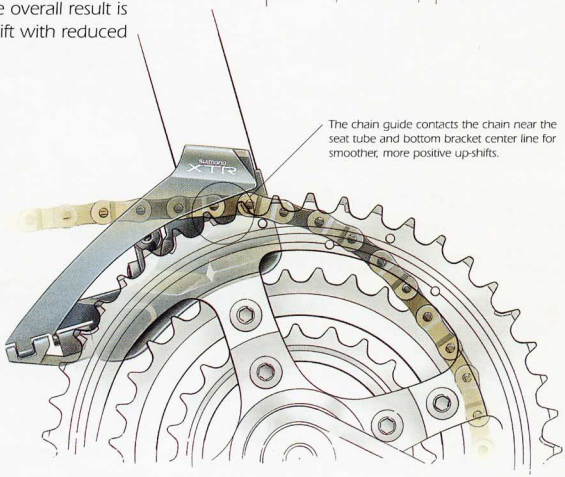
IG sprockets guide the chain quickly and directly to the next sprocket without override.

Conventional sprockets cause the chain to ride up and over the gear teeth before engaging the sprocket.

"Differential plate front derailleur"
Differential plate front derailleur improves chainwheel shifting.

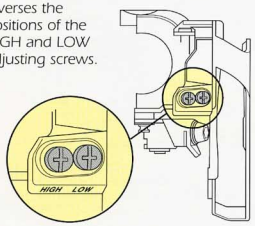
The big difference between XTR's new differential plate front derailleur and conventional types is the hinged chain plate which allows a separate movement of the inner and outer plates. While the outer plate moves in a similar fashion to conventional derailleurs, the oversize inner plate and its accelerated swing-out action are radically different. The larger size and articulated movement of the inner plate reduce the shift stroke and allow the chain guide to contact the chain much closer to the seat tube-bottom bracket center line. These factors combine to reduce chain twisting during up-shifts (shifts from a smaller to a larger chainring), decrease chainling-derailleur contact time, and eliminate excess derailleur movement. The overall result is a faster and more positive up-shift with reduced lever effort.

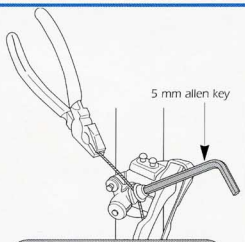

The articulated action of the chain guide's inner and outer plates makes chainwheel shifting smoother and faster.



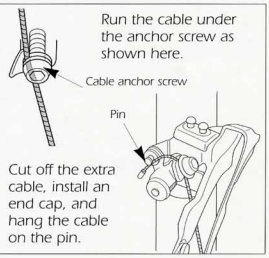
The chain guide contacts the chain near the seat tube and bottom bracket center line for smoother, more positive up-shifts.

Remember that the top-swing derailleur reverses the positions of the HIGH and LOW adjusting screws.



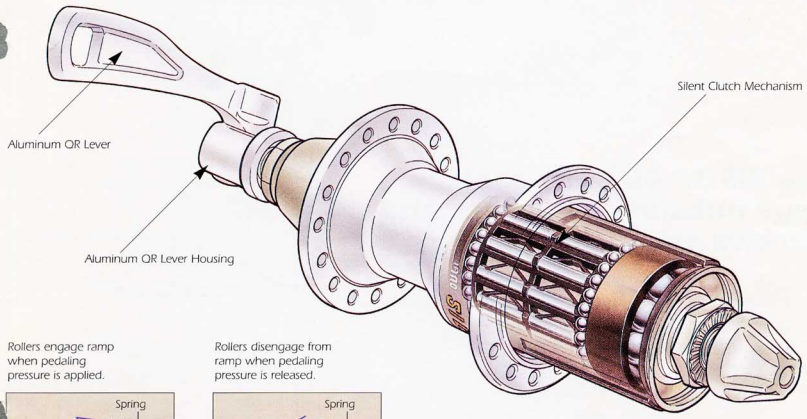


Tightening torque: 4.9 - 6.9 Nm {44 - 60 in. lbs.}

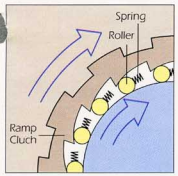


"Silent Clutch Freehub" Fast and smooth engagement plus silent freewheeling.

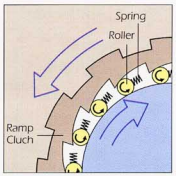
The Alivio, STX and STX-RC groups features the new Silent Clutch Freehub for 1996. The Silent Clutch Freehub replaces the conventional ratchet-type freewheel mechanism with an inclined ramp and roller clutch. The extra-wide rollers offer a much larger contact area than conventional pawls. so pedaling loads are dispersed and freewheel life is extended. The roller clutch provides a faster and more precise action because it engages instantly when pedaling starts. The pedals travel a shorter distance before freewheel engagement so shock is reduced and a more comfortable pedaling action is realized. Furthermore, the completely silent freewheeling action results in a more environmentally friendly bicycle. Used with the IG drivetrain, the Silent Clutch Freehub provides a feeling of quiet smoothness and precision that enhance the cycling experience.



Rollers engage ramp when pedaling pressure is applied.

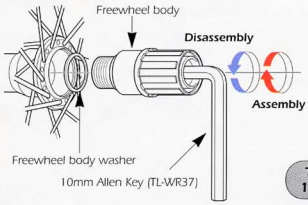


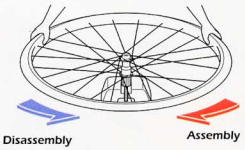
Rollers disengage from ramp when pedaling pressure is released.



Replacement of the freewheel body

Note :
Do not attempt dissemble the freewheel body, because it may result in a malfunction.
Special grease is used inside the freewheel body. Do not lubricate the freewheel body with ordinary grease or oil, as this may cause problems with the operation of the clutch mechanism.

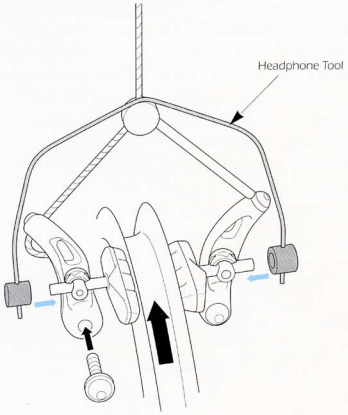




Tightening torque: 150Nm {133 in.lbs.}

"Easy-Set Cantilever Brakes"
Easy and accurate cantilever brake adjustment for maximum braking performance.

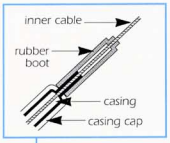
The Easy-Set brake design is used on the Deore LX, STX-RC, STX, Alivio, Acera-X, and Altus component groups. Easy-Set makes installation and adjustment of cantilever brakes faster and easier than ever before. The headphone tool holds the pads against the rim for initial alignment. The need to manually set toe-in is completely eliminated because the toe-in set spring automatically sets the correct shoe angle when the locknut is tightened. It couldn't get any easier.



New SIS SP-40 shift cable keeps out dirt and water and operates smoother.

The new SIS SP-40 shift cable incorporates an outer casing cap and protective rubber boot that keep dirt and water out of the liner and protect the exposed part of the cable.. The result is reduced maintenance needs and a cable that operates more smoothly for a longer period of time. The cable's low-friction action helps reduce shifting effort as well.

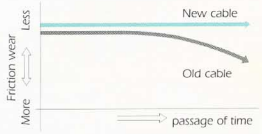
The M-System brake cable reduces friction and squirm between the cable and liner. The outer strands of the inner cable have been chamfered to match the inner contour of the liner and to distribute loads more evenly for a smoother cable action.



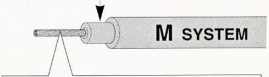


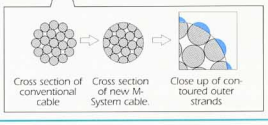
M-System cable uses contoured outer strands that provide a smoother action with less friction.

Cable operates more precisely and lasts longer.



New liner material reduces friction.





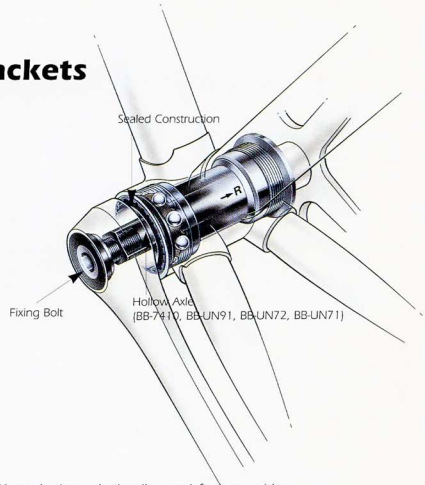
SP-40 cable reduces shifting friction.

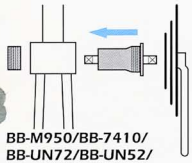
The new SIS SP-40 cable uses a smaller 1.2mm inner cable and 4.0mm casing for a smoother action that helps reduce shifting effort.



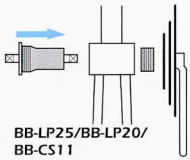
Cartridge-Type Bottom Brackets are easy to install and maintenance-free.

The cartridge bottom bracket is a one-piece construction incorporating the axle and bearing cassettes in an already assembled condition. Installation is fast and easy because the unit just screws into the bottom bracket shell without the need for adjustment. Sealed bearings keep out water and mud to extend service life and completely eliminate maintenance. Chainline stabilizer assures the crank arm mounts at the correct position on the axle to maintain an accurate chainline.





BB-M950/BB-7410/ BB-UN72/BB-UN52/ BB-LP26/BB-CT91



BB-LP25/BB-LP20/ BB-CS11

***Note:** As shown in the diagram left, the cartridge bottom brackets are installed from different sides of the frame according to model number.

SERIES	Crank set	Model No.	Spindle length	Stamped marking	Shell width	Chainline	Description
XTR	FC-M950	BB-M950	112.5	112	68, 73	47.5	hollow axle
			116	116	68, 73	50	
DEORE XT	FC-M737-IG	BB-UN72	107	MM107	68, 70, 73	47.5	hollow axle, chainline stabilizer
			113	LL113	68, 70, 73	50	
DEORE LX	FC-M563-IG	BB-UN52	107	MM107	68, 70	47.5	chainline stabilizer
			113	LL113	68, 70, 73	50	
STX-RC	FC-MC36	BB-UN52	110.5	MM110	68, 70	47.5	chainline stabilizer
			113	LL113	68, 70, 73	50	
STX	FC-MC34	BB-UN52	110.5	MM110	68, 70	47.5	chainline stabilizer
			113	LL113	68, 70, 73	50	
ALIVIO	FC-MC14	BB-LP26	110.5	MM110	68, 70	47.5	chainline stabilizer
			113	LL113	68, 70, 73	50	
ACERA-X	FC-M291	BB-LP26	110.5	MM110	68, 70	47.5	chainline stabilizer
			113	LL113	68, 70, 73	50	
ALTUS	FC-CT91	BB-CT91	116	YL116	68, 70	47.5	Easy-Set (BB & FD)
			121	ZL121	73	50	
TOURNEY	FC-TY21	BB-CS11	122.5	D-NL	68, 70	47.5	
MJ-II	FC-MJ05	BB-CT91	116	YL116	68, 70	47.5	Easy-Set (BB & FD)
			121	ZL121	73	50	
	FC-MJ06	BB-CT91	116	YL116	68, 70	43.5	
DURA-ACE	FC-7410	BB-7410	103	SS103	68, 70	43.5	hollow axle
600	FC-6400	BB-UN72	115	D-H	68, 70	43.5	hollow axle, chainline stabilizer
105 SC	FC-1056	BB-UN52	107	MM107	68, 70	43.5	chainline stabilizer
	FC-1057	BB-UN52	118	XL118	68, 70	45	
RX100	FC-A551	BB-UN52	107	MM107	68, 70	43.5	chainline stabilizer
	FC-A553	BB-UN52	122.5	D-NL	68, 70	45	
RSX	FC-A410	BB-LP26	110.5	MM110	68, 70	45	chainline stabilizer
	FC-A413	BB-LP20	118	XL118	68, 70	45	
300EX	FC-A300	BB-CS11	115	D-H115	68, 70	43.5	

Shimano Genuine Cables & Cable Casings

We strongly recommend the use of the Shimano products shown on these pages in order to maintain top performance of IG drivetrains, Advanced Light Action mechanisms, Dual SIS, and M-System brakes.

Inner Cable File Box

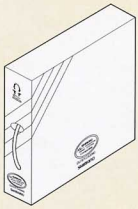
PART NO.	DESCRIPTION	PCS.PER BOX
600 9851	For Shifting Lever — ø1.2mm x 2000mm (Stainless steel)	100
600 9852	For Shifting Lever — ø1.2mm x 2100mm	100
600 9853	For Shifting Lever — ø1.1mm x 2100mm (Stainless steel)	100
800 9851	For ATB Brake Lever — ø2.0mm x 1700mm	50
800 9855	For ATB Brake Lever — ø1.6mm x 1700mm (Stainless steel)	100
800 9852	For ATB Brake Lever — ø1.6mm x 1700mm	100
800 9856	For Racing Brake Lever — ø1.6mm x 1700mm (Stainless steel)	100
800 9853	For Racing Brake Lever — ø1.6mm x 1700mm	100

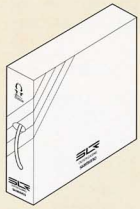


M-System Brake Outer Casing File Box (ø5mmx30m/98.5ft.)

Use for 1.6mm diameter brake inner cables.

PART NO.	DESCRIPTION
80Y 0021	ø5mm x 30m/Red (#107)
80Y 0021-2	ø5mm x 30m/Pink (#127)
80Y 0022	ø5mm x 30m/Blue (#207)
80Y 0022-1	ø5mm x 30m/Transparent Blue (#217)
80Y 0022-4	ø5mm x 30m/Pastel Green (#247)
80Y 0024	ø5mm x 30m/Yellow (#407)
80Y 0024-1	ø5mm x 30m/Transparent Yellow (#417)
80Y 0025	ø5mm x 30m/White (#507)
80Y 0025-1	ø5mm x 30m/Transparent Silver (#517)
80Y 0025-2	ø5mm x 30m/Silver (#527)
80Y 0025-3	ø5mm x 30m/Metallic Silver (#537)
80Y 0026	ø5mm x 30m/Black (#607)
80Y 0026-4	ø5mm x 30m/Gray (#647)





SLR Brake Outer Casing File Box (ø6mmx25m/82ft.)

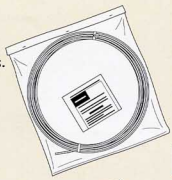
Use for 2.0mm diameter brake inner cables.

PART NO.	DESCRIPTION
80A 0020	ø6mm x 25m/White (#507) For ø2.0mm Inner Cable
80A 0026	ø6mm x 25m/Black (#607) For ø2.0mm Inner Cable

SIS-SP40 Shift Outer Casing

Use for 1.2mm diameter shift inner cables.
(10m)

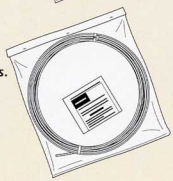
PART NO.	COLOR
6Z2 9810	Black



SIS-SP36 Shift Outer Casing

Use for 1.1mm diameter shift inner cables.
(10m)

PART NO.	COLOR
6Z6 9810	Black
6Z6 9811	High-tech Gray



SIS-SP Shift Outer Casing

Use for 1.2mm shift inner cables.
(25ft./7.62m) w/Outer Cap
End caps included
(Ø6mm-30pcs/
5.5mm-15pcs/4mm-15pcs)

PART NO.	COLOR
60B 9760-1	Silver (#537)
60B 9761-1	White (#207)
60B 9762	Red (#107)
60B 9763-1	Blue (#207)
60B 9765	Black (#607)
60B 9768	Yellow (#407)
60B 9769	Gray (#637)
60B 9764	Violet (#247)
60B 9766-1	Pastel Green (#1477)



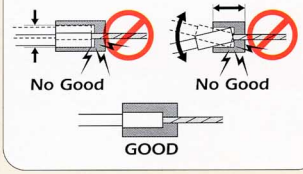
Outer End Cap

	PART NO	DESCRIPTION	
For SIS-SP40	6Z2 9801	Sealed Outer Cap (ø6mm) For SIS-SP40	100
	6ZA 9801	Outer Cap (ø6mm) For SIS-SP40	100
For SIS-SP36	6Y4 9801	Sealed Outer Cap (ø6mm) For SIS-SP36	100
	6Z6 9801	Outer Cap (ø6mm) For SIS-SP36	100
For SIS-SP (ø5mm)	60E 0004	Sealed Outer Cap (ø4mm) For SIS-SP	1
	60E 0003	Sealed Outer Cap (ø5mm) For SIS-SP	1
	60E 0002	Sealed Outer Cap (ø5.5mm) For SIS-SP	1
	60E 0001	Sealed Outer Cap (ø6mm) For SIS-SP	1
	60B 0003	Outer Cap (ø4mm) For SIS-SP	1
	60B 0004	Outer Cap (ø5mm) For SIS-SP	1
	60B 0002	Outer Cap (ø5.5mm) For SIS-SP	1
	60B 9801	Outer Cap (ø6mm) For SIS-SP	100

Inner End Cap

PART NO	DESCRIPTION	
620 9803	Inner End Cap (ø1.1mm / ø1.2mm)	100
620 9804	Inner End Cap (ø1.6mm)	100
620 9805	Inner End Cap (ø2.0mm)	100

The cable cap should fit completely into the cable stop to prevent binding which can adversely affect shifting performance.



Outer Caps



Inner Cable Caps

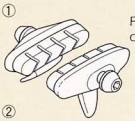


Shimano Original Equipment Brake Pads

Always use Shimano brake pads to assure top performance from your Shimano brake system.

Shoes for Caliper Brakes

①

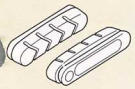


For the following caliper:BR-7403

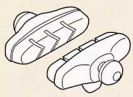


Pair

②

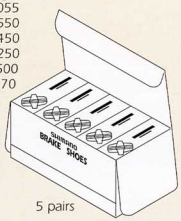


③



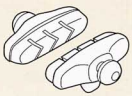
BR-6403

For the following calipers:
BR-6403 / BR-1055
BR-1050 / BR-A550
BR-A500 / BR-A450
BR-A350 / BR-A250
BR-E700 / BR-R500
BR-L490 / BR-L570



5 pairs

④



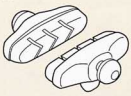
BR-1050

For the following calipers:
BR-1055 / BR-1050 /
BR-A550 / BR-A500 /
BR-A450 / BR-A350 /
BR-A250 / BR-E700 /
BR-R500 / BR-L490 /
BR-L570



5 pairs

⑤



For the following calipers:
BR-A500 / BR-A450
BR-A350 / BR-A250

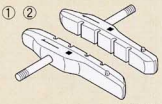


10 pairs

	PART NO.	DESCRIPTION
1	3-84B 9801	BR-7403 brake shoes (pair)
2	3-84B 9802	BR-7403 brake shoes without holder (pair)
3	3-83G 9801	BR-6403 brake shoes (5 pairs)
4	3-82A 9901	BR-1050 brake shoes (5 pairs)
5	3-81G 9810	Brake shoes (10 pairs)

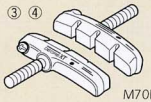
Replacement Shoes for Cantilever Brakes

① ②



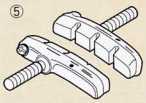
V-Brake cartridge-type shoes for BR-M950 / BR-M739

③ ④



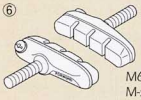
M70R
M-System cartridge-type brake shoes for
BR-M900-C / BR-M737

⑤



M70R
M-System cartridge-type brake shoes for
BR-M900-C / BR-M737
BR-M737 /
BR-M565-E
(For ceramic rims)

⑥



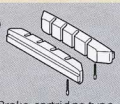
M65T
M-system cartridge-type brake shoes for
BR-M565 / BR-M565-E /
BR-MC33 / BR-MC33-E

③ ④ ⑤ ⑥



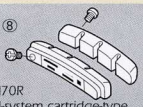
Front and rear set

⑦



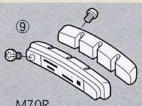
V-Brake cartridge-type shoes for
BR-M950 / BR-M739

⑧



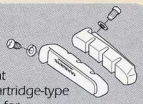
M70R
M-system cartridge-type brake shoes for
BR-M900-C / BR-M737

⑨



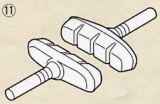
M70R
M-system cartridge-type brake shoe for ceramic rims

⑩



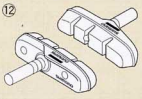
M65T
Replacement
M-System cartridge-type brake shoes for
BR-M565 / BR-M565-E /
BR-MC33 / BR-MC33-E

⑪



Replacement M-System brake shoes for
BR-M560 / BR-M561 /
BR-MC30-CH / BR-MC31-CH /
BR-MC30 / BR-MC31 /
BR-MC10 / BR-MC11 /
BR-MC15 / BR-C700 /
BR-C701 / BR-C400 / BR-C401

⑫

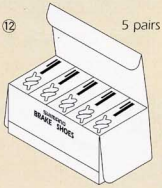


M65T
Brake shoes for
BR-MC32 / BR-MC32-E /
BR-MC12 / BR-MC12-E



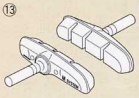
pair

⑪ ⑫



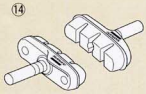
5 pairs

⑬



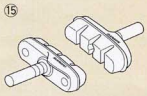
Brake shoes for
BR-MC32 / BR-MC12 / BR-CT50 / BR-CT51 /
BR-CT20 / BR-CT21 / BR-TY22 / BR-TY23 /
BR-TY20 / BR-TY21 / BR-M560 / BR-M561 /
BR-MC31-CH / BR-MC30-CH / BR-MC31 /
BR-MC30 / BR-MC10 / BR-MC15

⑭



M-System brake shoes for
BR-CT90 / BR-TY21 / BR-TY23 /
BR-CT50 / BR-TY21 / BR-M290 /
BR-CT20 / BR-TY22 / BR-MJ05 /
BR-CT51 / BR-TY20 / BR-TY20 /
BR-MJ05 / BR-M290-E /
BR-CT90-E / BR-MJ05-E

⑮



Regular ATB shoes for
BR-CT90 / BR-CT90-E /
BR-MJ05 / BR-MJ05-B

⑬ ⑭ ⑮



10 pairs

	PART NO.	DESCRIPTION
1	8AB 9801	BR-M950 V-brake cartridge-type shoe set (pair)
2	8AA 9801	BR-M739 V-brake cartridge-type shoe set (pair)
3	83P 9810	M70R BR-M900-C cartridge-type brake shoe set (front rear set)
4	83X 9801	M70R BR-M737 cartridge-type brake shoe set (front rear set)
5	8BG 9810	M70R cartridge-type brake shoe set for ceramic rims (front rear set)
6	8BA 9801	M65T cartridge-type brake shoe set (front rear set)
7	8AA 9802	V-brake cartridge-type shoes & stop pins set (pair)*1
8	83X 9802	M70R BR-M900-C BR-M737 brake shoes & fixing screws set (2 pairs)*2
9	83X 9807	M70R for ceramick rims brake shoes & fixing screws set (2 pairs)*2
10	8BA 9802	M65T brake shoes & fixing screws set (2 pairs)*3

	PART NO.	DESCRIPTION
11	82K 9804	M-System brake shoes (Alminum pins / 5pairs)
12	84F 9810	M65T brake shoe set (5 pairs)
13	82K 9810	M65T brake shoe set (10 pairs)
14	81X 9810	M55T brake shoe set (10 pairs)
15	8GB 9810	Brake shoe set (10 pairs)

*1 For use with V-Brake pad holder.
*2 For use with M70R brake pad holder.
*3 For use with M65T brake pad holders.

Shimano Recommended Service Parts

ATB/CTB
Universal Brake Cable and Casing
High-tech gray, 1.6mm diameter, front and rear
800-900mm/
1,400-1,500mm
Code No. 8YC 9801



ATB/CTB
Universal Brake Cable and Casing
High-tech gray, 1.6mm diameter, rear only,
1,400-1,600mm
Code No. 8YC 9802



Shift Inner Cables w/inner end cap
1.2mm diameter, 2,100mm, 10-pack
Code No. 600 9810



Chainwheel Mounting Bolts & Ring Nuts (Aluminum)
Code No. 17X 9801



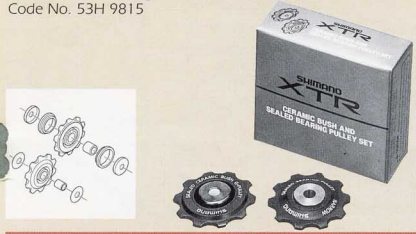
Titanium Crank Bolt set
(For FC-M900)
Code No. 17G 9808



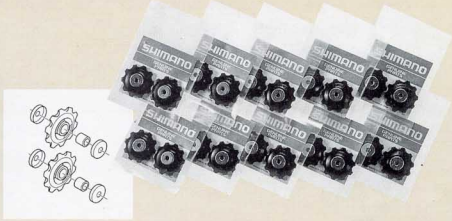
Titanium Crank Bolt Set
(For FC-7410)
Code No. 17X 9803



Rear Derailleur Ceramic Bushing/ Sealed Bearing Set (For RD-M910)
Code No. 53H 9815



Rear Derailleur Pulley Sets (10 pairs)
Code No. 563 9810



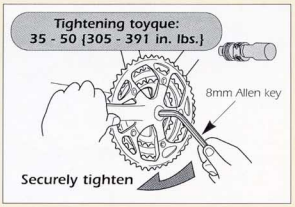
Shimano Genuine Tools

8mm x 200mm Hexagon Wrench key
TL-WR38
For Low Profile Crank
Code No. 130 0917



Cotterless Crank Extractor
TL-FC10
Code No. 130 0901





Three Spanners Set
TL-FC30



For removing and installing bottom brakets, headsets, and pedals.
Code No. 130 9001

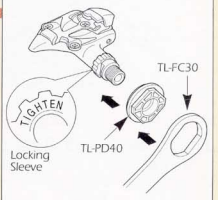
Cartridge Headset Tool
TL-HP50 (1")
(HP-7410, HP-6500, HP-M740, HP-M563 and HP-MC30)
Code No. 702 0105



TL-HP51 (1-1/8")
(HP-M741, HP-M564 and HP-MC31)
Code No. 720 0106

TL-HP52 (1-1/4")
(HP-M742)
Code No. 720 0107

Place the TL-PD40 tool on the axle nut and turn with the TL-FC30 spanner to remove the axle/bearing assembly. Turn clockwise on right pedal, and counter-clockwise on left pedal to remove axle.



Cone Adjusting Tool Set
TL-PD73
For SPD Pedal.
Code No. 460 9850



Pedal Axle Unit Removal Tool
TL-PD40
For SPD Pedal.
Code No. 42A 0900



Cable Cutter
TL-CT10



Use to cut outer casings, cables, and pinch end caps.
Code No.098 0001



Bottom Bracket Installation Tool
TL-UN73
For BB-7410 / BB-UN92 / 91 / 90, BB-UN72 / 71 / 70, BB-UN52 / 51 / 50, BB-CS21 / 20, BB-CS11 / 10, BB-LP30 / 26 / 25 / 20 and BB-CT91 / 90
Code No. 130 0906-6



Bottom Bracket Installation Tool (Mounts to ratcheting socket wrench handle.)
TL-UN70
Code No.
130 0906-4



Lock Ring Tool for HG/IG Sprockets
TL-HG15
Code No. 120 0918



Lock Ring Tool for HG/IG Sprockets (Mounts to ratcheting socket wrench handle.)
TL-HG10
Code No. 120 0917



Sprocket Holding Tool (Holds sprockets when removing lock rings.)
TL-SR20
Code No. 130 0915



Chain Connecting Tools
TL-CN21
(w/TL-CN24 chain gauge)
For IG/HG Chains
Code No. 130 9040



Chain Connecting Tools
TL-CN30
For IG/HG Chains
2 spare pins included in grip.
Code No. 130 9050

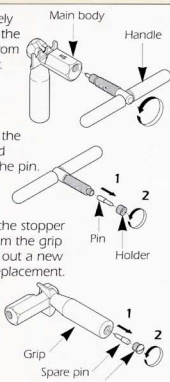


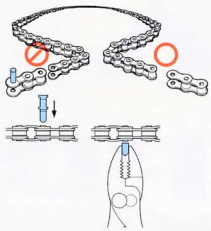
IG/HG Ampule-Type Chain Connector Pin

For connecting IG/HG chains.
50 pieces
Code No.045 9802



1. Completely unscrew the handle from the body.
2. Unscrew the collar and remove the pin.
3. Remove the stopper screw from the grip and take out a new pin for replacement.



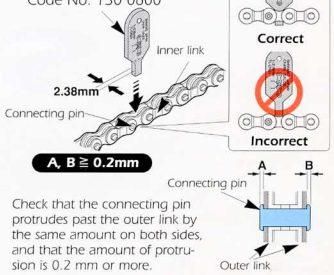


Connecting IG/HG Chains

When connecting chains with the IG/HG chain connector pin, make sure that the pin protrudes at least 0.2mm from each outer link. If these dimensions are unequal, the inner link spacing may become too narrow to allow proper shifting.

For IG, HG and UG chains, insert the chain gauge (TL-CN24) into the inner link which is next to the chain connecting pin to check that the inner link width is correct.

TL-CN24
Chain gauge
Code No. 130 0600



Check that the connecting pin protrudes past the outer link by the same amount on both sides, and that the amount of protrusion is 0.2 mm or more.

10mm x 200mm Hexagon Wrench key
TL-WR37
Code No. 520 0905

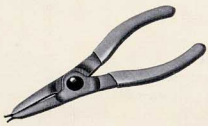




Hub Cone Wrenches
TL-HS10
13/14mm, 2 wrenches
Code No. 320 0901



Snap Ring Plier
TL-3S10
Code No. 320 0901



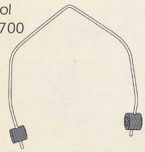
Sprockets for Nexus Rear Hubs

Code No. 320 0901



321 0300	14T gear (Black)
322 0320	16T gear (Black)
322 0342	18T gear (Silver)
322 0352	19T gear (Silver)
322 0362	20T gear (Silver)
330 6000	21T gear (Silver)
330 6010	22T gear (Silver)
321 2000	Snap ring

Headphone Tool
TL-CB20
Brake easy-set tool
Code No. 820 0700



Grease for Nexus Rear Hubs & Roller Brakes

50g can
Code No. 041 4000



Dura-Ace Grease

50g can
Code No. 041 1000

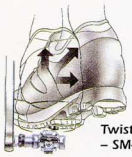


The shoe and pedal system that widens the cycling experience.

SPD®
SHIMANO PEDALING DYNAMICS



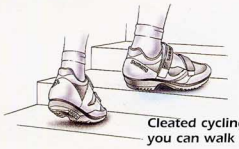
Step in to engage the SPD binding.



Twist out to release – SM-SH55 creat



Z-strap closure – SH-R070 shoe



Cleated cycling shoes you can walk in.

The SPD® System

SPD stands for Shimano Pedaling Dynamics, the shoe and pedal system that performs better whether you're on or off the bike. The SPD shoe uses a special shoe cleat that snaps into the SPD pedal so you can pedal with greater comfort, efficiency, and stability ... without the need for toeclips. The SPD cleat is recessed into the sole of the shoe so you can get off the bike anywhere and still walk with complete comfort and confidence.

The Design

SPD mountain bike pedals were designed to repel mud and dirt so even the worst environments don't interfere with the operation of the retention system. The compact SPD retention mechanism reduces the size and weight of SPD road racing pedals too. SPD also provides road racers with the convenience of being able to walk comfortably before and after events without the bother of changing shoes. Side pontoons protect the cleat from damage.

The SPD shoe and pedal system is easy to use. Just step onto the SPD pedal and the cleat engages. Rotate your ankle outward and the cleat retention mechanism releases quickly and easily.

The Advantages

SPD mountain bike shoes give you the best of both worlds – the pedaling stability and efficiency of clipless pedaling with the walking comfort of a good hiking shoe. SPD lets you combine cycling with other activities without changing shoes. Off-road cyclists can carry the bike over obstacles with greater safety and confidence. Touring cyclists have more freedom to stop and explore. Competitive cyclists can walk around more comfortably before and after events without damaging their cleats.

Pictograms denote the type of SPD® shoe. The pictograms below away easy identification of the type of SPD® shoe.





Off-Road Cycling Shoes

SPD off-road cycling shoes feature supportive uppers and aggressive rubber tread patterns that provide a good grip on dirt and sand when you have to touch down or get off the bike. Shoes are available for a range of off-road riding styles, from full-blown competition to casual trail and field riding. An SPD off-road shoe also makes an excellent touring and general purpose cycling shoe. page 82

Road Cycling Shoes

Shimano road cycling shoes were designed to give road racers, performance enthusiasts, and fitness cyclists the best balance of light weight, stiffness, and comfort for optimum pedaling efficiency. Pontoon protectors guard the cleat when walking, so you never have to worry about damaging your cleats off the bike. From fitness cycling to professional road racing, there's a Shimano road shoe that can help you perform better on your bike. page 84

Sport/Cycling Shoes

Shimano sport-cycling shoes are for people who include cycling as part of their active lifestyle. These shoes provide good pedaling comfort and efficiency but can also be worn off the bike, just like an athletic shoe, for a variety of other activities. Your SPD sport-cycling shoe is ready to ride anytime you are. page 86

SPD® Pedals and Replacement Parts

Shimano now makes available an expanded line-up of SPD pedals designed for use with SPD shose and cleats, There's an SPD pedals for every riding style, from competition cycling on or off the road to touring and recreational riding. The SPD pedal is an essetial part of any Shimano component group. page 88



SH-M210

Light and rugged SPD racing shoe designed for off-road competition.



SH-M110

A versatile, high-performance SPD shoe for racing, off-road cycling, and touring.



SH-M090

SPD mountain bike performance shoe with unique Z-strap closure system.



SH-M031

SPD flexibility and performance at an entry-level price.



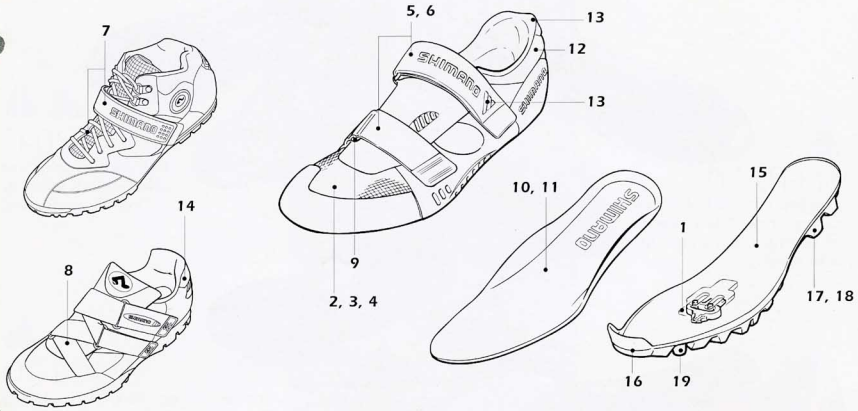
NEW SH-M055

Supportive high-cut upper with dual strap-and-lace closure. Hiking tread pattern on rubber sole.

SPD® shoes especially designed for all types of mountain biking.

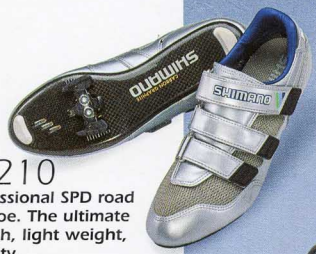
SPD® MOUNTAIN BIKE SHOE SPECIFICATIONS

Model	Weight (pair-w/o cleats)	Compatible SPD Pedal	Upper	Closures	Inner Sole	Mid Sole	Outer Sole	Color	Size
SH-M210	770g (size 44)	PD-M747 PD-M535 PD-M323 PD-A525	Hytrel plastic, synthetic leather, polyester mesh	double extra-long straps	cup molded Cambrelle w/EVA backing	fiberglass-reinforced nylon	rubber, aggressive knobby racing tread pattern	black	36, 37 to 47 in half size, 48
SH-M110	795g (size 43)		nylon mesh, Polyurethane coated split leather, synthetic leather	extra-long triple straps	cup molded Cambrelle w/EVA backing	fiberglass-reinforced nylon	rubber, aggressive knobby racing tread pattern	yellow	36-49 in whole sizes
SH-M090	866g (size 40)		split leather, Cordura, nylon cloth	criss-cross Z-strap	cup molded Cambrelle w/EVA backing	fiberglass-reinforced nylon	rubber, high-profile hiking tread pattern	green	36-48 in whole sizes
SH-M055	928g (size 43)		split leather, Cordura, nylon cloth	extra-long straps laces	Cambrelle w/EVA backing	fiberglass-reinforced nylon	rubber, low-profile hiking tread pattern	dark brown/ blue	36-48 in whole sizes
SH-M031	710g (size 41)		Cordura nylon, split leather, PVC	laces	Cambrelle w/EVA backing	super tough nylon	rubber, low-profile hiking tread pattern	blue	36-48 in whole sizes



SPD® MOUNTAIN BIKE SHOE FEATURES

Feature	Benefit	SH-M210	SH-M110	SH-M090	SH-M055	SH-M031
1. **SPD sole patch**	Use as a cleated or non-cleated shoe. Sole patch removes easily for SPD cleat mounting.	●	●	●	●	●
2. **Hytrel & polyester mesh upper**	Super-strong polyester and Hytrel plastic panels don't stretch under high pedaling loads.	●				
3. **Nylon mesh & polyurethane corted split leather upper**	High-strength upper panels. Nylon mesh breathes for ventilation. Split leather is super-strong and keeps shape when wet.		●			
4. **Nylon mesh upper**	Nylon mesh is strong, flexible, and breathable for ventilation.				●	
5. **Double strap closure**	Extra-long double straps provide a snug, foot-hugging fit.	●		●		
6. **Triple strap closure**	Triple strap closures help shoe conform to foot shape.		●			
7. **Strap & lace closure**	Dual closure system. Strap provides a non-loosening closure and keeps laces out of the chain.				●	
8. **Criss-Cross Z-Strap**	New Z-strap closure system helps shoe conform better to the shape of the foot.			●		
9. **Alloy strap rings**	Alloy strap rings reduce weight and eliminate corrosion.	●	●	●		
10. **Cup molded inner sole**	Provides a natural cradle for the foot and a smoother transition between sole and upper.	●	●	●		
11. **Cambrelle & EVA inner sole**	EVA cushions, and soft Cambrelle absorbs moisture to help keep foot dry.	●	●	●	●	●
12. **Natural fit heel**	Anatomically designed heel panels and reinforcing strap help support heel and prevent heel lift.	●	●	●	●	
13. **Strap & heel reflectors**	Safety. Helps cyclist to be seen at night.	●	●	●		
14. **Heel reflector**	Safety. Helps cyclist to be seen from behind at night.				●	●
15. **Nylon-fiberglass mid-sole**	Rigid fiberglass reinforced nylon mid-sole distributes pedaling loads and protects against shocks.	●	●	●	●	
16. **Hard toe block**	Protects against front impacts to the foot.	●	●			
17. **High-traction outer sole**	Aggressive rubber tread pattern provides an excellent grip on all kinds of surfaces, especially loose dirt.	●	●			
18. **Sport sole**	Low-profile rubber sole makes comfortable for waking			●	●	●
19. **Spike mounting**	Attaching spikes to outer sole increases traction in mud, sand, and loose dirt (spikes optional).	●				



SH-R210

The professional SPD road racing shoe. The ultimate in strength, light weight, and rigidity.



SH-R120-C

Full carbon graphite sole reduces weight, increases rigidity.



SH-T120

Lightweight, comfortable pedaling efficiency for fitness cycling, sport riding, and fast touring.



SH-R111 NEW

Sport-racing shoe with adjustable triple strap closure and figerglass-reinforced nylon sole.



SH-R070

Comfortable pedaling efficiency from lightweight materials and new Z-strap closure.

SPD® shoes for road racing, performance cycling, and fast touring.

SPD® ROAD RACING & LIGHTWEIGHT PERFORMANCE SHOE SPECIFICATIONS

Model	Weight (pair-w/o cleats)	Compatible SPD Pedal	Upper	Closures	Inner Sole	Mid Sole	Outer Sole	Color	Size
SH-R210	580g (size 43)	PD-7410 PD-6500	Vectran mesh, synthetic leather	triple extra-long straps	cup molded Cambrelle w/EVA backing	Texon	Carbon graphite	silver	39-47 in half sizes, 48
SH-R120-C	610g (size 43)	PD-7410 PD-6500	synthetic leather, nylon mesh	triple extra-long straps	cup molded Cambrelle w/EVA backing	Texon	Carbon graphite	dark gray	36-48 in whole sizes
SH-R111	760g (size 44)	PD-7410 PD-6500	plastic resin Polyurethane coated split leather, nylon mesh	triple extra-long straps	cup molded Cambrelle w/EVA backing	fiberglass-reinforced nylon	fiberglass reinforced nylon	red	36-48 in whole sizes
SH-T120	630g (size 43)	PD-7410 PD-6500	nylon mesh, Polyurethane coated split leather	double straps	Cambrelle w/EVA backing	fiberglass-reinforced nylon	fiberglass reinforced nylon	black	36-48 in whole sizes
SH-R070	700g (size 43)	PD-7410 PD-6500	nylon mesh, Polyurethane coated split leather	criss-cross Z-strap	Cambrelle w/EVA backing	fiberglass-reinforced nylon	fiberglass reinforced nylon	green	36-48 in whole sizes

NOTE: All of the shoes shown on this page are pre-drilled for mounting Shimano clipless cleats and Look®-type cleats as well as SPD cleats.



SPD® ROAD RACING SHOE FEATURES

Feature	Benefit	SH-R210	SH-R120-C	SH-R111	SH-T120	SH-R070
1. **Adjustable SPD cleat mount**	15mm fore-aft, and 5mm lateral positioning of SPD cleat position.	●	●	●	●	●
2. **SPD/Shimano clipless pedal (Look® type) compatibility**	Pre-drilled to mount your choice of SPD or Look® cleats.	●	●	●	●	●
3. **Vectran mesh & synthetic leather upper panels**	Super strong Vectran mesh ventilates but will not stretch. Synthetic leather is pliable, waterproof, and stretch-resistant.	●				
4. **Synthetic leather & nylon mesh upper panels**	Waterproof synthetic leather, breathable nylon mesh.		●			
5. **Nylon mesh & polyurethane coated split leather upper panels**	Nylon mesh breathes for ventilation. Polyurethane coated split leather panels resist stretching and keep their shape.			●	●	●
6. **Plastic resin upper panels**	Improves rigidity without sacrificing a comfortable fit.			●		
7. **Triple strap closures**	Extra-long triple straps help shoe conform better to the shape of the foot.	●	●	●	2-straps	
8. **Criss-cross Z-strap closure**	Criss-cross straps provide 4 closure points with one strap.					●
9. **Alloy strap rings**	Alloy strap rings reduce weight and prevent corrosion.	●	●			
10. **Cup molded inner sole**	Cupped sole cradles the foot to provide a more comfortable fit.	●	●	●		
11. **Cambrelle & EVA inner sole**	EVA cushions and soft Cambrelle absorbs moisture to help keep foot dry.	●	●	●	●	●
12. **Natural fit heel**	Anatomic design holds heel better to reduce squirm and increase pedaling efficiency.	●	●	●	●	●
13. **Strap & heel reflectors**	Increased safety – makes cyclist more visible at night.	●	●	●	●	●
14. **Carbon graphite outer sole**	Light weight and excellent rigidity for power transfer efficiency.	●	●			
15. **Nylon-fiberglass outer sole**	Fiberglass reinforced nylon sole is light and rigid for power transfer efficiency.			●	●	●
16. **Air vents**	Air vents on front sole help keep feet dry and fresh.	●	●	●	●	●
17. **Polyurethane cleat protectors**	Hard polyurethane cleat protectors prevent cleat from being damaged when walking.	●				
18. **Rubber cleat protectors**	Rubber cleat protectors prevent cleat from being damaged and provide a non-slip walking surface.		●	●	●	●

NEW

SH-A070

Great for fitness riding, touring, or just cycling around town.



A casual cycling shoe with a road racing style.

A fashionable all-purpose SPD® sport shoe.



SH-C070

With the SH-C070, you're always ready to ride.

NEW

SH-SD50

The cool comfort of a sandal with SPD pedaling efficiency.



New SPD®-compatible sandal.

SPD® SPORT SHOE SPECIFICATIONS

Model	Weight (pair-w/o cleats)	Compatible SPD Pedal	Upper	Closures	Inner Sole	Mid Sole	Outer Sole	Color	Size
SH-A070	700g (size 42)	PD-M747 PD-M535 PD-M323 PD-A525	nylon mesh, polyurethane coated split leather,PVC	criss-cross Z-strap	Cambrelle, EVA backing	fibergrass reinforced nylon	rubber	blue	36 to 48 in whole sizes
SH-C070	700g (size 43)		nylon mesh, split leather, PVC, nylon fabric	laces, dual-anchor Y-strap	cup molded Cambrelle, EVA backing	super tough nylon	EVA & rubber, sport tread pattern	green	36 to 48 in whole sizes
SH-SD50	860g (size 44)		plastic resin (polyurethane), Neoprene, PVC	double strap closure	polyurethane	fibergrass reinforced nylon	rubber	brack	39-40, 41-42, 43-44, 45-46, 47-48 (5sizes)

SPD® cleat application table

The table below shows the recommended cleats for each SPD pedal. Cleats listed under "usable cleat" can be substituted for the recommended cleat, but with certain restrictions as listed.

Pedal / Shoe	PD-7410/PD-6500		PD-A525/PD-M323		PD-M747/PD-M535	
	recomended cleat	useable cleat	recomended cleat	useable cleat	recomended cleat	useable cleat
SH-M210/SH-M110 SH-M090/SH-M055 SH-M031			**SM-SH51 SM-SH55**	SM-SH71*	**SM-SH51**	SM-SH55 SM-SH70* SM-SH71*
SH-R210/SH-R120-C SH-R111/SH-R070 SH-T120	**SM-SH70 SM-SH71**					
SH-A070/SH-C070 SH-SD50			**SM-SH51 SM-SH55**	SM-SH71*	**SM-SH51**	SM-SH55 SM-SH70* SM-SH71*

*SM-SH70/71 road cleats can be used with non-road SPD shoes but without cleat protector pontoons.

SPD® pedal & cleat sets:
1. PD-7410 and PD-6500 pedal packages include both SM-SH70 and SM-SH71 cleat sets.
2. SM-SH51 cleat set is included with PD-M747,PD-M535,PD-M323 and PD-A525 pedal packages.



SPD® SPORT SHOE FEATURES

Feature	Benefit	SH-A070	SH-C070	SH-SD50
1. **SPD sole patch**	Use as a cleated or non-cleated shoe. Sole patch removes easily for SPD cleat mounting.	●	●	●
2. **Nylon mesh, polyurethane coated split leather, PVC upper**	Breathable nylon mesh helps ventilate foot. Polyurethane coatedsplit leather and PVC are durable and resistant to stretching and water.	●		
3. **Nylon mesh, polyurethane coated split leather and synthetic leather upper**	Breathable nylon mesh helps ventilate foot. Polyurethane coated split leather and synthetic leather provide a supple yet stretch-resistant fit.		●	
4. **High top design**	Extended upper provides increased ankle support and protection.		●	
5. **Plastic resin (polyurethane), Neoprene, and PVC upper**	Upper materials are resistant to water and stretching.			●
6. **Criss-cross Z-strap closure**	Multiple closure points from a convenient single strap.	●		
7. **Strap and lace closure**	Dual closure system provides a more s ecure fit.		●	
8. **Resin eyelets**	Resin eyelets reduce weight and resist corrosion.		●	
9. **Double strap closure**	Two straps are convenient to use and provide a foot hugging fit.			●
10. **Reflectorized panels**	Increases safety by making cyclist easier to see at night.	●	●	●
11. **Reflectorized logos**	Increases safety by making cyclist easier to see at night.	●	●	
12. **Cup molded Cambrelle & EVA inner sole**	Cup molding provides a seamless transition between inner sole and upper.		●	
13. **Cambrelle & EVA inner sole**	Cambrelle & EVA help wick away moisture while providing a soft cushion for the foot.	●		
14. **Polyurethane inner sole**	Provides lightweight stiffness.			●
15. **Nylon mid-sole**	Added stiffness for pedaling efficiency.		●	
16. **Fiberglass reinforced nylon mid-sole**	Added stiffness for pedaling efficiency.	●		●
17. **Sleek rubber sole**	Smooth rubber road-type sole provides for comfortable walking.	●		
18. **Rubber sport sole**	Sport tread pattern provides excellent traction for off-bike activities.		●	
19. **Rubber sole**	Good traction and comfortable walking.			●

USA and Europe sizecomparison chart

US	4	5	5 1/2	6 1/2	7	8	8 1/2
European	36	37	38	39	40	41	42
US	9	10	11	11 1/2	12	13	
European	43	44	45	46	47	48	

Shimano SPD® & Clipless Pedals



PD-M747
Off-Road Racing Pedal
SPD system / chrome-moly spindle /
lightweight compact body /
precision cartridge bearings / easy step-in /
dual front and rear cleat retention adjustment /
mud-resistant cleat plate / weight: 393g (pair).



PD-7410
Road Racing Pedal
compact low-profile design
high-grade chrome-moly spindle
precision sealed cartridge bearing unit
weight: 313g (pair)



PD-M535
Off-Road Sport-Performance Pedal
SPD system / chrome-moly spindle /
lightweight compact body /
traditional cup and cone bearings / easy step-in /
mud-resistant cleat plate /
dual front and rear cleat retention adjustment /
weight: 410g (pair))



PD-6500
Road Racing Sport-Competition Pedal
compact low-profile design
chrome-moly spindle
sealed cartridge bearing unit
adjustable cleat tension / weight: 348g (pair)



PD-M323
Multi-Purpose Pedal
SPD and standard pedal surface /
usable with non-SPD shoes /
adjustable cleat tension / weight: 520g (pair)
(SPD cleats not included
with PD-M323 pedals.)



PD-7401
Clipless Road Racing Pedal (non-SPD)
compatible with Look or Shimano clipless
pedal cleats / precision compound ball and
needle bearings / nickel chrome-moly spindle /
aerodynamic sealed body design /
adjustable cleat tension /
weight: 416g (pair +92g w/cleats)



PD-A525
Sport Pedal
SPD system / chrome-moly spindle /
sealed cartridge bearings /
cleat retention indicator /
available in silver or white-violet /
weight: 390g (pair)

FOOTWEAR ACCESSORIES AND REPLACEMENT PARTS



SM-SH51
SPD® Cleat Sets
SM-SH51 for single direction release,and for "Easy step-in"feature when used with PD-M747 and PD-M535.



SM-PD51
Reflector Set
For use with PD-7410 and PD-6500 pedals.



SM-SH55
SPD® Cleat Sets
SM-SH55 for multi-directional release.

SM-PD30
Reflector Set
For PD-A525 pedals.





SM-SH70/SM-SH71
SPD® Cleat Sets
SPD road racing shoe cleat sets for R-series shoes and SH-T120. SM-SH70 is fixed retention type; SM-SH71 is rotational retention type.

SM-PD21
Reflector Set
For PD-M747 and PD-M535 pedals.



SM-PD20
Reflector Set
For PD-M737 and PD-M525 pedals.



Spikes
Removable sole spikes for SH-M210 shoe.



SM-SH74
Cleat Adapter Set
Allows mounting of SPD cleats to SH-R200, SH-R110, and SH-T110 shoes.

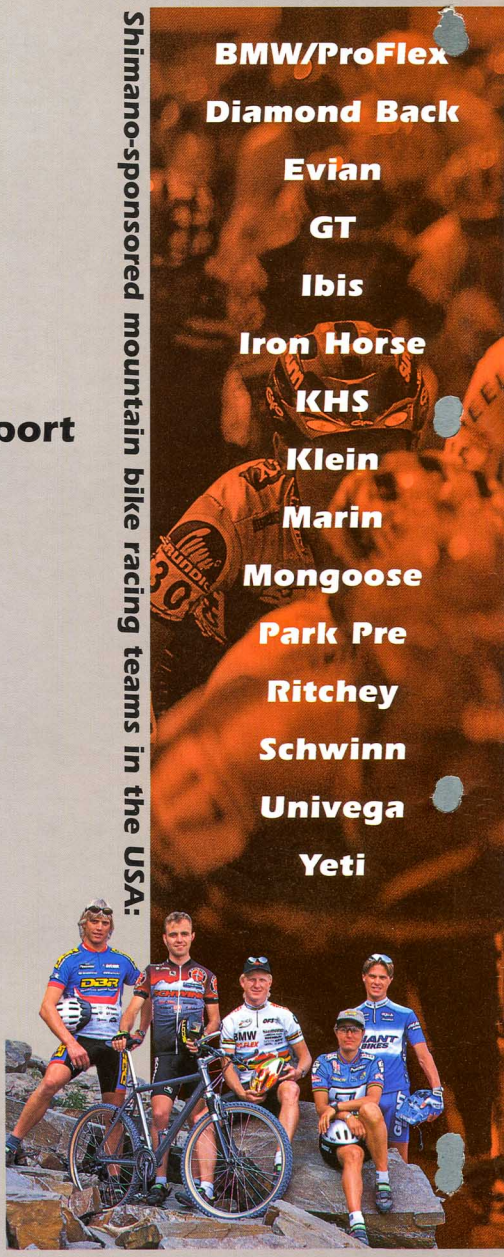
Shoe Insoles
Available in sizes to fit all Shimano shoes.



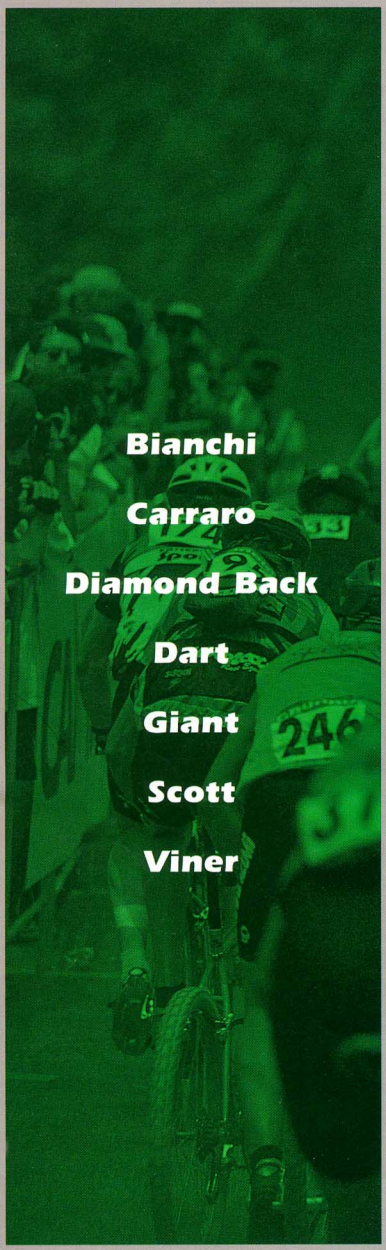
Team Shimano... Committed to the sport of bicycle racing.

Shimano is committed to advancing the sport of bicycle racing around the world. One way of showing this commitment is through active sponsorship of amateur and professional bicycle racing teams. Shimano currently provides equipment and technical support to 13 road-racing and 22 mountain bike racing teams in Europe and the United States. These include well known professional road racing squads such as the Motorola team from the USA, the TVM and Word Perfect teams from Holland, the Polti and Mapei Clas teams from Italy, and the ONCE team from Spain.

Shimano-sponsored mountain bike racing teams in the USA:



Shimano-sponsored mountain bike racing teams in Europe:



Bianchi

Carraro

Diamond Back

Dart

Giant

Scott

Viner

Shimano-sponsored road racing teams (USA and Europe):



Mapei GB

MG Maglificio-Technogym

Navigare Blue

Lampre-Panaria

Polti

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