

ARCHIVE

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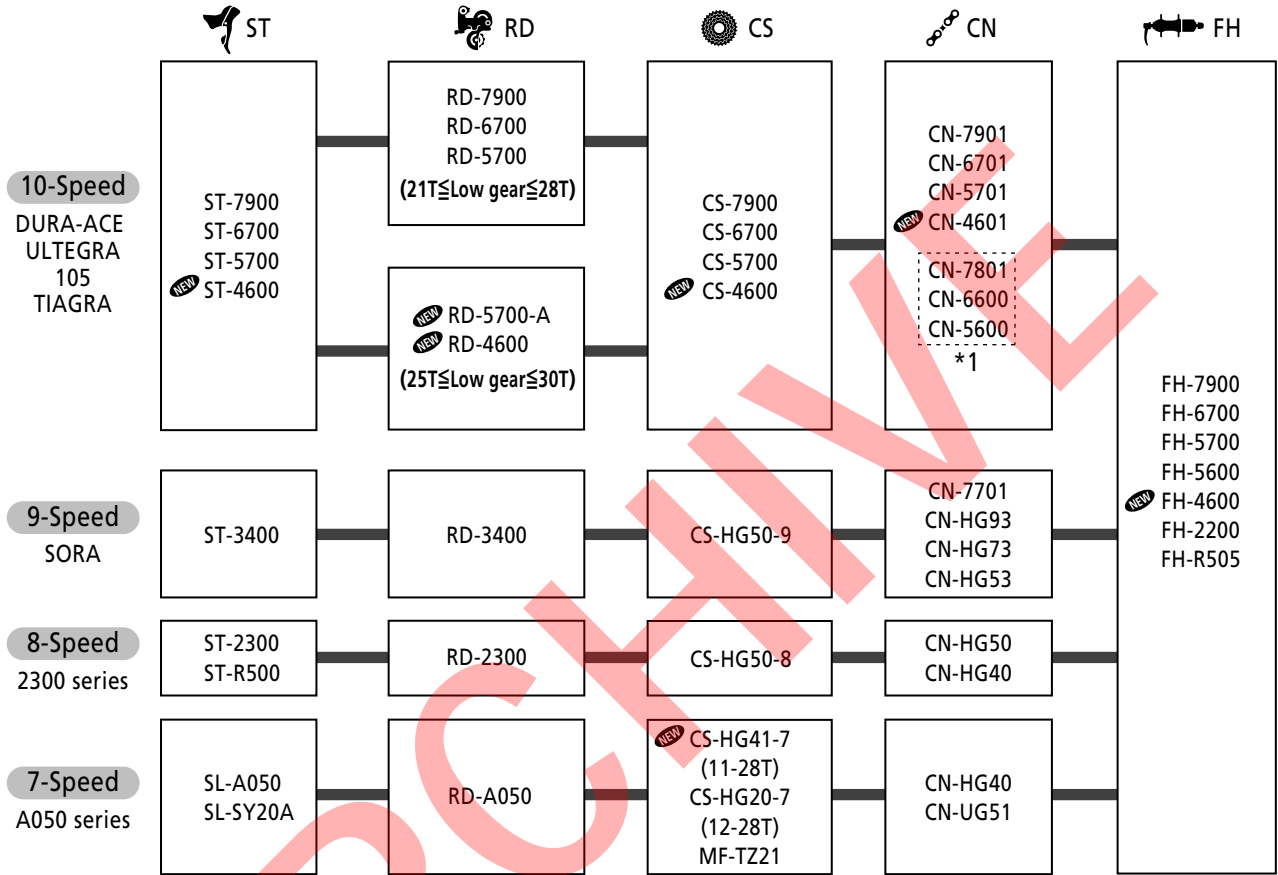
2011-2012

Products compatibility information

Drivetrain Interchangeability

Drivetrain for Road bike components

1. Rear drivetrain interchangeability



*1 : In case of front single, or using with 7800/6600/5600 series crankset.

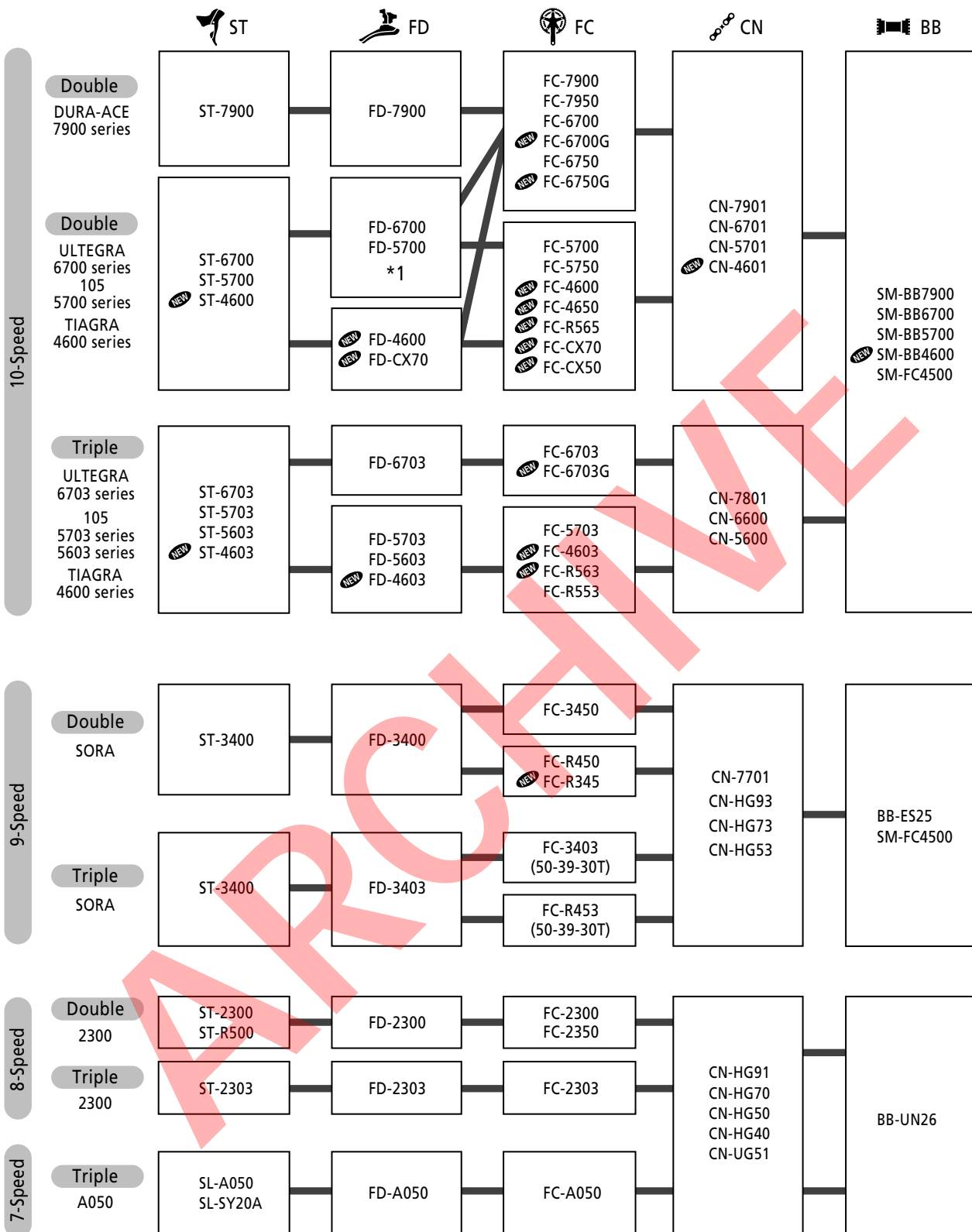
1-1. Interchangeability between RD and CS gear teeth

GEAR	RD-7900	RD-6700		RD-5700		NEW RD-5700-A		NEW RD-4600	
	SS	SS	GS	SS	GS	SS	GS	SS	GS
11-21T	X	X	X	X	X	-	-	-	-
11-23T	X	X	X	X	X	-	-	-	-
11-25T	X	X	X	X	X	X	X	X	X
12-23T	X	X	X	X	X	X	X	X	X
12-25T	X	X	X	X	X	X	X	X	X
12-27T	X	X	X	X	X	X	X	X	X
11-27T	X	X	X	X	X	X	X	X	X
11-28T	X	X	X	X	X	X	X	X	X
12-28T	X	X	X	X	X	X	X	X	X
12-30T	-	-	-	-	-	X	X	X	X
13-25T	X	X	X	X	X	X	X	X	X
14-25T	X	X	-	X	-	X	X	X	X
15-25T	X	X	-	X	-	X	-	X	-
16-27T*	-	-	-	-	-	-	-	-	-

* : 16-27T is compatible with RD-6600.

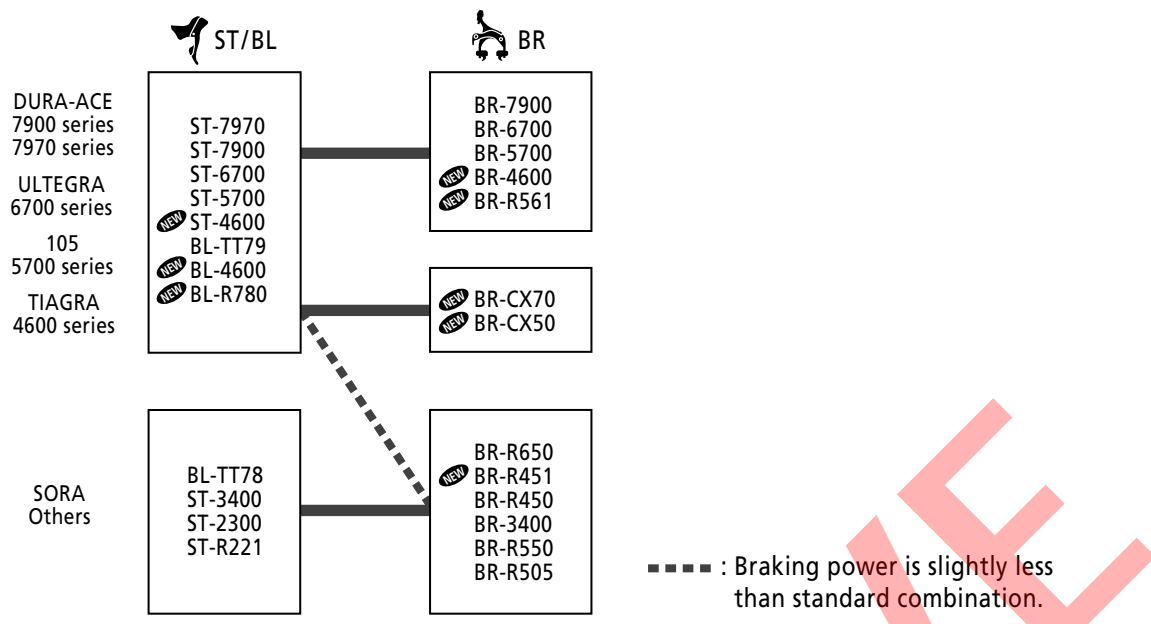
X: Yes

2. Front drivetrain interchangeability



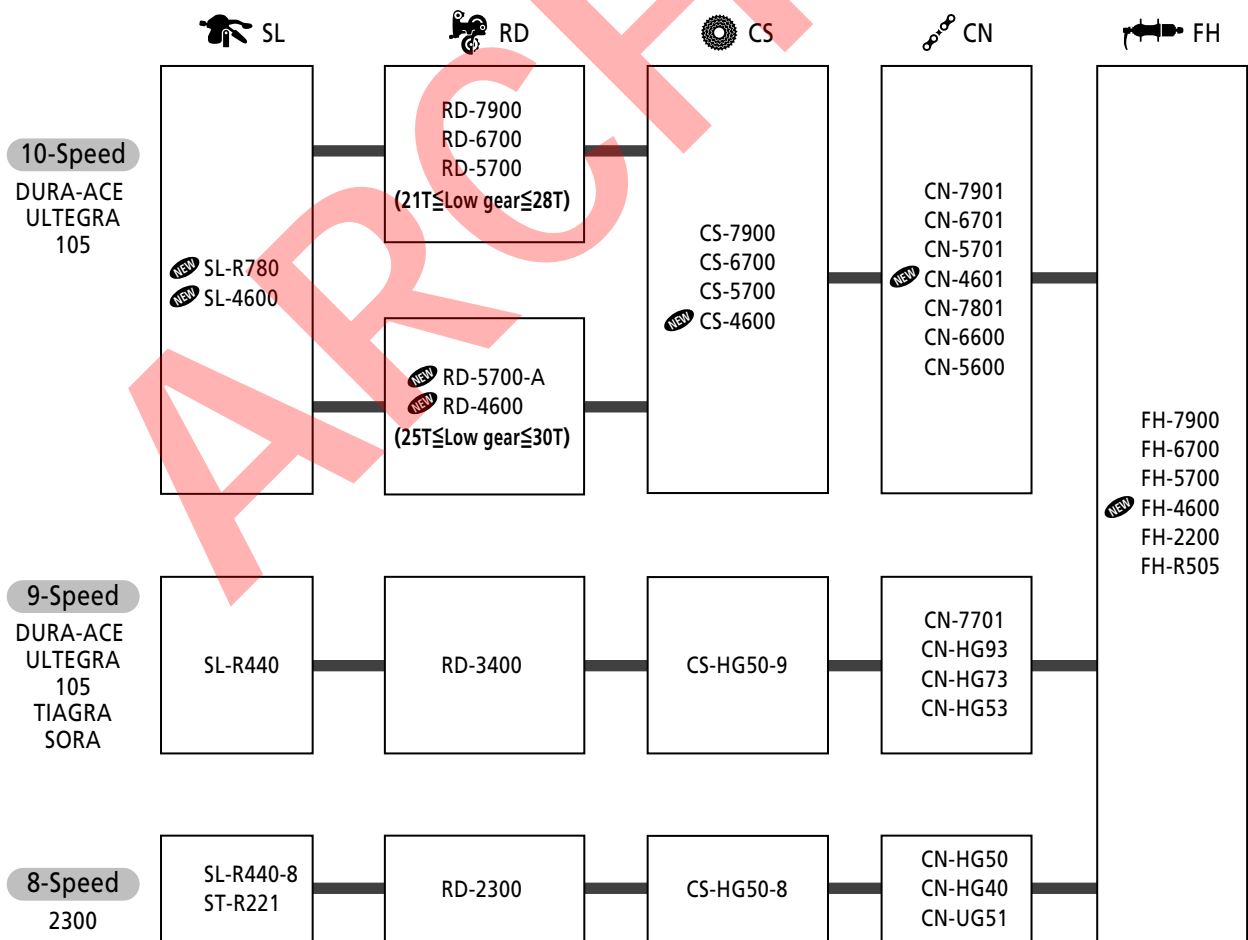
*1 : FD-5700/6700 have not interchangeability for 46T top gear of double FC.

3. Brake systems interchangeability

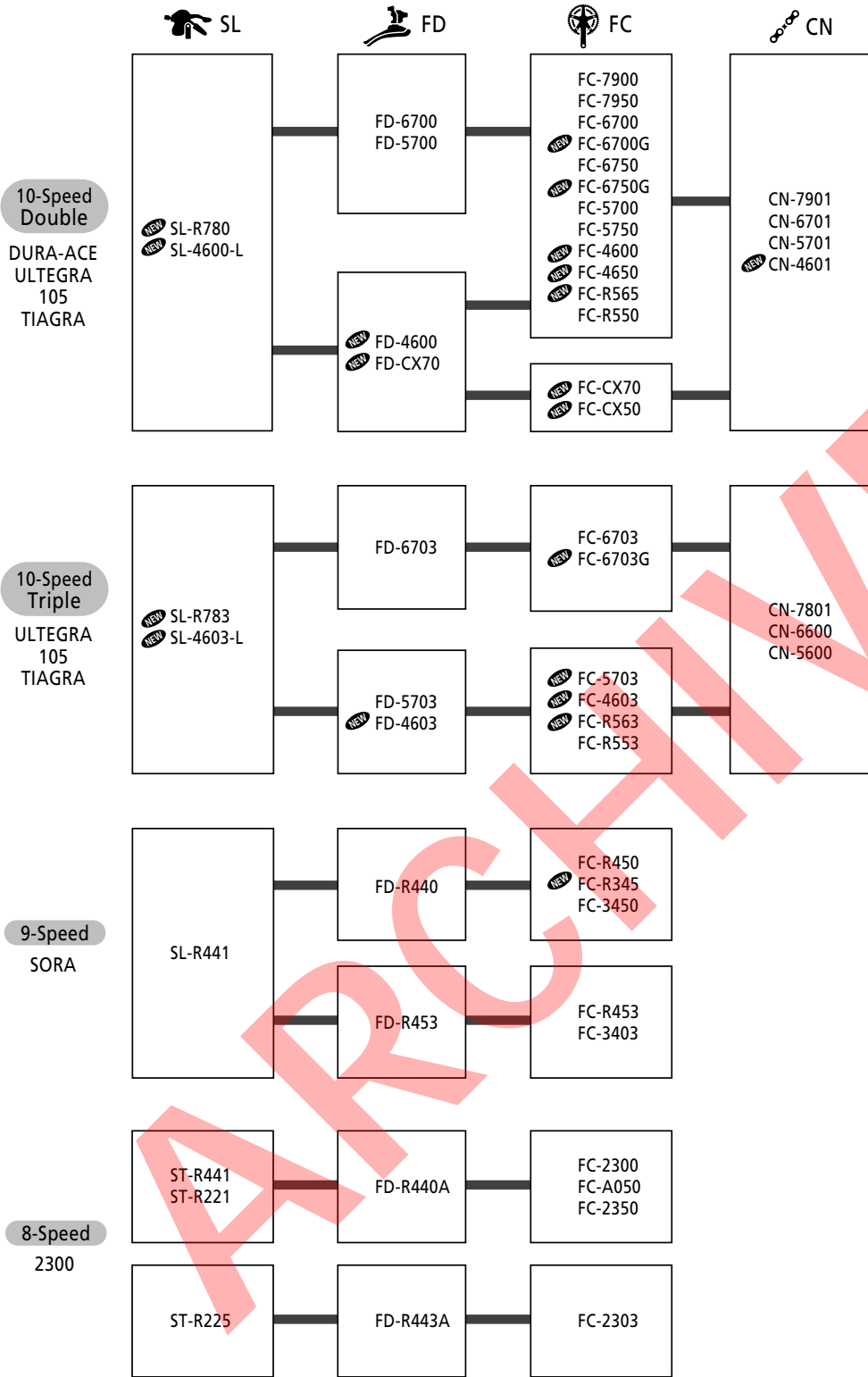


4. Interchangeability for flat handlebar

4-1. Rear system



4-2. Front system

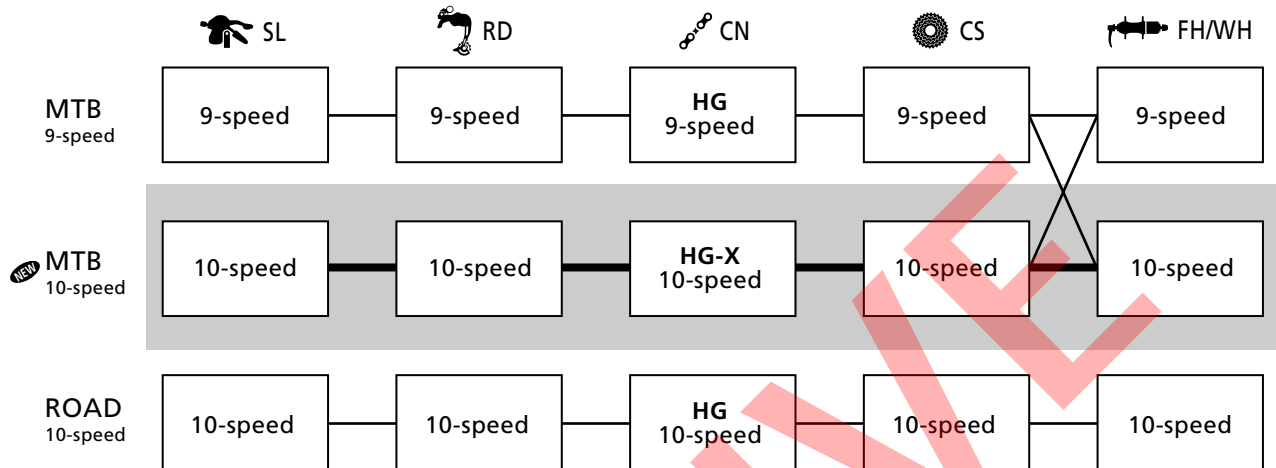


Drivetrain for MTB Components

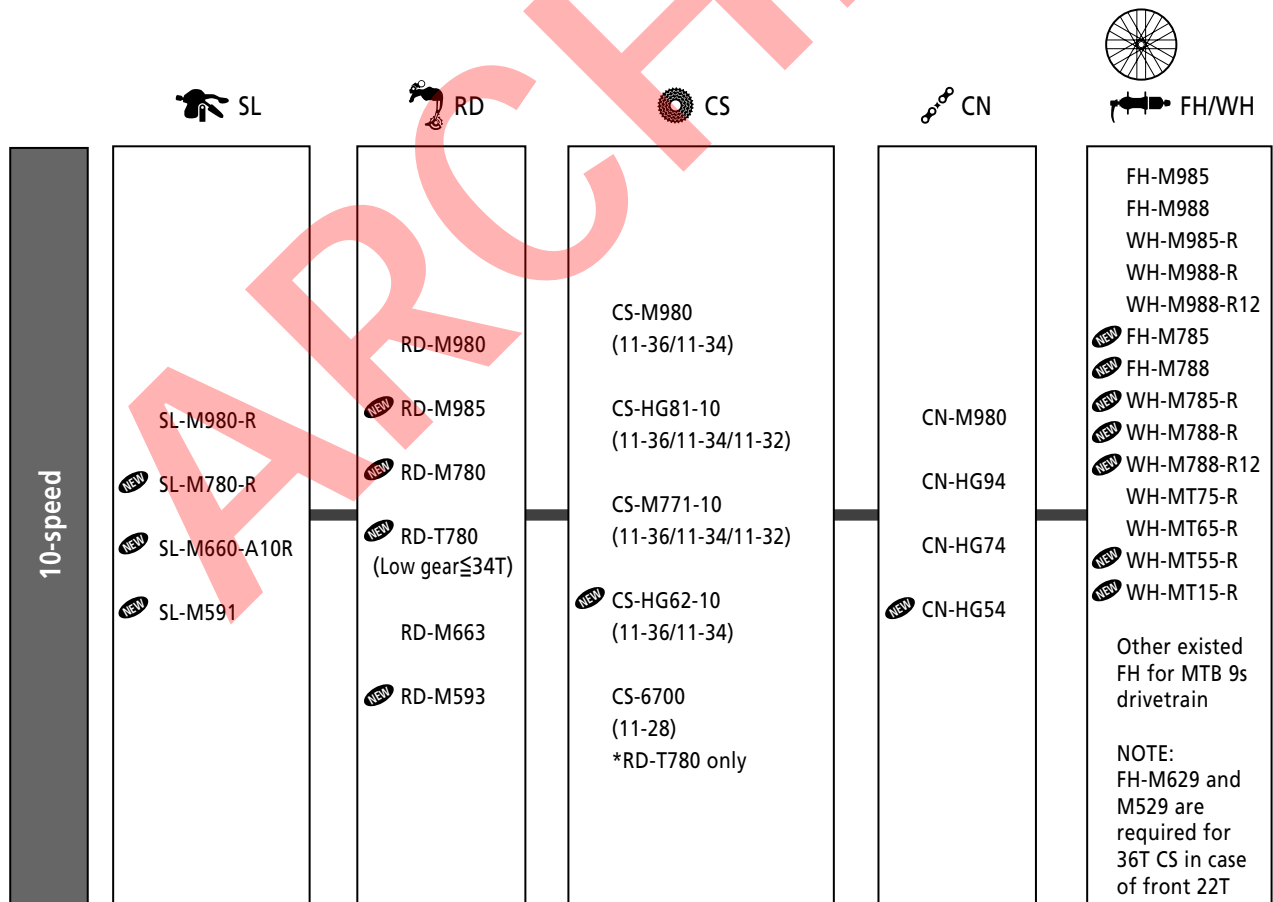
When using components of different series together, be aware of the points given below.

1. Rear drivetrain interchangeability

1-1. 10-speed/9-speed rear drivetrain compatibility



1-2. 10-speed rear drivetrain



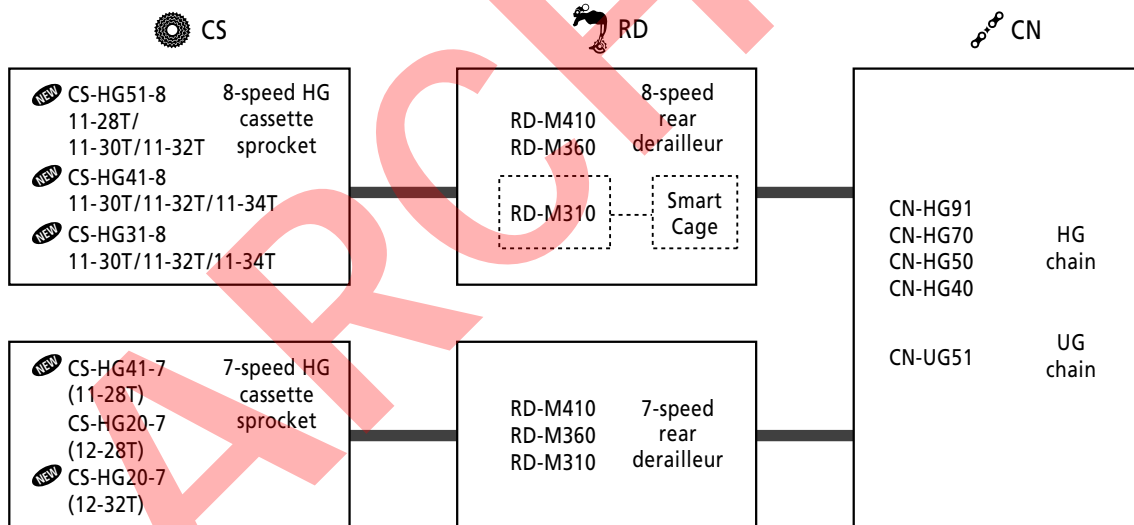
1-3. 9-speed rear drivetrain

CS		Shadow RD		W-servo RD			CN
		RD-M772 RD-M662 RD-M592	RD-M810-A	RD-M771 RD-M770	RD-T661	RD-M591 RD-M430 <small>NEW</small> RD-M390	CN-7701 CN-HG93 CN-HG73 CN-HG53
CS-HG61-9 bh	12 – 36T	X	X	–	–	–	X
CS-M770 as CS-HG80-9 au CS-HG61-9 au CS-HG50-9 au CS-HG30-9 au <small>NEW</small> CS-HG20-9 bn	11 – 34T	X	X	X	–	X	X
CS-M770 aq CS-HG80-9 ar CS-HG61-9 ar CS-HG50-9 ar CS-HG30-9 ar <small>NEW</small> CS-HG20-9 bo	11 – 32T	X	X	X	X	X	X
CS-HG80-9 bg CS-HG61-9	11 – 28T	–	X*	X	X	X	X
CS-6500 –	12 – 25T 11 – 23T	–	X*	–	–	–	X

*: Close ratio setting

X: Yes

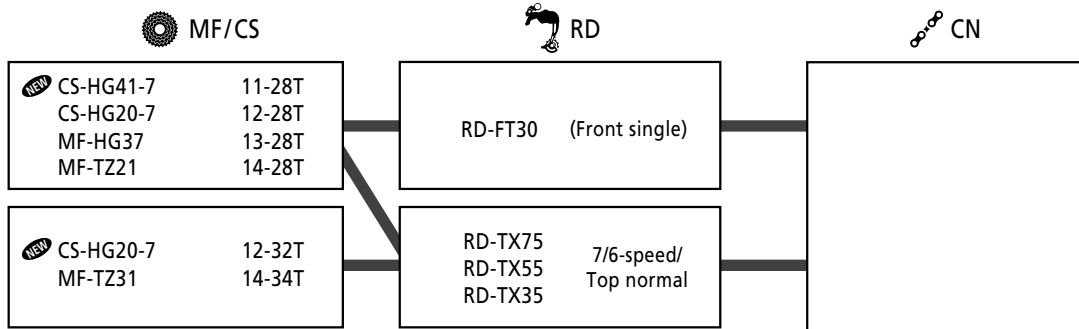
1-4. 8-speed and 7-speed HG/UG



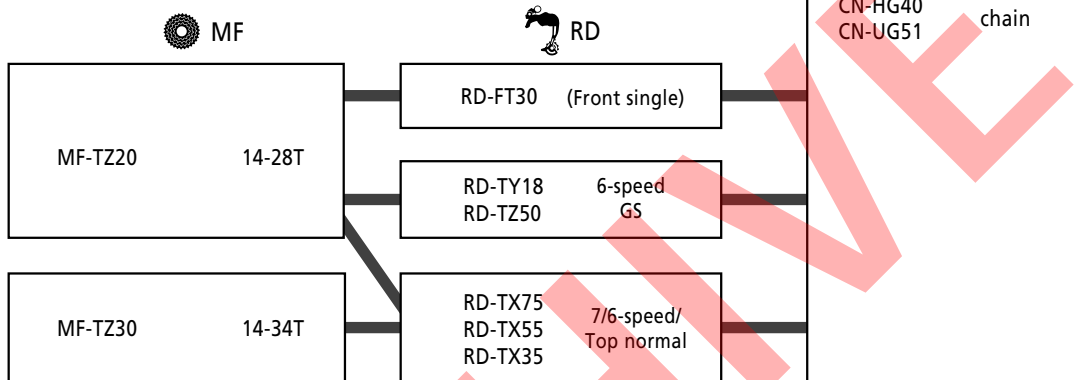
* The rear derailleur for 8-speed can also be used for 7-speed drivetrain.

1-5. 7-speed HG/ZH and 6-speed ZH

< 7-speed HG/ZH >



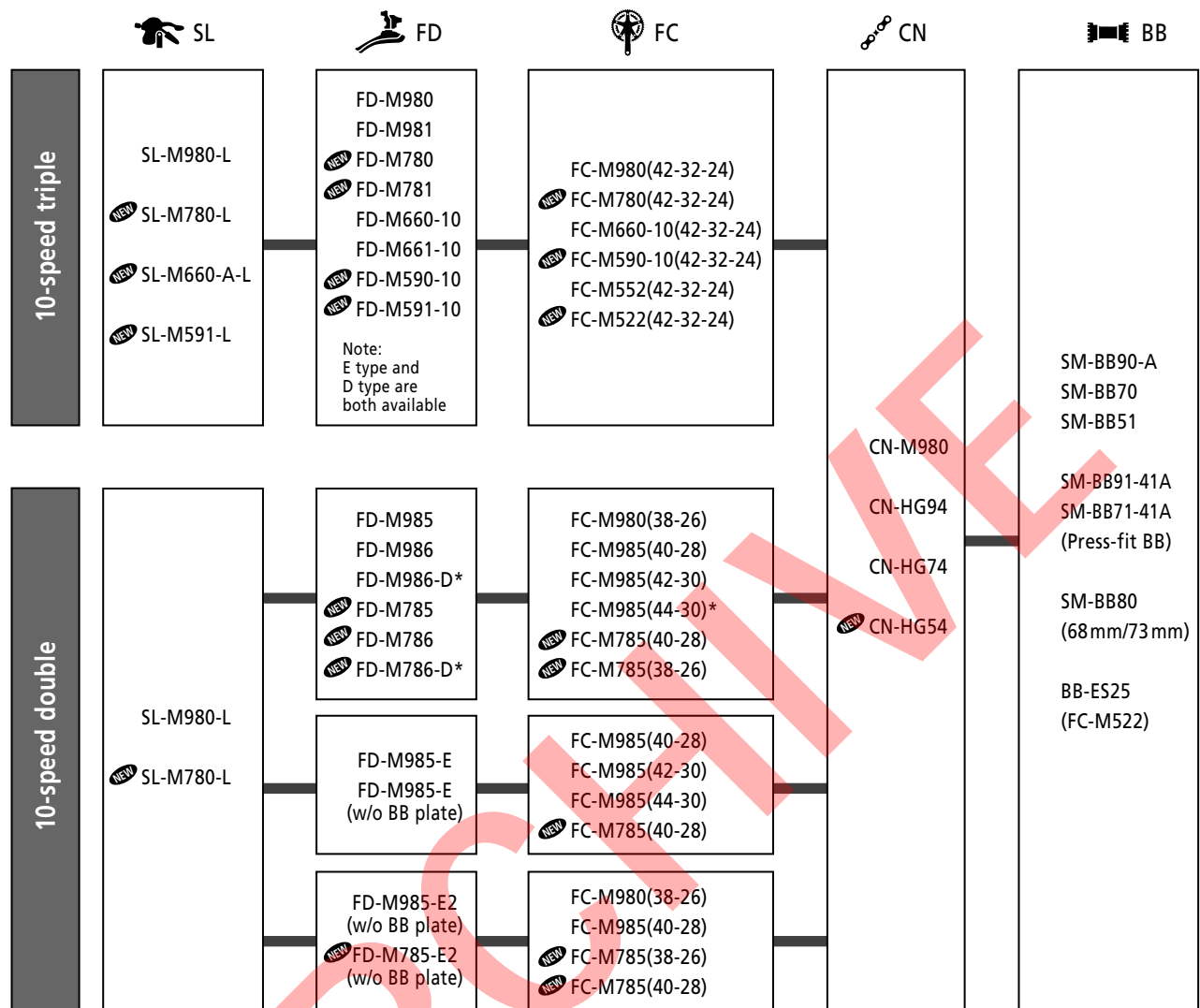
< 6-speed ZH >



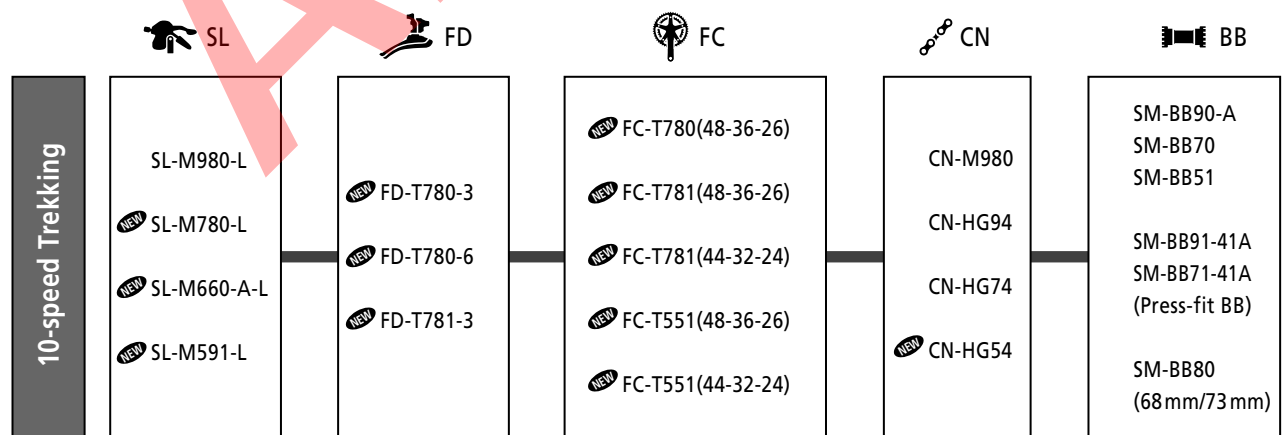
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2. Front drivetrain interchangeability

2-1. MTB 10-speed front drivetrain



*: New mount position is required for FD-M986-D/M786-D used with 44T double FC. (Please refer to Page 3, 32, 33)



2-2. MTB 10-speed FC-FD compatibility

FC model No.	Gear combination	Top swing					
		For triple			For double		
		NEW FD-M980 FD-M780 FD-M770-10 FD-M660-10 NEW FD-M590-10	NEW FD-M980-E FD-M780-E FD-M770-10E FD-M660-10E	NEW FD-T780-3 NEW FD-T780-6	NEW FD-M985 FD-M785	FD-M985-E	NEW FD-M985-E2 FD-M785-E2 (w/o BB Plate only)
NEW FC-M980 FC-M780 FC-M660-10 NEW FC-M590-10 FC-M552 NEW FC-M522 (BB-ES25 113mm)	42-32-24	X	X	-	-	-	-
NEW FC-T780	48-36-26	-	-	X	-	-	-
NEW FC-T781	48-36-26	-	-	X	-	-	-
NEW FC-T551	44-32-24	-	-	X	-	-	-
FC-M985	40-28	-	-	-	X	X	X
	42-30	-	-	-	X	X	-
	44-30	-	-	-	X	X	-
FC-M980	38-26	-	-	-	X	-	X
NEW FC-M785	40-28	-	-	-	X	X	X
	38-26	-	-	-	X	-	X

FC model No.	Gear combination	Down swing				
		For triple			For double	
		NEW FD-M981 FD-M781 FD-M771-10 FD-M661-10 NEW FD-M591-10	NEW FD-M981-D FD-M781-D FD-M771-10D FD-M661-10D	NEW FD-T781-3	NEW FD-M986 FD-M786	NEW FD-M986-D FD-M786-D
NEW FC-M980 FC-M780 FC-M660-10 NEW FC-M590-10 FC-M552 NEW FC-M522 (BB-ES25 113mm)	42-32-24	X	X	-	-	-
NEW FC-T780	48-36-26	-	-	X	-	-
NEW FC-T781	48-36-26	-	-	X	-	-
NEW FC-T551	44-32-24	-	-	X	-	-
FC-M985	40-28	-	-	-	X	X
	42-30	-	-	-	X	X
	44-30	-	-	-	X	X*
FC-M980	38-26	-	-	-	X	X
NEW FC-M785	40-28	-	-	-	X	X
	38-26	-	-	-	X	X

X: Yes

*: New mount position is required for FD-M986-D/M786-D used with 44T double FC.
(Please refer to Page 3, 32, 33)

2-3. MTB 9-speed Triple FC-FD compatibility

FC \ FD		Speed		9-speed			
		Chain line		50 mm			50 mm
		Chain stay angle		66° - 69°			63° - 66°
		Top swing FD			FD-M770-E FD-M660-E	FD-M770 FD-M660 FD-T660-6 FD-M590-6 FD-M430-6 NEW FD-M390-6	FD-M772A FD-T660A-3 FD-M590-3 FD-M430-3 NEW FD-M390-3
Chain line	BB Model / structure	Down swing FD		FD-M771 FD-M771D FD-M661 FD-M661D		FD-T661-6 FD-M591-6 FD-M431-6	FD-M773 FD-T661-3 FD-M591-3 FD-M431-3
		FC model No.					
50 mm	2pc type FC	FC-M770 FC-M660 FC-T661 FC-M542 FC-M543K FC-M590 FC-M591	44-32-22	X	X	X	X
		FC-M771K FC-M660 FC-T661 FC-M543K FC-M590 FC-M591	48-36-26	-	-	X	X
	BB-ES25 (please refer chart as below for detailed combination)	FC-M521	44-32-22	X	-	X	X
	BB-ES25 126 (-K)	NEW FC-M431-8 FC-M391-8					
	BB-UN26 LL123 (-K)	NEW FC-M431 FC-M391					
	BB-ES25 118 (-E)	FC-M430-8	44-32-22	X	X	X	X
	BB-UN26 LL113 (-E)	FC-M430					
	BB-ES25 (please refer chart as below for detailed combination)	FC-M521	48-36-26	-	-	X	X
	BB-ES25 126 (-K)	NEW FC-M431-8 FC-M391-8					
	BB-UN26 LL123 (-K)	NEW FC-M431 FC-M391					

X: Yes

< 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

2-4. MTB 9-speed Double FC-FD compatibility

Chainline	BB model No. / structure	FC No.	Chain line	54.3 mm	46.8 mm
			Top swing FD	FD-M815	FD-M665
				FD-M665-E	FD-M665-E
Down swing FD	FD-M817	FD-M667			
54.3 mm	HOLLOWTECH II	FC-M815	36-22	X	-
46.8 mm	HOLLOWTECH II	FC-M810	36-22	-	X
		FC-M665			
	2pc type FC	FC-M545			

X: Yes

2-5. MTB 8/7/6-speed Triple FC-FD compatibility

Chain line		BB Model / structure		Speed		8/7-speed							
				Chain line		50 mm		47.5/50 mm		47.5/50 mm			
				Chain stay angle		66° - 69°	63° - 66°	66° - 69°	63° - 66°	66° - 69°	63° - 66°		
				Top swing FD		FD-M410-E	FD-M410-E	FD-M412-6 FD-M360-6 FD-M310-6	FD-M412-3 FD-M360-3 FD-M310-3	FD-M190A-6	FD-M190-3		
Chain line		BB Model / structure		Down swing FD		FC model No.							
50mm	BB-ES25 (-E) 118 (-E)		FC-M410-8		42-32-22	X	X	X	X	-	-		
	BB-UN26 (-E) LL113 (-E)		FC-M410										
	BB-ES25 (-K) 126 (K)		FC-M361-8										
			FC-M311-8										
BB-UN26 (-K) LL123 (-K)		FC-M411 FC-M361 FC-M311		42-32-22	-	-	X	X	-	-			
47.5mm	BB-UN26 D-NL		FC-M171 FC-M131		42-34-24	-	-	-	-	X	X		
47.5 + t mm	BB-UN26-K D-NL K				48-38-28	-	-	X	X	-	-	-	-
					42-34-24	-	-	-	-	X	X	-	X
					48-38-28	-	-	X	X	-	-		

Chain line		BB Model / structure		Speed		8/7-speed		7/6-speed					
				Chain line		47.5/50 mm		47.5/50 mm		47.5/50 mm			
				Chain stay angle		66° - 69°	63° - 66°	66° - 69°	63° - 66°	66° - 69°	63° - 66°		
				Top swing FD		FD-M191-6	FD-M191-3	FD-TX50-6 FD-TY10*	FD-TX50-3	FD-TX51-6	FD-TX51-3		
Chain line		BB Model / structure		Down swing FD		FC model No.							
50mm	BB-ES25 (-E) 118 (-E)		FC-M410-8		42-32-22	-	-	-	-	-	-		
	BB-UN26 (-E) LL113 (-E)		FC-M410										
	BB-ES25 (-K) 126 (K)		FC-M361-8 FC-M311-8										
			FC-M411 FC-M361 FC-M311										
BB-UN26 (-K) LL123 (-K)		FC-M411 FC-M361 FC-M311		42-32-22	-	-	-	-	-	-			
47.5mm	BB-UN26 D-NL		FC-M171 FC-M131		48-38-28	X	X	-	-	X	X		
47.5 + t mm	BB-UN26-K D-NL K				42-34-24	-	-	X	X	-	-	-	-
					48-38-28	X	X	-	-	X	X		

* FD-TY10 L size is designed for 50 mm chain line.

X: Yes

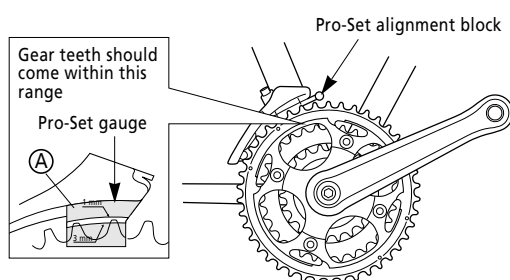
NOTE:

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

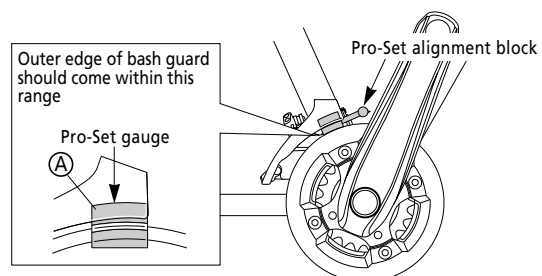
How to set position for FC with bigger top gear chain ring or bash guard in the same series.

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

< 9-speed triple FC-FD >



< 9-speed double FC-FD >



3. 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.

$$FC \text{ (top gear) - (low gear)} \leq FD \text{ (top and low capacity)}$$

$$FC \text{ (top gear) - (middle gear)} = FD \text{ (allowance of difference in teeth number between top and middle)}$$

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

4. Front derailleur and Chain line (Tourney)

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

	ø 28.6 (S)	ø 31.8 (M)	ø 34.9 (L)
FD-TY10	47.5 mm		50 mm
FD-TZ31 FD-TZ30	47.5 mm		-

5. 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.

5-1. MTB Components (Separate type FC/BB)

Speed	Series	Crankset				Bottom Bracket Model NO.	Chain line & Axle mark			
		Model No.	Type of Crank				47.5mm	50.0mm	52.5mm	47.5+tmm
			OCTALINK	Square	Chaincase					
10	Non-Series	FC-M522	X	-	-	BB-ES25	-	LL113	-	-
		FC-M521	X	-	X*	BB-ES25-AK	-	**	-	-
9	Alivio	FC-M431-8	X	-	X	BB-ES25(-K)	-	126(-K)	-	-
		FC-M431	-	X	X	BB-UN26(-K)	-	LL123(-K)	-	-
		FC-M430-8	X	-	-	BB-ES25(-E)	-	118(-E)	-	-
	Acera	FC-M430	-	X	-	BB-UN26(-E)	-	LL113(-E)	-	-
		FC-M391-8	X	-	X	BB-ES25(-K)	-	126(-K)	-	-
		FC-M391	-	X	X	BB-UN26(-K)	-	LL123(-K)	-	-
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	FC-M361-8 (42T)	X	-	X	BB-ES25(-E)	-	126	-	-
		FC-M361 (42T)	-	X	X*	BB-UN26(-K)	-	LL123(-K)	-	-
		FC-M361 (48T)	-	X	X*	BB-UN26(-K)	-	LL123(-K)	-	-
		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-M131 FC-M171	-	X	X	BB-UN26(-K)	D-NL(122.5)	-	-	D-NL(122.5)

X: Yes

Note:

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

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 118 for detailed combination.

Note:

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

Combination & Interchangeability

5-2. 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	Model No.	Crankset			Bottom Bracket	Chain line & Axle mark			
		Type of Crank				Model NO.	47.5mm	50.0mm	52.5mm
Capreo	FC-F800	OCTALINK	Square	Chaincase	BB-UN26				
		-	X	X	BB-UN26-K	-	-	-	*117.5

X: Yes

Note:

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

6. Chain, Chainring 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		7/8-speed HG	
		Cassette sprocket	Crankset	Cassette sprocket	Crankset
FC/CS		CS-M770 CS-HG80-9 CS-HG61-9 CS-HG50-9 CS-HG30-9 NEW CS-HG20-9	FC-M810 FC-M815 FC-M770 FC-M771-K FC-T661 FC-M660 FC-M665 FC-M591 FC-M590 FC-M545 FC-M543-K FC-M542 FC-M521 FC-M431 FC-M430 NEW FC-M391	NEW CS-HG51-8 NEW CS-HG41-8 NEW CS-HG31-8 NEW CS-HG41-7 CS-HG20-7	FC-M410 FC-M411 FC-M361 FC-M311 FC-M131 FC-M171
Chain	9-speed Narrow chain CN-7701 CN-HG93 CN-HG73 CN-HG53	Good	Good	Not good	Not good
	HG Chain CN-HG50 CN-HG40 CN-UG51	Not good	Not good	Good	Good

Wheels & Cassette sprocket

1. 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.

Righthand flange diameter	Speed	CS model	Cassette low gear number					Spoke hole number			
			28T	30T	32T	34T	36T	28H	32H	36H	
53.8mm	10S	CS-M980	-	-	-	X	X	-	CP-FH56	CP-FH53	
		CS-HG81-10	-	-	X	X	X	-	CP-FH56	CP-FH53	
		CS-M771-10	-	-	X	X	X	-	CP-FH56	CP-FH53	
		NEW CS-HG62-10	-	-	-	X	X	-	CP-FH56	CP-FH53	
	9S	CS-M770	-	-	X	X	-	CP-WH13	CP-32H2	CP-36H2	
		CS-HG80-9	-	-	X	X	-	CP-WH12	CP-FH56	CP-FH53	
		CS-HG80-9	X	-	-	-	-	-	CP-FH35	CP-FH50	
		CS-HG61-9	-	-	-	-	X	-	CP-FH56	-	
		CS-HG61-9	-	-	X	X	-	CP-WH12	CP-FH56	CP-FH53	
		CS-HG61-9	X	-	-	-	-	-	CP-FH35	CP-FH50	
		NEW CS-HG50-9	-	-	X	X	-	CP-WH12	CP-FH56	CP-FH53	
		CS-HG30-9	-	-	X	X	-	CP-WH12	CP-FH56	CP-FH53	
		NEW CS-HG20-9	-	-	X	X	-	CP-WH12	CP-FH56	CP-FH53	
		CS-ROAD	X	-	-	-	-	CP-FH08	CP-FH35	CP-FH31	
	8S	CS-HG60-8I	-	-	-	X	-	CP-WH12	CP-FH56	CP-FH53	
		NEW CS-HG51-8	X	X	-	-	-	CP-FH40	CP-FH35	CP-FH50	
		NEW CS-HG51-8	-	-	X	-	-	CP-WH12	CP-FH56	CP-FH53	
		NEW CS-HG41-8	-	X	-	-	-	CP-FH40	CP-FH35	CP-FH50	
		NEW CS-HG41-8	-	-	X	X	-	CP-WH12	CP-FH56	CP-FH53	
		NEW CS-HG31-8	-	X	-	-	-	CP-FH40	CP-FH35	CP-FH50	
		NEW CS-HG31-8	-	-	X	X	-	CP-WH12	CP-FH56	CP-FH53	
		CS-HG50-1	-	-	-	X	-	-	CP-FH56	CP-FH53	
	7S	MF-HG40-7	X	-	-	-	-	-	CP-FH56	CP-FH53	
		NEW CS-HG41-7	X	-	-	-	-	CP-FH40	CP-FH35	CP-FH50	
		NEW CS-HG20-7	-	-	X	-	-	-	CP-FH56	CP-FH53	
		CS-HG20-7	X	-	-	-	-	-	CP-FH35	CP-FH50	
		MF-HG37	X	-	-	-	-	-	-	CP-HG22	
		MF-TZ31	-	-	-	X	-	-	-	CP-HG22/MF-TZ31-CP	
	6S	MF-TZ21	X	-	-	-	-	-	-	CP-HG22/MF-TZ21-CP	
		ME-TZ30	-	-	-	X	-	-	-	CP-HG22/MF-TZ30-CP	
			MF-TZ20	X	-	-	-	-	-	CP-HG20/MF-TZ20-CP	
	70.6mm	10S	CS-M980	-	-	-	X	X	-	CP-FH76	CP-FH76
			CS-HG81-10	-	-	X	X	X	-	CP-FH76	CP-FH76
			NEW CS-HG62-10	-	-	-	X	X	-	CP-FH56	CP-FH53
			CS-M770	-	-	X	X	-	-	CP-FH75	CP-FH75
		9S	CS-HG80-9	-	-	X	X	-	-	CP-FH76	CP-FH76
			CS-HG61-9	X	-	-	-	-	-	-	-
			CS-HG61-9	-	-	X	X	-	-	CP-FH76	CP-FH76
			CS-HG61-9	-	-	-	-	X	-	CP-FH76	CP-FH76
			NEW CS-HG50-9	-	-	X	X	-	-	CP-FH76	CP-FH76
			CS-HG30-9	-	-	X	X	-	-	CP-FH76	CP-FH76
			NEW CS-HG20-9	-	-	X	X	-	-	CP-FH76	CP-FH76
CS-HG80-9			X	-	-	-	-	-	-	-	
CS-ROAD			X	-	-	-	-	-	-	-	
8S			CS-HG60-8I	-	-	-	X	-	-	CP-FH76	CP-FH76
		NEW CS-HG51-8	X	X	-	-	-	-	-	-	
		NEW CS-HG51-8	-	-	X	-	-	-	CP-FH76	CP-FH76	
		NEW CS-HG41-8	-	X	-	-	-	-	-	-	
		NEW CS-HG41-8	-	-	X	X	-	-	CP-FH76	CP-FH76	
		NEW CS-HG31-8	-	X	-	-	-	-	-	-	
		NEW CS-HG31-8	-	-	X	X	-	-	CP-FH76	CP-FH76	
		NEW CS-HG41-7	X	-	-	-	-	-	-	-	
7S		NEW CS-HG20-7	-	-	X	-	-	-	CP-FH56	CP-FH53	
		CS-HG20-7	X	-	-	-	-	-	CP-FH56	CP-FH53	
		MF-HG37	X	-	-	-	-	-	-	CP-HG22	
	MF-TZ31	-	-	-	X	-	-	MF-TZ31-CP	CP-HG22/MF-TZ31-CP		
	MF-TZ21	X	-	-	-	-	-	MF-TZ21-CP	CP-HG22/MF-TZ21-CP		

WH model	CS model	Cassette low gear number			
		28T	32T	34T	36T
NEW WH-M985-R, M988-R NEW WH-M785-R, M788-R	CS-M980	–	CP-WH14A	CP-WH14A	CP-WH14A
	CS-HG81-10	–	CP-WH14A	CP-WH14A	CP-WH14A
	CS-M770	–	CP-WH15	CP-WH15	–
	CS-HG80-9	CP-WH14A	CP-WH14A	CP-WH14A	–
	CS-HG50-9	–	CP-WH14A	CP-WH14A	–
NEW WH-M988-R12 NEW WH-M788-R12	CS-M980	–	CP-WH14A	CP-WH14A	CP-WH14A
	CS-M771-10	–	CP-WH14A	CP-WH14A	CP-WH14A
	CS-HG81-10	–	CP-WH14A	CP-WH14A	CP-WH14A
	CS-M970	–	CP-WH14A	CP-WH14A	–
	CS-M770	–	CP-WH15	CP-WH15	–
	CS-HG80-9	CP-WH14A	CP-WH14A	CP-WH14A	–
	CS-HG50-9	–	CP-WH14A	CP-WH14A	–
NEW WH-MT75-R, MT65-R NEW WH-MT55-R NEW WH-MT55-R-29	CS-M980	–	CP-WH14A	CP-WH14A	CP-WH14A
	CS-M771-10	–	CP-WH14A	CP-WH14A	CP-WH14A
	CS-HG81-10	–	CP-WH14A	CP-WH14A	CP-WH14A
	CS-M970	–	CP-WH14A	CP-WH14A	–
	CS-M770	–	CP-WH15	CP-WH15	–
	CS-HG80-9	CP-WH14A	CP-WH14A	CP-WH14A	–
	CS-HG50-9	–	CP-WH14A	CP-WH14A	–
WH-MT15-R	CS-M980	–	CP-WH12	CP-WH12	CP-WH12
	CS-M771-10	–	CP-WH12	CP-WH12	CP-WH12
	CS-HG81-10	–	CP-WH12	CP-WH12	CP-WH12
	CS-M970	–	CP-WH12	CP-WH12	–
	CS-M770	–	CP-WH13	CP-WH13	–
	CS-HG80-9	CP-FH08	CP-WH12	CP-WH12	–
	CS-HG50-9	–	CP-WH12	CP-WH12	–

WH model	CS model	Cassette low gear number						
		21T	23T	25T	26T	27T	28T	30T
WH-7900 WH-7850 WH-RS80 WH-6700 WH-RS30-A WH-RS20-A WH-RS10-A	CS-7900	CP-WH23	CP-WH23	CP-WH23	–	CP-WH23	CP-WH23	–
	CS-6700	–	CP-WH23	CP-WH23	–	CP-WH23	CP-WH23	–
	CS-5700	–	–	CP-WH23	–	CP-WH23	CP-WH23	–
	NEW CS-4600	–	–	CP-WH23	–	–	CP-WH23	CP-WH23
	NEW CS-HG50-9	–	CP-WH23	CP-WH23	–	CP-WH23	–	–
	CS-HG50-8	CP-WH23	CP-WH23	CP-WH23	CP-WH23	–	–	–
NEW WH-R501-30 NEW WH-R501-A NEW WH-R501	CS-7900	CP-FH02	CP-FH02	CP-FH02	–	CP-FH31	CP-FH31	–
	CS-6700	–	CP-FH02	CP-FH02	–	CP-FH31	CP-FH31	–
	CS-5700	–	–	CP-FH02	–	CP-FH31	CP-FH31	–
	NEW CS-4600	–	–	CP-FH02	–	–	CP-FH31	–
	NEW CS-HG50-9	–	CP-FH02	CP-FH02	–	CP-FH31	–	–

1-1. 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

1-2. Spoke protector for Road

speed	Model No.	Cassette low Gear number								Spoke holes number			
		21	23	24	25	26	27	28	30	24	28	32	36
8,9,10 speed	Road	X	X	-	X	-	-	-	-	CP-FH06	CP-FH08	CP-FH05	CP-FH06
		-	-	-	-	X	-	-	-	CP-GH06	CP-FH08	CP-FH35	CP-FH31
		-	-	-	-	-	X	X	-	CP-FH31	CP-FH08	CP-FH35	CP-FH31
		-	-	-	-	-	-	-	X	-	-	CP-FH45	CP-FH46

2. Recommendation of the Rim Tape Sizes for Shimano Wheels

Rim Sizes	Applicable Wheel Models	Recommended Rim Tape Size
622 X 15C	WH-7900-C35-CL / 7900-C50-CL / 7900-C24-CL / RS80-C24-CL / RS80-C50-CL / RS30-A / RS20-A / RS10-A	18-622
622 X 17C	WH-S501 / S500	18-622
622 X 19C	WH-S501-V / S500/T560	20-622
559 X 19C	WH-MT55 WH-MT15	20-559
Road Tubeless	WH-7900-C24-TL / 7850-C24-TL / 7850-SL / 6700	Never use rim tapes
MTB UST	WH-M985 / M988 WH-M785 / M788 WH-M778 / M776 / M775 / M770 / M765 WH-MT75 / MT65	Never use rim tapes

Disc brake

1. Hydraulic Disc Brake hose specification

Series	Hose Model No.	Compatible brake lever & caliper	Connection	Rigidity
XTR	SM-BH90-SB	BL-M985 / BR-M985 BL-M988 / BR-M985	Straight - Banjo	High power
SAINT	SM-BH80-SB	BL-M810 / BR-M810	Straight - Banjo	High power
Deore XT SLX	SM-BH90-SB	BL-M785 / BR-M785 BL-T785 / BR-M785 BL-M666 / BR-M666	Straight - Banjo	High power
Deore	SM-BH90-SS	BL-M596 / BR-M596	Straight - Straight	High power
Deore LX	SM-BH59	BL-T665 / BR-T665	Straight - Straight	Standard
Alfine	SM-BH59	BL-S500 / BR-S501		
Non-series	SM-BH59	BL-M505 / BR-M446 BL-M445 / BR-M446 BL-T445 / BR-M446		
Deore XT	SM-BH63	BL-M776 / BR-M775	Straight - Banjo	

2. Combination Chart (Mechanical Disc)

2-1. 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/RT53M/RT53L SM-RT51/RT51M SM-RT30 for resin pad only	B01S Resin
	BR-M416-A BR-M375	*			
	BR-R505	**	Road Lever***	SM-RT64	M06 Metal

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

** Front & Rear mount: International standard

*** For BL-TT78, ST-3400/2300/R221

2-2. Mechanical Disc brake and Brake lever interchangeability

Model No.	Brake lever type		
	2 finger	4 finger	4 finger w/ modulator
			w/ SM-PM50
BR-M495	Good	Not Good	Good
BR-M416-A	Good	Not Good	Good
BR-M375	Good	Not Good	Good

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

3. 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	BR-T665	Other BR models
BL-T665	X	Not good
Other BL models	Not good	X

X: Yes

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V-BRAKE and Hub roller brake

1. 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.

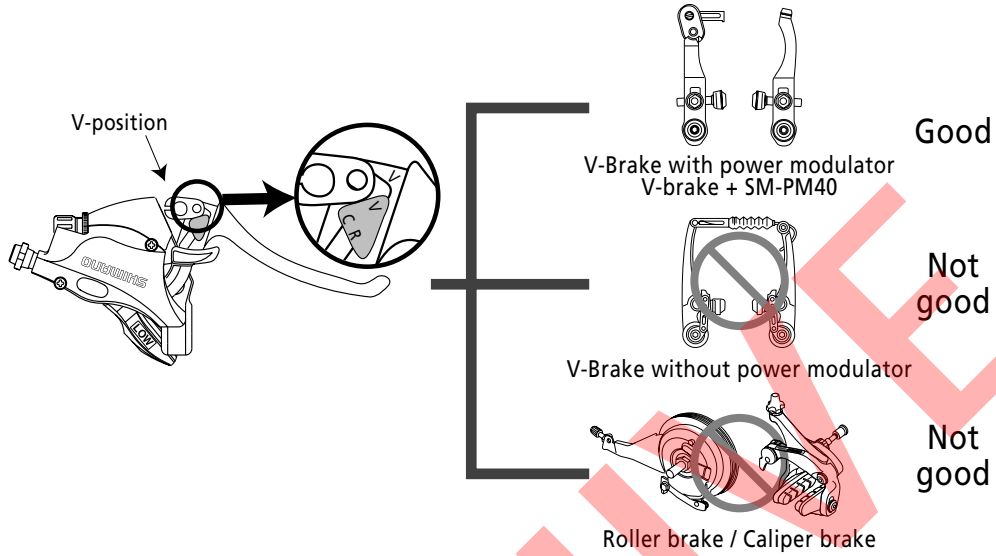
Brakes Brake levers	V-BRAKE			Roller Brake
	NEW BR-T780 BR-T660	BR-M590 BR-M432 BR-M422 BR-MX70	NEW With power modulator model BR-T780 with SM-PM70 BR-T660 with SM-PM70 BR-M590 with SM-PM70 BR-M422 with SM-PM40	
V-Brake Levers ST-M770 BL-M740 ST-M430 BL-M571 ST-M410 BL-M590 NEW ST-M390 BL-M421 ST-M360 (2-finger) BL-MX70 NEW ST-M310 (2-finger) NEW ST-EF65 (2-finger) ST-EF51 (2-finger) ST-EF40	X		X	This combination will not provide the sufficient amount of braking force.
V-Brake Levers ST-T660 NEW BL-T780 ST-M590 BL-T660 BL-M591	Not good		X	Not good
Brake lever with switch ST-T300-S BL-C800 ST-M360 (4-finger) BL-T400 NEW ST-M310 (4-finger) BL-IM65 NEW ST-EF65 (4-finger) BL-IM60 ST-EF51 (4-finger) SB-8520 ST-8520	Not good		X	X
Levers for Roller Brake	Not good		Not good	X

X: Yes

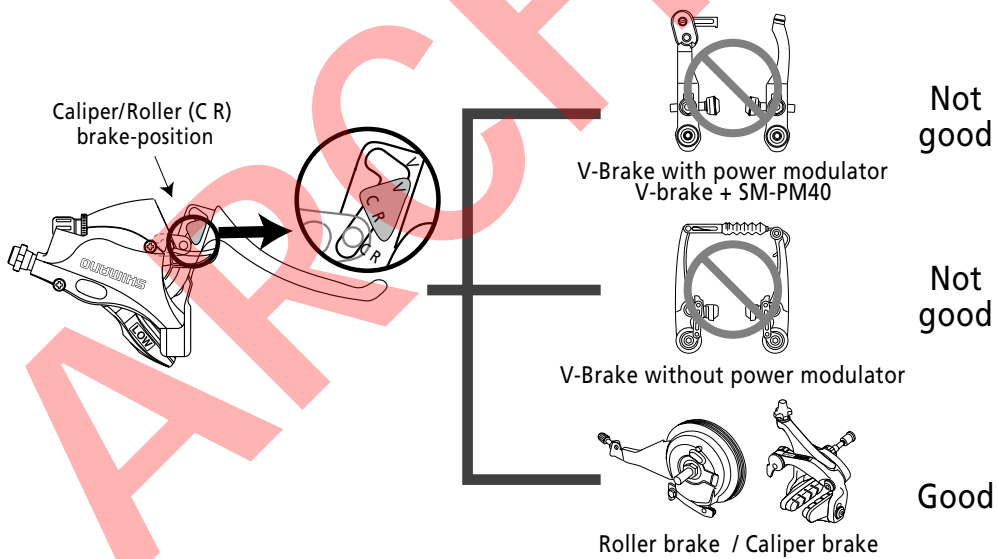
2. Brake lever with switch interchangeability

Four finger brake levers such as 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 or roller brake mode.

2-1. For V-Brake (with power modulator) mode



2-2. For Caliper 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.

Brake shoe

1. Brake shoe (for V-brake/Cantilever brake)

1-1. 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
NEW BR-T780	—	—	—	—	—	Standard	—	—	Option	—	—	—
BR-T660	—	—	—	Option	Option	—	—	—	Standard	—	—	—
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	—	—

1-2. 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 EN 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	
M65T4	—	X	65 mm	X	Only for side wall machined rims. Performs especially well in wet conditions and may pass EN standard. Tend to be low noise, low rim wear and fade.
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

*: M-system maintenance its strong braking power and controllability even in wet environments.

2. Brake shoe (Capreo)






2-1. Shoe characteristics

	Cartridge shoe	M-system	Length	Thread Shoe Post	Brake Shoe Charectristic
R55C (for F800/F700)	X	X	55 mm	X	Performs well in wet conditions and may pass EN standards. Tends to be low noise. But faster rim wear.

X: Yes

3. Brake shoe (for road bikes)

3-1. Brake/Shoe line-up

Series	Model No.	R55C3	R55C3 for Carbon rim	R55C2	R55C for Carbon rim	R55C for Ceramic rim	R55C + 1	M50T	R50T	R50T2
DURA-ACE	BR-7900	Standard	Option	Option	Option	Option	-	-	-	-
ULTEGRA	BR-6700	Standard	Option	Option	Option	Option	-	-	-	-
105	BR-5700	Standard	Option	Option	Option	Option	-	-	-	-
TIAGRA	 BR-4600	-	-	-	-	-	-	-	-	Standard
SORA	BR-3400	-	-	-	-	-	-	-	-	Standard
CYCLOCROSS	 BR-CX70	Option	Option	-	-	-	Standard	-	-	-
	 BR-CX50	-	-	-	-	-	-	-	-	Standard
Non-series	BR-R650	-	-	Standard	Option	Option	-	-	-	-
	 BR-R561	Standard	-	-	Option	Option	-	-	-	-
	 BR-R451	-	-	-	-	-	-	-	-	Standard














3-2. Shoe characteristics

	Cartridge shoe	M-system	Length	Brake shoe characteristics
R55C3	X	—	55 mm	Performs well in dry and wet conditions.
R55C3 for Carbon rim	X	—	55 mm	For Carbon rim
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
R55 + 1	X	—	55 mm	For BR-CX70
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

1. Rotor Specification

Series	Model No.	Outside Diameter	CENTERLOCK System	6 bolts mounts	Ice technologies
XTR	SM-RT98-SS	140 mm	X	-	X
	SM-RT98-S	160 mm	X	-	X
	SM-RT98-M	180 mm	X	-	X
	SM-RT98-L	203 mm	X	-	X
SAINT Deore XT	 SM-RT86-S	160 mm	-	X	X
	 SM-RT86-M	180 mm	-	X	X
	 SM-RT86-L	203 mm	-	X	X
	 SM-RT81-S	160 mm	X	-	X
	 SM-RT81-M	180 mm	X	-	X
	 SM-RT81-L	203 mm	X	-	X
	SM-RT79	160 mm	X	-	-
	SM-RT79-M	180 mm	X	-	-
	SM-RT79-L	203 mm	X	-	-
	SM-RT76	160 mm	-	X	-
	SM-RT76-M	180 mm	-	X	-
	SM-RT76-L	203 mm	-	X	-
	 SM-RT67-AS	160 mm	X	-	-
	 SM-RT67-AM	180 mm	X	-	-
	 SM-RT67-AL	203 mm	X	-	-
	SLX	 SM-RT67-S *	160 mm	X	-
 SM-RT67-M *		180 mm	X	-	-
 SM-RT67-L *		203 mm	X	-	-
Deore	SM-RT64	160 mm	X	-	-
	SM-RT64-M	180 mm	X	-	-
	SM-RT64-L	203 mm	X	-	-
Non-series	SM-RT75-S	160 mm	-	X	-
	SM-RT75-MA	180 mm	-	X	-
	SM-RT75-DH	203 mm	-	X	-
	SM-RT53 **	160 mm	X	-	-
	SM-RT53-M **	180 mm	X	-	-
	SM-RT53-L **	203 mm	X	-	-
	SM-RT51 **	160 mm	-	X	-
	SM-RT51-M **	180 mm	-	X	-
 SM-RT30 **	160mm	X	-	-	

X: Yes

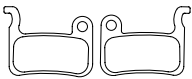
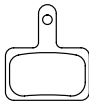
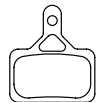
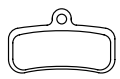
* : Aluminum locking option available.



** : For resin pad only.

Brake pad

1. Brake pad line-up (for disc brake)

The number of “★” mark shows better performance.

Model No.	Type	A01S	M06Ti	M06	M07Ti	B01S	M08	E01S	D02S	D01S
		Resin	Metal	Metal	Resin	Resin	Resin	Metal	Metal	Resin
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	★★★★★	★★★☆☆	★★★☆☆	★★★★★	★★★★★	★★★★★	★★★★☆	★★★☆☆	★★★★★
Radiator Fin		-	-	-	-	-	-	-	-	-
Titanium Back plate		-	X	-	X	-	-	-	-	-
Aluminum Back plate		-	-	-	-	-	-	-	-	-
BR-M985	Hydraulic	-	-	-	-	-	-	-	-	-
BR-M810	Hydraulic	-	-	-	-	-	-	-	Standard	Option
NEW BR-M785	Hydraulic	-	-	-	-	-	-	-	-	-
NEW BR-M666	Hydraulic	-	-	-	-	-	-	-	-	-
BR-T665	Hydraulic	Standard	-	Option	-	-	-	-	-	-
BR-S501	Hydraulic	Standard	-	-	-	-	-	-	-	-
NEW BR-M596	Hydraulic	Standard	-	Option	-	-	-	-	-	-
BR-M575	Hydraulic	-	-	-	-	Standard	-	Option	-	-
NEW BR-M446	Hydraulic	-	-	-	-	Standard	-	-	-	-
BR-M495	Mechanical	-	-	-	-	Standard	-	-	-	-
BR-M416A	Mechanical	-	-	-	-	Standard	-	-	-	-
NEW BR-M375	Mechanical	-	-	-	-	Standard	-	-	-	-
BR-R505	Mechanical	-	-	Standard	-	-	-	-	-	-

Model No.	Type	G01A	G01S	G03S	G03Ti	F01A	F03C
		Resin	Resin	Metal	Metal	Resin	Metal
Pad Shape Type		G-Type: 				F-Type: 	
Characteristics	Modulation	★★★★★	★★★★★	★★★★☆	★★★★☆	★★★★★	★★★★☆
	Power	★★★★☆	★★★★☆	★★★★★	★★★★★	★★★★☆	★★★★★
	Durability	★★★★☆	★★★★☆	★★★★★	★★★★★	★★★★☆	★★★★★
	Anti-fading	★★★★☆	★★★★☆	★★★★★	★★★★★	★★★★☆	★★★★★
	Silence	★★★★★	★★★★★	★★★☆☆	★★★☆☆	★★★★★	★★★★★
Radiator Fin		-	-	-	-	X	X
Titanium Back plate		-	-	-	X	-	-
Aluminum Back plate		X	-	-	-	X	-
BR-M985	Hydraulic	Standard*	-	-	Option*	Option**	Standard**
BR-M810	Hydraulic	-	-	-	-	-	-
NEW BR-M785	Hydraulic	Standard*	-	Option*	-	Option**	Standard**
NEW BR-M666	Hydraulic	-	Standard*	Option*	-	Option**	Standard**
BR-T665	Hydraulic	-	-	-	-	-	-
BR-S501	Hydraulic	-	-	-	-	-	-
NEW BR-M596	Hydraulic	-	-	-	-	-	-
BR-M575	Hydraulic	-	-	-	-	-	-
NEW BR-M446	Hydraulic	-	-	-	-	-	-
BR-M495	Mechanical	-	-	-	-	-	-
BR-M416A	Mechanical	-	-	-	-	-	-
NEW BR-M375	Mechanical	-	-	-	-	-	-
BR-R505	Mechanical	-	-	-	-	-	-

* For XC. Tekking
** For Trail. All mountain

X: Yes

2. Disc brake caliper and Rotor compatibility

Caliper	Pad material	Rotor			
		140	160	180	203
NEW BR-M985 NEW BR-M785 NEW BR-M666 NEW BR-T665* NEW BR-M596	Metal/Resin	SM-RT98-SS Narrow Type	NEW SM-RT98-S NEW SM-RT86 NEW SM-RT81 NEW SM-RT79-S NEW SM-RT67 SM-RT76 SM-RT75-S SM-RT64 Narrow Type	NEW SM-RT98-M NEW SM-RT86-M NEW SM-RT81-M NEW SM-RT79-M NEW SM-RT67-M SM-RT76-M SM-RT75-MA SM-RT64-M Narrow Type	NEW SM-RT98-L NEW SM-RT86-L NEW SM-RT81-L NEW SM-RT79-L NEW SM-RT67-L SM-RT76-L SM-RT75-DH SM-RT64-L Narrow Type
BR-M810	Metal				
BR-S501	Resin				
BR-M575	Metal				
NEW BR-M575 NEW BR-M495 NEW BR-M446 NEW BR-M416-A NEW BR-M375	Resin		NEW SM-RT53 SM-RT51 SM-RT30 Wide Type	SM-RT53-M SM-RT51-M Wide Type	SM-RT53-L Wide Type
BR-R505	Metal		NEW SM-RT98-S NEW SM-RT86 NEW SM-RT81 NEW SM-RT79-S NEW SM-RT67 SM-RT75-S SM-RT64 Narrow Type		

* recommend 160/180mm rotor for front and 160mm rotor for rear.

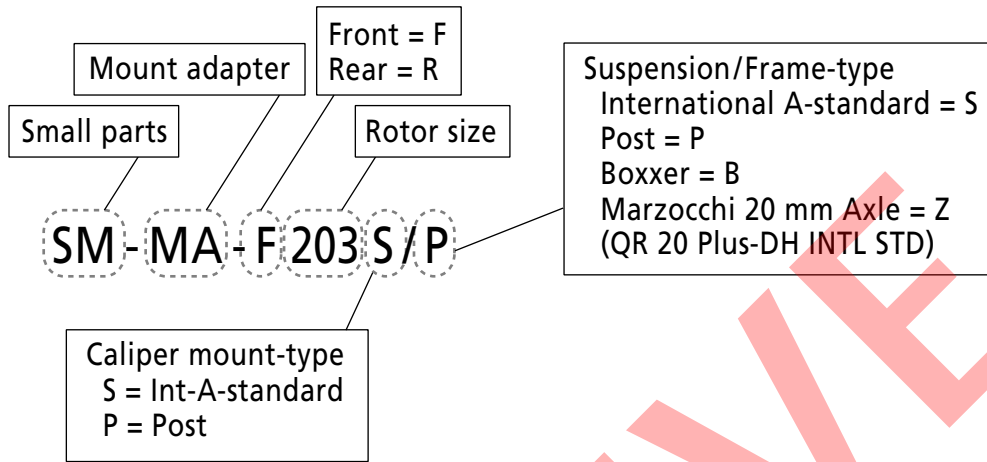
NOTE:

1. suitable mount adapter is necessary according to your frame mount style.
2. SM-RT51/RT53/RT53-M/RT53-L/RT51-M/RT30 are compatible with Resin pad caliper specification only. If use with metal pads, rotor will be easily damaged.
3. when using 140mm rotor, braking power is less than 160mm, please confirm the power is enough for your purpose. 140mm rotor is recommended for rear use only.
4. durability of B/E type pad become shorter when the pad is used with narrow type rotor.

Disc brake mount adapter

1. Disc brake mount adapter application

1-1. How to read Model No.



1-2. Disc brake mount adapter application table

< Postmount caliper >

Fork & Frame mount style			Rotor			
			140	160	180	203
FRONT	Postmount	160mm direct	-	Direct mount *	SM-MA90-F180P/P SM-MA-F180P/P2	SM-MA-F203P/P
		180mm direct	-	-	Direct mount	SM-MA90-F180P/P SM-MA-F180P/P2
		203mm direct	-	-	-	Direct mount *
	Standard A		-	SM-MA90-F160P/S * 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-MA90-R140P/S	SM-MA90-R160P/S * SM-MA-R160P/S *	SM-MA90-R180P/S, SM-MA-R180P/S	SM-MA-R203P/S
	Postmount	140mm direct	Direct mount	SM-MA90-F180P/P SM-MA-F180P/P2	SM-MA-F203P/P *	-
		160mm direct	-	Direct mount *	SM-MA90-F180P/P SM-MA-F180P/P2	SM-MA-F203P/P
		180mm direct	-	-	Direct mount	SM-MA90-F180P/P SM-MA-F180P/P2
		203mm direct	-	-	-	Direct mount

*: BR-R505 is available.

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