

ARCHIVE

This information was updated on April 21, 2009. Shimano makes no warranty with respect to this information, including without limitation any warranty on the accuracy of measures, specifications and compatibility of the current products. Regarding any modification and new product information after April 21, 2009, please refer to the Shimano Business Customer Web Site or directly contact the sales person of our company.

SHIMANO

2009-2010

Products compatibility information

Drivetrain Interchangeability

Rear drivetrain for Comfort & MTB Components

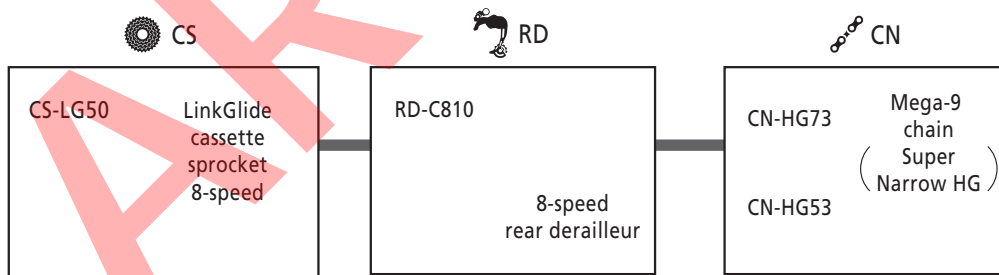
When using components of different series together, be aware of the points given below.

9-speed Drivetrain

CS		Shadow RD		W-servo RD			CN
		RD-M972 RD-M772 RD-M662 <small>NEW</small> RD-M592	RD-M810	RD-M971 RD-M970 RD-M771 RD-M770 RD-M531 RD-M530	RD-T661	<small>NEW</small> RD-M591	CN-7701 CN-HG93 CN-HG73 CN-HG53
<small>NEW</small> CS-HG61-9 bh	12-36T	X	X	-	-	-	-
CS-M970 bd	12-34T	X	X	X	-	X	X
CS-M970 be CS-M770 as CS-HG80-9 au CS-HG61-9 au CS-HG50-9 au	11-34T	X	X	X	-	X	X
CS-M970 ba CS-M770 aq CS-HG80-9 ar CS-HG61-9 ar CS-HG50-9 ar	11-32T	X	X	X	X	X	X
CS-HG80-9 bg <small>NEW</small> CS-HG61-9	11-28T	-	X*	-	X	X	X
CS-6500 -	12-25T 11-23T	-	X*	-	-	-	X

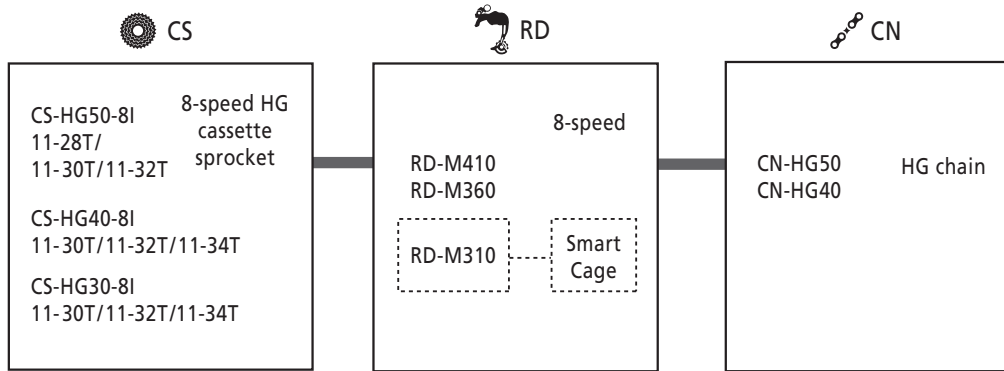
*: Close ratio setting

8-Speed LinkGlide



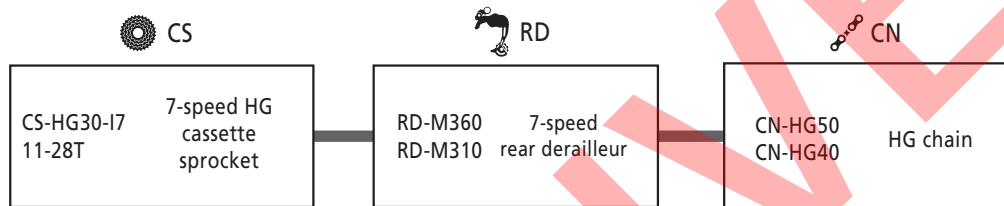
The full performance of LinkGlide will not be realized in combinations other than these. Also, HG performance will be reduced if RD-C810 is used with HG gears other than LinkGlide gears. LinkGlide shifting performance is achieved when combined with ST-C503-A(R) as the shifting lever.

8-Speed HG

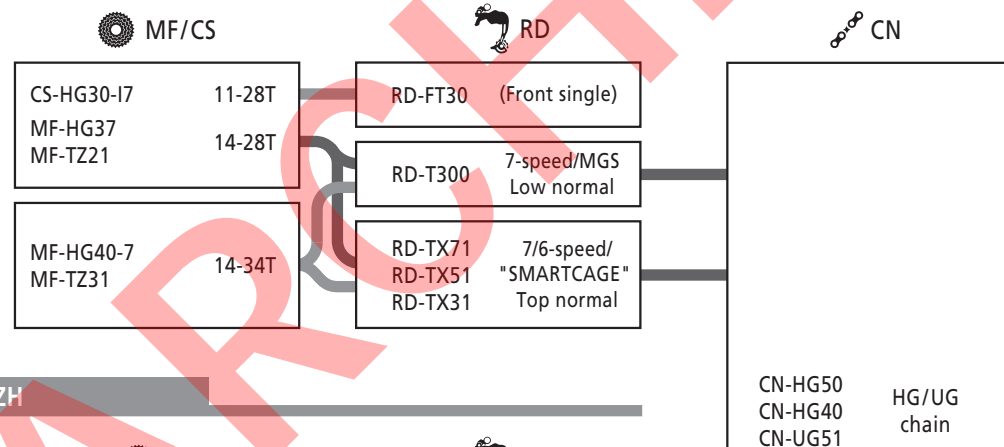


* The rear derailleur for 8-speed can also be used for 7-speed drivetrain.

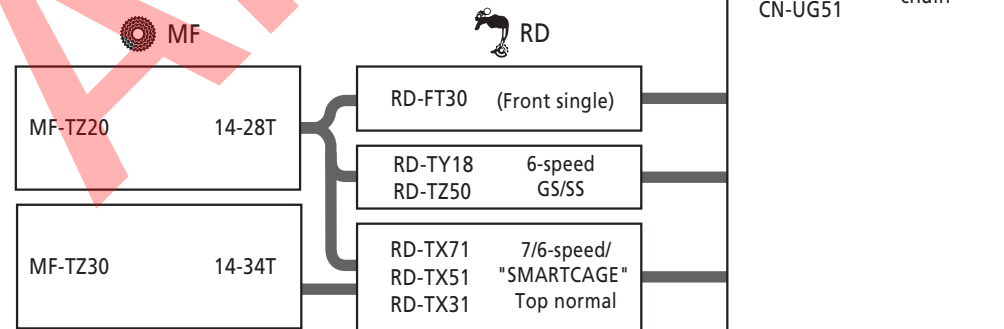
7-Speed HG



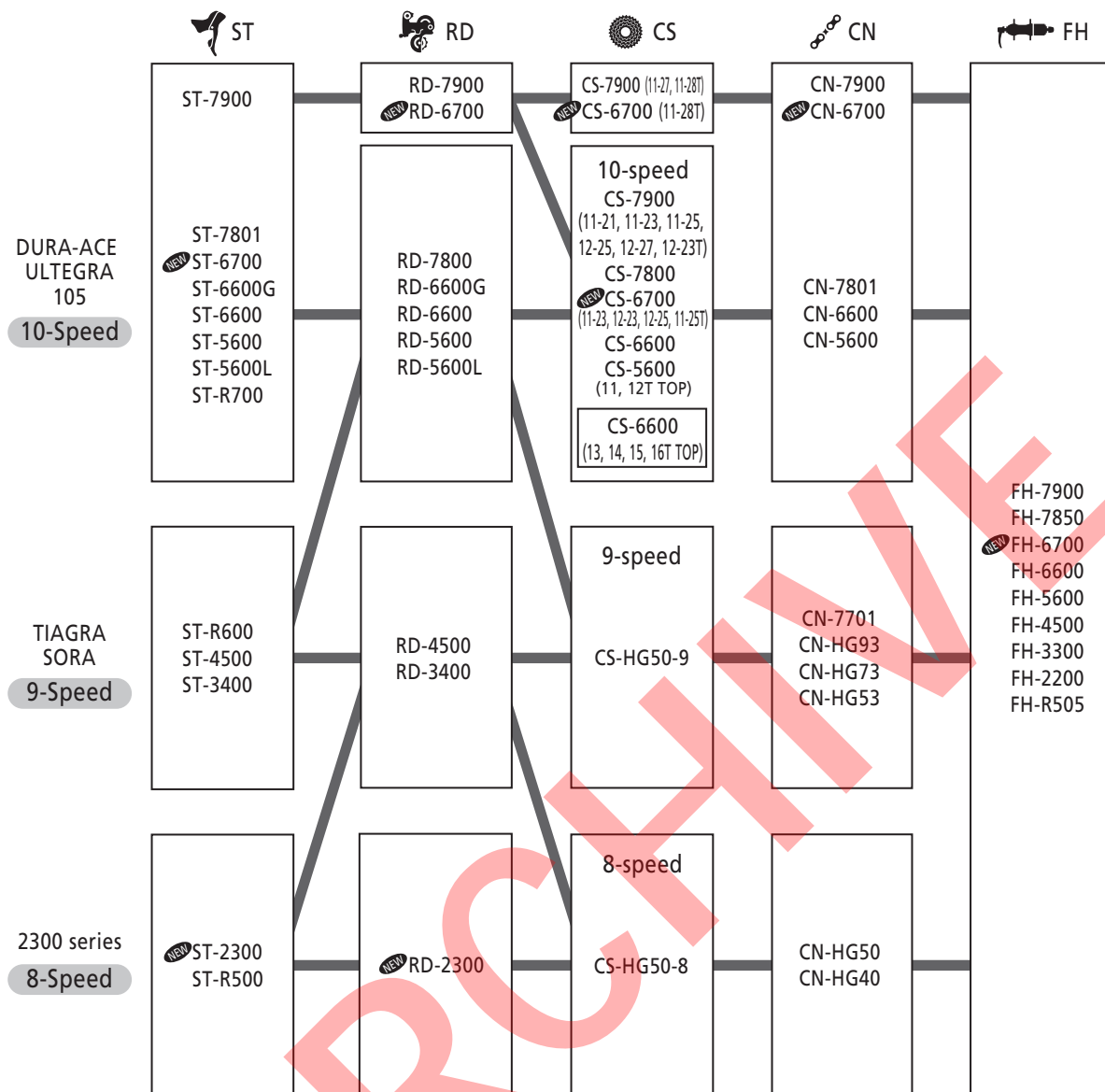
7-Speed HG/ZH



6-Speed ZH



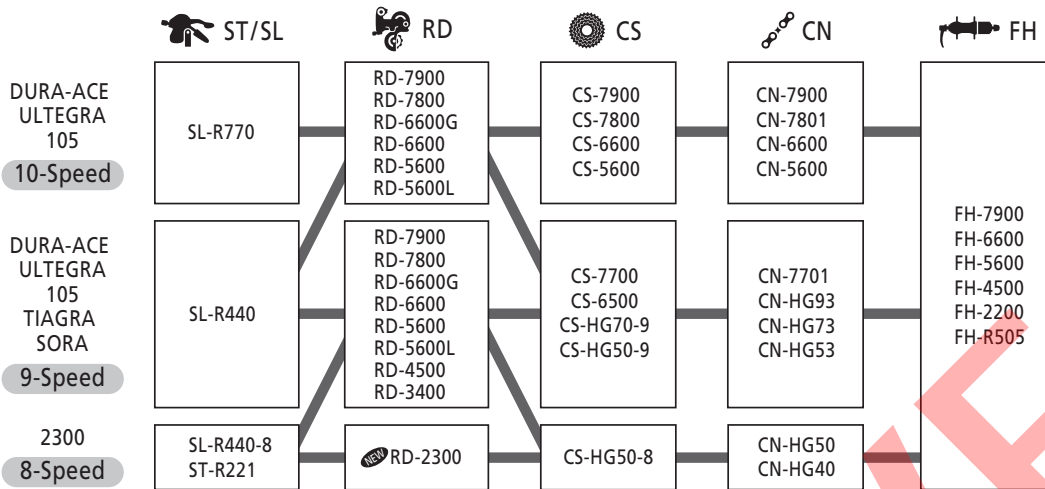
Rear drivetrain for Road bike components



Note: CS-6600; Do not use front triple chainwheel with 14, 15, 16 top sprockets combination.

Interchangeability for flat handlebar

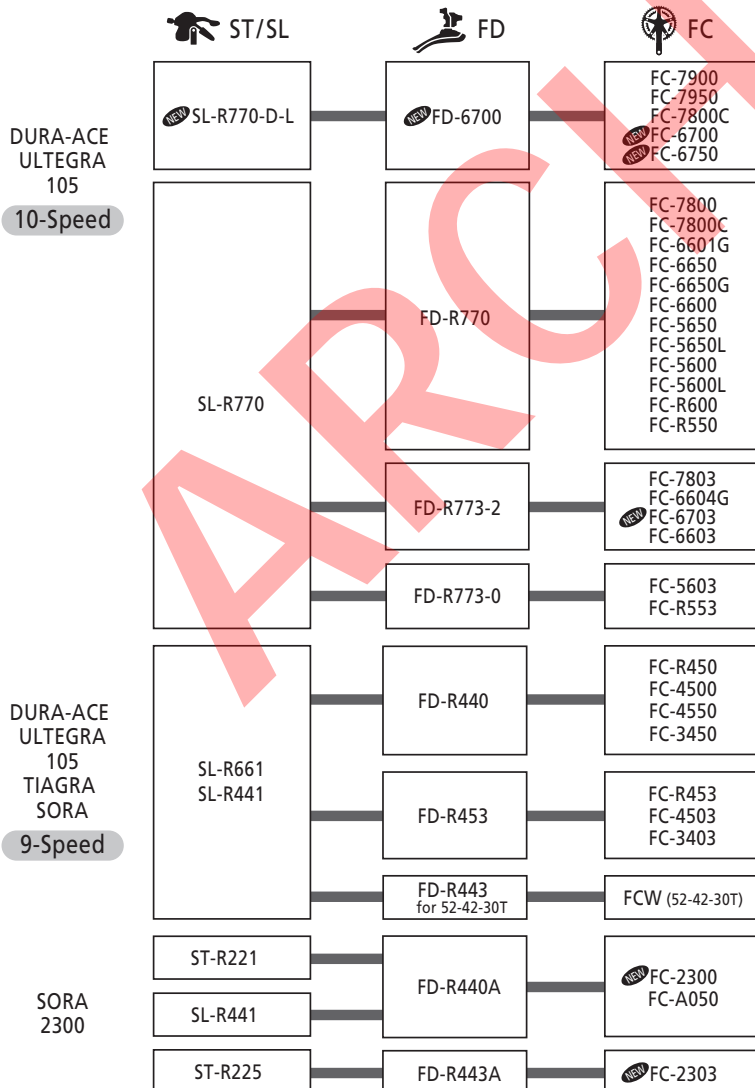
Rear system



Note: CS-6600; Do not use front triple chainwheel with 14, 15, 16 top sprockets combination.

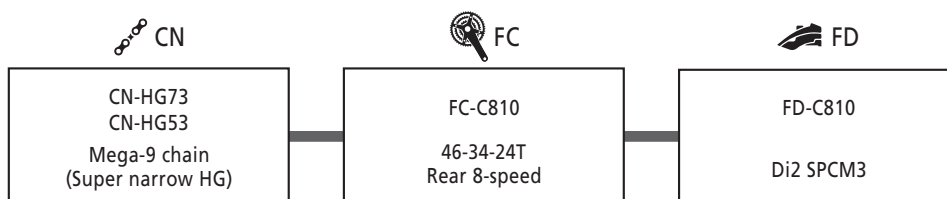
Note: FH-R505 O.L.D. 135 mm for disc brake frame.

Front system

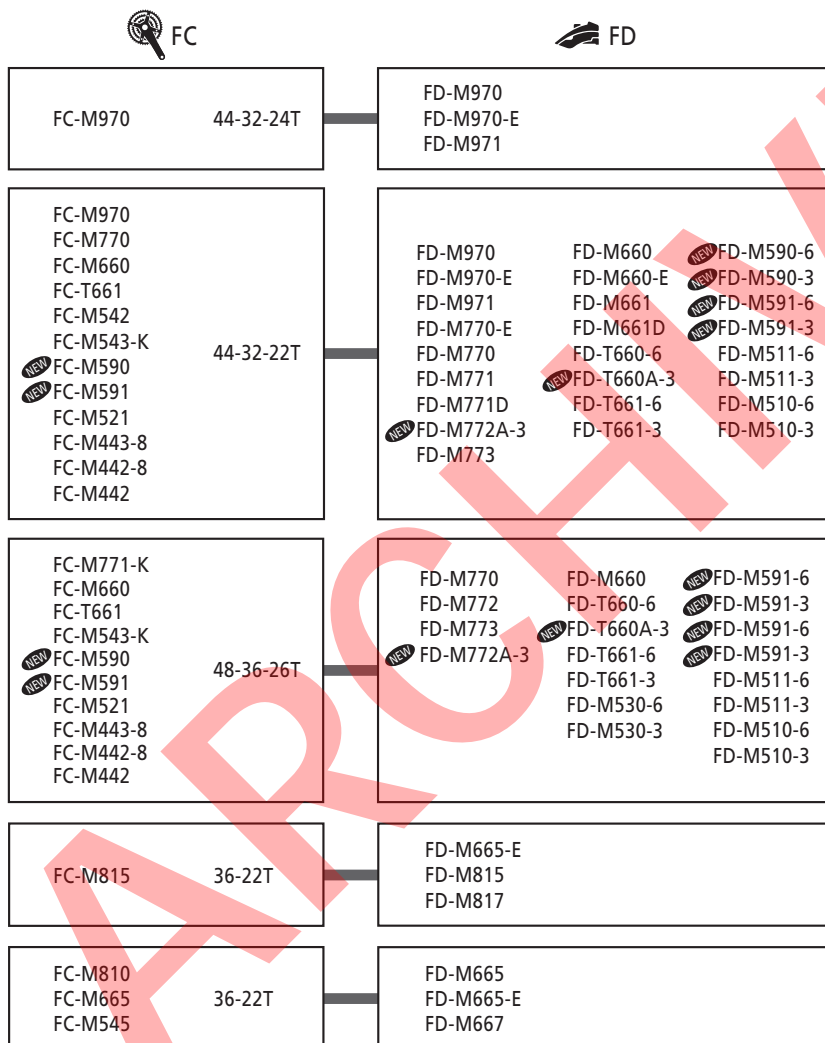


Front drivetrain interchangeability (MTB front SIS)

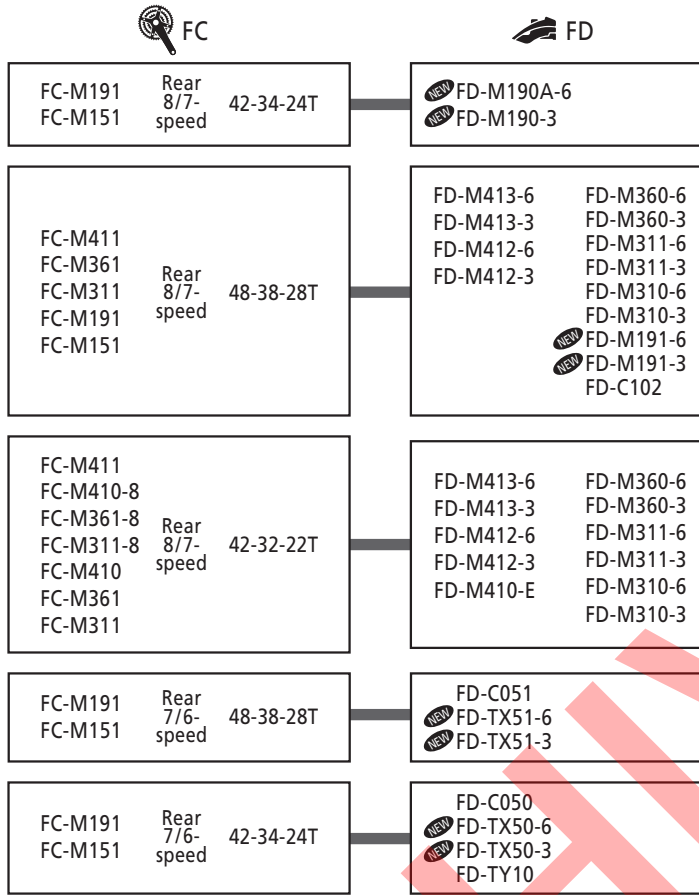
SPCM (TRIPLE)



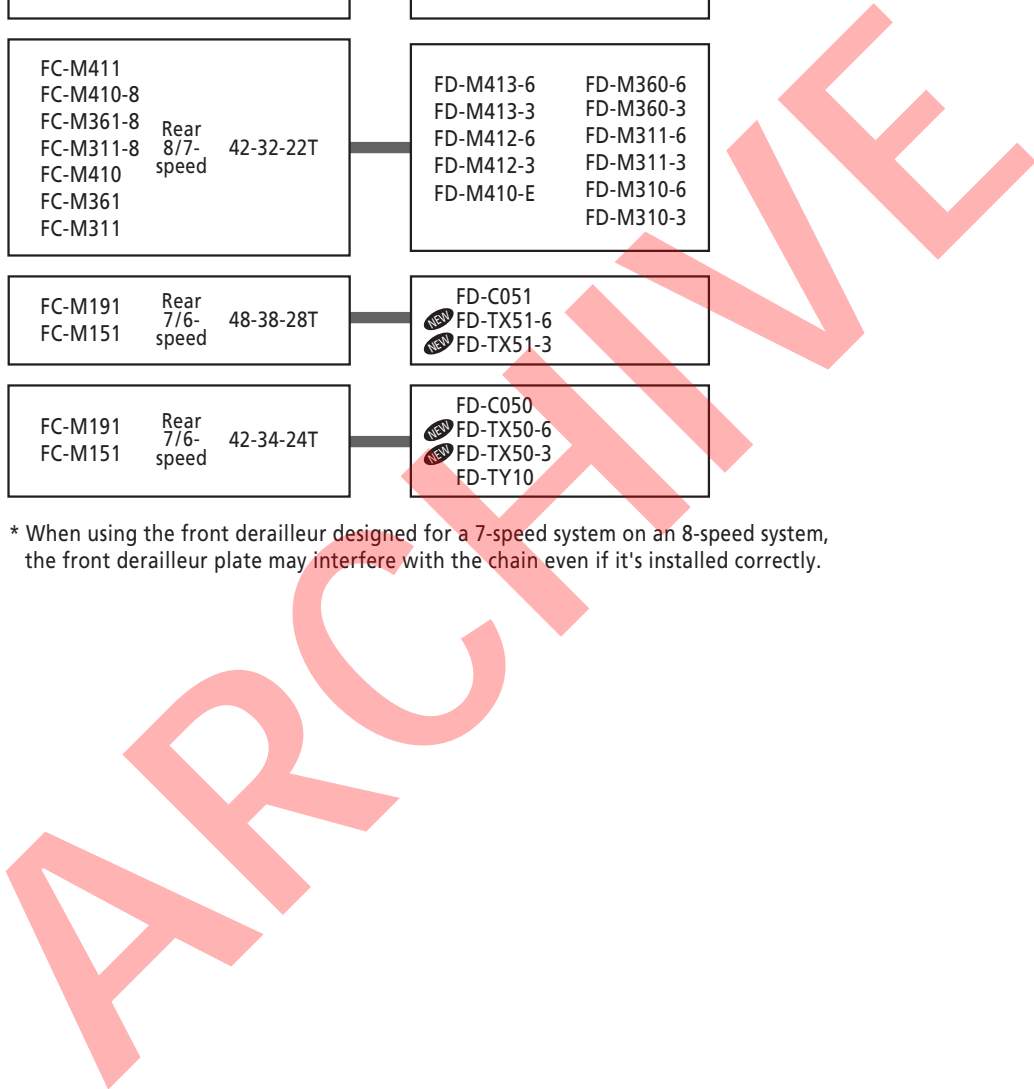
9-speed drivetrain



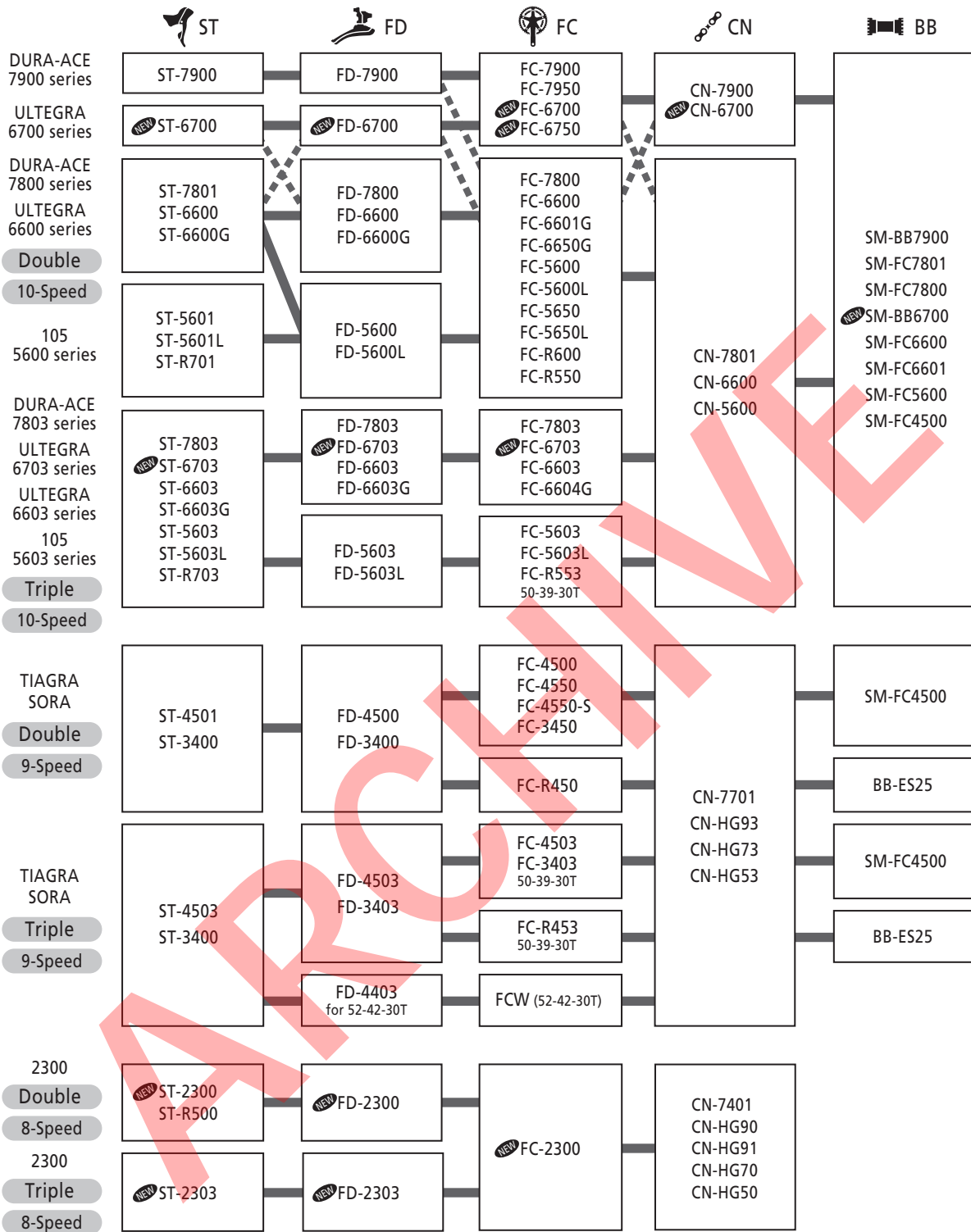
HG triple (8/7/6-speed)



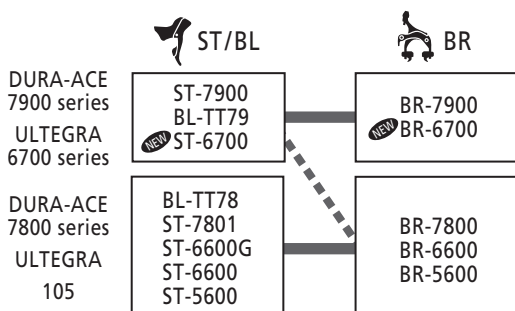
* When using the front derailleur designed for a 7-speed system on an 8-speed system, the front derailleur plate may interfere with the chain even if it's installed correctly.



Front drivetrain interchangeability (Road bike components)



Brake systems interchangeability



Front derailleur and Crankset

The allowable combinations of front derailleurs depend on the difference in the number of teeth of the gears and the shape of the front derailleur plate.

If the conditions given below are not satisfied, then the desired shiftability may not be obtained.

FC (top gear) - (low gear) \cong FD (top and low capacity)

FC (top gear) - (middle gear) \cong FD (minimum difference in teeth number between top and middle)

Front derailleurs and the number of teeth for corresponding cranksets are given in the chart below.

9-speed Triple FC-FD compatibility

Chain line	BB model no./structure	FC model no.	Chain line						
			50 mm			47.5/50 mm			
			66-69		63-66	66-69		63-66	
			Top swing FD						
FD-M970	FD-M970E FD-M770E FD-M660E	FD-M770 FD-M660 FD-T660-6 FD-M590-6	NEW FD-M772A NEW FD-T660A-3 NEW FD-M590-3	FD-M510-6	FD-M510-3				
Down swing FD									
FD-M971 FD-M771 FD-M771D FD-M661 FD-M661D		FD-T661-6 FD-M591-6	FD-M773 FD-T661-3 FD-M591-3	FD-M511-6	FD-M511-3				
50 mm	2pc type FC	FC-M970	44-32-24	X	X	X	X	X	X
		FC-M970 FC-M770 FC-M660 FC-T661 FC-M542 FC-M543K FC-M590 FC-M591	44-32-22	X	X	X	X	X	X
		FC-M771K FC-M660 FC-T661 FC-M543K FC-M590 FC-M591	48-36-26	-	-	X	X	X	X
	BB-ES25 (please refer chart as below for detailed combination)	FC-M521	44-32-22	X	-	X	X	X	X
	BB-ES25 126	FC-M443-8							
	BB-UN26 LL123 (-K)	FC-M443							
	BB-ES25 (-E) 118 (-E)	FC-M442-8	44-32-22	X	X	X	X	X	X
	BB-UN26 (-E) LL113 (-E)	FC-M442							
	BB-ES25 (please refer chart as below for detailed combination)	FC-M521	48-36-26	-	-	X	X	X	X
	BB-ES25 126	FC-M443-8							
	BB-UN26 LL123 (-K)	FC-M443							
	47.5 mm	BB-ES25 121	FC-M443-8						
BB-UN26 117.5		FC-M443	44-32-22	-	-	-	-	X	X
BB-ES25 113		FC-M442-8							
BB-UN26 MM110		FC-M442							
BB-ES25 121		FC-M443-8	48-36-26	-	-	-	-	X	X
BB-UN26 117.5		FC-M443							
47.5 + t mm	BB-ES25-K 121	FC-M443-8	44-32-22	-	-	-	-	X	X
	BB-UN26-K 117.5	FC-M443							
	BB-ES25-K 121	FC-M443-8	48-36-26	-	-	-	-	X	X
	BB-UN26-K 117.5	FC-M443							

FC-M521/BB-ES25 combination

		MTB (without chain case)	Trekking (with chain case)	E-type
BB shell width	68 mm	ABBES25AKB21W (use with 1.8mm spacer) / ABBES25B21	ABBES25AKB21W (use without 1.8mm spacer) / ABBES25AKB21	ABBES25EB21
	73 mm	ABBES25C21	-	ABBES25EC21

■ 9-speed Double FC-FD compatibility

Chain line	BB model no./structure	FC model no.		Chain line	
				54.3 mm	46.8 mm
				Chain stay angle	
				65-71	
				Top swing FD	
				FD-M815 FD-M665-E	FD-M665 FD-M665-E
				Down swing FD	
FD-M817	FD-M667				
54.3 mm	2pc type FC	FC-M815	36-22	X	-
46.8 mm	2pc type FC	FC-M810 FC-M665 FC-M545	36-22	-	X

■ Front derailleur specifications

	SPCM (Triple)	FD-M412-6 FD-M412-3 FD-M413-6 FD-M413-3 FD-M360-6 FD-M360-3	FD-M310-6 FD-M310-3 FD-M311-6 FD-M311-3	FD-T301 FD-M191-3 FD-C102 8/75	FD-M190-3 FD-M190A-6 FD-C101-E 8/75
		FD-C810	FD-M360-6 FD-M360-3	8/75	FD-C051 FD-TX51-3 FD-TX51-6 FD-TZ31 FD-TZ21 7/65
		FD-M410-E for top gear 42T	FD-M330		
Top gear teeth number		42/48T	48T	42T	
Top-Middle min. teeth difference	SPCM (46/34/24T)	10T	10T	8T	
Capacity		20T	20T	18T	

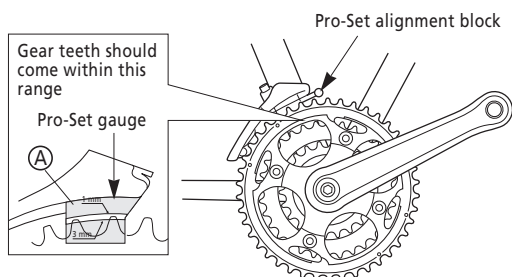
■ Crankset specifications

	For HG Chain		
	FC-M411 FC-M410 FC-M410-8 FC-M361 FC-M311 FC-M311-8	FC-M191 FC-M151	FC-M411 FC-M361 FC-M311 FC-M191 FC-M151
Top gear	42T	42T	48T
Middle gear	32T	34T	38T
Low gear	22T	24T	28T

NOTE: When using the front derailleur designed for a 7-speed system on an 8-speed system, the front derailleur plate may interfere with the chain even if its installed correctly.

How to set position for FC with bigger top gear chain ring in the same series.





- 1) set A
- 2) Check if outer plate and bigger chainring have clearance
- 3) Reposition height of FD in case problem at process (2)



Front derailleur and Chain line

The Shimano line-up for front derailleurs and the chain lines they support are given in the chart below.

■ Front derailleur and chain line (MTB)

		Ø 28.6 (S)	Ø 31.8 (M)	Ø 34.9 (L)
ALIVIO	FD-M410-E	50 mm For the E-type (BB mounting front derailleur)		
DEORE	FD-M511/M510	47.5/50 mm		
ALIVIO	FD-M413-6/M413-3 FD-M412-6/M412-3			
ALTUS	FD-M311-6/M311-3 FD-M310-6/M310-3			
	FD-M360-6/M360-3			
ACERA	FD-M330-D6/T6	47.5/50 mm For the E-type (BB mounting front derailleur): 47.5 mm (shell width of 68 mm) 50 mm (shell width of 73 mm)	the chainstay angle should be between 66 and 69	
NEXAVE	FD-C810/C505	50 mm (shell width of 68 mm)		
	FD-T301	47.5 mm (shell width 68 mm), 50 mm (shell width 73 mm)		—
Non-Series	 FD-M190A-6/M190-3  FD-M191-6/M191-3	47.5/50 mm		
Tourney	 FD-TX50-6/TX50-3  FD-TX51-6/TX51-3			
C-series	FD-C101-E FD-C102 FD-C050	With seat tube of diameter 34.9 mm (L), the chainstay angle should be between 66 and 69 For the E-type (BB mounting front derailleur): 47.5 mm (shell width of 68 mm) 50 mm (shell width of 73 mm)		
	FD-C102	For the E-type (BB mounting front derailleur): 47.5 mm (shell width of 68 mm) 50 mm (shell width of 73 mm)	73 mm shell width/66 and 69	

Shimano front derailleurs, with the exception of some of the C-series and the Tourney class, support chain lines of 47.5 and 50 mm. The Tourney front derailleurs and corresponding chain lines are given in the chart below.

■ Front derailleur and chain line (Tourney)

		Ø 28.6 (S)	Ø 31.8 (M)	Ø 34.9 (L)
FD-TY10 FD-TZ31 FD-TZ30 FD-TZ21 FD-TZ20		47.5 mm		—

Crankset, Bottom bracket, and Chain line

In order to use SIS to its full extent, the required correct chain line, along with the crankset and bottom bracket required to obtain that, are given in the chart below.

■ Comfort bike and MTB Components (Separate type FC/BB)

Speed	Series	Crankset				Bottom Bracket	Chain line & Axle mark			
		Model No.	Type of Crank				Model NO.	47.5mm	50.0mm	52.5mm
			Spline	Square	Chaincase					
9	Non-Series	FC-M521	X		X*	BB-ES25-AK	-	**	-	-
		FC-M443-8	X		X	BB-ES25(-K)	121	126	-	121K
		FC-M443		X	X	BB-UN26(-K)	117.5	LL123(-K)	-	117.5K
		FC-M442-8	X			BB-ES25(-E)	113	118(-E)	-	-
		FC-M442		X		BB-UN26(-E)	MM110	LL113(-E)	-	-
8	NEXAVE	FC-C810		X	X*	BB-UN26	-	130	-	-
8/7	Alivio	FC-M411 (48T)		X	X*	BB-UN26(-K)	-	LL123(-K)	-	-
		FC-M410-8	X			BB-ES25(-E)	-	118(-E)	-	-
		FC-M411		X	X*	BB-UN26(-K)	-	LL123(-K)	-	-
		FC-M410		X		BB-UN26(-E)	-	LL113(-E)	-	-
	Acerca Altus	FC-M361-8 (42T)	X		X	BB-ES25(-E)	-	126	-	-
		FC-M361 (42T) FC-M361 (48T) FC-M311-42T FC-M311-48T		X	X*	BB-UN26(-K)	-	LL123(-K)	-	-
		FC-M311-8	X		X*	BB-ES25(-K)	-	126(-K)	-	-
8/7/6	Non-Series	FC-M191 FC-M151		X	X	BB-UN26(-K)	D-NL(122.5)	-	-	D-NL(122.5)

Note: If using a chain case, select a BB-○○○○(-K)/-K bottom bracket.

X: Yes

If using an E-type front derailleur, select a BB-○○○○(-E) bottom bracket.

*: Chain case stay thickness should be 1.5 mm to 2.1 mm.

** : Please refer to page 108 for detailed combination.

Note: FC-C810: Use super narrow HG 9-speed chain.

FC-M521: Use 121AK with 1.8 mm spacer if no chain case used.

■ Capreo series components

The combinations of the front chainwheel and the bottom bracket to obtain proper chain line, which are necessary for the SIS (= Shimano Indexed System) to function well, are presented in the following chart.

Series	FC			BB	Chain Line & Axle mark				
	Model No.	type of Crank			Model No.	46.0 mm	48.5 mm	50.0 mm	52.5+t mm
		Spline	Square	Chaincase					
Capreo	FC-F700		X	X	BB-UN26	MM110	LL113	YL117	-
					BB-UN26-K	-	-	-	*117.5

Note: This specification can be used without the chain case as 52.5 mm chain line.

X: Yes

In that case, a space is to be left between the shell and the adapter on the left side of the BB, but there is no problem in actual use.

Chain, Chaining and Cassette sprocket

The allowable combinations for the Shimano chain (CN), chainrings (FC), and cassette sprockets (CS) are given in the chart below. These chains are available in order to match the type of drivetrain. Select the combination you desire after checking the chart below.

		9-speed HG		LG		HG	
		Cassette sprocket	Crankset	Cassette sprocket	Crankset	Cassette sprocket	Crankset
FC / CS		CS-M970 CS-M770 CS-HG80-9 CS-HG61-9 CS-HG50-9	FC-M970 FC-M810 FC-M815 FC-M770 FC-M771-K FC-T661 FC-M660 FC-M665 <small>NEW</small> FC-M590 <small>NEW</small> FC-M591 FC-M545 FC-M542 FC-M521 FC-M443 FC-M442	CS-LG50	FC-C810	CS-HG40-8I CS-HG50-8I CS-HG30-I CS-HG30-8I	FC-M410 FC-M411 FC-M361 FC-M311 FC-M191 FC-M151
Chain	9-speed Narrow chain CN-7701 CN-HG93 CN-HG73 CN-HG53	Good	Good	Good	Good	Not good	Not good
	HG Chain CN-HG50 CN-HG40	Not good	Not good	Not good	Not good	Good	Good

Recommendation of the Rim Tape Sizes for Shimano Wheels

Rim Sizes	Applicable Wheel Models	Recommended Rim Tape Size
622 X 13C	WH-7701/7700/6500/R540/R535	16-622
622 X 15C	WH-7850-C50-CL/7850-C24-CL/7801/7800/RS80/6600-G/6600-S/5600/R580/R561/R560/R550/R500/RS30/RS20/RS10/3N71-Road	18-622
571 X 15C	WH-R550-650C	18-571
622 X 17C	WH-S501/S500	18-622
622 X 19C	WH-S501-V/S500/8R25/T565/T560/3N71-NX/3N71-T	20-622
559 X 19C	WH-M565/ <small>NEW</small> MT15/M505	20-559
559 X 18C	WH-M959/M575/M540/M535	20-559
Road Tubeless	WH-7850-C24-TL/7850-SL/7801-SL/ <small>NEW</small> 6700	Never use rim tapes
MTB UST	WH-M975/M970/M965/MT75/M778/M776/M775/M770/M765/ <small>NEW</small> MT65	Never use rim tapes

Spoke protector

Select the spoke protector after checking the chart below.
It is decided by hole number of hub and number of the gear teeth, other than multiple freewheel.

Speed	Model No.	Low gear number											Righth hand flange (mm)	Spoke hole number			
		21	23	24	25	26	27	28	30	32	34	36		24	28	32	36
	Road gear	[Grid with shaded cells]											∅53.8	CP-FH06	CP-FH08	CP-FH05	CP-FH06
		CP-FH06	CP-FH08	CP-FH05	CP-FH06												
		CP-FH31	CP-FH08	CP-FH35	CP-FH31												
9	CS-HG61-9	[Grid with shaded cells]											∅53.8	—	—	CP-FH56	—
	CS-HG50-9	[Grid with shaded cells]												—	—	CP-FH35	CP-FH50
	CS-M970	[Grid with shaded cells]												—	CP-WH12	CP-FH56	CP-FH53
	CS-M770	[Grid with shaded cells]												—	CP-WH13	CP-32H2	CP-36H2
	CS-HG80-9	[Grid with shaded cells]												—	—	CP-FH35	CP-FH50
	CS-6500	[Grid with shaded cells]												—	—	CP-FH56	CP-FH53
8	CS-HG60-8l	[Grid with shaded cells]											∅53.8	—	CP-WH12	CP-FH56	CP-FH53
	CS-HG50-8l	[Grid with shaded cells]												—	CP-FH40	CP-FH35	CP-FH31
	CS-HG40-8l	[Grid with shaded cells]												—	CP-WH12	CP-FH56	CP-FH53
	CS-HG30-8l	[Grid with shaded cells]												—	CP-FH40	CP-FH35	CP-FH31
		[Grid with shaded cells]												—	CP-WH12	CP-FH56	CP-FH53
7	CS-HG50-l	[Grid with shaded cells]											∅53.8	—	CP-WH12	CP-FH56	CP-FH53
	CS-HG30-l	[Grid with shaded cells]												—	CP-FH40	CP-FH35	CP-FH50
	MF-HG40-7	[Grid with shaded cells]												—	CP-WH12	CP-FH56	CP-FH53
	MF-HG37	[Grid with shaded cells]												—	—	—	CP-HG22
	MF-TZ37	[Grid with shaded cells]												—	—	—	CP-HG22
	MF-TZ31	[Grid with shaded cells]												—	—	—	CP-HG22
	MF-TZ07	[Grid with shaded cells]												—	—	—	CP-HG22
	MF-TZ21	[Grid with shaded cells]												—	—	—	CP-HG22
6	MF-ZH06	[Grid with shaded cells]											∅53.8	—	—	—	CP-HG22
	ME-TZ30	[Grid with shaded cells]												—	—	—	CP-HG22
	MF-TZ06	[Grid with shaded cells]												—	—	—	CP-HG22
	MF-TZ20	[Grid with shaded cells]												—	—	—	CP-HG22
9	CS-HG61-9	[Grid with shaded cells]											∅70.6	—	—	CP-FH76	—
	CS-HG50-9	[Grid with shaded cells]												—	—	—	—
	CS-M970	[Grid with shaded cells]												CP-FH76	—	CP-FH76	CP-FH76
	CS-M770	[Grid with shaded cells]												CP-FH75	—	CP-FH75	CP-FH75
	CS-HG80-9	[Grid with shaded cells]												—	—	—	—
8	CS-HG60-8l	[Grid with shaded cells]											∅70.6	—	—	CP-FH76	CP-FH76
	CS-HG50-8l	[Grid with shaded cells]												CP-FH76	—	CP-FH76	CP-FH76
	CS-HG40-8l	[Grid with shaded cells]												—	—	—	—
	CS-HG30-8l	[Grid with shaded cells]												CP-FH76	—	CP-FH76	CP-FH76
		[Grid with shaded cells]												—	—	—	—

For Shimano Wheel	CP-WH71	for WH-7701-carbon/7701/R540
	CP-WH10/11	*for WH-M965/M765/M565/M540/T565/T560
	CP-WH12/13/FH08	*for WH-MT15/M505
	CP-WH14-A/15	*for WH-M975/M970/MT75/M776/M775/M770/MT65
	CP-WH23	for WH-7850-C50-TU/7850-C24-TU/7850-C50-CL/7850-C24-TL/7850-C24-CL/7850-SL/RS80/6700/RS30/RS20/RS10
	CP-WH20-A	for WH-7801-carbon50/7801-carbon/7801-SL/7801/7800/6600-G/6600-S/5600/R601/R600/R580/R561/R560/R550
	CP-FH02/35	**for WH-R500-A/R500

*Compatible cassette sprocket

- CP-WH11/WH13/WH15: for CS-M750/M760/M960 (11-32T)
CS-M770 (11-32T/11-34T)
- CP-WH10/**WH12/WH14: for CS-M970 (11-32T/11-34T/12-34T)
CS-M750/M760/M960 (12-34T/11-34T)
CS-M953 (12-34T)
CS-HG80 (11-28T/11-32T/11-34T)
CS-HG70-9 (11-32T/11-34T)
CS-HG61 (11-28T/11-32T/11-34T)
CS-HG50-9 (11-32T)

***CP-WH12 can not be used for CS-HG80/HG61 (11-28T)
CP-FH08: for CS-HG80/HG61 (11-28T)

** CP-FH02: for Low max 21-25T
CP-FH35: for Low max 26T-30T

■ Spoke protector for Capreo

Choose an appropriate spoke protector in the chart below.

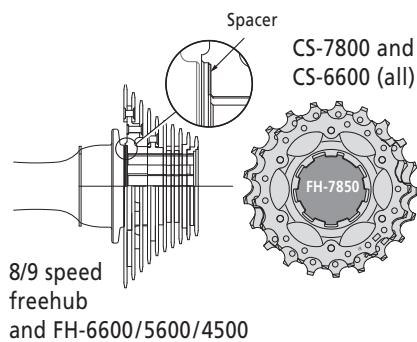
FH		Spoke Protector
FH-F700	24H	CP-FH35/FH31
	32H	CP-FH35
	36H	CP-FH31

Cassette sprocket, Rear freehub and Wheel

Cassette sprocket compatibility will differ depending on the freehub (FH) and wheel (WH) used.

Type	Model no.	Tooth	WH-7850 Series FH-7900 FH-7850 FH-6600 WH-5600 8/9-speed freehub	WH-RS80-C24-CL NEW WH-6700 WH-RS30 WH-RS20 WH-RS10 WH-R500	WH-6600-G WH-6600 WH-R601	
10-speed standard	CS-7900 CS-7800 NEW CS-6700 CS-5600 CS-6600 (except 13-25T, 14-25T, 15-15-25T, 16-25T)			X	X	
		10-speed JUNIOR	CS-6600	13-25T	X	—
				14-25T	X	—
				15-25T	X	—
				16-27T	X	—
9-speed	CS-HG50-9	11-25T	X	—		
		12-23T	X	—		
		12-25T	X	—		
		13-25T	X	—		
		14-25T	X	—		

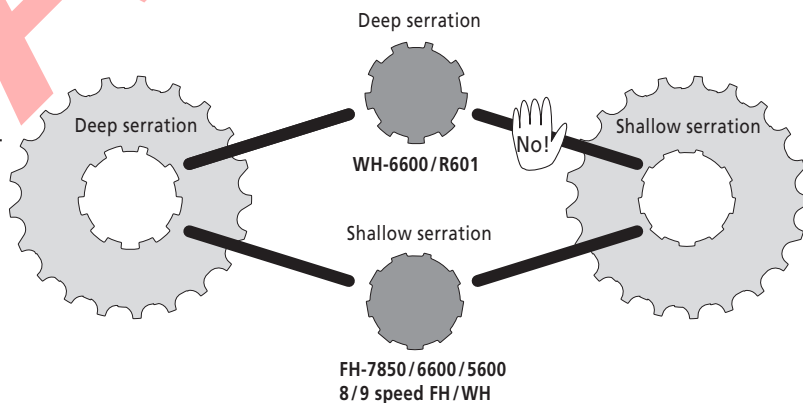
X = Yes — = No



Be aware that freehub (FH) and wheel (WH) compatibility with CS-6600 might differ depending on the tooth combination.

A 1 mm spacer is required when combining CS-7800 and CS-6600 (except junior types) with a 8/9 speed freehub (FH) and FH-7850/6600.

CS-7800 (all)
CS-6600 (Standard 11T and 12T top gear combinations)
CS-5600 (all)



CS-6600 (13, 14, 15, 16 top gear combinations for JUNIOR type)

*The serration depth is the same as for the 8 and 9 speed cassette sprocket.

Note: CS-6600 (14 – 25, 15 – 25, 16 – 27) cannot work with tripple front drive system. If combine, bad shifting performance could be happend.

Disc brake

Hydraulic Disc Brake hose specification

Series	Model No.	Compatible brake lever & caliper	Connection	Rigidity
SAINT	SM-BH80 SB	BL-M810/BR-M810	Straight – Banjo	High power
XTR Deore XT SLX Deore LX Deore	SM-BH59	ST-M975, BL-M975A/BR-M975 ST-M775, BL-M775/BR-M775 BL-M665/BR-M665 NEW BL-M595/ NEW BR-M595 BL-M575/BR-M575 BL-M486/BR-M486 BL-T605/BR-T605 NEW BL-T665/ NEW BR-T665 BL-S500/BR-S501	Straight – Straight	Standard
Deore XT	SM-BH63	BL-M776/BR-M775	Straight – Banjo	

Combination Chart (Mechanical Disc)

Shimano Mechanical Disc Brake combination chart

In order to realize the best performance, we recommend that the following combination be used.

Series	Caliper	Mount type	Brake Lever	Rotor	PAD
Non-series	BR-M495	*	V-brake BL (1.5-2.5 finger)	SM-RT53/SM-RT53M/RT53L	M08 Resin
	BR-M416	*		SM-RT51/RT51M For resin pad only	B01S Resin
	BR-R505	**	Road lever	SM-RT62	M06 Metal

* Front mount: International standard/Post mount Rear mount: International standard

** Front & Rear mount: International standard

Mechanical Disc brake and Brake lever interchangeability


Model No.	BL type		
	2 finger	4 finger	4 finger w/modulator w/SM-PM50
BR-M495	Good	Not good	Good
BR-M416			

Model No.	BL type
BR-R505	Road ST/BL-R770/BL-R550/ ST-R221/ST-R225


Interchangeability between disc brake systems

Depending on the brake and brake lever combination to be used, the relationship between the input at the brake lever and the actual braking force output at the wheels is very easily affected.

Be very careful when combining a brake and brake lever. Incorrect combinations can cause accidents or insufficient braking forces due to improper total braking ratio. Be sure to carefully consult the chart below and select the brake and the matching brake lever.

Brake levers \ Brakes calipers	NEW BR-T665	Other BR models
	NEW BL-T665	X
Other BL models		X

X: Yes






 The "NO!" symbols indicate combinations that should not be used under any circumstances.

V-BRAKE and Cantilever brake

Interchangeability between brake systems

Depending on the brake and brake lever combination to be used, the relationship between the input at the brake lever and the actual braking force output at the wheels is very easily affected.

Be very careful when combining a brake and brake lever. Incorrect combinations can cause accidents or insufficient braking forces due to improper cable strokes. Be sure to carefully consult the chart below and select the brake and the matching brake lever.

Brakes / Brake levers	V-BRAKE		Cantilever Brake Roller Brake
	BR-M970 BR-M770 BR-T660	^{NEW} BR-M590 BR-M432 BR-M422 BR-MX70	
V-Brake Levers ST-M970 BL-M970 ST-M770 BL-M770 ST-M410 BL-M740 ST-M405 BL-M571 ST-M360 ^{NEW} BL-M590 ST-EF60 BL-M421 ST-EF50 BL-MX70 ST-EF40	X	X	Note 1
V-Brake Levers BL-M771 ^{NEW} ST-M590 ST-T660 ^{NEW} BL-M591 BL-T660		X	
Nexus/NEXAVE (Trekking bike lever) ST-C503-A BL-C800 ST-T300-S BL-T400 ST-M405 (4-finger) BL-IM65 ST-M360 (4-finger) BL-IM60 ST-EF60 (4-finger) ST-EF50 (4-finger) SB-8S20 ST-8S20		X	X
Levers for Cantilever Brake and Roller Brake			X

X: Yes



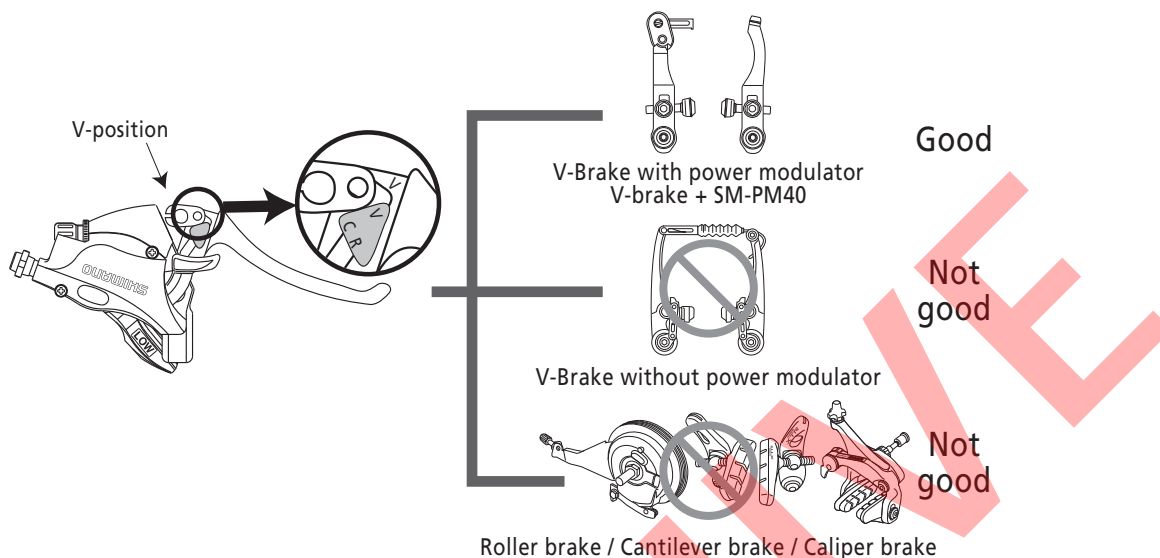
The "NO!" symbols indicate combinations that should not be used under any circumstances.

Note 1: This combination will not provide the sufficient amount of braking force.

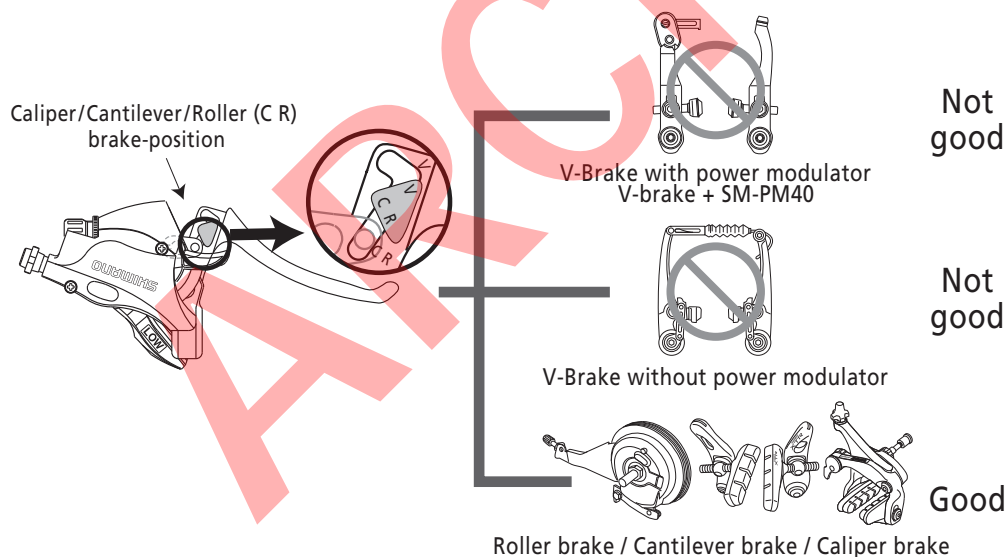
Brake component interchangeability

Four finger brake levers such as ST-T300/ST-EF60/ST-EF50/SB-7S45/BL-IM45/ST-R221/R225/R223 brake levers are equipped with a switch to change between the V-Brake with modulator mode (for example BR-M422 with SM-PM40) and the caliper brake, cantilever brake or roller brake mode.

■ For V-Brake (with power modulator) mode



■ For Caliper brake / Cantilever brake / Roller brake




⚠ WARNING:

If the mode is not matched to the type of brake being used, this could result in inadequate or excessive braking power. Please proceed with caution when selecting the correct mode for the corresponding brake.

Hub roller brake

Interchangeability between hub and roller brake


■ Hub roller brake and Front hub w/modulator

Model No.	Modulator Level	Type	 BR-IM80-F	BR-IM75-F	BR-IM70-F	BR-IM50-F	BR-IM41-F
HB-IM70	Hyper	QR	⊙	⊙	⊙	not good	not good
HB-IM40	Normal	NUT	○	○	○	⊙	⊙

⊙: Recommended combination

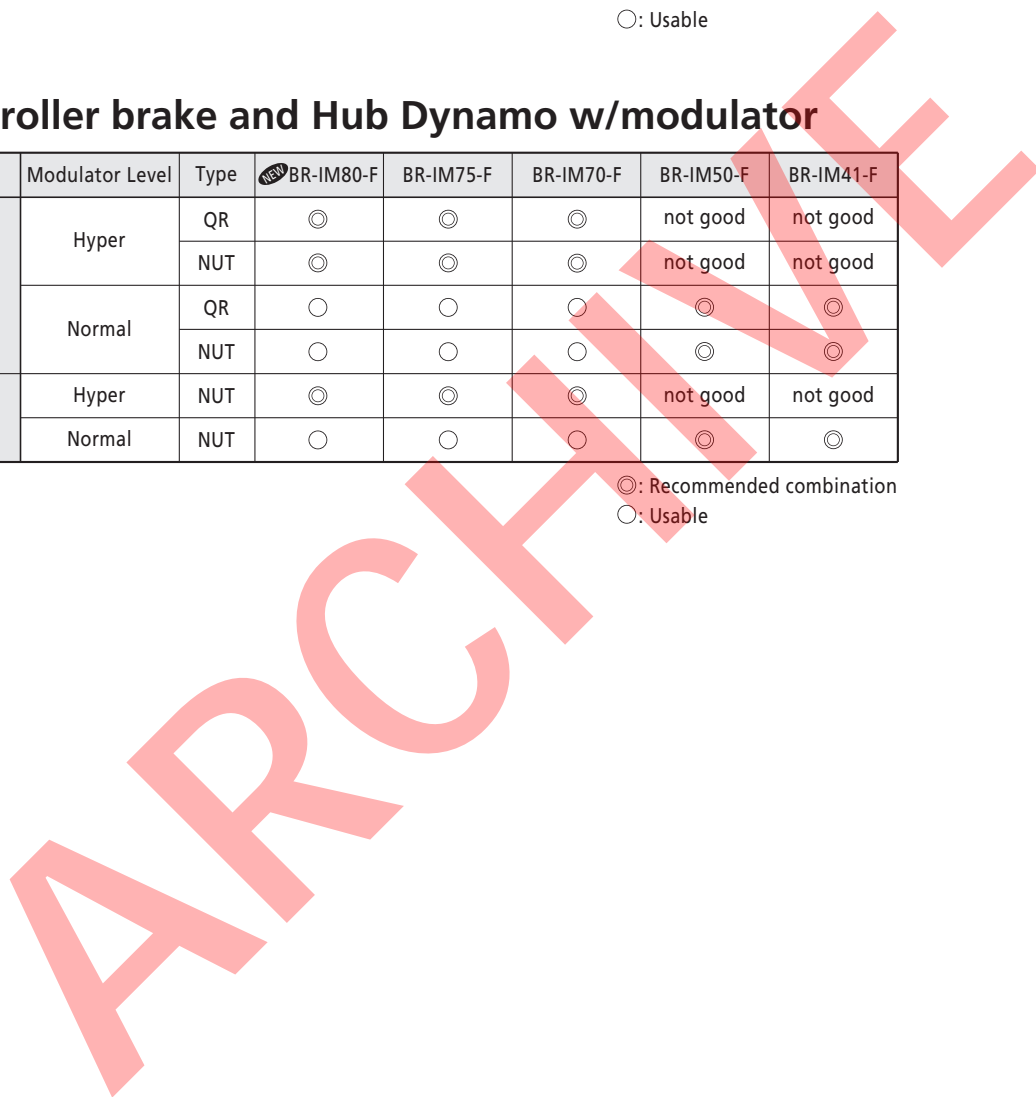
○: Usable

■ Hub roller brake and Hub Dynamo w/modulator

Model No.	Modulator Level	Type	 BR-IM80-F	BR-IM75-F	BR-IM70-F	BR-IM50-F	BR-IM41-F
DH-3R30	Hyper	QR	⊙	⊙	⊙	not good	not good
		NUT	⊙	⊙	⊙	not good	not good
	Normal	QR	○	○	○	⊙	⊙
		NUT	○	○	○	⊙	⊙
DH-2R30-E	Hyper	NUT	⊙	⊙	⊙	not good	not good
	Normal	NUT	○	○	○	⊙	⊙

⊙: Recommended combination

○: Usable



Brake shoe

Brake shoe (for V-Brake and Cantilever brake)

■ Brake/Shoe line-up

	M70R2	M70R2 (Severe Condition shoe)	Ceramic	M70T3	M70T4	M70CT4 (Severe Condition shoe)	M65T3	M65T4	S70C	S70C (Severe Condition shoe)	S70T	S65T
BR-M970	Standard	—	Option	—	—	—	—	—	—	—	—	—
BR-M960	Standard	—	Option	—	—	—	—	—	—	—	—	—
BR-M770	Standard	—	Option	Low noise	Option	—	—	—	Standard	—	—	—
BR-T660	—	—	—	Option	Option	—	—	—	Standard	—	—	—
NEW BR-M590	—	—	—	Option	Option	—	—	—	Standard	—	Option	—
BR-M432	Option	—	—	—	—	—	—	—	Standard	—	—	—
BR-M422	—	—	—	—	—	—	Option	Option	—	—	—	Standard
BR-MX70	—	—	—	Option	Option	—	—	—	—	Standard	—	—
BR-R550	—	Option	—	—	—	Option	—	—	—	Standard	—	—

■ Shoe characteristics

	Cartridge shoe	M-system	Length	Threaded shoe post	Brake shoe characteristics
M70R2	X	X	70 mm	X	A race shoe that performs well in dry and wet conditions, and is also highly resistant to wear. may give off noise.
M70R2 (Severe Condition shoe)	X	X	70 mm	X	+1mm thicker shoe with M70R2
Ceramic	X	—	70 mm	X	Specific shoe for ceramic rims.
M70T3	—	X	70 mm	X	Performs especially well in wet conditions and may pass DIN standards. Gives off less noise, but the pad is heavier, faster rim wear, and tends to fade.
M65T3	—	X	65 mm	X	
M70T4	—	X	70 mm	X	Only for side wall machined rims. Performs especially well in wet conditions and may pass DIN standard. Tend to be low noise, low rim wear and fade.
M65T4	—	X	65 mm	X	
M70CT4 (Severe Condition shoe)	X	X	70 mm	X	Cartridge shoe with M70T4
S70C	X	—	70 mm	X	Performs well in dry conditions and tends to be low noise. Wears in muddy conditions.
S70T	—	—	70 mm	X	
S65T	—	—	65 mm	X	
S70C (Severe Condition shoe)	X	—	70 mm	X	+1mm thicker shoe with S70C

X: Yes

Brake shoe (Capreo)

< Shoe characteristics >

Shoe	Cartridge shoe	M-system	Length	Thread Shoe Post	Brake Shoe Charectistic
R55C (for F700)	X	X	55 mm	X	Performs well in wet conditions and may pass DIN standards. Tends to be low noise. But faster rim wear.

X: Yes

Brake shoe (for road bikes)

< Brake/Shoe line-up >

		R55C3	R55C2	R55C for Carbon rim	R55C for Ceramic rim	M50T	R50T	R50T2
DURA-ACE	BR-7900	Standard	Option	Option	Option	—	—	—
	BR-7800	Option	Standard	Option	Option	—	—	—
ULTEGRA	BR-6600/6600G	Option	Standard	Option	Option	—	—	—
105	BR-5600/5600L	Option	Standard	Option	Option	—	—	—
TIAGRA	BR-4500	—	—	—	—	—	—	Standard
SORA	BR-3400	—	—	—	—	—	—	Standard
Non-series	BR-R650	—	Standard	Option	Option	—	—	—
	BR-R560	—	Standard	—	—	—	—	—
	BR-R450	—	—	—	—	—	—	Standard




< Shoe characteristics >

	Cartridge shoe	M-system	Length	Brake shoe characteristics
R55C3	X	—	55 mm	Performs well in dry and wet conditions.
R55C2	X	—	55 mm	Performs well in dry conditions and tends to be low noise. Highly resistant to wear in rainy conditions.
R55C for Carbon rim	X	—	55 mm	For Carbon rim
R55C for Ceramic rim	X	X	55 mm	For Ceramic rim only
M50T	—	X	50 mm	Performs well in wet conditions. But faster rim wear.
R50T	—	—	50 mm	Performs well in dry conditions and tends to be low noise. Wears in rainy conditions.
R50T2	—	—	50 mm	Performs well in dry conditions and tends to be low noise. Wears in rainy conditions. Toe-in adjust design.

X: Yes

Brake rotor

Rotor Specification

Series	Model No.	Outside Diameter	CENTERLOCK System	PCD 44 mm
XTR	SM-RT97SS*1	140 mm	X	—
	SM-RT97	160 mm	X	—
	SM-RT97M	180 mm	X	—
	SM-RT97L	203 mm	X	—
SAINT Deore XT	SM-RT79	160 mm	X	—
	SM-RT79M	180 mm	X	—
	SM-RT79L	203 mm	X	—
SLX	SM-RT64	160 mm	X	—
	SM-RT64M	180 mm	X	—
	SM-RT64L	203 mm	X	—
Deore LX	SM-RT64	160 mm	X	—
	SM-RT64M	180 mm	X* (for front only)	—
Deore	SM-RT62	160 mm	X	—
	SM-RT62M	180 mm	X	—
	SM-RT62L	203 mm	X	—
Non-series	SM-RT53	160 mm	X	—
	SM-RT53M	180 mm	X	—
	SM-RT53L	203 mm	X	—
	 SM-RT76	160 mm	—	X
	 SM-RT76M	180 mm	—	X
	 SM-RT76L	203 mm	—	X
	SM-RT75S	160 mm	—	X
	SM-RT75MA	180 mm	—	X
	SM-RT75-DH	203 mm	—	X
	SM-RT51	160 mm	—	X
SM-RT51M	180 mm	—	X	

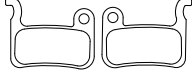



*1: Rear only

X: Yes











Brake pad

Brake pad line-up (for disc brake)

The number of "*" mark shows better performance.

Model No.	Type	A01S	M06Ti	M06	M07Ti	M07-S	B01S	M08	E01S	D02S
		Resin	Metal	Metal	Resin	Resin	Resin	Resin	Metal	Metal
Pad Shape Type		A-Type: narrow type 					B-Type: wide type 		E-Type: wide type 	D-Type: narrow type 
Characteristics	Modulation	*****	****	****	*****	*****	*****	*****	****	****
	Power	****	*****	*****	****	****	****	****	*****	*****
	Durability	****	*****	*****	****	***	****	***	*****	*****
	Anti-fading	***	*****	*****	***	***	***	***	*****	*****
	Silence	*****	***	***	*****	*****	*****	***	***	***
Titanium Back plate		-	X	-	X	-	-	-	-	-
BR-M975 BR-M975P	Hydraulic		Option		Standard					
BR-M810	Hydraulic									Standard
BR-M775 BR-M776 BR-M665 BR-T665 BR-M595	Hydraulic	Standard		Option						
BR-T605 BR-S501	Hydraulic	Standard								
BR-M575	Hydraulic						Standard		Option	
BR-M486	Hydraulic						Standard			
BR-M416	Mechanical						Standard			
BR-M495	Mechanical							Standard		
BR-R505	Mechanical			Standard						

Disc brake caliper and Rotor compatibility

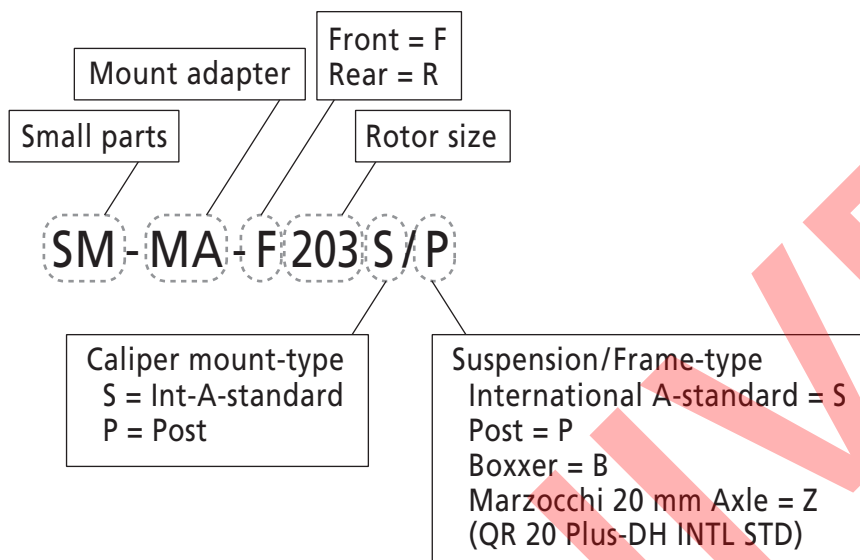
Caliper	Pad material	Rotor		
		160	180	203
BR-M975P BR-M975 BR-M776 BR-M775 BR-M665 BR-T665*1 BR-M595	Metal/Resin	SM-RT97 SM-RT79 SM-RT76 SM-RT75S 	SM-RT97M SM-RT79M SM-RT76M SM-RT75MA 	SM-RT97L SM-RT79L SM-RT76L SM-RT75DH 
BR-M810	Metal	SM-RT64 SM-RT62 	SM-RT64M SM-RT62M 	SM-RT64L SM-RT62L 
BR-T605 BR-S501	Resin			
BR-M575	Metal			
BR-M575 BR-M486 BR-M495 BR-M416	Resin	SM-RT53 SM-RT51 	SM-RT53M SM-RT51M 	SM-RT53L 
BR-R505	Metal	SM-RT97 SM-RT79 SM-RT75S SM-RT64 SM-RT62 		


- * Suitable mount adapter is necessary according to your frame mount style.
- * SM-RT51/RT51M/RT53/RT53M/RT53L are compatible with Resin pad caliper specification only. If use with caliper with metal pads, rotor will be easily damaged.
- * When using 140 mm rotor, braking power is less than 160 mm. Please confirm the power is enough for your purpose.
- * 140mm RT, SM-RT97SS is recommended only for rear wheel with "BR-M975 F160/R140" caliper.
- * Durability of B/E type pad become shorter when the pad is used with narrow type rotor.
- *1: Recommend 160/180 mm rotor for front and 160 mm rotor for rear.

Disc brake mount adapter

Disc brake mount adapter application

■ How to read Model No.



Mount adapter / Model No.
SM-MA-F203S/S
SM-MA-F203S/P
SM-MA-F203S/B
SM-MA-F203S/Z
SM-MA-F203P/S
SM-MA-F203P/P
SM-MA-F203P/B
SM-MA-F203P/Z
SM-MA-F180S/S
SM-MA-F180S/P
SM-MA-F180P/S
SM-MA-F180P/P
 SM-MA-F180P/P2
SM-MA-F170S/P
SM-MA-F160P/S
SM-MA-F160P/Z
SM-MA-R203S/S
SM-MA-R203P/S
SM-MA-R180S/S
SM-MA-R180P/S
SM-MA-R160P/S

■ Disc brake mount adapter application table

< Postmount caliper >

Fork & Frame mount style		Rotor			
		140	160	180	203
FRONT	Postmount	-	No adapter needed *	SM-MA-F180P/P * SM-MA-F180P/P2	SM-MA-F203P/P *
	Standard A	-	SM-MA-F160P/S	SM-MA-F180P/S *	SM-MA-F203P/S *
	MARZOCCHI 20 mm Thru **	-	SM-MA-F160P/Z *	-	SM-MA-F203P/Z *
	BOXXER	-	-	-	SM-MA-F203P/B *
REAR	Standard A	SM-MA-F160P/S	SM-MA-R160P/S	SM-MA-R180P/S *	SM-MA-R203P/S *

*: BR-R505 is not available.

** : Latest MARZOCCHI 20 mm thru axle forks are using postmount type disc mount.

< XTR caliper >

Fork & Frame mount style			Rotor				
			140	160	180	203	
FRONT	Postmount	Capliper	-	BR-M975P	BR-M975P	BR-M975P	
		Adaptor	-	No adapter needed	SM-MA-F180P/P SM-MA-F180P/P2	SM-MA-F203P/P	
		Capliper	-	-	BR-M975-160F/140R	BR-M975-160F/140R	
		Adaptor	-	-	SM-MA-F180S/P	SM-MA-F203S/P	
	Standard A	Capliper	-	BR-M975-160F/140R	BR-M975-160F/140R	BR-M975-160F/140R	
		Adaptor	-	No adapter needed	SM-MA-F180S/S	SM-MA-F203S/S	
		Capliper	-	BR-M975P	BR-M975P	BR-M975P	
		Adaptor	-	SM-MA-F160P/S	SM-MA-F180P/S	SM-MA-F203P/S	
		Capliper	-	-	BR-M975-180F	-	
		Adaptor	-	-	No adapter needed	-	
		MARZOCCHI 20 mm Thru **	Capliper	-	-	-	BR-M975-160F/140R
			Adaptor	-	-	-	SM-MA-F203S/Z
	Capliper		-	BR-M975P	-	BR-M975P	
	Adaptor		-	SM-MA-F160P/Z	-	SM-MA-F203P/Z	
	BOXXER	Capliper	-	-	-	BR-M975-160F/140R	
		Adaptor	-	-	-	SM-MA-F203S/B	
		Capliper	-	-	-	BR-M975P	
		Adaptor	-	-	-	SM-MA-F203P/B	
	REAR	Standard A	Capliper	BR-M975-160F/140R *	BR-M975-160R	BR-M975-160R	BR-M975-160R
			Adaptor	No adapter needed	No adapter needed	SM-MA-R180S/S	SM-MA-R203S/S
			Capliper	BR-M975P *	BR-M975P	BR-M975P	BR-M975P
			Adaptor	SM-MA-F160P/S	SM-MA-R160P/S	SM-MA-R180P/S	SM-MA-R203P/S

*: When using 140 mm rotor, braking power is less than 160 mm. Please confirm the power is enough for your purpose.

** : Latest MARZOCCHI 20 mm thru axle forks are using postmount type disc mount.