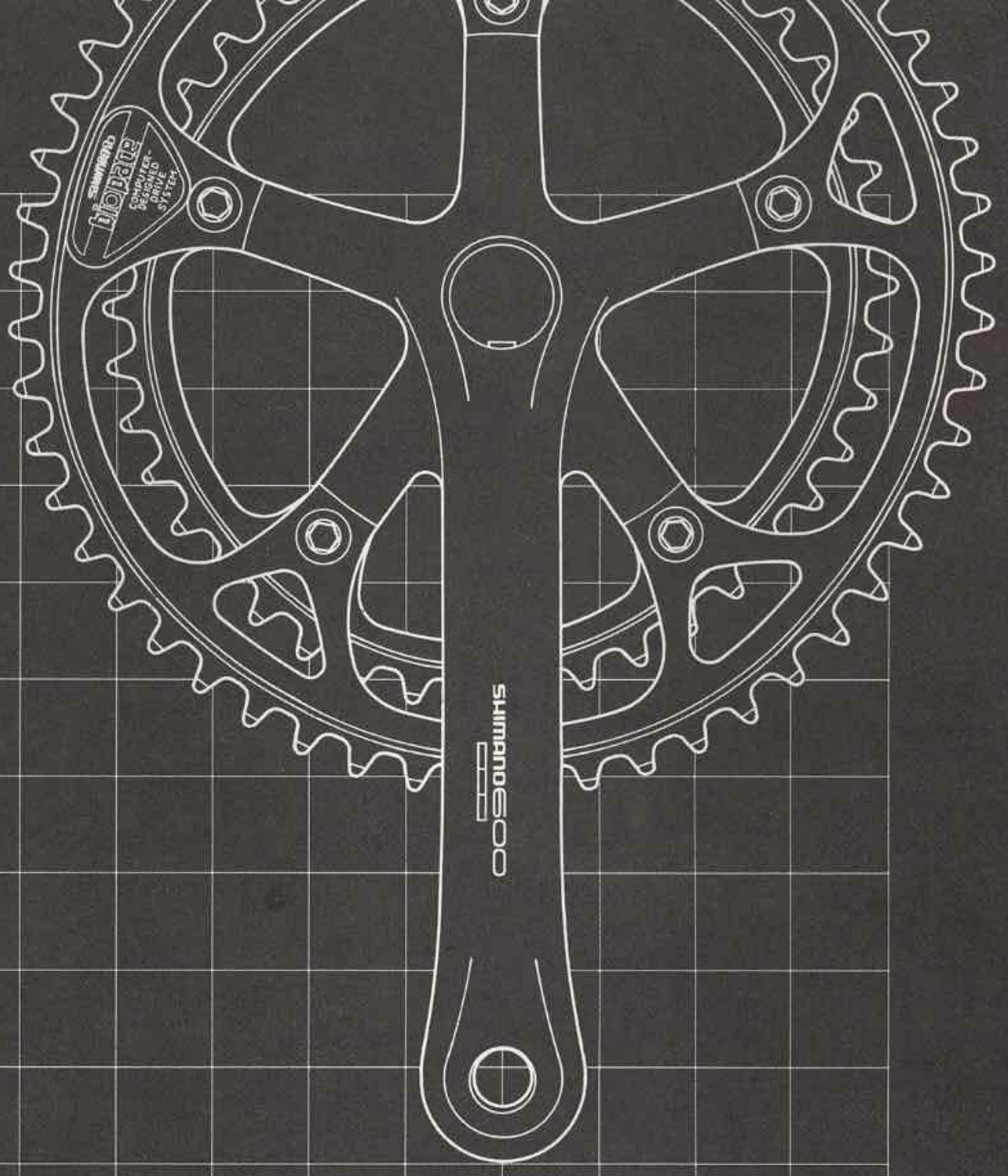


SHIMANO600 ULTEGRA

English (U)

SHIMANO

Refined functions that result in a better man-machine interface.

SLR
SHIMANO
LINEAR RESPONSE

Linear Response for Better Braking Control

Dive deeper into turns. Come out faster. Get better control on wet pavement. This is the state-of-the-art in braking performance today. 600 Ultegra's SLR system utilizes a spring-assisted lever, lined cable housing, and CAD designed caliper with ball plate and coated thrust washers at the arm pivot point. Friction is reduced to an absolute minimum which results in a direct "linear response" lever feeling that gives you more braking control.

SIS
SHIMANO
INDEX SYSTEM

Pro-Level 7-Speed SIS Shifting

600 Ultegra's 7-speed SIS gives you the racer's choice of seven instantly-selectable gears on Shimano's race-proven cassette freehub. A wider choice of gearing with SIS shifting precision means the right gear at the right time, every time. What's more, 600 Ultegra's lever and freehub give you the flexibility to easily change over between 6 or 7-speed SIS operation.



biopace
COMPUTER DESIGNED
DRIVE SYSTEM

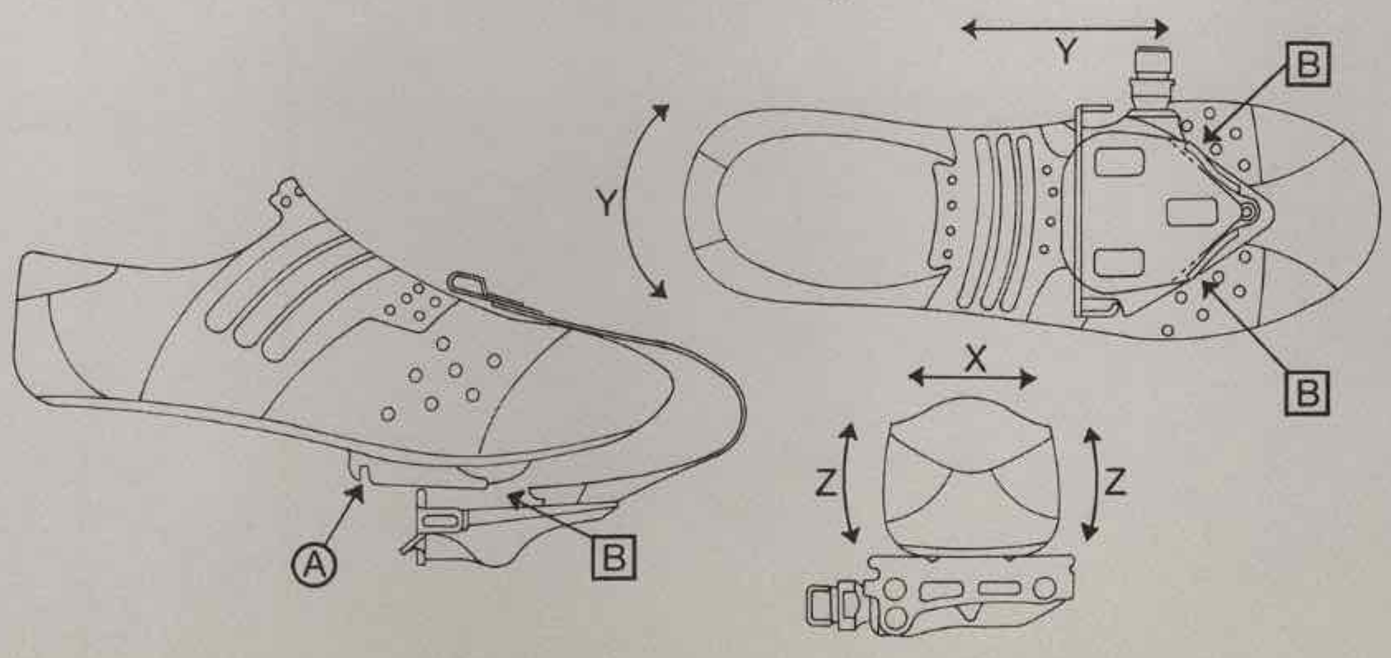
The New Shape of Pedaling Efficiency

The 600 Ultegra crankset features Biopace chainrings. Many competitive cyclist's are realizing that Biopace provides a true advantage. That's because Biopace's computer-designed shape creates a more natural pedaling cadence that actually saves valuable energy. Hills are easier to climb and knee strain is reduced.

Positive Grip Cleat and Pedal

A Better Foot/Pedal Interface

Even with conventional cleats and toestraps, the foot can be pulled out of the pedal during sprints or sustained hard riding. Shimano has solved this problem with a new positive-grip cleat design for the 600 Ultegra pedal. The cleat is firmly secured at the rear and front to prevent separation from the pedal. The design also eliminates lateral movement for better power transfer efficiency. The 600 Ultegra pedal still remains completely compatible with conventional cleats.



Conventional cleats only contact the pedal at the rear plate (A). This design still leaves room for pedal-cleat movement in the lateral (Y) and vertical (Z) directions. During hard pedaling, there's a lot of energy-robbing movement along these two axes. The 600 Ultegra cleat secures itself to the pedal at both the rear (A) and front (B) positions. Movement in the lateral (Y) and vertical (Z) directions is completely eliminated.

Rear Derailleur

RD-6400

•SIS 6-and 7-speed compatible •Improved double servo-pantagraph design, Centeron guide pulley, Sealed mechanism, Ceramic guide pulley bushing, Double spoke barrier, Digital adjust mechanism •Minimum sprocket size: 12t •Maxmum sprocket size: 28t •Maximum sprocket difference: 28t •Maximum chainwheel difference: under 13t •Weight: 216g (7.6 oz) •Material: light alloy (plate, brackets, and pulley cage)/Dark finish (electrostatic paint) plate body/Light finish (electrostatic paint) right link



Features:

1. SIS 6 and 7-Speed Interchangeability
2. Upgraded Durability
   Improved sealed mechanisms
   Ceramic bushing guide pulley
3. SIS Compatibility
   Compatible with all SIS shifting levers except Dura-Ace.
4. Easy Setup
   Inner cable tension adjustment screw
   Positional adjustment screw
   5mm Allen wrench treatment



Shifting Lever

SL-6400-BCAI (band, side-mount/A-type)
SL-6400-FCAI (braze-on, side mount/A-type)
SL-6400-FCBI (braze-on, top mount/ B-type)
SL-6400-FAI (braze-on, side-mount/A-type/M4.5)

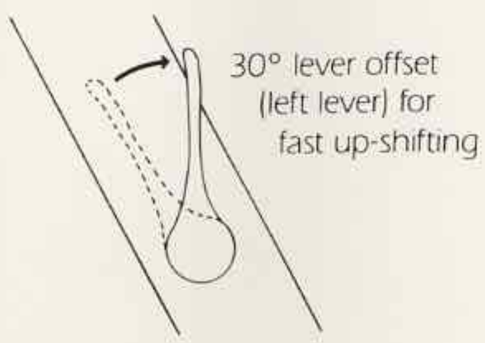
(BCAI, FCAI and FCBI types use Italian-spec 5mm lever securing bolt. FCBI and FAI types can be assembled using available adapters.)

•SIS 6-or 7-speed compatible •One-touch changeover between SIS and friction modes/ Light-action mechanism/Lever interchange-ability/Human engineered design/Sealed mechanism •Weight: 60g (2.1 oz) •Material: light alloy/Dark electrostatic surface finish •Installation: Down tube •Band diameter: 28.6mm •For SIS function use with: RD-6400 rear derailleur, FH-6400 freehub, Uniglide chain, SIS lined cable outer



Features:

1. Refined Shifting Action
   Ball indent SIS mechanism
   Light-action design
   Repositioned left lever stop for faster shifting (see diagram)
2. SIS Compatibility
   Compatible with all SIS rear derailleurs except Dura-Ace
3. SIS/Friction Mode Changeover
   Easy-action SIS/friction changeover at D-ring
4. 6 or 7-Speed Interchangeability
   6 or 7-speed SIS shifting through easy cable groove insert
5. Upgraded Adjustment Features
   Fast and easy setup from unit-type SIS mechanism



Gre

Front Derailleur

FD-6400-B (band type)
FD-6400-F (braze-on type)

•Leading Action Pantagraph design •Chainwheel difference: under 14t •Weight: 104g (3.7 oz) [band type] •Material: light alloy (l/r link, band)/heat-treated steel (chain cage)/chrome plating (chain guide) •Finish: Bright electrostatic (r link)/Dark electrostatic (f/r band) •Band dia: 28.6mm



Features:

1. Improved Shifting Performance
   Leading action design
   Increased chain guide rigidity
   Strengthened left and right links
2. Compact Design
   Leading-action design results in greater compactness
   Reduced chain guide front section
3. Flexible Applications
   Band type or braze-on types available
4. Increased Durability
   Bushings at link pivots

Pedal

PD-6400

•Aerodynamic Wedge Design • 5° more road clearance •Cartridge-type axle unit •Positive-gripping cleat •Weight: 410g (14.5 oz) [pair w/L toeclips] •Material: light alloy (body) chrome-moly steel (axle) •Thread sizes: BC 9/16" × 20 •Toe clip sizes: M/L/LL

Features:

1. High Performance
   5° more road clearance
2. Greater Stability & Efficie
   New posi-grip cleat design
3. Improved Service and D
   Cartridge type bearing unit
4. Simple & Elegant Design
   No-dustcap body
   Improved sealing





Front Hub & Rear Freehub

HB-6400-F (front hub)

FH-6400-7 (7-speed freehub)

•Compatible with 6 or 7-speed sprocket clusters •Sealed mechanism, Uniglide sprocket teeth/Bolt-on freewheel body/ Unibalance mechanism •Weight: Rear—423g (14.9 oz) without sprockets, Rear 647g (22.8 oz) with 7-speed (12—21T) sprockets, Front 212g (7.5 oz) •Material: light alloy (body)/resin (dustcap)/steel (sprockets) •Finish: Alumite process (body)/Dark gray metallic (dustcap)/silver (sprockets) •Overlocknut: Front—100mm/Rear—126mm •Spoke holes: Front—28/32/36/Rear—32/36 •Spoke hole dia: 2.6mm •Chain size: 1/2" x 3/32" (narrow type for 7-speed)

Features:

1. Improved Performance
   Burnished bearing races (cups)
   Borozon treated bearing cones
2. Increased Durability
   New bearing race contour reduces play
   More effective sealing mechanism
3. Improved Freewheel Action
   Alignment collar assures concentric rotation
   Positive ratchet action from new pawl design
4. 6 or 7-Speed SIS Compatibility
   SIS sprockets and spacers
   6 or 7-speed cassette gears available

	6-speed	7-speed
Threaded Sprockets	12—16t (6S mark)	12—16t (7S mark)
2nd Gear (spline type) W/Spacer	13t (6S mark)	13t (7S mark)
Splined Sprockets	14—26t/28t/30t/32t/34t	
Spacer Width	3.65mm (light gray)	2nd—3.30mm (except 13t) 3rd to low—3.1mm (7S mark) (Dark grey)

Standard Sprocket Conbinations

7-speed	12, 13, 14, 15, 16, 17, 19T. 12, 13, 14, 15, 17, 19, 21T. 13, 14, 15, 17, 19, 21, 24T. 13, 14, 15, 16, 17, 19, 21T. 13, 15, 17, 19, 21, 23, 26T. 13, 15, 17, 19, 21, 24, 28T.



ater Quality, Fu and Pr

cy

rability





Head Set

HP-6400

•New improved sealed mechanism •Weight: 100g (3.5 oz) •Material: light alloy cups/chrome-moly races/stainless steel fork cone •2 types available



nction, ecision

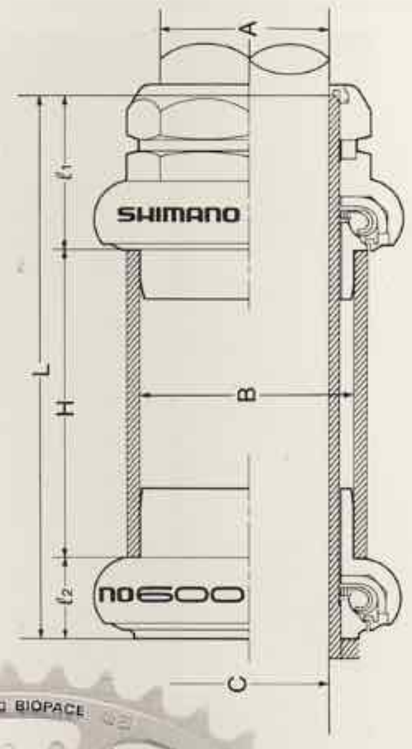
Features:

1. Increased Durability
   Chrome-moly bearing races
   Smooth burnished bearing race surfaces
   Stainless steel fork cone
   Improved sealing mechanisms
2. Lightweight Design
   Only 100 grams
3. Compact Shape
   More compactness from new sealing mechanism

		Dimensions	
Type	Thread	Head Tube (upper cone lower cup)	Fork Stem Cone Dia.
English/ Italian	BC 1" × 24	30.2mm	26.4mm
French	M25 × 1.0	30.2mm	26.4mm

Headset Dimensions:

ℓ_1	22.0mm
ℓ_2	11.5mm
H	Head Tube Length
L	H + 33.5mm
A	22.3mm
B	30.2mm
C	26.4mm
Threads	BC 1" ×24 (English) M25 × 1.0 (French)





Front Chainwheel

FC-6400-BP (Biopace double/LD bolt circle)

Brake

BB-6400 (bottom braket set)

•Low profile design/sealed mechanism/ aërodynamic profile/Biopace chainrings (6400-BP) •Weight: 650g (22.9 oz) [42 × 52t, 170mm 308g (10.9 oz) [BBset] •Material: light alloy (crank, chainrings) •Chain: 1/2 × 3/32" •Chainring sizes: Biopace Outer—52,53t Biopace Inner —42t •Arm lengths: 165/170/172.5/ 175mm •Pedal thread: BC 9/16" × 20 •BB Specs: English-1.37 × 24/ French-M35 × 1.0/ Italian-M36 × 24 •BB Size: 68-W-113, 70-W-115



Features:

1. Increased Strength
   Beefy low profile design
   Widened chainring contact area
2. Smooth-Shape Design
   Smooth flowing crank contours
   Flat surface crank cap
3. Improved Bottom Bracket Durability
   Efficient contact sealing
   Polished bearing races
   Improved crank contact angle
4. Easy Setup & Adjustment
   11-ball retainers

Brake

BR-6400-49 (short reach)

BR-6400-57 (normal reach)

• Advanced SLR design/Ball-plate thrust bearing/Coated washers/Resin spring sleeves/One-piece low-profile shoes/Easy-grip digital quick release •Weight: 360g (12.7 oz) front & rear, short reach •Material: light alloy

Features:

1. Improved Durability and Control
   SLR ball-plate thrust bearing and coated washers
   Resin slider blocks at spring contact points
   Low-profile brake shoes
   Increased caliper arm strength
2. High-Tech Feeling
   Digital quick release mechanism
3. Comapct Design
   CAD developed
   One-piece brake shoes
   Lightweight resin tire guides
4. Biomechanical Design
   Easy-grip resin quick release



Brake Lever

BL-6400 (standard type)

BL-6401 (aero type)

BL-6402 (short reach aero-type)

•SLR design/Human-engineered form/Integral assist spring/Aero cable housing guides/Ergonomic gum covers •Weight: 260g (9.2 oz) [pair with gum covers] •Material: Light alloy lever & body/soft gum covers •Clamp: 23.8—24.2mm •Variations: Black or white soft gum covers

Features:

1. Advanced SLR operation
   Linear response lever action
   SLR return spring
   Repositioned lever pivot
   Non-slip gum cover
2. Expanded Variations
   Standard, aero, and aero short reach types available
   Black or white gum covers

PURE PERFORM



MANCE



SHIMANO 600
ULTEGRA

As a performance-oriented cyclist, you want your bike to put out just as much as you put into it. And to get the most out of your bike, you need to get the most out of your components.

Meet 600 Ultegra. An evolutionary new racing component group from Shimano that incorporates all the technology gained through the development of Dura-Ace and Shimano 105, plus a lot more.

Born from advanced human-engineering technology and realized through state-of-the-art manufacturing processes, 600 Ultegra delivers a higher level of quality, value, and performance and a better man-machine interface than anything in its class. 600 Ultegra features 7-speed SIS freehub shifting, linear response SLR brake system, and a positive-grip cleat design for the pedals, for example. Polished bearing surfaces, greater strength and durability of moving parts, more efficient sealing, and compact unibody design with electrostatic finish help take 600 Ultegra to the leading edge of component capability.

That's why we call it Pure Performance.



SHIMANO

SHIMANO AMERICAN CORPORATION
One Shimano Drive, Irvine, California, U.S.A. 92718 Tel. (714) 951-5003

SHIMANO (EUROPA) GmbH.
Im Hülsenfeld 13 4010 Hilden, West Germany Tel. 02103-5005-0

SHIMANO (SINGAPORE) PTE. LTD.
No. 20, Benoi Sector, Jurong Town, Singapore 2262 Tel. 2654777

SHIMANO INDUSTRIAL CO., LTD
3-77 Oimatsucho, Sakai, Osaka, Japan Tel. (0722) 23-3244

Specifications are subject to change without notice.

© 1987 by Shimano Industrial Co., Ltd. 1087 SM/7M Printed in Japan AX IZM.