

ARCHIVE

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SHIMANO

2008-2009

Products compatibility information

Drivetrain Interchangeability

Rear drivetrain for Comfort & MTB Components

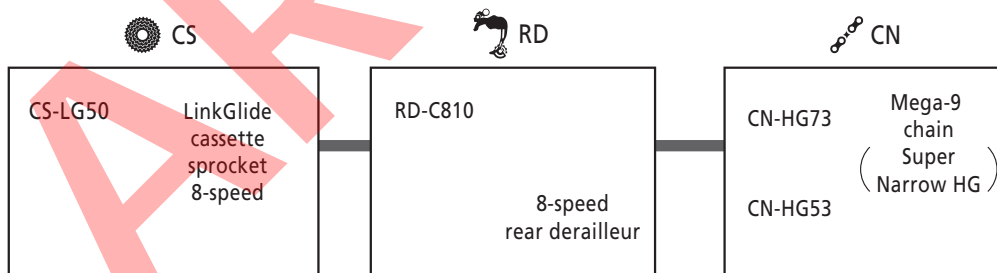
When using components of different series together, be aware of the points given below.

9-speed Drivetrain

CS			RD			CN
			RD-M972 RD-M971 RD-M970 RD-M772 RD-M771 RD-M770 NEW RD-M662 RD-M531 RD-M530	NEW RD-T661	NEW RD-M810	CN-7701 CN-HG93 CN-HG73 CN-HG53
CS-M970	bd	12-34 T	X	-	X	X
CS-M970 CS-M770 NEW CS-HG80-9 NEW CS-HG61-9 CS-HG50-9	be as au au au	11-34 T	X	-	X	X
CS-M970 CS-M770 NEW CS-HG80-9 NEW CS-HG61-9 CS-HG50-9	ba aq ar ar ar	11-32 T	X	X	X	X
NEW CS-HG80-9	bg	11-28 T	-	X	X*	X
CS-6500	-	12-25 T 11-23 T	-	-	X*	X

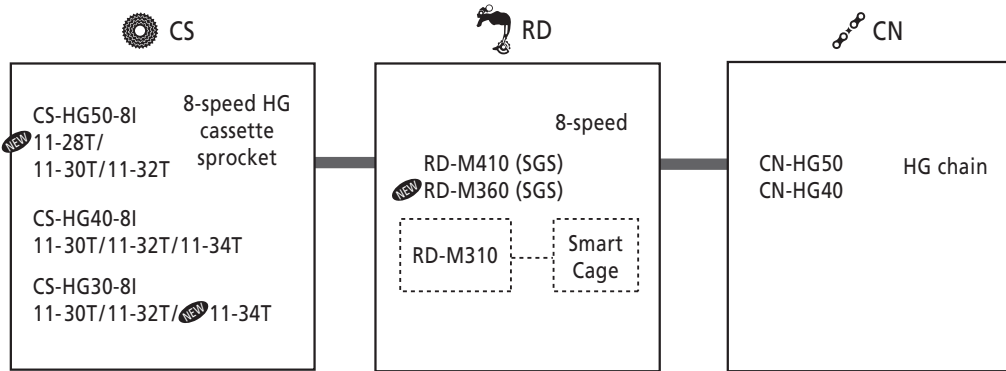
*: Close ratio setting

8-Speed LinkGlide



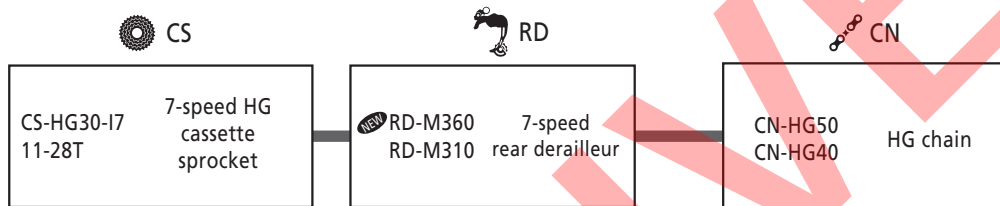
The full performance of LinkGlide will not be realized in combinations other than these. Also, HG performance will be reduced if RD-C810 is used with HG gears other than LinkGlide gears. LinkGlide shifting performance is achieved when combined with ST-C503-A(R) as the shifting lever.

8-Speed HG

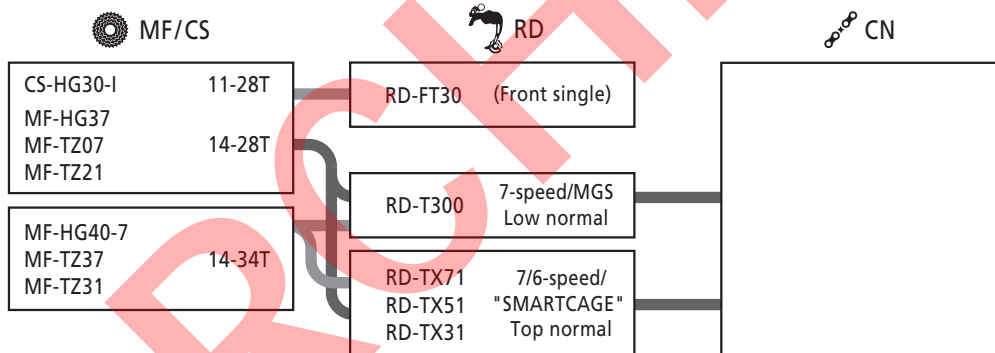


* The rear derailleur for 8-speed can also be used for 7-speed drivetrain.

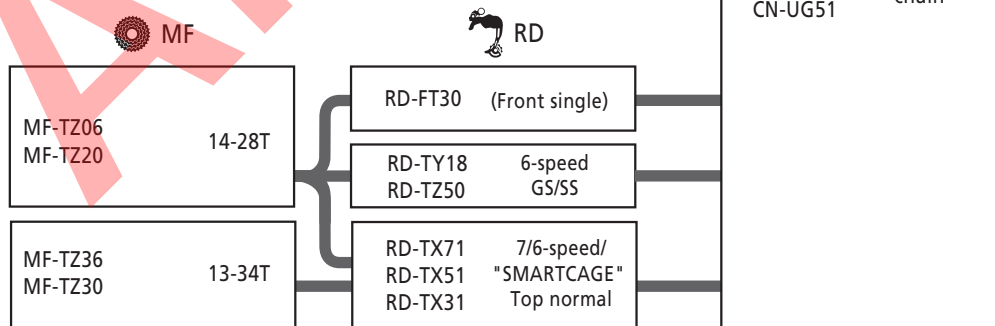
7-speed HG



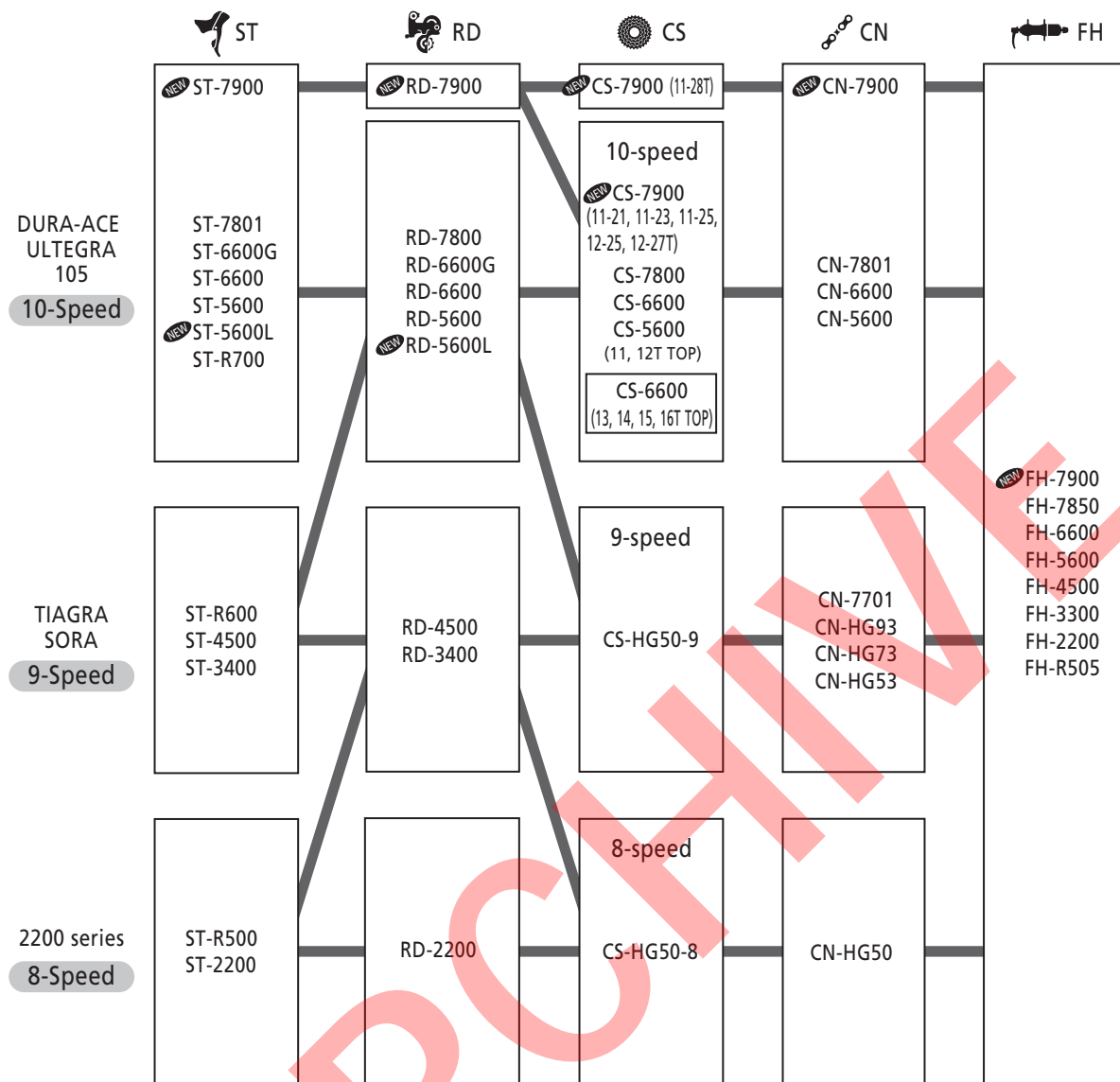
7-speed HG/ZH



6-speed HG/ZH



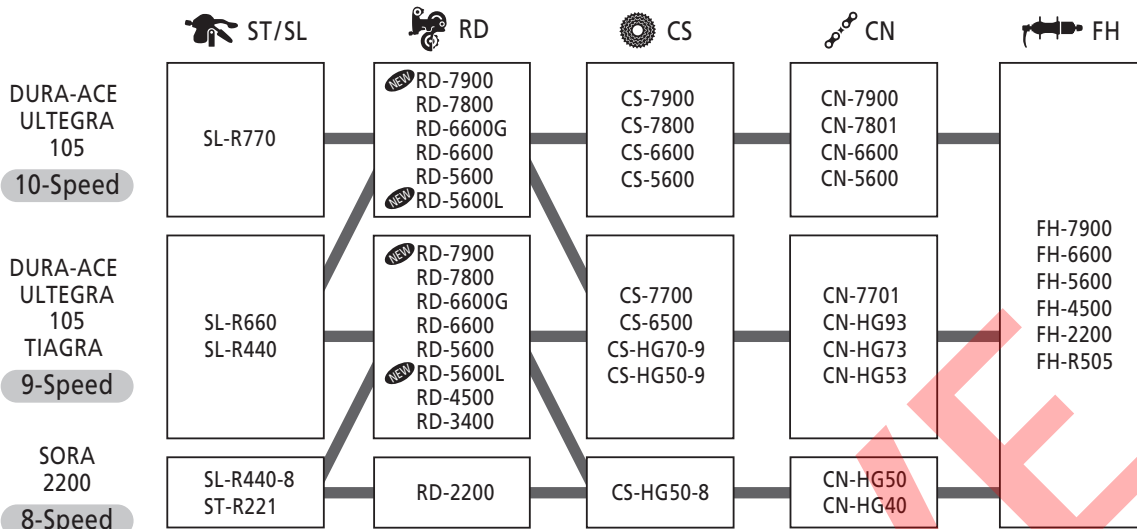
Rear drivetrain for Road bike components



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

Interchangeability for flat handlebar

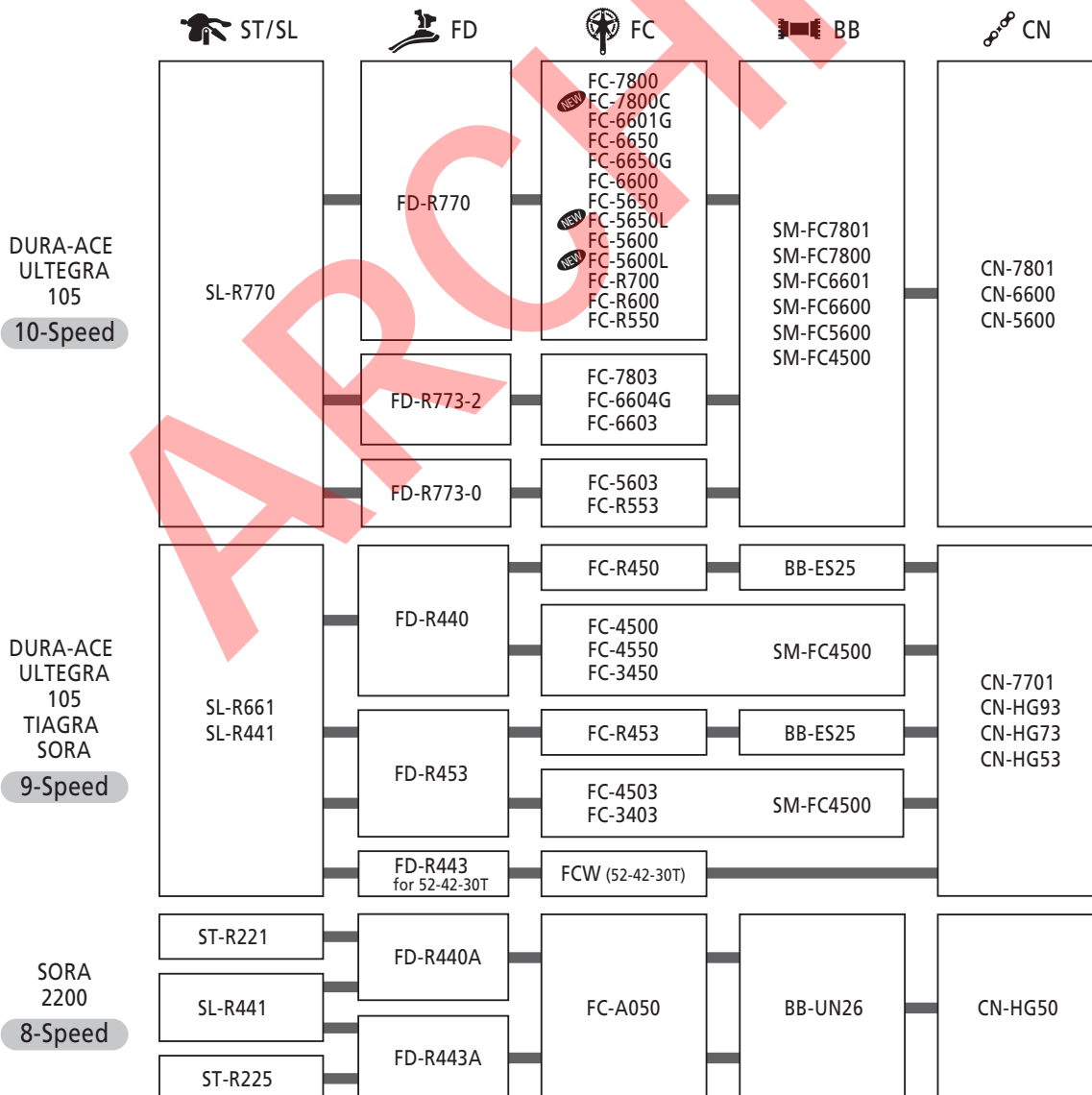
Rear system



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

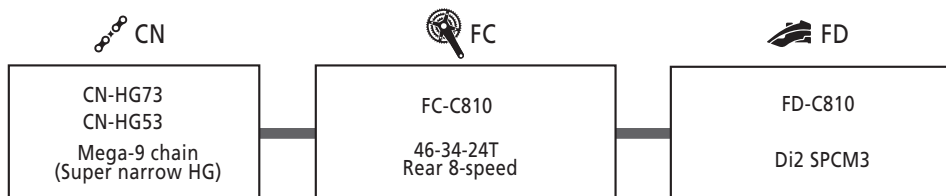
Note: FH-R505 O.L.D. 135 mm for disc brake frame.

Front system

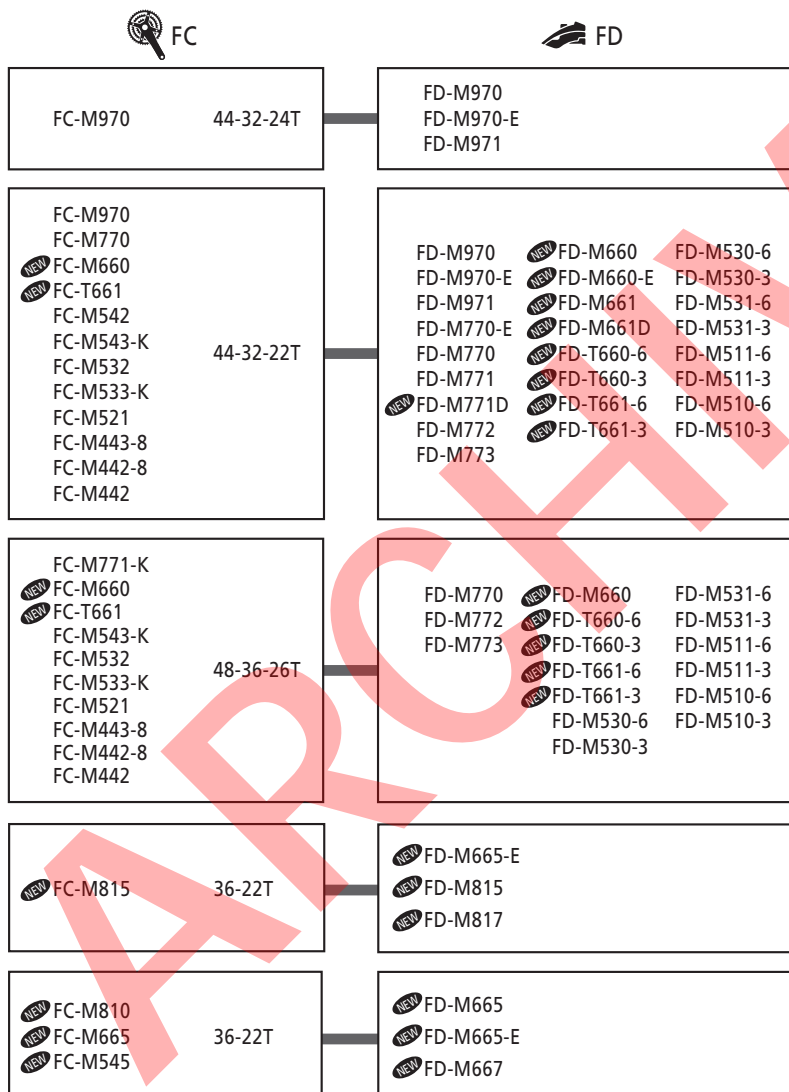


Front drivetrain interchangeability (MTB front SIS)

SPCM (TRIPLE)



9-speed drivetrain



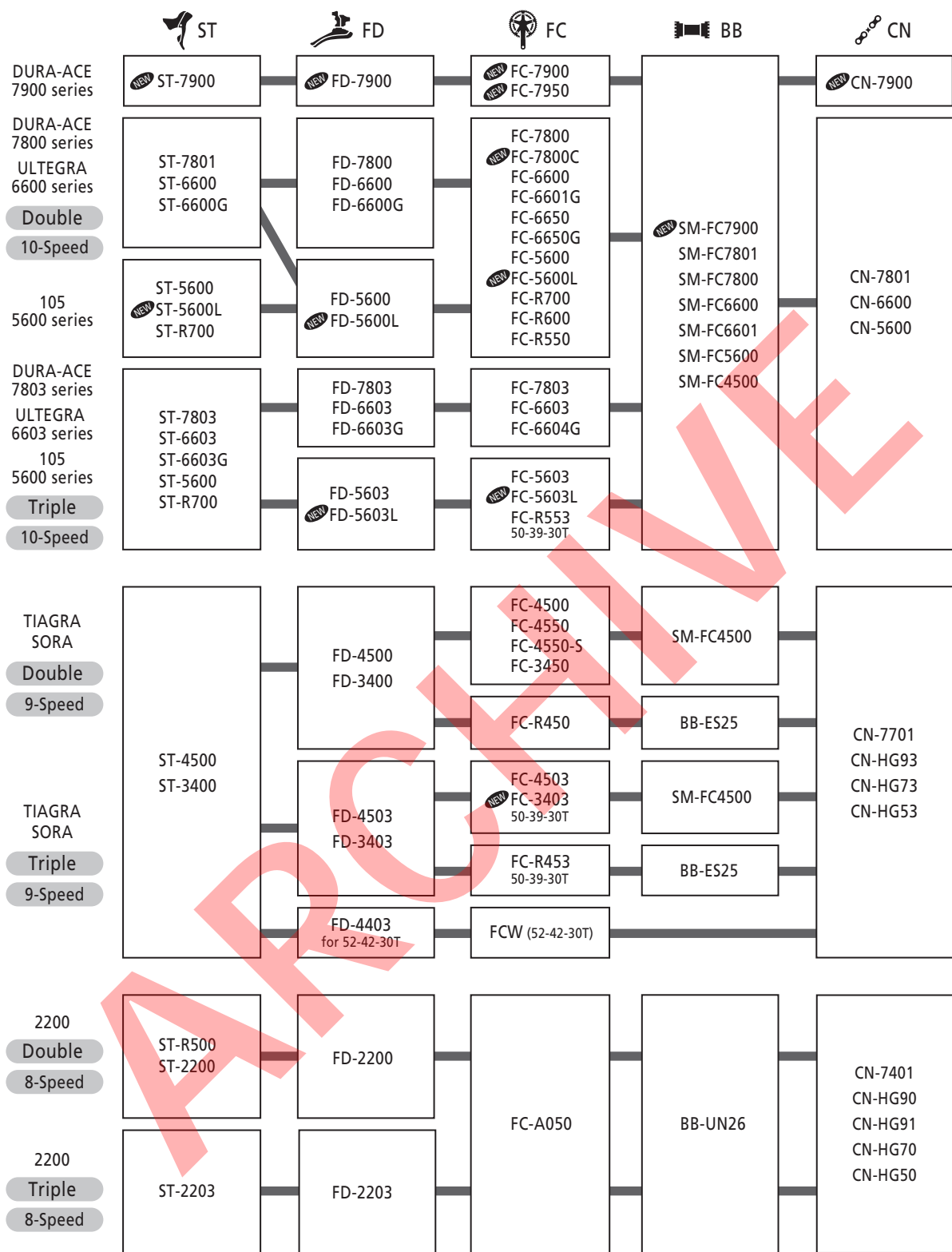
HG triple (8/7/6-speed)



FC-M191 FC-M151 Rear 8/7-speed 42-34-24T	FD-M190
FC-M411 FC-M361 FC-M311 FC-M191 FC-M151 Rear 8/7-speed 48-38-28T	FD-M413-6 FD-M413-3 FD-M412-6 FD-M412-3 FD-M360-6 FD-M360-3 FD-M311-6 FD-M311-3 FD-M310-6 FD-M310-3 FD-C102
FC-M411 FC-M410-8 FC-M361-8 FC-M311-8 FC-M410 FC-M361 FC-M311 Rear 8/7-speed 42-32-22T	FD-M413-6 FD-M413-3 FD-M412-6 FD-M412-3 FD-M410-E FD-M360-6 FD-M360-3 FD-M311-6 FD-M311-3 FD-M310-6 FD-M310-3
FC-M191 FC-M151 Rear 7/6-speed 48-38-28T	FD-C051
FC-M191 FC-M151 Rear 7/6-speed 42-34-24T	FD-C050 FD-TY10

* 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)



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 NEW FD-M660E	FD-M770 FD-M660 NEW FD-T660-6 FD-M530-6	NEW FD-M772 FD-T660-3 NEW FD-M530-3	FD-M510-6	FD-M510-3					
Down swing FD										
NEW FD-M971 NEW FD-M771 NEW FD-M771D NEW FD-M661 NEW FD-M661D		NEW FD-T661-6 NEW FD-M531-6	NEW FD-M773 NEW FD-T661-3 NEW FD-M531-3	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 NEW FC-M660 NEW FC-T661 FC-M542 FC-M543K FC-M532 FC-M533K	44-32-22	X	X	X	X	X	X	
		NEW FC-M771K NEW FC-M660 NEW FC-T661 FC-M543K FC-M532 FC-M533K	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	44-32-22	-	-	-	-	X	X
		BB-UN26 117.5	FC-M443							
		BB-ES25 113	FC-M442-8							
BB-UN26 MM110		FC-M442								
47.5 + t mm	BB-ES25 121	FC-M443-8	48-36-26	-	-	-	-	X	X	
	BB-UN26 117.5	FC-M443								
	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								

		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
				FD-M665-E	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-M310-6	FD-T301	FD-M190-6
		FD-C810	FD-M412-3	FD-M310-3	FD-C102 8/75
		FD-M413-6	FD-M311-6	FD-C051	FD-C050
		FD-M413-3	FD-M311-3	FD-TZ31	FD-TZ30
		FD-M360-6		FD-TZ21 7/65	FD-TZ20 7/65
		FD-M360-3	8/75		
		FD-M410-E	FD-M330		
			FD-M330-E		
		for top gear 42T			
Top gear teeth number		42/48T	48T	42T	
Top-Middle min. teeth difference	SPCM (46/34/24T)	10T	10T	8T	
Capacity		20T	20T	18T	

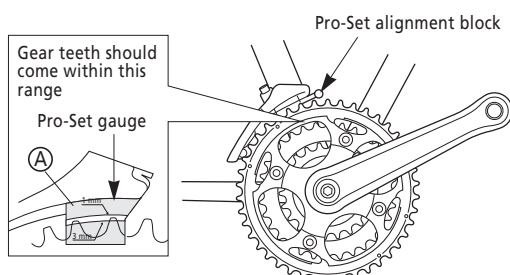
■ Crankset specifications

	For HG Chain		
		FC-M411 FC-M410 FC-M410-8 FC-M361 FC-M311 FC-M311-8	FC-M191 FC-M151
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):	the chainstay angle should be between 66 and 69	
	FD-M330-E	47.5 mm (shell width of 68 mm) 50 mm (shell width of 73 mm)		
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)		
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)	–	–
	Acera Altus	NEW FC-M361-8 (42T)	X		X	BB-ES25(-E)	–	126	–	–
		NEW FC-M361 (42T)				BB-UN26(-K)	–	LL123(-K)	–	–
		NEW FC-M361 (48T)		X	X*					
FC-M311-42T										
FC-M311-48T										
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 88 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
		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 NEW CS-HG80-9 NEW CS-HG61-9 CS-HG50-9	FC-M970 NEW FC-M810 NEW FC-M815 FC-M770 FC-M771-K NEW FC-T661 NEW FC-M660 NEW FC-M665 NEW FC-M545 FC-M542 FC-M533-K FC-M532 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 NEW 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/ NEW RS80/6600-G/ 6600-S/5600/R580/R561/R560/R550/R500/ NEW RS30/RS20/ RS10/3N71-Road	18-622
571 X 15C	WH-R550-650C	18-571
622 X 17C	WH-S500	18-622
622 X 19C	WH-S500-V/8R25/T565/T560/3N71-NX/3N71-T	20-622
559 X 19C	WH-M565/M505	20-559
559 X 18C	WH-M959/M575/M540/M535	20-559
Road Tubeless	WH-7850-C24-TL/7850-SL/7801-SL/ NEW RS60	Never use rim tapes
MTB UST	WH-M975/M970/M965/ NEW MT75/ NEW M778/M776/M775/ M770/M765	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	24		28	32	36		
	Road gear														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 CS-M970 CS-HG50-9														—	CP-WH12	CP-FH56	CP-FH53
	CS-M770														—	CP-WH13	CP-32H2	CP-36H2
	CS-HG80-9														—	—	CP-FH35	CP-FH50
															—	—	CP-FH56	CP-FH53
	CS-6500														—	—	CP-FH05	CP-FH06
8	CS-HG60-8I														—	CP-WH12	CP-FH56	CP-FH53
	CS-HG50-8I														—	CP-FH40	CP-FH35	CP-FH31
	CS-HG40-8I														—	CP-WH12	CP-FH56	CP-FH53
	CS-HG30-8I														—	CP-FH40	CP-FH35	CP-FH31
														—	CP-WH12	CP-FH56	CP-FH53	
7	CS-HG50-I														—	CP-WH12	CP-FH56	CP-FH53
	CS-HG30-I														—	CP-FH40	CP-FH35	CP-FH50
	MF-HG40-7														—	CP-WH12	CP-FH56	CP-FH53
	MF-HG37														—	—	—	CP-HG22
	MF-TZ37 MF-TZ31														—	—	—	CP-HG22
	MF-TZ07 MF-TZ21														—	—	—	CP-HG22
6	MF-ZH06 ME-TZ30														—	—	—	CP-HG22
	MF-TZ06 MF-TZ20														—	—	—	CP-HG22
9	CS-M970 CS-HG50-9														CP-FH76	—	CP-FH76	CP-FH76
	CS-M770														CP-FH75	—	CP-FH75	CP-FH75
8	CS-HG60-8I														CP-FH76	—	CP-FH76	CP-FH76
	CS-HG50-8I														—	—	—	—
	CS-HG40-8I														CP-FH76	—	CP-FH76	CP-FH76
	CS-HG30-8I														—	—	—	—
															CP-FH76	—	CP-FH76	CP-FH76
7	CS-HG30-I7													CP-FH76	—	CP-FH76	CP-FH76	

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	* for WH-M505
	CP-WH14/15	* for WH-M975/M970/MT75/M776/M775/M770
	CP-WH23	for WH-7850-C50-TU/7850-C24-TU/7850-C50-CL/7850-C24-TL/7850-C24-CL/7850-SL/R580/R560/R530/R520/R510
	CP-WH20-A	for WH-7801-carbon/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-M770 (11-32T/11-34T)
- CP-WH10/WH12/WH14: for CS-M970 (11-32T/11-34T/12-34T)
- CS-HG80-9 (11-32T/11-34T)
- CS-HG61-9 (11-32T/11-34T)
- CS-HG50-9 (11-32T)

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

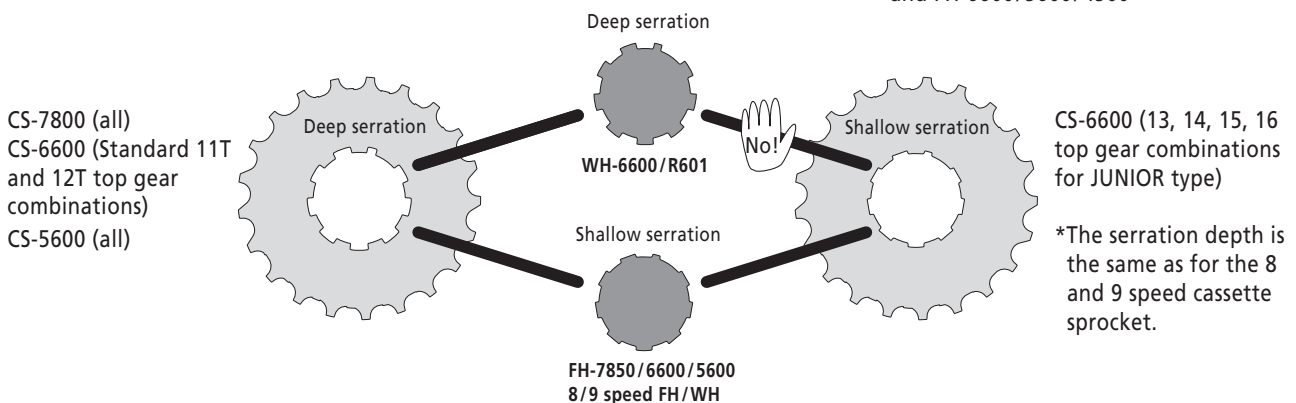
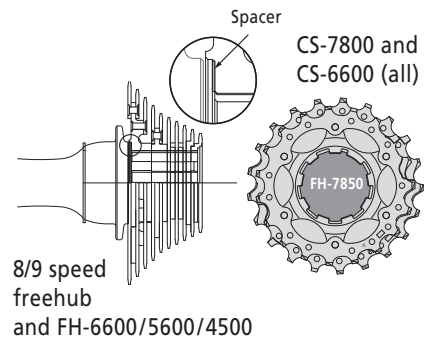
Cassette sprocket compatibility will differ depending on the freehub (FH) and wheel (WH) used.

Type	Model no.	Tooth	WH-7850 Series NEW FH-7900 FH-7850 FH-6600 WH-5600 8/9-speed freehub	NEW WH-RS80-C24-CL NEW WH-RS60-C24-CL NEW WH-RS30-C24-CL WH-RS20 WH-RS10 WH-R500	WH-6600-G WH-6600 WH-R601
10-speed standard	NEW CS-7900	11-25T	X	X	X
		11-27T	X	X	X
		11-28T	X	X	X
	NEW CS-7900 CS-7800	11-21T	X	X	X
		CS-7800	12-21T	X	X
	NEW CS-7900 CS-7800 CS-6600	11-23T	X	X	X
		12-23T	X	X	X
		12-25T	X	X	X
		12-27T	X	X	X
	CS-5600	11-23T	X	X	X
11-25T		X	X	X	
12-25T		X	X	X	
12-27T		X	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.



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

Combination Chart (Hydraulic Disc)

■ Shimano Hydraulic 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 (option)	Hose
XTR	BR-M975	International standard	ST-M975 BL-M975	SM-RT97SS*3 SM-RT97 SM-RT97M SM-RT97L SM-RT75	M07Ti Resin (M06Ti Metal)	SM-BH59
	BR-M975P	Post mount*2				
SAINT	BR-M810	Post mount*2	BL-M810	SM-RT75 SM-RT78 SM-RT78M SM-RT78L SM-RT79 SM-RT9M SM-RT9L	D02S Metal	SM-BH80-SB
Deore XT	BR-M775	Post mount*2	ST-M775 BL-M775	SM-RT79 SM-RT9M SM-RT9L	A01S Resin (M06S Metal)	SM-BH59
	BR-M776 *1		ST-M776 BL-M776			SM-BH63
SLX	BR-M665	Post mount*2	BL-M665	SM-RT62 SM-RT62M SM-RT62L SM-RT64 SM-RT64M SM-RT64L SM-RT75	A01S Resin (M06S Metal)	SM-BH59
Deore	BR-M535	Post mount*2	ST-M535 BL-M535	SM-RT64	M07-S Resin (M06 Metal)	SM-BH59
ALFINE	BR-S501	Post mount*2	BL-S500 BL-S502	SM-RT64	A01S Resin	SM-BH59
Non-series	BR-M575	Post mount*2	BL-M575	SM-RT61 SM-RT62 SM-RT64	B01S Resin (E01S Metal)	SM-BH59
	BR-M486	Post mount*2	BL-M486	SM-RT53 SM-RT53M SM-RT53L SM-RT51 SM-RT51M	B01S Resin	SM-BH59

*1: For banjo type joint

*2: Available for international standard with mount adapter

*3: Rear only

■ Rotor Specification

Series	Model No.	Outside Diameter	CENTERLOCK System	Oversized CENTERLOCK System	PCD 44 mm
XTR	SM-RT97SS*3	140 mm	X	—	—
	SM-RT97	160 mm	X	—	—
	SM-RT97M	180 mm	X	—	—
	SM-RT97L	203 mm	X	—	—
SAINT Deore XT	SM-RT78/ RT79	160 mm	X	—	—
	SM-RT78M/ RT79M	180 mm	X	—	—
	SM-RT78L/ RT79L	203 mm	X	—	—
SLX Deore LX Deore	SM-RT62/ RT64	160 mm	X	—	—
	SM-RT62M/ RT64M	180 mm	X	—	—
	SM-RT62L/ RT64L	203 mm	X	—	—
Deore	SM-RT61	160 mm	—	—	X
Non-series	SM-RT53	160 mm	X	—	—
	SM-RT53M	180 mm	X	—	—
	SM-RT53L	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	

X: Yes

■ Hose material & length

Series	Model No.	Compatible brake lever & caliper	Material	Hose length (mm)		
				for Front	for Rear	
SAINT	SM-BH80	BL-M810 BR-M810	Resin	850-1000 (evely 50 mm)	1400-1700 (evely 50 mm)	Cutable
XTR Deore XT SLX	SM-BH59	ST-M975/BR-M975 BL-M975A ST-M775/BL-M775 BR-M775 BL-M665/BR-M665 BL-M575/BR-M575 BL-M486/BR-M486 BL-T605/BR-T605 BL-S500/ BR-S501		900, 1300, 1700 mm		Cutable
Deore	SM-BH59	ST-M535/BR-M535 BL-M535		900, 1300, 1700 mm		Cutable

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 SM-RT51/RT51M For resin pad only	M08 Resin
	BR-M416	*			
	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

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 NEW BR-T660	BR-M530 NEW BR-M432 NEW BR-M422 BR-MX70	
V-Brake Levers ST-M970 BL-M970 ST-M770 BL-M770 ST-M410 BL-M740 ST-M405 BL-M571 NEW ST-M360 BL-M511 ST-EF60 NEW BL-M421 ST-EF50 BL-MX70 NEW ST-EF40	X	X	Note 1
V-Brake Levers BL-M771 NEW ST-T660 NEW BL-T660	No!	X	No!
Nexus/NEXAVE (Trekking bike lever) ST-C503-A BL-C800 ST-T300-S BL-T400 ST-M405 (4-finger) BL-IM65 NEW ST-M360 (4-finger) BL-IM60 ST-EF60 (4-finger) ST-EF50 (4-finger) SB-8520 ST-8520	No!	X	X
Levers for Cantilever Brake and Roller Brake	No!	No!	X

X: Yes



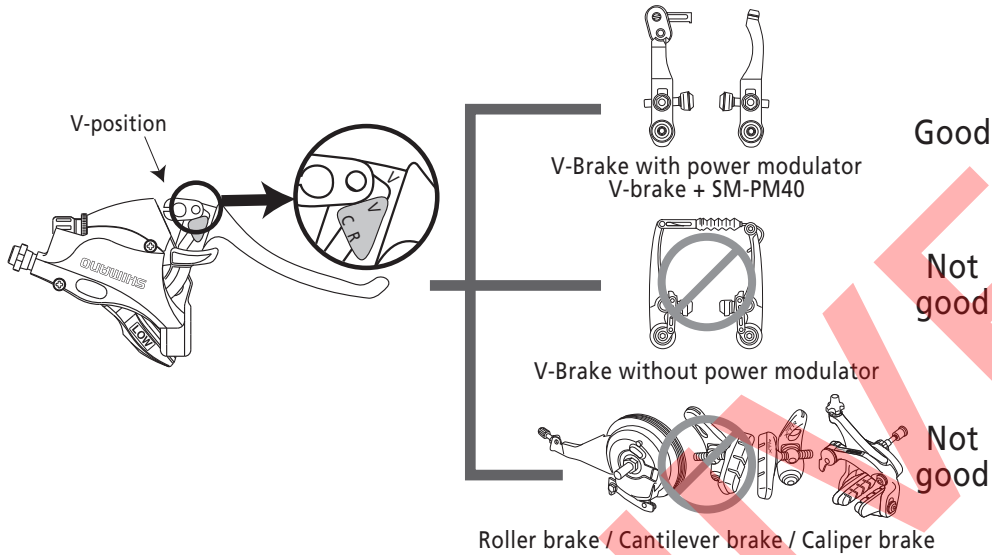
The "NO!" symbols indicate combinations that should not be used under any circumstances.

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

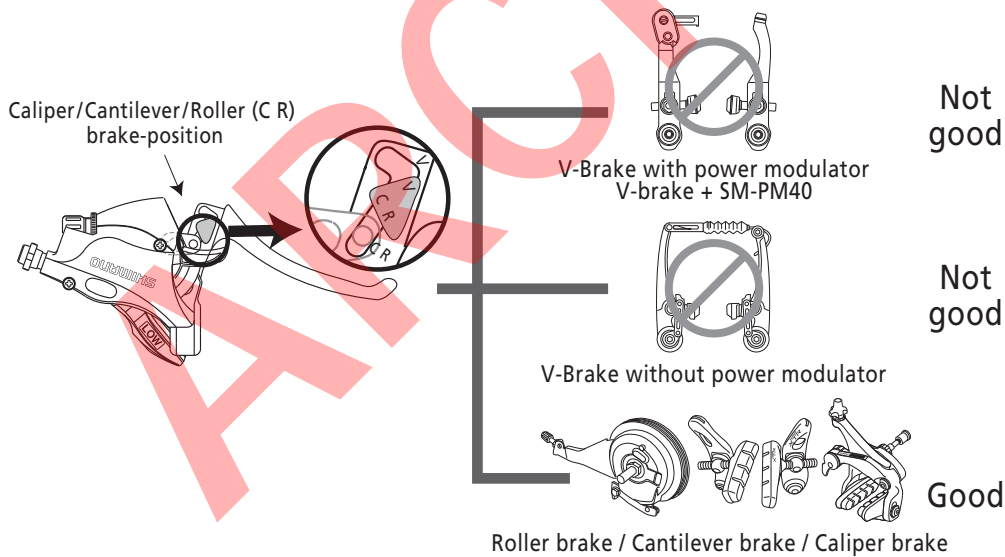
Brake component interchangeability

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 (BR-T300 and BR-M420 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



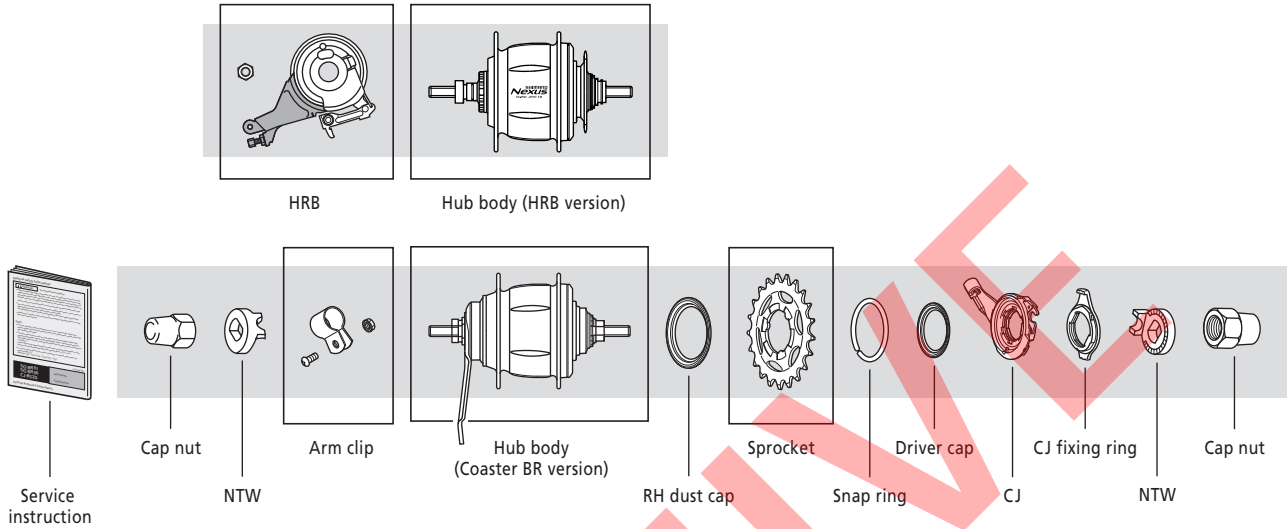
⚠ WARNING:

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.

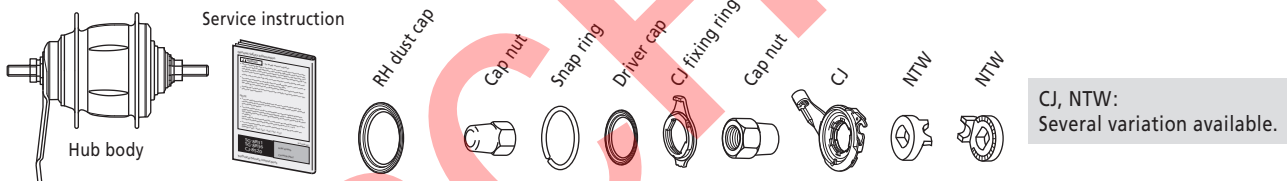
Inter-8 and Small parts

Nexus Inter-8/Alfine Small Parts Kit Specification

Assembly requirement and order



Recommended combination between hub and small parts kit



Hub Model	Service Instruction	RH dust cap	Cap nut	Snap ring	Driver cap	CJ fixing ring	Cap nut	CJ	NTW	NTW	Small Parts Kit
NEW SG-8R31/36	X	C									
NEW SG-8R31/36---"R"	X	B									
NEW SG-8C31	X	C	X	X	X	X	X	X	X	X	NEW SM-8531
NEW SG-8C31---"R"	X	B									
NEW SG-5501	X	B									
NEW SG-8R56	X	B	X	X	-	-	X	-	X	X	NEW SM-8556
NEW SG-8C56	X	B									
SG-8R20/25	X	B	X	X	X	X	X	X	X	X	SM-8R20
SG-8C20	X	B	X	X	X	X	X	X	X	X	SM-8C20
SG-8R22/27	X	C	X	X	X	X	X	X	X	X	SM-8R22
SG-8C22	X	C	X	X	X	X	X	X	X	X	SM-8C22
SG-8R30/35	X	C	X	X	X	X	X	X	X	X	SM-8530
SG-8R30/35---"R"	X	B	X	X	X	X	X	X	X	X	SG-8530---"R"
SG-8R45/55	X	B	X	X	-	-	X	-	X	X	SM-8R20/8C20---"X"
SG-8C45	X	B	X	X	-	-	X	-	X	X	SM-8R20/8C20---"X"
SG-5500	X	B	X	X	X	X	X	X	X*	X*	SM-5500

*: Only 8R/8L non-turn washer come with SM-5500.

Inter-8 and Small Parts interchangeability chart

				Internal Hub Gear						
				NEW SG-8R31/36	NEW SG-8R31/36 ---"R"	NEW SG-8C31	NEW SG-8C31 ---"R"	NEW SG-8R56	NEW SG-8C56	NEW SG-S501
Service instruction	SI			⊙	⊙	⊙	⊙	⊙	⊙	⊙
Right hand dust cap		B		-	⊙	-	⊙	⊙	⊙	⊙
			C	⊙	-	⊙	-	-	-	-
NEW SM-8S31	-	-	-	X	X	X	X	X *6	X *6	X
NEW SM-8S56	-	-	-	-	-	-	-	X	X	-
SM-8R20	⊙	⊙	-	X *1	X *1	X *1	X *1	X *2	X *2	X *1
SM-8C20	⊙	⊙	-	X *1	X *1	X *1	X *1	X *2	X *2	X *1
SM-8R20/ 8C20---"X"	-	⊙	-	-	-	-	-	X *1	X *1	X *1
SM-8R22	⊙	-	⊙	X *1	X *1	X *1	X *1	X *2	X *2	X *1
SM-8C22	⊙	-	⊙	X *1	X *1	X *1	X *1	X *2	X *2	X *1
SM-8S30	-	-	⊙	X *3	X *3	X *3	X *3	X *4	X *4	X *3
SM-8S30---"R"	-	⊙	-	X *3	X *3	X *3	X *3	X *4	X *4	X *3
SM-S500	⊙	⊙	-	X *1	X *1	X *1	X *1	X *2	X *2	X *1

				Internal Hub Gear							
				SG-8R20/25	SG-8C20	SG-8R22/27	SG-8C22	SG-8R30/35	SG-8R30/35 ---"R"	SG-8R45/55	SG-8C45
Service instruction	SI			-	-	-	-	⊙	⊙	-	-
Right hand dust cap		B		-	-	-	-	-	-	-	-
			C	-	-	-	-	-	-	-	-
NEW SM-8S31	-	-	-	-	-	-	-	-	-	-	-
NEW SM-8S56	-	-	-	-	-	-	-	-	-	-	-
SM-8R20	⊙	⊙	-	X	X *5	X	X *5	X	X	X *6	X *6
SM-8C20	⊙	⊙	-	X	X	X	X	X	X	X *6	X *6
SM-8R20/ 8C20---"X"	-	⊙	-	-	-	-	-	-	X	X	-
SM-8R22	⊙	-	⊙	-	-	X	X *5	X	-	-	-
SM-8C22	⊙	-	⊙	-	-	X	X	X	-	-	-
SM-8S30	-	-	⊙	-	-	X *5	X *5	X	-	-	-
SM-8S30---"R"	-	⊙	-	X *5	X *5	X *5	X *5	X	X	X *6	X *6
SM-S500	⊙	⊙	-	X	X *5	X	X *5	X	X	X *6	X *6

- * 1: No need Right hand dust cap B or C and SI.
- * 2: No need Right hand dust cap B or C, SI and Cassette Joint.
- * 3: No need Right hand dust cap B or C.
- * 4: No need Right hand dust cap B or C, Cassette Joint.
- * 5: Need SI
- * 6: No need Cassette Joint.

SM-8S31: w/o SI, and Right hand dust cap.
 SM-8S56: For Cyber Nexus specification. w/o SI, and Right hand dust cap and Cassette Joint set (Driver cap/CJ fixing ring/CJ).
 SG-8R30/35---"R": For specifications with reverse assembly of sprocket (19T and smaller).
 SM-8S30---"R": For specifications with reverse assembly of sprocket (19T and smaller).
 SM-8R20/8C20---"X": For Cyber Nexus specifications, not including SI, as SI is included in SC-8C40.

Hub roller brake

Interchangeability between hub and roller brake

■ Hub roller brake and Front hub w/modulator

Model No.	Modulator Level	Type	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-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	—	—	—
BR-M530	—	—	—	Option	Option	—	—	—	—	—	Standard	—
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	
S70T	—	—	70 mm	X	Performs well in dry conditions and tends to be low noise. Wears in muddy conditions.
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 Charectristic
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	^{NEW} BR-7900	Standard	Option	Option	Option	—	—	—
	BR-7800	—	Standard	Option	Option	—	—	—
ULTEGRA	BR-6600/6600G	—	Standard	Option	Option	—	—	—
105	BR-5600/ ^{NEW} 5600L	—	Standard	Option	Option	—	—	—
TIAGRA	BR-4500	—	—	—	—	—	—	Standard
SORA	BR-3400	—	—	—	—	—	—	Standard
	BR-3300/3300-A	—	—	—	—	Option	Standard	—
Non-series	BR-R650	—	Standard	Option	Option	—	—	—
	BR-R560	—	Standard	—	—	—	—	—
	BR-R450	—	—	—	—	—	—	Standard

< Shoe characteristics >

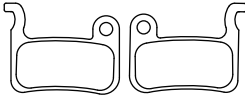
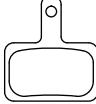


	Cartridge shoe	M-system	Length	Brake shoe characteristics
R55C3	X	—	55 mm	Performs well in dry and wet conditions.
R55C2	X	—	55 mm	Performs well in dry conditions and tends to be low noise. Highly resistant to wear in rainy conditions.
R55C for Carbon rim	X	—	55 mm	For Carbon rim
R55C for Ceramic rim	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 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 					B-Type 		E-Type 	D-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	Hydraulic	Standard		Option						
BR-M535	Hydraulic			Option		Standard				
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

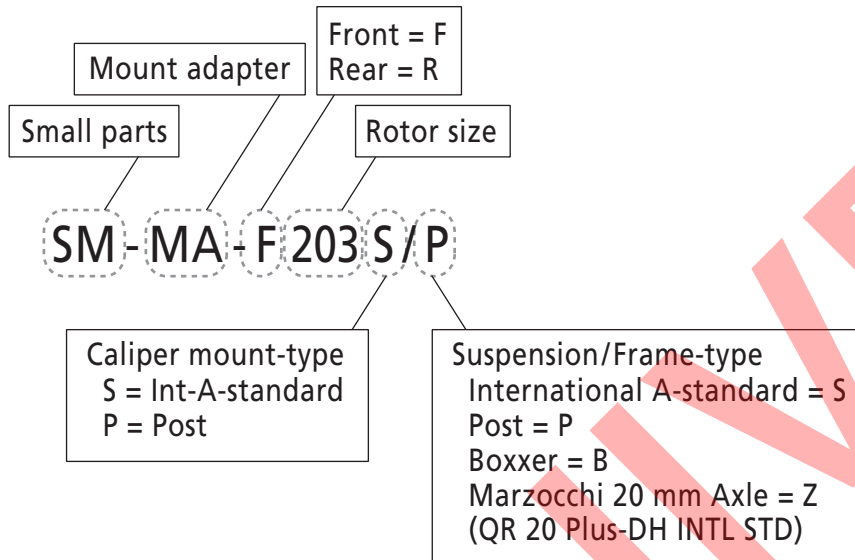
Caliper	Pad material	Rotor		
		160	180	203
BR-M975P BR-M975 BR-M776 BR-M775 BR-M665 BR-M535	Metal/Resin	SM-RT97 SM-RT79 SM-RT78 SM-RT75S SM-RT64 SM-RT62 Narrow Type	SM-RT97M SM-RT79M SM-RT78M SM-RT75MA SM-RT64M SM-RT62M Narrow Type	SM-RT97L SM-RT79L SM-RT78L SM-RT75DH SM-RT64L SM-RT62L Narrow Type
BR-M810	Metal			
BR-T605 BR-S501	Resin	SM-RT61 Wide Type		
BR-M575	Metal			
BR-M575 BR-M486 BR-M495 BR-M416	Resin	SM-RT61 SM-RT53 SM-RT51 Wide Type	SM-RT53M SM-RT51M Wide Type	SM-RT53L Wide Type
BR-R505	Metal	SM-RT97 SM-RT79 SM-RT78 SM-RT75S SM-RT64 SM-RT62 SM-RT61 Narrow Type Wide Type		

- * 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 140mm 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.

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-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-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-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.