SHIMANO BICYCLE SYSTEM COMPONENTS


DURA-ACE EX


SHIMANO 600 EX


SHIMANO BMX


NEW PPS COMPONENTS

DURA-ACE EX / SHIMANO-600 EX / BMX COMPONENTS / NEW PPS COMPONENTS / TOOLS

SHIMANO

DURA-ACE EX

THE NEW CONCEPT COMPONENTS

Spearheading the new generation of components

SHIMANO 600 EX



This catalog does not contain the complete line of Shimano's products.
We have only included those components which were introduced in Spring '78 and BMX components.
Please use this 1978/79 new product supplement together with our regular "Complete Catalog."

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NEW CONCEPT COMPONENTS—EXCITING FEATURES

Cassette Freehub

The EX Freewheel is a freehub unit and we have also incorporated a cassette sprocket assembly system. This has the considerable advantage of allowing the rider to choose the most suitable sprocket combination according to the speed desired, and also leg-power capacity. Overall weight and size reductions have been made—and durability improved.

Features of the "Cassette Freehub"

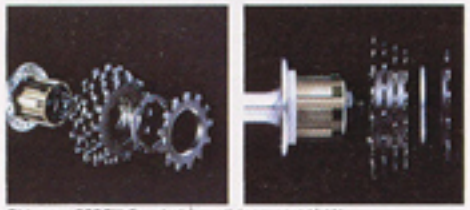
1. Easy to exchange sprockets!
2. Multiple choice of cassette gear combinations—with fewer sprockets!
3. **Weight reduction of the Freehub!**
   Conventional hub and freewheel (Over lock nut dimension: 4.96" (126mm.), 13T—18T. 6-speed) weigh 23.7oz. (673g.). In contrast, the Dura-Ace EX Freehub weighs 20.1oz. (571g.). This means 3.6oz. (102g.) lighter in weight.
4. **At last—11 tooth high gear combination is possible! (Dura-Ace EX Series only)**
   The freehub allows a reduction in the number of front chainwheel teeth and, also, a 12T combination is possible for Shimano-600 EX Series. Thus resulting in an overall weight reduction of the drive train.



Dura-Ace EX Freehub (6-speed)/High gear sprocket is threaded type—all others are cassette spline-type.



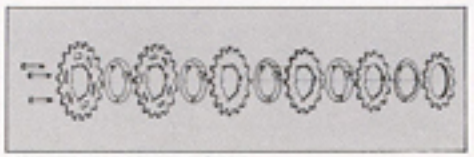
Spline-type cassette gear of Dura-Ace EX Freehub.



Shimano-600EX Freehub's unit-type sprockets.

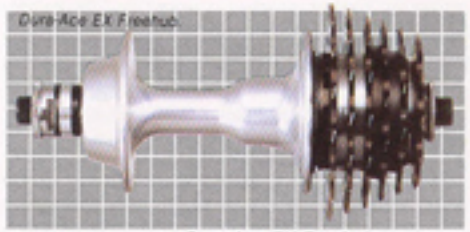
The structure of conventional freewheel sprockets has long posed difficulties for riders. Even when using the same tooth number sprocket, i.e. 15T, the rider needed both threaded sprockets and unthreaded, spline-type sprockets. Thus, sprockets could not be combined as desired unless quantities of both types were available. In contrast, the EX Series Cassette Freewheel incorporates a spline-type system which freely allows all kinds of gear combinations between second to low gears. Since these gears are tightly fastened by a threaded high gear sprocket, it is now possible to obtain any sprocket combination desired with a minimum of fuss.

5. **Sturdy design—Freehub structure exhibits minimal deflection!**
   Because the freehub is a combination of the hub and freewheel, we are able to move the ¼" ball much closer to high gear. This move has markedly reduced deflection for both freewheel and hub, while increasing the durability of the hub axle.

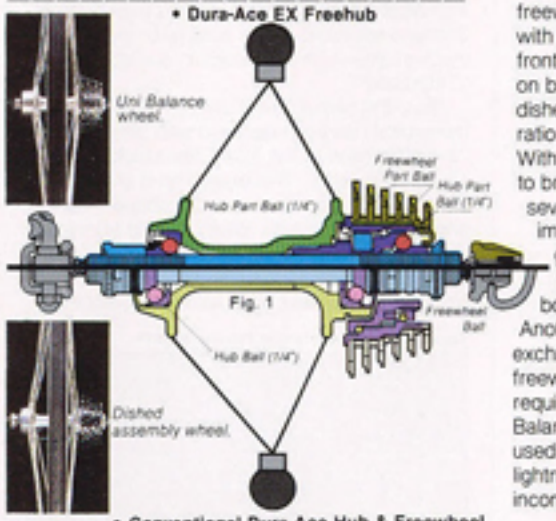


Shimano-600 EX Cassette Gears.

Uni Balance Mechanism



• **Dura-Ace EX Freehub**

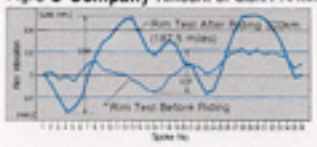


• **Conventional Dura-Ace Hub & Freewheel**

Fig. 2 **Uni Balance** Amount of dish/2.7 mm. (0.11")



Fig. 3 **C Company** Amount of dish/7.4 mm. (0.29")



The above illustrates the difference in Vibration levels between a conventional dished assembly and the Uni Balance assembly, using 36 spoke wheels, when tested before and after riding. The result of the rim Vibration difference for the conventional rim assembly is 0.47mm (0.02") <Fig. 3>, while the Uni Balance is only 0.05mm (0.002") <Fig. 2>. Thus, the Uni Balance has solved the problem of rim Vibration so apparent in the conventional assembly, and exhibits incredible rigidity.

At Shimano, we tackled the long-outstanding problems of dished wheel assemblies and the inflexibility of changing 5-speed bikes to 6-speed; while still retaining conventional flange dimensions. The newly developed "Uni Balance" Mechanism is our answer and, we feel, will revolutionize accepted standards for multi-speed bicycles. The dished assembly of the multi-speed bicycle wheel has been with us since the conception of the freewheel. Ideally, the wheel rim should be in line with the center of the hub, as in the case of the front wheel. This allows equal distribution of tension on both left and right side spokes, unlike the dished assembly where there is an imbalance. (A ratio of 10: 6 between right and left side spokes.) With the dished assembly, spokes are quite liable to break whenever they are under constant or severe stress. Also, vertical and lateral vibrations impede smooth riding and sure braking. And, in general, riders have to rely on bicycle experts to make the critical adjustments between both left and right side spokes.

Another problem is when the rider wants to exchange a 5-speed freewheel for a 6-speed freewheel: to do this a whole new frame is required. With the arrival of the exciting new "Uni Balance" Mechanism, 5 and 6 speeds can be used on the same bicycle frame; strength and lightness of the bicycle is increased and dishing inconveniences are now a thing of the past!

Features of the "Uni Balance"

1. Durability of spokes and wheel increased!
2. Easy to assemble!
3. Wheel adjustment made easier!
4. **Six-speed freehub for a 5-speed frame!**
   The same frame can be utilized for both a 5-speed Freewheel and a 6-speed Freehub. (When installing a 6-speed freehub on a 5-speed frame, the dished assembly remains the same as that on a conventional 5-speed freewheel.) The considerable time-saving and convenience of this feature is an outstanding improvement.
5. **Lighter wheel!**
   By retaining the strength of a 36 hole conventional wheel, the Uni Balance utilizes fewer spokes—without any strength-loss—for a lighter wheel.

NEW CONCEPT COMPONENTS—EXCITING FEATURES

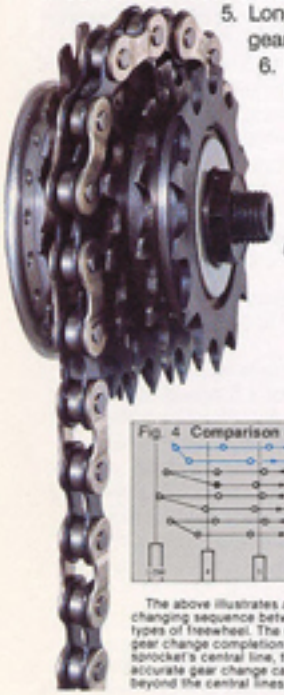
Uniglide Freewheel

The Uniglide Mechanism (UG Freewheel & UG Chain) has brought about an entirely progressive concept toward the gear-shifting efficiency of the multi-speed bicycle and is now installed on all EX Series equipped bicycles.

The teeth of the UG Freewheel are twisted to run parallel with the direction of the chain, when it is moving from high to low gear. And when shifting from low to high gear, the teeth are at cross angles to the chain's movement to prevent any slipping back. Smooth, sure and swift gear changes are now possible.

Features

1. Sure and smooth gearshifting performance!
2. Overshifts eliminated!
3. Irritating noises eliminated for quiet and smooth gear changes!
4. Sure and smooth shifting on inclines!
5. Longlasting, high gearshifting efficiency!
6. Immediate shifting response!



UG Freewheel & UG Chain

Fig. 4 Comparison of Gear Shift Performance



The above illustrates a high to low and back again gear changing sequence between the UG Freewheel and 3 other types of freewheel. The white circles indicate the chain's gear change completion points. These are all prior to the sprocket's central line, the maximum point at which an accurate gear change can be made. The black circles are beyond the central lines and therefore indicate overshifts.

Trap-Ease Mechanism

Until recently, the pantograph mechanism, used on all conventional front derailleurs, was thought to be ideal. And for the high to low gear shift it was satisfactory. But the low to high gear change was prone to considerable mechanical difficulties. This occurred because the parallel movement of the derailleur caused the inner plate to force the chain onto the gear sprocket with a primarily lateral thrust. This, naturally, caused unnecessary friction and impaired an otherwise perfect gear change. Shimano searched for an ideal gear changing mechanism—and succeeded in developing the "Trap-Ease".

Now, the pantograph's awkward parallel movement has been replaced with the free "swing" motion of the Trap-Ease Mechanism, as seen in diagram 6. The longer travel of (b) over (a) gives the derailleur its trapezium shape—no two angles being the same. When shifting from low (small gear) to high (large gear), the swing allows the inner plate to lift the chain up and deposit it squarely on the gear sprocket teeth without any interference. The efficient movement of the "Trap-Ease" Mechanism means less force—and therefore a shorter stroke—is needed to shift the gear lever but still the equivalent power of a conventional front derailleur is produced. Thus we could widen the inside dimensions of the front derailleur plates, eliminating grating noises, through contact with the chain, and resulting in a much more enjoyable ride.

Fig. 5 Conventional Pantograph Mechanism

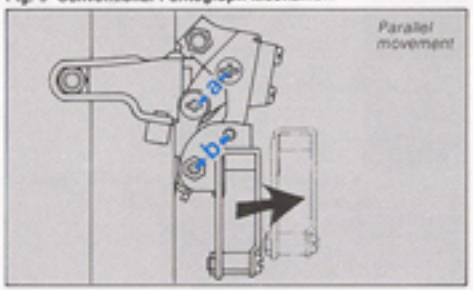
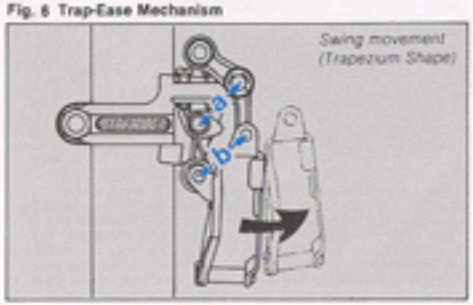
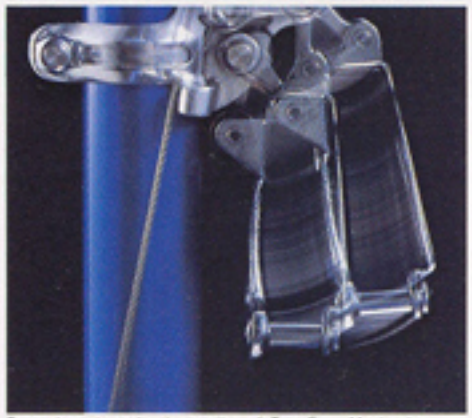


Fig. 6 Trap-Ease Mechanism





Parallel movement of the conventional pantograph mechanism.



Trapezium shaped swing motion of Trap-Ease Mechanism.

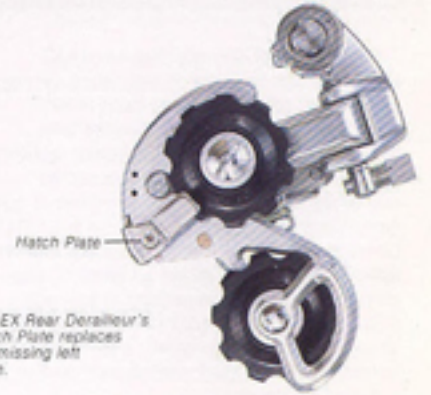
Hatch-Plate Mechanism



Hatch-Plate Mechanism (Shimano-600EX Rear Derailleur).

The Hatch-Plate Mechanism allows much easier dismantling of the rear derailleur than ever before. The need to remove the pulley bolt or to undo the chain is eliminated. A simple movement is all that is needed.

Easier assembly and disassembly is possible and maintenance is much easier to carry out. Also, the elimination of the left plate has resulted in a lighter component. The Hatch-Plate Mechanism rear derailleur is suitable for use on any multi-speed bicycle—and is made especially for a bicycle equipped with a Uni-Balance Freehub.



The EX Rear Derailleur's Hatch Plate replaces the missing left plate.

W cut Teeth Mechanism

When shifting the chain on a conventional front chainwheel from high to low, the effort required to lift it up on the gear teeth, while under a heavy load, causes great stress and wear on the chainwheel and other related parts.

We developed the W cut Chainwheel Teeth for a smoother gear changing operation. We simply shortened the length of two sprocket teeth located



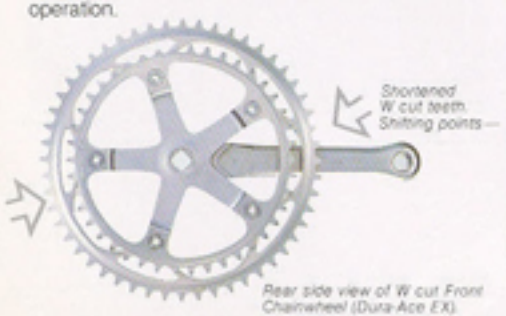
Shortened W cut teeth (Shimano-600EX)



Rear side view of chain moving to low gear off W cut teeth.

almost behind the crank arm, and the two teeth directly opposite because they sustain the least amount of tension when cycling.

Now, the chain is easily released from the chainwheel in order to complete a smooth operation.



Rear side view of W cut Front Chainwheel (Dura-Ace EX).

One Key Release

To disassemble the cotterless-type front chainwheel, a special tool plus monkey wrench are ordinarily used in a several-step operation. Shimano's One Key Release consists of one hexagon wrench key for detachment and of course, attachment—and all in one movement. Also, the Dura-Ace EX Series incorporates this feature.



Hexagon wrench key (8 mm.) with Shimano-600EX Front Chainwheel (Model GC-400).

Sealed Mechanism

The Sealed Mechanism is yet another EX Series innovation. Although unseen, it is, nevertheless, vitally important for upgrading the efficiency of the bicycle. The "Sealed Mechanisms" protect all EX Series rotating parts against unwanted foreign objects. And the Dura-Ace EX Series Freehub also has a double-jointed seal to prevent water and dust invasion.



Sectional view of Shimano's 600EX Rotating Head Part (Labyrinth seal).

Light Weight

Although the EX Series has incorporated a number of new mechanisms, these have, in fact, contributed to the overall weight reduction. For example: freewheel and hub are combined as one unit—the freehub: the rear derailleur is made without the left plate; and the head parts are made of aluminum.

The weight reduction of rotating parts plays another role than merely "lightening a bicycle". It also means an increased acceleration efficiency which requires only a light touch of the pedal to start, and allows the rider to pedal for many hours.

The light weight parts shown in our "System Components" EX Series are of a genuine lightness which only the thorough approach of Shimano could have devised.



Dura-Ace EX Road Ensemble.

One-Step Attachment

The cable fixed to the brake lever, used exclusively for the EX Series, is attachable and detachable with one simple movement. This is a great boost for easy maintenance.



One-step cable attachment mechanism (Shimano 600EX Brake Lever)

Additional Features

Hexagon Release

Dura-Ace EX Series Only

Wherever possible, a hexagon wrench key is used to tighten all Dura-Ace EX Series components. Easy handling and secure tightening, along with a sportier appearance, are all added benefits.



Safety Crank Arm

Shimano-600EX Series Only

The Shimano 600 EX Series crank arm has been set back at the point near where it is attached to the chainwheel. This means the ankle is no longer liable to strike the crank arm with the likelihood of an accident.



Arabesque Pattern

Shimano-600EX Series Only

The Shimano 600 EX Series is artistically decorated with Arabesque patterns for a unique appearance.



DURA-ACE EX Road Ensemble

THE NEW CONCEPT

For over half-a-century, Shimano has devoted itself to the production of bicycle components. Based on the abundant experience and technology acquired through the continuous innovation of bicycle parts, Shimano was able to create the "System Components" concept.—Components which are made to work together in perfect harmony.

And now we, at Shimano, as a result of this enlightened policy, are pleased to introduce our latest system components success—the EX Series.



Dura-Ace EX Road Model

COMPONENTS

It was through our involvement with bicycle racing that we were able to succeed so perfectly in coordinating the necessary requisites of lightness and strength combined—and precision of parts. Many of the mechanisms incorporated in this series are revolutionary in their concept and are certain to spearhead the bicycle into a new era. The Dura-Ace EX Series and the 600 EX Series are now unveiled for the world of bicycling to appreciate—and to herald a new age for the bicycle!

SHIMANO 600 EX Road Ensemble



Shimano-600 EX Road Model

DURA-ACE EX SERIES ROAD ENSEMBLE

Rear Derailleur

Model DA-200

DURA-ACE EX

SPECIFICATIONS

- Capacity: ●Front Difference/13 Teeth or less ●Rear Largest Sprocket/26 Teeth or less
- Weight: ●6.2 oz. (175g.)
- Material: ●Light Alloy • Anodized Finish (Body) ●Light Alloy (Cage Plate) ●Heat Treated Steel (Guide Pulley Teeth)
- Type: ●Servo Panta Mechanism, Hatch Plate Mechanism, Without Left Plate, Hexagon Release, Synchro-Line Mechanism





Front Derailleur

Model EA-200

DURA-ACE EX

SPECIFICATIONS

- Capacity: ●14 Teeth or Less
- Weight: ●3.6oz. (102g.)
- Material: ●Light Alloy (Body) ●Steel • Chromium Finish (Chain Guide)
- Type: ●Lower Inlet Type 1-1/8" ●Trap-Ease Mechanism ●Hexagon Release

Also Available Brazed Type



Shifting Lever

Model LA-110

DURA-ACE EX

SPECIFICATIONS

- Weight: ●2.01oz. (57g.)
- Material: ●Light Alloy • Anodized Finish
- Type: ●Friction Type
- Attachment Position: ●Down Tube
- Lever Clamp Diameter: ●1-1/8"
- Option: ●Brazed on parts (w/Sealed Mechanism)
- Lever Non-loosening Feature





Front Chainwheel

Model GA-300 (without Bottom Bracket Set)
GB-110 (Bottom Bracket Set)

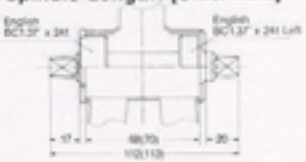
DURA-ACE EX

SPECIFICATIONS

- Material: ●Light Alloy • Anodized Finish
- Type: ●Cotterless
- Chain Ring: ●1/2" x 3/32" chain (2mm.)
- Teeth: ●Inner Chain Ring 42, 43, 44, 45T ●Outer Chain Ring 50, 51, 52, 53T
- Crank Lengths: ●6-1/2" (165mm.), 6-3/4" (170mm.), 6-7/8" (175mm.)



Spindle Length: [Unit: mm.]





W cut teeth

Available by request
- ●6-19/32" (167.5mm.), 6-13/16" (172.5mm.)

Crank Thread: ●9/16" x 20t
Cup Thread: ●English 1.37" x 24t, French 35 x 1.0, Italian 36 x 24t
Material of Chain Ring: ●Light Alloy • Anodized Finish
W cut Mechanism, One Key Release





Freehub

Model HF-100 (Small Flange)

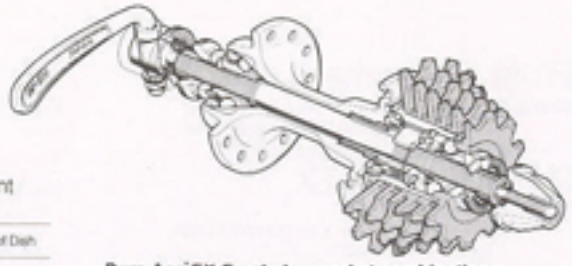
DURA-ACE EX

SPECIFICATIONS

Weight • Over Lock Nut Dimensions • Amount of Dish ●

	Weight	Over Lock Nut Dimension	Amount of Dish
Front	7.4 oz. (210 g.)	3.94" (100 mm.)	
Rear (6-speed (Except Cassette Gears)	14.0 oz. (398 g.)	4.72" (120 mm.)	0.31" (7.8 mm.)
	14.2 oz. (403 g.)	4.96" (126 mm.)	0.19" (4.8 mm.)

Material ●Light Alloy • Anodized Finish (W/Light Alloy Adjusting Nut)
Sprocket ●Golden Finish
Teeth ●Threaded Sprocket 11T~14T
●Spline Sprocket 12T~28T
Spoke Holes ●28H, 32H, 36H
Type ●Quick Release, Uni Balance Mechanism, Uniglide Freewheel, Cassette Freewheel, Sealed Mechanism (Double-Jointed Seal)
Use ●With EX Rear Derailleur Only



Dura-Ace EX Freehub sprocket combinations:

High Gear (Threaded)	Gears from 2nd to low (Spline Type)
11T	12, 13, 14, 15, 16T
11T	12, 13, 15, 17, 19T
11T	13, 15, 17, 19, 21T
12T	13, 14, 15, 16, 17T
13T	14, 15, 16, 17, 18T
13T	14, 15, 17, 19, 21T
13T	15, 17, 19, 21, 23T
14T	15, 16, 18, 20, 22T
14T	16, 18, 20, 22, 24T

We offer all kinds of tooth sprocket possibilities: High gear (threaded sprockets), from 11T to 14T; other gears (spline-type), from 12T to 24T.





Head Parts

Model UA-110

DURA-ACE EX

SPECIFICATIONS

Weight ●3.7 oz. (106 g.)
Material ●Light Alloy • Anodized Finish (Body).
●Bearing Steel (Ball Race)
Type ●Road Type
Polished Ball Race
Sealed Mechanism (Labyrinth Seal)





Caliper Brake

Model BA-200

DURA-ACE EX

SPECIFICATIONS

Weight ●Front 5.8 oz. (164 g.)
●Rear 5.9 oz. (166 g.)
Material ●Light Alloy • Anodized Finish
Type ●Side Pull with Quick Release and Tire Guide
●Pivot Bolt with Lubricating Channel
●Hexagon Release

(All bolts use 6 mm. hexagon wrench key)





Brake Lever

Model MA-200

DURA-ACE EX

SPECIFICATIONS

Weight ●7.3 oz. (206 g.)/Pair (Including Rubber Cover)
Material ●Light Alloy • Anodized Finish
Type ●Hooded Lever with Rubber Cover
Lever Clamp
Diameter ●23.8 mm.
Drilled Out Finish
One-Step Cable Attachment Mechanism





SHIMANO-600 EX SERIES ROAD ENSEMBLE

Rear Derailleur

Model DC-230

SHIMANO-600 EX

SPECIFICATIONS

- Capacity: ● Front Difference/13 Teeth or Less ● Rear Largest Sprocket/28 Teeth or Less
- Weight: ● 6.7 oz. (190 g.)
- Material: ● Light Alloy • Anodized Finish (Body) ● Light Alloy (Cage Plate)
- Type: ● Servo Panta Mechanism, Hatch Plate Mechanism and Without Left Plate

Arabesque Pattern Design





Front Derailleur

Model EC-630

SHIMANO-600 EX

SPECIFICATIONS

- Capacity: ● 14 Teeth or Less
- Weight: ● 3.95 oz. (112 g.)
- Material: ● Light Alloy (Body) ● Steel • Chromium Finish (Chain Guide)
- Type: ● Lower Inlet Type 1-1/8" ● Trap-Ease Mechanism

Arabesque Pattern Design



Shifting Lever

Model LB-630

SHIMANO-600 EX

SPECIFICATIONS

- Weight: ● 2.05 oz. (58 g.)
- Material: ● Light Alloy
- Type: ● Friction Type

Attachment Position
- ● Down Tube

Lever Clamp Diameter
- ● 1-1/8"

Arabesque Pattern Design Option: ● Brazed on parts (W/Sealed Mechanism)





Front Chainwheel

Model GC-400 (Double/without B.B. Set)
GC-410 (Double/without B.B. Set)
GB-210 (Bottom Bracket Set)

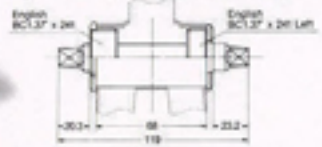
SHIMANO-600 EX

SPECIFICATIONS

- Material: ● Light Alloy • Anodized Finish
- Type: ● Cotterless
- Chain Ring: ● 1/2" x 3/32" (2 mm.)
- Teeth: ● GC-400/Inner 39T~48T, Outer 48T~55T, ● GC-410/Inner 34T~37T, Outer 48T~49T.



Spindle Length: [Unit: mm.]



Crank Lengths
- ● GC-400/6-1/2" (165 mm.), 6-3/4" (170 mm.), ● GC-410/6-1/2" (165 mm.)

Crank Thread: ● 9/16" x 20t
Cup Thread: ● English 1.37" x 24t, French 35 x 1.0, Italian 36 x 24t
Material of Chain Ring: ● Light Alloy • Anodized Finish
W cut Mechanism, One Key Release Mechanism, Safety Crank Arm and Arabesque Pattern Design







Freehub

Model HF-300 (Small Flange)

SHIMANO-600 EX

SPECIFICATIONS

Weight • Over Lock Nut Dimensions • Amount of Dish •

		Weight	Over Lock Nut Dimension	Amount of Dish
Front		8.3 oz. (235 g.)	3.94" (100 mm.)	
Rear (Except Cassette Gears)	5-speed	13.9 oz. (395 g.)	4.72" (120 mm.)	0.07" (1.75 mm.)
		14.2 oz. (402 g.)	4.88" (124 mm.)	0" (0 mm.)
	6-speed	14.2 oz. (403 g.)	4.72" (120 mm.)	0.28" (7.05 mm.)
		14.3 oz. (405 g.)	4.88" (124 mm.)	0.21" (5.3 mm.)
		14.4 oz. (408 g.)	4.96" (126 mm.)	0.17" (4.3 mm.)

Material • Light Alloy • Buff Finish
Sprocket • Black Finish
Teeth • Threaded Sprocket 12T~15T
Spline Sprocket 13T~28T
Spoke Holes • 36H
Type • Quick Release, Uni Balance Mechanism, Uniglide Freewheel, Cassette Freewheel, Sealed Mechanism
Use • With EX Rear Derailleur Only

Shimano-600 EX Freehub sprocket combinations:

High Gear (Threaded)	5-SPEED Gears from 2nd (4 gears united)	6-SPEED Gears from 2nd (5 gears united)
12T	13, 14, 15, 16T	13, 14, 15, 16, 17T
13T	14, 15, 16, 17T	14, 15, 16, 17, 18T
	15, 17, 19, 21T	14, 15, 17, 19, 21T
	15, 17, 20, 23T	15, 17, 19, 21, 23T
14T	16, 18, 20, 22T	15, 16, 18, 20, 22T
	16, 18, 21, 24T	16, 18, 20, 22, 24T
15T	18, 21, 24, 28T	17, 19, 21, 24, 28T

We offer a wide range of tooth sprockets: High gear (threaded sprockets), from 12T to 15T, other gears (spline-type), from 13T to 28T. Even if all 3 bolts of the 600EX unit gear are removed, the bicycle can still proceed unhindered.



Head Parts

Model UB-100

SHIMANO-600 EX

SPECIFICATIONS

Weight • 5.29 oz. (150 g.)
Material • Light Alloy • Anodized Finish (Cup & Nut)
• Steel • Chromium Finish (Cone)
Type • Road Type Sealed Mechanism (Labyrinth Seal)



Caliper Brake

Model BB-330

SHIMANO-600 EX

SPECIFICATIONS

Weight • Front 5.6 oz. (159 g.)
• Rear 5.5 oz. (157 g.)
Material • Light Alloy • Anodized Finish
Type • Side Pull with Quick Release and Tire Guide
Size • A-A' (43 mm.~57 mm.)



Brake Lever

Model MB-230

SHIMANO-600 EX

SPECIFICATIONS

Weight • 7.4 oz. (209 g.)/Pair (Including Rubber Cover)
Material • Light Alloy • Anodized Finish
Type • Hooded Lever with Rubber Cover
• One-Step Cable Attachment
• Drilled Out Finish
Lever Clamp Diameter
• 23.8 mm.



SHIMANO
motocross
components

MOTOCROSS COMPONENTS



Front Hub

Model HD-400

STEEL SEMI-LARGE FLANGE HUB

SPECIFICATIONS

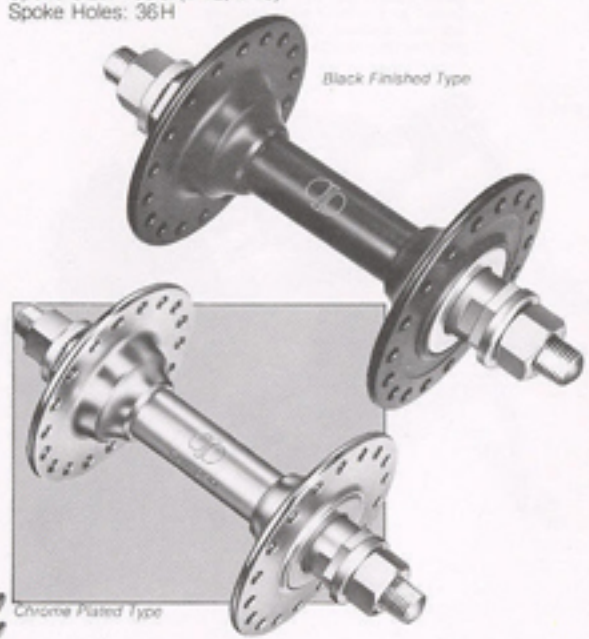
Use: With Motocross Bicycle
Weight: 12.7oz (360g.)
Material: Steel
Surface Treatment: Black Finish or Chrome Plated
Type: Solid Axle with Hub Nut
Axle Thread • Material: 3/8" x 26t • High Carbon Steel
Over Look Nut Dimension: Rear 3.78" (96mm.)
Spoke Size: 105G (#12, #13)
Spoke Holes: 36H

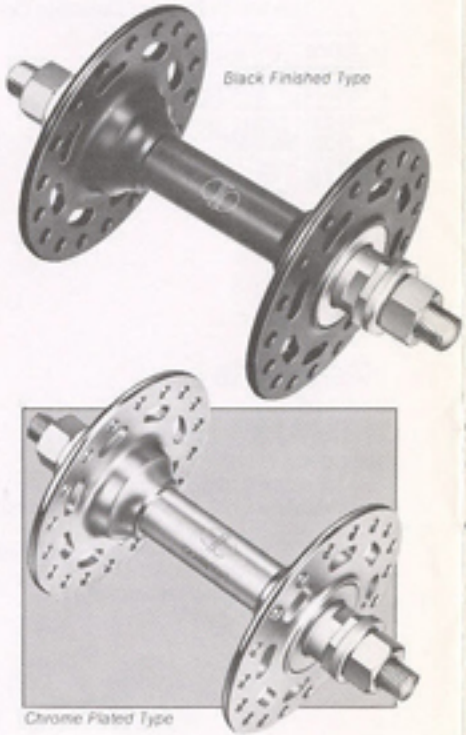
Model HD-410

STEEL LARGE FLANGE HUB

SPECIFICATIONS

Use: With Motocross Bicycle
Weight: 14.1oz (400g.)
Material: Steel
Surface Treatment: Black Finish or Chrome Plated
Type: Solid Axle with Hub Nut
Axle Thread • Material: 3/8" x 26t • High Carbon Steel
Over Lock Nut Dimension: Rear 3.78" (96mm.)
Spoke Size: 120G (#11, #12)
Spoke Holes: 36H





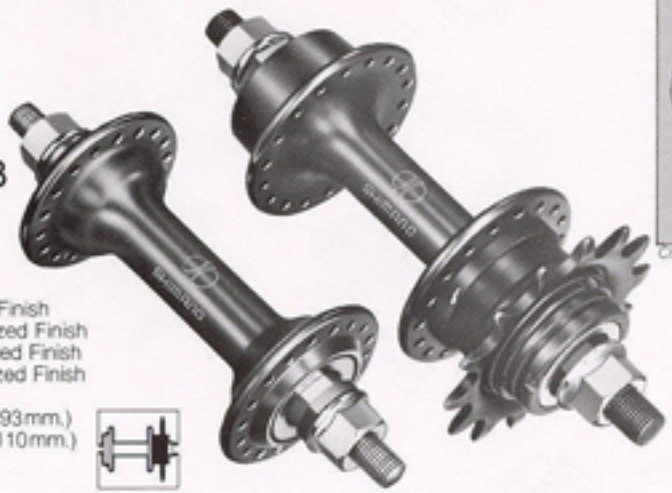
Freehub

Model HF-500

MOTOCROSS FREEHUB

SPECIFICATIONS

Use: With Motocross Bicycle
Weight: Front 6.3oz (180g.)
: Rear 13.9oz (395g.)
Material: Light Alloy
Color • Surface Treatment: Silver • Buff Finish
Gold • Anodized Finish
Red • Anodized Finish
Blue • Anodized Finish
Type; Small Flange Hub
Over Lock Nut Dimensions: Front 3.66" (93mm.)
: Rear 4.33" (110mm.)
Spoke Holes: 36H
Sprocket Combinations: 14T
: 13T, 15T, 16T, 17T, 18T Available
Standard Sprocket: 1/2" x 1/8" Chain



new

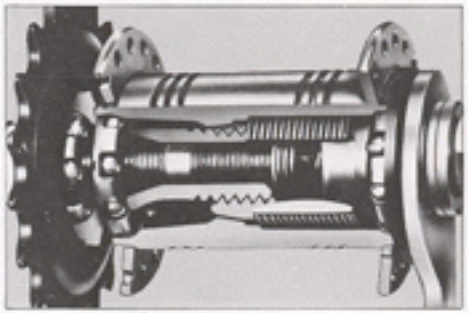
Coaster Brake

Model CB-400

SMALL FLANGE COASTER BRAKE

SPECIFICATIONS

Use: With Motocross Bicycle
Weight: 29.4 oz (833g.)
Mateiral: Steel
Surface Treatment: Black Finish or Chrome Plated
Axle Thread • Material: 3/8" x 24t • High Carbon Steel/ Heat Treated
Teeth: 14T, 15T, 16T, 17T, 18T, 19T, 20T
Over Lock Nut Dimension: 4.29" (109mm.)
Sprocket: 1/2" x 1/8" Chain
Spoke Size: 105G (#12, #13)
Spoke Holes: 36H



Sectional View of Coaster Brake

Model CB-410

LARGE FLANGE COASTER BRAKE

SPECIFICATIONS

Use: With Motocross Bicycle
Weight: 32.0 oz (908g.)
Material: Steel
Surface Treatment: Black Finish or Chrome Plated
Axle Thread • Material: 3/8" x 24t • High Carbon Steel/ Heat Treated
Teeth: 14T, 15T, 16T, 17T, 18T, 19T, 20T
Over Lock Nut Dimension: 4.29" (109mm.)
Sprocket: 1/2" x 1/8" Chain
Spoke Size: 120G (#11, #12)
Spoke Holes: 36H

Rear Sidepull Caliper Brake

Model BB-250

TOURNEY

SPECIFICATIONS

Use: With Motocross Bicycle
Material: Light Alloy
Type: Sidepull with Quick Release and Synpul Mechanism

Type	A-A'	Weight (Rear)
CS-S88	70mm-88mm	6.2 oz. (175g.)

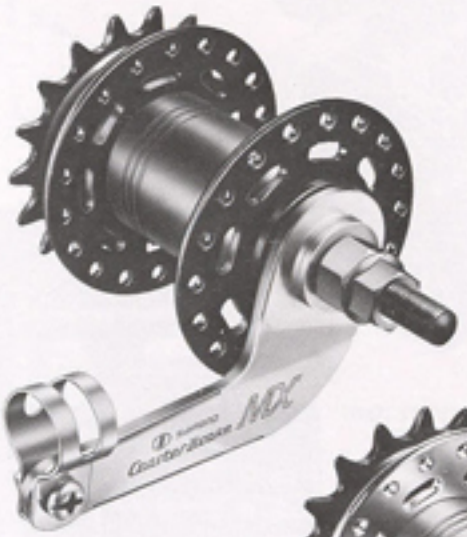
new QR BRAKE



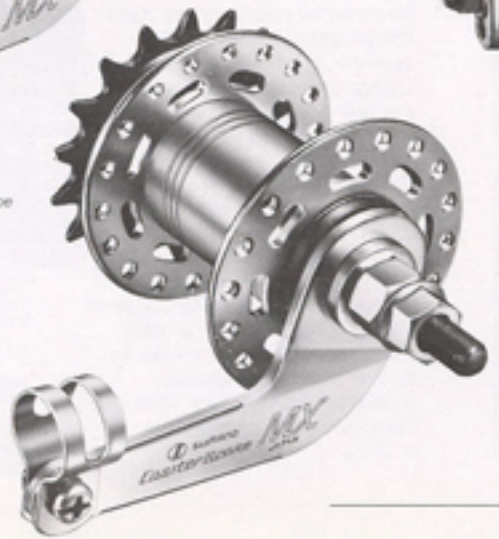
Black Finished Type



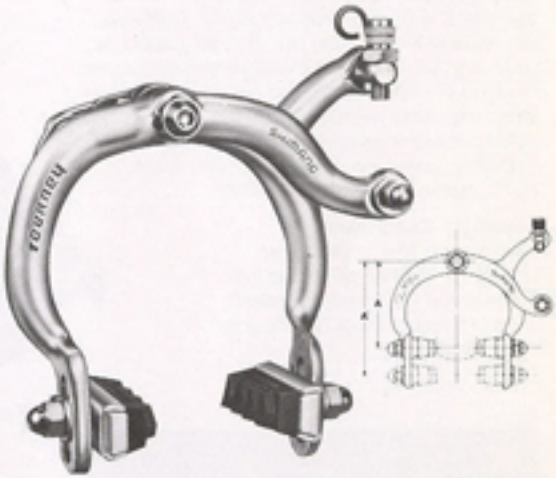
Chrome Plated Type



Black Finished Type



Chrome Plated Type





Quick Release Mechanism

NEW POSITRON PPS SYSTEM

NEW PPS 10-Speed SYSTEM

Shimano has done extensive research to develop a gear shifting mechanism which would enable everyone to shift gears easily, accurately and safely. The PPS System (Positive and Pre-Select Shifting), the follow-up to the FF System, answers everyone's needs. The front derailleur comes equipped with both the Pre-Select Mechanism and the Trap-Ease Mechanism. The console lever "Positron 10-s" gives the rider complete gearshift control over 10 speeds—and with only one lever. Shimano's PPS System is a tremendous addition to the bicycle world.

Positron 10-s Console Lever (LE-420)
10-speed gear shifting with a single shift lever—the ideal shift lever "Positron 10-s" that riders have long been waiting for. Until now, one console lever for the rear derailleur could be used only with 5-speed bicycles. Shimano pursued the ideal of "10-speed shifting with one console lever only" until we succeeded. It shifts in the same way as changing gears in a car. With this innovative gear lever, anyone can shift gears easily, quickly and, above all, safely.

Assembly Conditions:
The Positron 10-s console lever consists of the Positron II and the Positron 400 for the rear derailleur; and the Positron Front Derailleur for the front derailleur.



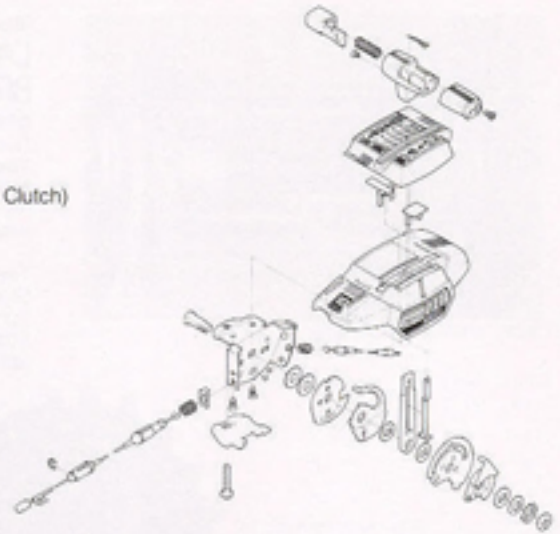
Shifting Lever

Model LE-420

POSITRON 10-S CONSOLE

SPECIFICATIONS
Use: With PPS System 10-Speed Only
Material: Resin (Body)
Weight: 13.1 oz. (370g.)
Type: Click
: Double Function Single Lever (With Inner Clutch)
Attachment Position: Top Tube
Lever Clamp Diameter: 1"







Features of PPS-10s:
1. Conventional console levers could change gears only with the rear derailleur, but the PPS-10s can change gears both with the front and rear derailleur.
2. Shifting gears with the 10-speed console lever is a simple operation. The rear derailleur gear change is made in the normal way as with a conventional lever. The front derailleur gear change is made by simply pushing a lever knob, positioned on the lever handle, when shifting. All gear shifting is within easy reach of the rider's hand, so there is no more dangerous groping for the shift lever while riding. Complete safety is ensured at all times.



POSITRON Rear Derailleur



POSITRON Front Derailleur

Front Derailleur

Model EE-100

POSITRON

SPECIFICATIONS
Use: With PPS System Only
Capacity: 14 Teeth or Less
Weight: 6.1 oz. (173g.)
Material: Steel
Type: Lower Inlet Type 1-1/8"
: Trap-Ease Mechanism
: Pre-Select Mechanism



Positron Front Derailleur (EE-100)
The front derailleur is also equipped with the Pre-Select Mechanism that allows riders to pre-select their next gear whether in motion or stationary. At the same time the derailleur is equipped with the mechanism that has revolutionized gear-shifting—the Trap-Ease Mechanism. The Trap-Ease Mechanism promises swifter gearshifting, unerring shift timing and a quieter ride.

Features of Positron Front Derailleur:
1. Pre-selects and sets front gears by the Pre-Select Mechanism. Used in coordination with the rear derailleur, the Mechanism can pre-select any gear.
2. The combination of the Positron 10-s console lever with the Positive Mechanism means unerring and accurate gearshifting is ensured.
3. With the much talked-about Trap-Ease Mechanism, gearshifting the front derailleur is now startlingly efficient. Irritating grating noises have been eliminated.

SHIMANO special tool SPECIAL TOOL

Rear Derailleur

Model DG-300

POSITRON-400

SPECIFICATIONS

Use: PPS System Only
Capacity: Front Difference/14 Teeth or Less
: Rear Largest Sprocket/28 Teeth or Less
Weight: 11.3oz. (320g.)
Material: Light Alloy • Steel
Type: Positive Mechanism with Pre-Select Mechanism and Servo Panta Mechanism



Model DG-200

POSITRON-II

SPECIFICATIONS

Use: PPS System Only
Capacity: Front Difference/14 Teeth or Less
: Rear Largest Sprocket/28 Teeth or Less
Weight: 10.9oz. (310g.)
Material: Steel
Type: Positive Mechanism with Pre-Select Mechanism and Servo Panta Mechanism



Shifting Lever

Model LB-700

POSITRON DOWN TUBE

SPECIFICATIONS

Use: PPS System Only
Material: Light Alloy
Type: Friction Type
Attachment Position: Down Tube
Lever Clamp Diameter: 1-1/8"

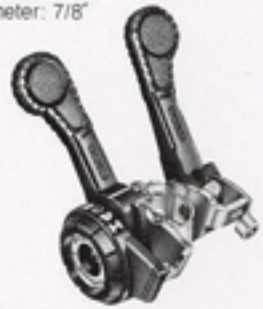


Model LC-410

POSITRON STEM

SPECIFICATIONS

Use: PPS System Only
Material: Resin
Type: Friction Type
Attachment Position: Handle Stem
Lever Clamp Diameter: 7/8"



Cable

PUSH-PULL CABLE



The PPS System can be combined with the Shimano FF System.

Model XB-520 Freehub Removal Tool



Model XB-220 B-Type Multiple Freewheel Removal Tool



Model XB-600 Single Freewheel Removal Tool



Model XB-420 Exclusive Tool for EX Series Head Parts

Model XC-300 Front Chainwheel Removal Tool for FF System (One Piece Crank)

Model XC-200 Drum Removal Tool for RADIAX Brake



"Shimano Bicycle Parts" Catalog

- We have a complete line of small parts for DURA-ACE, 600 Series and all other Shimano products.
- Only a limited sample of our entire range is shown here.
- Please refer to the "Shimano Bicycle Parts" catalog which contains the complete line of Shimano parts.



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