

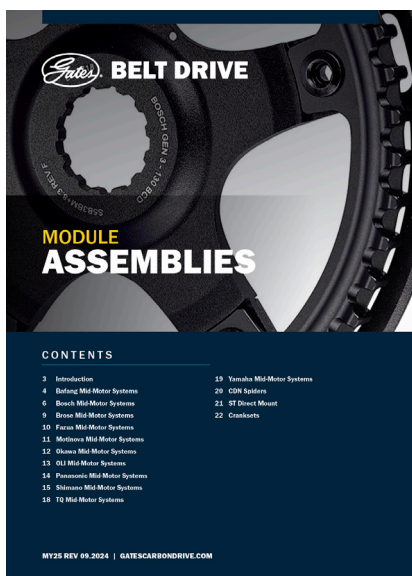


BELT DRIVE

MODULE ASSEMBLIES

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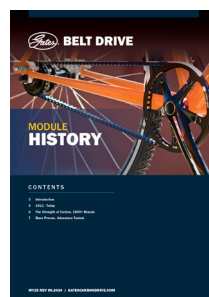
MODULE ASSEMBLIES

Detailed technical information for integration and specification of Gates spiders and cranksets.



MODULE OWNER'S MANUAL

This manual explains proper belt handling, contains information about proper care and tensioning as well as warranty information.



MODULE HISTORY

Gates Corporation has been a global leader in power transmission and belt drive technologies since 1911, this module explains how Gates Carbon Drive evolved.



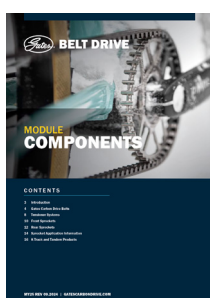
MODULE PRODUCT LINES

Comparisons of our systems, their ideal applications, and guidance in choosing the right system for you.



MODULE APPLICATIONS

A quick look at the hub and mid-motors, gearboxes, internal gear hubs and cranksets we support.



MODULE COMPONENTS

Our current product listing. Includes belts, front and rear sprockets.



MODULE TECHNICAL RESOURCES

Frame design details, including dropout and frame stiffness and alignment requirements, assembly tolerances, online resources, available tools, troubleshooting, and a glossary.

ACCURATE ASSEMBLIES

Several products are available pre-assembled by Gates Carbon Drive, ensuring accurate and precise alignment and tolerances, ready-to-install for the specific bicycle or eBike application.

RESOURCES



BELT HANDLING



TENSION



ALIGNMENT



WARRANTY

ISO REQUIREMENTS

Gates Carbon Drive products meet or exceed the standards set forth in the applicable requirements in ISO 4210-2 and ISO 4210-8. While individual Carbon Drive components sold by Gates meet or exceed these ISO requirements, it is the sole responsibility of the bicycle original equipment manufacturer (OEM) to configure the Gates Carbon Drive components in a way that meets or exceeds the ISO requirements for their particular bicycle model, especially regarding protective devices.

Note: All dimensions in millimeters unless otherwise noted.

ANANDA M81, M230, M1000, M5000

Identify rear hub choice.



Identify spider part number, front sprocket mounting surface, and spider mounting surface.



Identify rear sprocket type needed, and choose appropriate front and rear sprockets.

ANANDA M81, M230, M1000, M5000 CONFIGURATION CHART

COMPATIBLE HUBS	REAR SPROCKET TYPE	NOMINAL BELTLINE	SPIDER*	FRONT SPROCKET MOUNTING SURFACE	SPIDER MOUNTING SURFACE
enviolo (148mm OLD)	E9	50mm	S17-14	A	OUTBOARD TAB
Rohloff SpeedHUB 500/14 (148mm OLD)	RS	51.7mm	S7-6	A	INBOARD TAB
Rohloff SpeedHUB 500/14 (135/142mm OLD)	RS	54.7mm	S7-6	B	INBOARD TAB
3X3 NINE (135/142mm OLD)	HB				
3X3 NINE (148mm OLD)	HA				
Revolute HUB1 (135/142/148mm OLD)	S9				
Classified Powershift Hub (142mm OLD)					

* Prowheel Spider required

OWNER'S MANUAL

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DRIVE SELECTION STEPS

Identify rear hub choice.



Determine if node offset is required.



Identify spider part number, and front sprocket mounting surface.



Identify rear sprocket type needed, and choose appropriate front and rear sprockets.

BAFANG M510 CONFIGURATION CHART

COMPATIBLE HUBS	REAR SPROCKET TYPE	NOMINAL BELTLINE	SPIDER*	FRONT SPROCKET MOUNTING SURFACE†
	Mounting Plane: 37.3mm			
Shimano Inter-5E (Mechanical & Di2 ^d)	YU	45.5mm	MM G332-011001B	B
Shimano Nexus 7/8 Disc, Alfine 8/11 (Mechanical & Di2 ^d)	XU			
enviolo (135mm OLD)	E9			
enviolo (148mm OLD) MY 22	E9	50mm	MM G520-011001C	A
Rohloff SpeedHUB 500/14 (148mm OLD) "SL" Carrier	RS			
Rohloff SpeedHUB 500/14 (148mm OLD)	RS	51.7mm	MM G520-011001	A
Rohloff SpeedHUB 500/14 (135/142mm OLD) 3x3 Revolute Classified	RS	54.7mm	MM G520-011001	B
	HB			
	HA			
	S9			

^d Requires use of Shimano MU-UR510 or MU-UR520 Motor Unit

[†] See Sprocket Orientation in the Components Module.

* Requires use of Bafang Spider listed.

BAFANG M820 CONFIGURATION CHART

COMPATIBLE HUBS	REAR SPROCKET TYPE	NOMINAL BELTLINE	SPIDER*	FRONT SPROCKET MOUNTING SURFACE†
	Mounting Plane: 38.1mm			
Rohloff SpeedHUB 500/14 (148mm OLD)	RS	51.7mm	MM G520-011001C	A
Rohloff SpeedHUB 500/14 (135/142mm OLD) 3x3 Revolute Classified	RS	54.7mm	MM G520-011001C	B
	HB			
	HA			
	S9			

[†] See Sprocket Orientation in the Components Module.

* Requires use of Bafang Spider listed.



BDU38YY, BDU347Y DRIVE SELECTION STEPS

Identify rear hub choice.



Determine correct spider assembly part number based on desired front sprocket tooth count and target beltline.



Identify rear sprocket type needed, and choose appropriate rear sprocket part number.

BOSCH BDU38YY, BDU347Y SPIDER ASSEMBLY CHART

COMPATIBLE HUBS	REAR SPROCKET TYPE	NOMINAL BELTLINE	FRONT SPROCKET TEETH	CENTERED NODE ASSEMBLY PART NUMBER
				Mounting Plane: 41.3mm
Shimano Inter-5E (Mechanical & Di2 ^d) Shimano Nexus 7/8 Disc, Alfine 8/11 (Mechanical & Di2 ^d) enviolo (135mm OLD)	YU XU E9/EV	45.5mm	42	S4B4BM+8.0 42CDX -3.1 BG
			46	S5B4BM+9.0 46CDX -3.85 BG
			48	S5B4BM+9.0 48CDX -3.85 BG
			50	S5B4BM+9.0 50CDX -3.85 BG
			55	S5B4BM+9.0 55CDX -3.85 BG
			60	S5B4BM+9.0 60CDX -3.85 BG
enviolo (148mm OLD) MY24+ Rohloff SpeedHUB 500/14 (148mm OLD) "SL" Carrier	E9 RS	50.0mm	46	S5B4BM+9.0 46CDX -0 BG
			48	S5B4BM+9.0 48CDX -0 BG
			50	S5B4BM+9.0 50CDX -0 BG
			55	S5B4BM+9.0 55CDX -0 BG
			60	S5B4BM+9.0 60CDX -0 BG
			63	S5B4BM+9.0 63CDX -0 BG
Rohloff SpeedHUB 500/14 (Boost 148mm) 3X3 NINE (148mm OLD)	RS HB	51.7mm	46	S5B4BM+13.6 46CDX -3.1 BG
			48	S5B4BM+13.6 48CDX -3.1 BG
			50	S5B4BM+13.6 50CDX -3.1 BG
			55	S5B4BM+13.6 55CDX -3.1 BG
			60	S5B4BM+13.6 60CDX -3.1 BG
			63	S5B4BM+13.6 63CDX -3.1 BG
Rohloff SpeedHUB 500/14 (135/142mm OLD) 3X3 NINE (135/142mm OLD) 3X3 NINE (148mm OLD) Revolute HUB1 (135/142/148mm OLD) Classified Powershift Hub (142mm OLD)	RS HB HA S9	54.7mm	46	S5B4BM+13.6 46CDX -0 BG
			48	S5B4BM+13.6 48CDX -0 BG
			50	S5B4BM+13.6 50CDX -0 BG
			55	S5B4BM+13.6 55CDX -0 BG
			60	S5B4BM+13.6 60CDX -0 BG
			63	S5B4BM+13.6 63CDX -0 BG

^d Requires use of Shimano MU-UR510 or MU-UR520 Motor Unit

S5 in the part number indicates 5-bolt spiders, S4 indicates 4-bolt.

"BG" at the end of Part Number specifies inclusion of an ISO compliant Black Guard. Alternatively "NG" would specify No Guard.



BDU346Y DRIVE SELECTION STEPS

Identify rear hub choice.



Determine correct spider assembly part number based on desired front sprocket tooth count and target beltline.



Identify rear sprocket type needed, and choose appropriate rear sprocket part number.

BOSCH BDU346Y SPIDER ASSEMBLY CHART

COMPATIBLE HUBS	REAR SPROCKET TYPE	NOMINAL BELTLINE	FRONT SPROCKET TEETH	CENTERED NODE ASSEMBLY PART NUMBER
				Mounting Plane: 41.3mm
Shimano Inter-5E (Mechanical & Di2 ^d) Shimano Nexus 7/8 Disc, Alfine 8/11 (Mechanical & Di2 ^d) enviolo (135mm OLD)	YU XU E9/EV	45.5mm	46	S5B4BM+9.0 46CDC -3.85 BG
			50	S5B4BM+9.0 50CDC -3.85 BG
			55	S5B4BM+9.0 55CDC -3.85 BG
			60	S5B4BM+9.0 60CDC -3.85 BG
enviolo (148mm OLD) MY24+ Rohloff SpeedHUB 500/14 (148mm OLD) "SL" Carrier	E9 RS	50.0mm	46	S5B4BM+9.0 46CDC -0 BG
			50	S5B4BM+9.0 50CDC -0 BG
			52	S5B4BM+9.0 52CDC -0 BG
			55	S5B4BM+9.0 55CDC -0 BG
			60	S5B4BM+9.0 60CDC -0 BG
Rohloff SpeedHUB 500/14 (Boost 148mm) 3X3 NINE (148mm OLD)	RS HB	51.7mm	46	S5B4BM+13.6 46CDC -3.1 BG
			50	S5B4BM+13.6 50CDC -3.1 BG
			52	S5B4BM+13.6 52CDC -3.1 BG
			55	S5B4BM+13.6 55CDC -3.1 BG
			60	S5B4BM+13.6 60CDC -3.1 BG
Rohloff SpeedHUB 500/14 (135/142mm OLD) 3X3 NINE (135/142mm OLD) 3X3 NINE (148mm OLD) Revolute HUB1 (135/142/148mm OLD) Classified Powershift Hub (142mm OLD)	RS HB HA S9	54.7mm	46	S5B4BM+13.6 46CDC -0 BG
			50	S5B4BM+13.6 50CDC -0 BG
			52	S5B4BM+13.6 52CDC -0 BG
			55	S5B4BM+13.6 55CDC -0 BG
			60	S5B4BM+13.6 60CDC -0 BG
			60	S5B4BM+13.6 60CDC -0 BG

^d Requires use of Shimano MU-UR510 or MU-UR520 Motor Unit

S5 in the part number indicates 5-bolt spiders, S4 indicates 4-bolt.

"BG" at the end of Part Number specifies inclusion of an ISO compliant Black Guard. Alternatively "NG" would specify No Guard.

**BOSCH****PERFORMANCE LINE CX,
PERFORMANCE LINE SPEED, CARGO LINE****BDU37YY "GEN4" DRIVE SELECTION STEPS**

Identify rear hub choice.



Determine correct spider assembly part number based on desired front sprocket tooth count and target beltline.



Identify rear sprocket type needed, and choose appropriate rear sprocket part number.

BOSCH BDU37YY "GEN4" SPIDER ASSEMBLY CHART

COMPATIBLE HUBS	REAR SPROCKET TYPE	NOMINAL BELTLINE	FRONT SPROCKET TEETH	CENTERED NODE ASSEMBLY PART NUMBER
				Mounting Plane: 39.5mm
Shimano Inter-5E (Mechanical & Di2 ^d) Shimano Nexus 7/8 Disc, Alfine 8/11 (Mechanical & Di2 ^d) enviolo (135mm OLD)	YU	45.5mm	39	S4B4BM+9.0 39CDX -3.1 BG
			42	S4B4BM+9.0 42CDX -3.1 BG
			46	S4B4BM+9.0 46CDX -3.1 BG
	XU		48	S5B4BM+9.0 48CDX -3.1 BG
			50	S5B4BM+9.0 50CDX -3.1 BG
			55	S5B4BM+9.0 55CDX -3.1 BG
	E9/EV		60	S5B4BM+9.0 60CDX -3.1 BG
			63	S5B4BM+9.0 63CDX -3.1 BG
enviolo (148mm OLD) MY22	EV	48.7mm	46	S4B4BM+9.0 46CDX -0 BG
			48	S5B4BM+9.0 48CDX -0 BG
			50	S5B4BM+9.0 50CDX -0 BG
			55	S5B4BM+9.0 55CDX -0 BG
			60	S5B4BM+9.0 60CDX -0 BG
			63	S5B4BM+9.0 63CDX -0 BG
enviolo (148mm OLD) MY24+ Rohloff SpeedHUB 500/14 (148mm OLD) "SL" Carrier	E9	50.0mm	46	S5B4BM+13.6 46CDX -3.1 BG
			48	S5B4BM+13.6 48CDX -3.1 BG
			50	S5B4BM+13.6 50CDX -3.1 BG
	RS		55	S5B4BM+13.6 55CDX -3.1 BG
			60	S5B4BM+13.6 60CDX -3.1 BG
			63	S5B4BM+13.6 63CDX -3.1 BG
			70	S5B4BM+13.6 70CDX -3.1 BG
Rohloff SpeedHUB 500/14 (135/142mm OLD) 3X3 NINE (135/142mm OLD) 3X3 NINE (148mm OLD) Revolute HUB1 (135/142/148mm OLD) Classified Powershift Hub (142mm OLD)	RS	54.7mm	39	S4B4BM+15.2 39CDX -0 BG
			42	S4B4BM+15.2 42CDX -0 BG
	HB		46	S4B4BM+15.2 46CDX -0 BG
			48	S5B4BM+15.2 48CDX -0 BG
	HA		50	S5B4BM+15.2 50CDX -0 BG
			55	S5B4BM+15.2 55CDX -0 BG
	S9		60	S5B4BM+15.2 60CDX -0 BG
			63	S5B4BM+15.2 63CDX -0 BG

^d Requires use of Shimano MU-UR510 or MU-UR520 Motor Unit

S5 in the part number indicates 5-bolt spiders, S4 indicates 4-bolt.

"BG" at the end of Part Number specifies inclusion of an ISO compliant Black Guard. Alternatively "NG" would specify No Guard.

**BOSCH****ACTIVE LINE, ACTIVE LINE PLUS,
PERFORMANCE LINE****BDU33YY "GEN3" DRIVE SELECTION STEPS**

Identify rear hub choice.



Verify if BES3 cover is to be used. BES3 cover will require the node to be offset in the frame.*



Determine if node offset is required.



Identify correct spider assembly part number based on desired front sprocket tooth count and target beltline.



Identify rear sprocket type needed, and choose appropriate rear sprocket part number.

When using the Gates Carbon Drive system with Bosch GEN3 mid-drive motors, use the below chart to determine if the mounting node will be centered in the frame, or if an offset is required.

BOSCH BDU33YY "GEN3" ASSEMBLY SELECTION CHART

COMPATIBLE HUBS	REAR SPROCKET TYPE	NOMINAL BELTLINE	FRONT SPROCKET TEETH	CENTERED NODE ASSEMBLY PART NUMBER	6 MM OFFSET NODE ASSEMBLY PART NUMBER
				Mounting Plane: 44.85mm	Mounting Plane: 38.85mm
Shimano Inter-5E (Mechanical & Di2 ^d) Shimano Nexus 7/8 Disc, Alfine 8/11 (Mechanical & Di2 ^d) enviolo (135mm OLD)	YU	45.5mm	46	S5B3BM+5.4 46CDX -3.85 BG	S5B3BM+10.1 46CDX -3.1 BG
			S5B3BM+5.4 46CDC -3.85 BG		
	XU^c		50	S5B3BM+5.4 50CDX -3.85 BG	S5B3BM+10.1 50CDX -3.1 BG
			S5B3BM+5.4 50CDC -3.85 BG		
	E9^c/EV^c		55	S5B3BM+5.4 55CDX -3.85 BG	S5B3BM+10.1 55CDX -3.1 BG
			S5B3BM+5.4 55CDC -3.85 BG		
			60	S5B3BM+5.4 60CDX -3.85 BG	S5B3BM+10.1 60CDX -3.1 BG
			63	S5B3BM+5.4 63CDX -3.85 BG	NA
enviolo (148mm OLD) MY24+ Rohloff SpeedHUB 500/14 (148mm OLD) "SL" Carrier	E9^c	50.0mm	46	S5B3BM+8.3 46CDC -3.1 BG	NA
			50	S5B3BM+8.3 50CDC -3.1 BG	
	RS		52	S5B3BM+8.3 52CDC -3.1 BG	
			55	S5B3BM+8.3 55CDC -3.1 BG	
Rohloff SpeedHUB 500/14 (135/142mm OLD) 3X3 NINE (135/142mm OLD) 3X3 NINE (148mm OLD) Revolute HUB1 (135/142/148mm OLD) Classified Powershift Hub (142mm OLD)	RS	54.7mm	46	S5B3BM+13.3 46CDX -3.1 BG	NA
	HB		48	S5B3BM+13.3 48CDX -3.1 BG	
	HA		50	S5B3BM+13.3 50CDX -3.1 BG	
	S9		55	S5B3BM+13.3 55CDX -3.1 BG	
			60	S5B3BM+13.3 60CDX -3.1 BG	

^d Requires use of Shimano MU-UR510 or MU-UR520 Motor Unit

* All BES3 Bosch drive systems have interference with Gates Carbon Drive belt systems starting in MY23. Gates recommends customers specify the previous generation BES2 Performance Line design covers, or custom covers if a centered node is desired. Review the Bosch Design Cover Requirements for MY23 Tech Bulletin.

^c CDC sprockets are approved only for mid-drive motors producing 75 Nm or less of torque.

All are 5-bolt spiders as indicated by S5 in the part number.

"BG" at the end of Part Number specifies inclusion of an ISO compliant Black Guard. Alternatively "NG" would specify No Guard.



**BOSCH****PERFORMANCE LINE SX,
PERFORMANCE LINE SPRINT**

OWNER'S MANUAL

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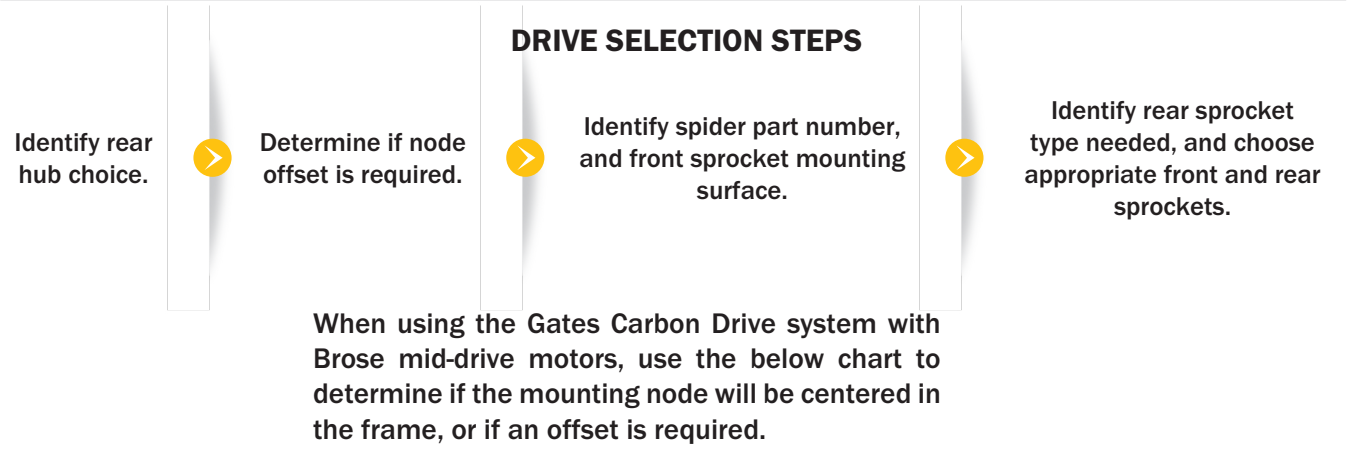
BDU31YY DRIVE SELECTION STEPSIdentify rear
hub choice.Determine correct spider assembly part
number based on desired front sprocket
tooth count and target beltline.Identify rear sprocket type
needed, and choose appropriate
rear sprocket part number.

BDU31YY has two possible mounting variations, and two different widths. For all of the four possible combinations, it is critical for OEMs to review frame bracket designs for clearance required for belt drive applications. Gates Carbon Drive offers spider assembly “CAD envelopes” to assist in designing frame brackets.

BOSCH BDU31YY SPIDER ASSEMBLY CHART

COMPATIBLE HUBS	REAR SPROCKET TYPE	NOMINAL BELTLINE	FRONT SPROCKET TEETH	CENTERED NODE ASSEMBLY PART NUMBER	6 MM OFFSET NODE ASSEMBLY PART NUMBER
				Mounting Plane: 39.5mm	Mounting Plane: 33.5mm
Shimano Inter-5E (Mechanical & Di2 ^d)	YU	45.5mm	39	NA	S4B4BM+15.2 39CDX -3.1 BG
			42		S4B4BM+15.2 42CDX -3.1 BG
			46		S5B4BM+15.2 46CDC -3.1 BG
			50		S5B4BM+15.2 50CDC -3.1 BG
			52		S5B4BM+15.2 52CDC -3.1 BG
Shimano Nexus 7/8 Disc, Alfine 8/11 (Mechanical & Di2 ^d)	XU ^c	45.5mm	55	S5B4BM+9.0 55CDC -3.1 BG	S5B4BM+15.2 55CDC -3.1 BG
			60	S5B4BM+9.0 60CDC -3.1 BG	S5B4BM+15.2 60CDC -3.1 BG
			60	S5B4BM+9.0 60CDC -3.1 BG	S5B4BM+15.2 60CDC -3.1 BG
enviolo (135mm OLD)	E9 ^c /EV ^c				
enviolo (148mm OLD) MY24+	E9	50.0mm	46	S5B4BM+13.6 46CDC -3.1 BG	NA
			50	S5B4BM+13.6 50CDC -3.1 BG	
			52	S5B4BM+13.6 52CDC -3.1 BG	
			55	S5B4BM+13.6 55CDC -3.1 BG	
			60	S5B4BM+13.6 60CDC -3.1 BG	
Rohloff SpeedHUB 500/14 (148mm OLD) "SL" Carrier	RS				
Rohloff SpeedHUB 500/14 (Boost 148mm)	RS	51.7mm	46	S5B4BM+15.2 46CDC -3.1 BG	NA
			50	S5B4BM+15.2 50CDC -3.1 BG	
			52	S5B4BM+15.2 52CDC -3.1 BG	
			55	S5B4BM+15.2 55CDC -3.1 BG	
			60	S5B4BM+15.2 60CDC -3.1 BG	
Rohloff SpeedHUB 500/14 (135/142mm OLD)	RS	54.7mm	46	S5B4BM+15.2 46CDC -0 BG	NA
			50	S5B4BM+15.2 50CDC -0 BG	
			52	S5B4BM+15.2 52CDC -0 BG	
			55	S5B4BM+15.2 55CDC -0 BG	
			60	S5B4BM+15.2 60CDC -0 BG	
			63	S5B4BM+15.2 63CDC -0 BG	
3X3 NINE (135/142mm OLD)	HB				
3X3 NINE (148mm OLD)	HA				
Revolute HUB1 (135/142/148mm OLD)	S9				
Classified Powershift Hub (142mm OLD)					

^d Requires use of Shimano MU-UR510 or MU-UR520 Motor Unit^c CDC sprockets are approved only for mid-drive motors producing 75 Nm or less of torque.



BROSE DRIVE C, T, S CONFIGURATION CHART					
COMPATIBLE HUBS	REAR SPROCKET TYPE	NOMINAL BELTLINE	MOTOR NODE OFFSET TOWARD NON-DRIVE SIDE	SPIDER*	FRONT SPROCKET MOUNTING SURFACE†
Shimano Inter-5E (Mechanical & Di2 ^d)	YU	45.5mm	3.5mm	W0063	A
Shimano Nexus 7/8 Disc, Alfine 8/11 (Mechanical & Di2 ^d)	XU				
enviolo (135mm OLD)	E9/EV				
enviolo (148mm OLD) MY22	EV RS	48.7mm	None	W0063	A
enviolo (148mm OLD) MY24+		50mm			
Rohloff SpeedHUB 500/14 (148mm OLD) "SL" Carrier					

^d Requires use of Shimano MU-UR510 or MU-UR520 Motor Unit
* Requires use of FSA Spider listed. Sprocket mounts to inboard tab of spider.
† See Sprocket Orientation in the Components Module.

BROSE DRIVE C, T, S COMPATIBLE FRONT SPROCKETS							
FRONT SPROCKET TYPE		DESCRIPTION	TOOTH COUNT				
			39	42	46	50	55
CDX	4AA	4-Bolt 104 mm BCD	XF1139B4AA	XF1142B4AA	XF1146B4AA	XF1150B4AA	XF1155B4AA
CDC	4AT	4-Bolt 104 mm BCD			CF11464AT ^c	CF11504AT ^c	CF11554AT ^c

^c CDC sprockets are approved only for mid-drive motors producing 75 Nm or less of torque.



AVINOX M1

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DRIVE SELECTION STEPS

Identify rear hub choice.



Use the Avinox spider, and identify front sprocket mounting surface, and spider mounting surface.



Identify rear sprocket type needed, and choose appropriate front and rear sprockets.

AVINOX M1 CONFIGURATION CHART

COMPATIBLE HUBS	REAR SPROCKET TYPE	NOMINAL BELTLINE	SPIDER*	FRONT SPROCKET MOUNTING SURFACE†
Rohloff SpeedHUB 500/14 (135/142mm OLD)	RS	54.7mm	Chainring Spider (w/ screw) - M1	A
3X3 NINE (135/142mm OLD)	HB			
3X3 NINE (148mm OLD)	HA			
Revolute HUB1 (135/142/148mm OLD)	S9			
Classified Powershift Hub (142mm OLD)				

* Requires use of Avinox Spider listed. Sprocket mounts to inboard tab of spider.

† See Sprocket Orientation in the Components Module.

AVINOX M1 COMPATIBLE FRONT SPROCKETS

FRONT SPROCKET TYPE		DESCRIPTION	TOOTH COUNT				
			39	42	46	50	55
CDX	4AA	4-Bolt 104mm BCD				XF1150B4AA	XF1155B4AA

DRIVE SELECTION STEPS

Identify rear hub choice.



Determine correct spider assembly part number based on desired front sprocket tooth count and target beltline.



Identify rear sprocket type needed, and choose appropriate rear sprocket part number.

FAZUA RIDE 60 SPIDER ASSEMBLY CHART

COMPATIBLE HUBS	REAR SPROCKET TYPE	NOMINAL BELTLINE	FRONT SPROCKET TEETH	CENTERED NODE ASSEMBLY PART NUMBER
				Mounting Plane: 37.3mm
enviolo (148mm OLD) MY24+ Rohloff SpeedHUB 500/14 (148mm OLD) "SL" Carrier	E9	50mm	46	S5F2BM+17.3 46CDC -3.85 NG
			50	S5F2BM+17.3 50CDC -3.85 NG
	RS		55	S5F2BM+17.3 55CDC -3.85 NG
			57	S5F2BM+17.3 57CDC -3.85 NG
			60	S5F2BM+17.3 60CDC -3.85 NG
Rohloff SpeedHUB 500/14 (148mm OLD) 3X3 NINE (148mm OLD)	RS	51.7mm	46	S5F2BM+17.3 46CDC -3.1 BG
			50	S5F2BM+17.3 50CDX -3.1 BG
	S5F2BM+17.3 50CDC -3.1 BG			
	52		S5F2BM+17.3 52CDC -3.1 BG	
	HB		55	S5F2BM+17.3 55CDX -3.1 BG
				S5F2BM+17.3 55CDC -3.1 BG
			60	S5F2BM+17.3 60CDX -3.1 BG
				S5F2BM+17.3 60CDC -3.1 BG
Rohloff SpeedHUB 500/14 (135/142mm OLD) 3X3 NINE (135/142mm OLD) 3X3 NINE (148mm OLD) Revolute HUB1 (135/142/148mm OLD) Classified Powershift Hub (142mm OLD)	RS	54.7mm	46	S5F2BM+17.3 46CDC -0 BG
	HB		50	S5F2BM+17.3 50CDC -0 BG
	HA		52	S5F2BM+17.3 52CDC -0 BG
	S9		55	S5F2BM+17.3 55CDC -0 BG
			60	S5F2BM+17.3 60CDC -0 BG

GOBAO P100 / P100 PRO

DRIVE SELECTION STEPS

Identify rear hub choice.



Determine correct spider assembly part number based on desired front sprocket tooth count and target beltline.



Identify rear sprocket type needed, and choose appropriate rear sprocket part number.

GOBAO P100/P100 PRO ASSEMBLY SELECTION CHART

COMPATIBLE HUBS	REAR SPROCKET TYPE	NOMINAL BELTLINE	FRONT SPROCKET TEETH	CENTERED NODE ASSEMBLY PART NUMBER
				Mounting Plane: 34.1mm
Shimano Inter-5E (Mechanical & Di2 ^d) Shimano Nexus 7/8 Disc, Alfine 8/11 (Mechanical & Di2 ^d) enviolo (135mm OLD)	YU XU^c E9^c/EV^c	45.5mm	39	S4S6BM+15.6 39CDX -3.1 BG
			42	S4S6BM+15.6 42CDX -3.1 BG
			46	S4S6BM+15.6 46CDX -3.1 BG
			50	S4S6BM+15.6 50CDX -3.1 BG
enviolo (148mm OLD) MY22	EV^c	48.7mm	55	S4S6BM+15.6 55CDX -3.1 BG
			46	S4S6BM+14.6 46CDX -0 BG
			50	S4S6BM+14.6 50CDX -0 BG
enviolo (148mm OLD) MY24+ Rohloff SpeedHUB 500/14 (148mm OLD) "SL" Carrier	E9 RS	50.0mm	55	S4S6BM+14.6 55CDX -0 BG
			46	S4S6BM+15.6 46CDX -0 BG
			50	S4S6BM+15.6 50CDX -0 BG
			55	S4S6BM+15.6 55CDX -0 BG

^d Requires use of Shimano MU-UR510 or MU-UR520 Motor Unit

DRIVE SELECTION STEPS

Identify rear hub choice.



Determine correct spider based on front sprocket tooth count, bolt pattern, and if a guard is needed.



Identify rear sprocket type needed, and choose appropriate rear sprocket.

MAHLE M40 CONFIGURATION CHART

COMPATIBLE HUBS	REAR SPROCKET TYPE	NOMINAL BELTLINE	SPIDER*	BOLT PATTERN	GUARD	FRONT SPROCKET MOUNTING SURFACE	SPIDER MOUNTING SURFACE
Rohloff SpeedHUB 500/14 (135/142mm OLD)	RS	54.7mm	ep01a-mhm40-gx-dg-b545-250520	4-Bolt	GUARD**	A	INBOARD TAB
3X3 NINE (135/142mm OLD)	HB		ep01a-mhm40-gx-d0-b545-250520		NO GUARD		
3X3 NINE (148mm OLD)	HA		ep05a-mhm40-gx-dg-b545-250520	5-Bolt	GUARD**		
Revolute HUB1 (135/142/148mm OLD)	S9				NO GUARD		
Classified Powershift Hub (142mm OLD)							

* Requires use of Samox spider

**Requires the use of a 1.2mm offset guard

MAHLE M40 COMPATIBLE FRONT SPROCKETS

FRONT SPROCKET TYPE	DESCRIPTION	TOOTH COUNT							
		39	42	46	48	50	55	60	63
CDX	4AA 4-Bolt 104mm BCD	XF1139B4AA	XF1142B4AA	XF1146B4AA		XF1150B4AA	XF1155B4AA		
CDX	5AA 5-Bolt 130mm BCD				XF1148B5AA	XF1150B5AA	XF1155B5AA	XF1160B5AA	XF1163B5AA

MIVICE X365

OWNER'S MANUAL

HISTORY

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DRIVE SELECTION STEPS

Identify rear hub choice.



Identify spider part number, front sprocket mounting surface, and spider mounting surface.



Identify rear sprocket type needed, and choose appropriate front and rear sprockets.

MIVICE X365 CONFIGURATION CHART

COMPATIBLE HUBS	REAR SPROCKET TYPE	NOMINAL BELTLINE	SPIDER*	FRONT SPROCKET MOUNTING SURFACE†
Shimano Inter-5E (Mechanical & Di2 ^d)	YU			
Shimano Nexus 7/8 Disc, Alfine 8/11 (Mechanical & Di2 ^d)	XU	45.5mm	11010211	A
enviolo (135mm OLD)	E9			

* Requires use of MIVICE Spider listed. Sprocket mounts to inboard tab of spider.

† See Sprocket Orientation in the Components Module.

MIVICE X365 COMPATIBLE FRONT SPROCKETS

FRONT SPROCKET TYPE		DESCRIPTION	TOOTH COUNT				
			39	42	46	50	55
CDX	4AA	4-Bolt 104mm BCD	XF1139B4AA	XF1142B4AA	XF1146B4AA	XF1150B4AA	XF1155B4AA
CDC	4AT	4-Bolt 104mm BCD			CF11464AT ^c	CF11504AT ^c	CF11554AT ^c

^c CDC sprockets are approved only for mid-drive motors producing 75Nm or less of torque.

DRIVE SELECTION STEPS

Identify rear hub choice.



Determine correct spacer stack and sprocket orientation based on desired front sprocket target beltline



Identify rear sprocket type needed, and choose appropriate rear sprocket part number.

The Motinova Volans motor has an internal 2.4:1 speed up ratio between the spindle and the output shaft, requiring a much smaller final drive ratio. This must be included in final drive calculations.

MOTINOVA VOLANS ASSEMBLY SELECTION CHART

COMPATIBLE HUBS	REAR SPROCKET TYPE	NOMINAL BELTLINE	FRONT SPROCKET	INBOARD SPACER STACK* (MM)	OUTBOARD SPACER STACK* (MM)	SPROCKET ORIENTATION
			Mounting Plane: 44mm			
enviolo (148mm OLD)	E9	50mm	BF1124MAHB	NA	4.5	BIASED OUTBOARD
Rohloff SpeedHUB 500/14 (148mm OLD) "SL" Carrier	RS					
Rohloff SpeedHUB 500/14 (148mm OLD)	RS	51.7mm		1.5	3	
Rohloff SpeedHUB 500/14 (135/142mm OLD)	RS	54.7mm		4.5	NA	
3X3 NINE (135/142mm OLD)	HB					
3X3 NINE (148mm OLD)	HA					
Revolute HUB1 (135/142/148mm OLD)	S9					
Classified Powershift Hub (142mm OLD)						

* Requires use of 1.5mm Motinova spacers.



DRIVE SELECTION STEPS

Identify rear hub choice.



Identify spider part number, front sprocket mounting surface, and spider mounting surface.



Identify rear sprocket type needed, and choose appropriate front and rear sprockets.

OKAWA A70 ASSEMBLY SELECTION CHART

COMPATIBLE HUBS	REAR SPROCKET TYPE	NOMINAL BELTLINE	SPIDER*	FRONT SPROCKET MOUNTING SURFACE†	SPIDER MOUNTING SURFACE
Shimano Inter-5E (Mechanical & Di2 ^d)	YU				
Shimano Nexus 7/8 Disc, Alfine 8/11 (Mechanical & Di2 ^d)	XU	45.5mm	EP01A-OKA70-DG-C45	B	Inboard Tab
enviolo (135/142mm OLD)	E9				
enviolo (148mm OLD)	E9				
Rohloff SpeedHUB 500/14 (148mm OLD) "SL" Carrier	RS	50mm	EP01A-OKA70-DG-C45	A	Outboard Tab
Rohloff SpeedHUB 500/14 (148mm OLD)	RS	51.7mm	EP01A-OKA70-DG-C53	A	Inboard Tab
Rohloff SpeedHUB 500/14 (135/142mm OLD)	RS				
3X3 NINE (135/142mm OLD)	HB				
3X3 NINE (148mm OLD)	HA	54.7mm	EP01A-OKA70-DG-C53	B	Inboard Tab
Revolute HUB1 (135/142/148mm OLD)	S9				
Classified Powershift Hub (142mm OLD)					

^d Requires use of Shimano MU-UR510 or MU-UR520 Motor Unit

* Requires use of SAMOX 4-Bolt spiders listed.

† See Sprocket Orientation in the Components Module.

OKAWA A70 COMPATIBLE FRONT SPROCKETS

FRONT SPROCKET TYPE		DESCRIPTION	TOOTH COUNT				
			39	42	46	50	55
CDX	4AA	4-Bolt 104mm BCD	XF1139B4AA	XF1142B4AA	XF1146B4AA	XF1150B4AA	XF1155B4AA

DRIVE SELECTION STEPS

Identify rear hub choice.



Determine correct spider assembly part number based on desired front sprocket tooth count and target beltline.



Identify rear sprocket type needed, and choose appropriate rear sprocket part number.

OLI ASSEMBLY SELECTION CHART

COMPATIBLE HUBS	REAR SPROCKET TYPE	NOMINAL BELTLINE	FRONT SPROCKET TEETH	CENTERED NODE ASSEMBLY PART NUMBER
				Mounting Plane: 39.5mm
Shimano Inter-5E (Mechanical & Di2 ^d) Shimano Nexus 7/8 Disc, Alfine 8/11 (Mechanical & Di2 ^d) enviolo (135mm OLD)	YU	45.5mm	39	S4B4BM+9.0 39CDX -3.1 BG
			42	S4B4BM+9.0 42CDX -3.1 BG
			46	S4B4BM+9.0 46CDX -3.1 BG
	XU		48	S5B4BM+9.0 48CDX -3.1 BG
			50	S5B4BM+9.0 50CDX -3.1 BG
			55	S5B4BM+9.0 55CDX -3.1 BG
	E9/EV		60	S5B4BM+9.0 60CDX -3.1 BG
			63	S5B4BM+9.0 63CDX -3.1 BG
enviolo (148mm OLD) MY22	EV	48.7mm	46	S4B4BM+9.0 46CDX -0 BG
			48	S5B4BM+9.0 48CDX -0 BG
			50	S5B4BM+9.0 50CDX -0 BG
			55	S5B4BM+9.0 55CDX -0 BG
			60	S5B4BM+9.0 60CDX -0 BG
			63	S5B4BM+9.0 63CDX -0 BG
enviolo (148mm OLD) MY24+ Rohloff SpeedHUB 500/14 (148mm OLD) "SL" Carrier	E9	50.0mm	46	S5B4BM+13.6 46CDX -3.1 BG
			48	S5B4BM+13.6 48CDX -3.1 BG
			50	S5B4BM+13.6 50CDX -3.1 BG
	RS		55	S5B4BM+13.6 55CDX -3.1 BG
			60	S5B4BM+13.6 60CDX -3.1 BG
			63	S5B4BM+13.6 63CDX -3.1 BG
			70	S5B4BM+13.6 70CDX -3.1 BG
Rohloff SpeedHUB 500/14 (148mm OLD) 3X3 NINE (148mm OLD)	RS HB	51.7mm	39	S4B4BM+15.2 39CDX -3.1 BG
			42	S4B4BM+15.2 42CDX -3.1 BG
			46	S4B4BM+15.2 46CDX -3.1 BG
			50	S5B4BM+15.2 50CDX -3.1 BG
			55	S5B4BM+15.2 55CDX -3.1 BG
			60	S5B4BM+15.2 60CDX -3.1 BG
			63	S5B4BM+15.2 63CDX -3.1 BG
Rohloff SpeedHUB 500/14 (135/142mm OLD) 3X3 NINE (135/142mm OLD) 3X3 NINE (148mm OLD) Revolute HUB1 (135/142/148mm OLD) Classified Powershift Hub (142mm OLD)	RS HB HA S9	54.7mm	46	S4B4BM+15.2 46CDX -0 BG
			48	S5B4BM+15.2 48CDX -0 BG
			50	S5B4BM+15.2 50CDX -0 BG
			55	S5B4BM+15.2 55CDX -0 BG
			60	S5B4BM+15.260CDX -0 BG
			63	S5B4BM+15.2 63CDX -0 BG

^d Requires use of Shimano MU-UR510 or MU-UR520 Motor Unit

"BG" at the end of Part Number specifies inclusion of an ISO compliant Black Guard. Alternatively "NG" would specify No Guard.

S5 in the part number indicates 5-bolt spiders, S4 indicates 4-bolt

DRIVE SELECTION STEPS

Identify rear hub choice.



Determine correct spider assembly part number based on desired front sprocket tooth count and target beltline.



Identify rear sprocket type needed, and choose appropriate rear sprocket part number.

OLI ASSEMBLY SELECTION CHART

COMPATIBLE HUBS	REAR SPROCKET TYPE	NOMINAL BELTLINE	FRONT SPROCKET TEETH	CENTERED NODE ASSEMBLY PART NUMBER
				Mounting Plane: 39.5mm
Shimano Inter-5E (Mechanical & Di2 ^d) Shimano Nexus 7/8 Disc, Alfine 8/11 (Mechanical & Di2 ^d) enviolo (135mm OLD)	YU XU E9/EV	45.5mm	52	S5B4BM+9.0 52CDC -3.1 BG
			55	S5B4BM+9.0 55CDC -3.1 BG
			60	S5B4BM+9.0 60CDC -3.1 BG
enviolo (148mm OLD) MY24+ Rohloff SpeedHUB 500/14 (148mm OLD) "SL" Carrier	E9	50.0mm	46	S5B4BM+13.6 46CDC -3.1 BG
			50	S5B4BM+13.6 50CDC -3.1 BG
	RS		52	S5B4BM+13.6 52CDC -3.1 BG
			55	S5B4BM+13.6 55CDC -3.1 BG
			60	S5B4BM+13.6 60CDC -3.1 BG
Rohloff SpeedHUB 500/14 (148mm OLD) 3X3 NINE (148mm OLD)	RS	51.7mm	46	S5B4BM+15.2 46CDC -3.1 BG
			50	S5B4BM+15.2 50CDC -3.1 BG
	HB		52	S5B4BM+15.2 52CDC -3.1 BG
			55	S5B4BM+15.2 55CDC -3.1 BG
			60	S5B4BM+15.2 50CDC -3.1 BG
Rohloff SpeedHUB 500/14 (135/142mm OLD) 3X3 NINE (135/142mm OLD) 3X3 NINE (148mm OLD) Revolute HUB1 (135/142/148mm OLD) Classified Powershift Hub (142mm OLD)	RS	54.7mm	46	S5B4BM+15.2 46CDC -0 BG
	HB		50	S5B4BM+15.2 50CDC -0 BG
			52	S5B4BM+15.2 52CDC -0 BG
	HA		55	S5B4BM+15.2 55CDC -0 BG
	S9		60	S5B4BM+15.2 60CDC -0 BG

^d Requires use of Shimano MU-UR510 or MU-UR520 Motor Unit

"BG" at the end of Part Number specifies inclusion of an ISO compliant Black Guard. Alternatively "NG" would specify No Guard.

S5 in the part number indicates 5-bolt spiders, S4 indicates 4-bolt

DRIVE SELECTION STEPS

Identify rear
hub choice.



Determine spider part
number, and front sprocket
mounting surface.



Identify rear sprocket type
needed, and choose appropriate
front and rear sprockets.

PANASONIC GX ULTIMATE CONFIGURATION CHART

COMPATIBLE HUBS	REAR SPROCKET TYPE	NOMINAL BELTLINE	SPIDER*	FRONT SPROCKET MOUNTING SURFACE†
Shimano Inter-5E (Mechanical & Di2 ^d)	YU	45.5mm	BEP-NUM540B1	B
Shimano Nexus 7/8 Disc, Alfine 8/11 (Mechanical & Di2 ^d)	XU ^c			
enviolo (135mm OLD)	E9 ^c /EV ^c			

^d Requires use of Shimano MU-UR510 or MU-UR520 Motor Unit

^c CDC sprockets are approved only for mid-drive motors producing 75Nm or less of torque.

* Requires use of Panasonic Spider listed. Sprocket mounts to inboard tab of spider.

† See Sprocket Orientation in the Components Module.

PANASONIC GX ULTIMATE COMPATIBLE FRONT SPROCKETS

FRONT SPROCKET TYPE		DESCRIPTION	TOOTH COUNT				
			39	42	46	50	55
CDX	4AA	4-Bolt 104mm BCD	XF1139B4AA	XF1142B4AA	XF1146B4AA	XF1150B4AA	XF1155B4AA
CDC	4AT	4-Bolt 104mm BCD			CF11464AT ^c	CF11504AT ^c	CF11554AT ^c

^c CDC sprockets are approved only for mid-drive motors producing 75Nm or less of torque.

PENDIX DRIVE SELECTION STEPS

Identify rear hub choice.



Determine correct spider assembly part number based on desired front sprocket tooth count and target beltline.



Identify rear sprocket type needed, and choose appropriate rear sprocket part number.

PENDIX GDRIVE SPIDER ASSEMBLY CHART

COMPATIBLE HUBS	REAR SPROCKET TYPE	NOMINAL BELTLINE	FRONT SPROCKET TEETH	CENTERED NODE ASSEMBLY PART NUMBER
				Mounting Plane: 40.3mm
Shimano Inter-5E (Mechanical & Di2 ^d) Shimano Nexus 7/8 Disc, Alfine 8/11 (Mechanical & Di2 ^d) enviolo (135mm OLD)	YU	45.5mm	39	S4B4BM+9.0 39CDX -3.1 BG
			42	S4B4BM+9.0 42CDX -3.1 BG
			46	S4B4BM+9.0 46CDX -3.1 BG
	XU		48	S5B4BM+9.0 48CDX -3.1 BG
			50	S5B4BM+9.0 50CDX -3.1 BG
			55	S5B4BM+9.0 55CDX -3.1 BG
	E9/EV		60	S5B4BM+9.0 60CDX -3.1 BG
			63	S5B4BM+9.0 63CDX -3.1 BG
enviolo (148mm OLD) MY22	EV	48.7mm	46	S4B4BM+9.0 46CDX -0 BG
			48	S5B4BM+9.0 48CDX -0 BG
			50	S5B4BM+9.0 50CDX -0 BG
			55	S5B4BM+9.0 55CDX -0 BG
			60	S5B4BM+9.0 60CDX -0 BG
			63	S5B4BM+9.0 63CDX -0 BG
enviolo (148mm OLD) MY24+ Rohloff SpeedHUB 500/14 (148mm OLD) "SL" Carrier	E9	50.0mm	46	S5B4BM+13.6 46CDX -3.1 BG
			48	S5B4BM+13.6 48CDX -3.1 BG
			50	S5B4BM+13.6 50CDX -3.1 BG
	RS		55	S5B4BM+13.6 55CDX -3.1 BG
			60	S5B4BM+13.6 60CDX -3.1 BG
			63	S5B4BM+13.6 63CDX -3.1 BG
			70	S5B4BM+13.6 70CDX -3.1 BG
Rohloff SpeedHUB 500/14 (135/142mm OLD) 3X3 NINE (135/142mm OLD) 3X3 NINE (148mm OLD) Revolute HUB1 (135/142/148mm OLD) Classified Powershift Hub (142mm OLD)	RS	54.7mm	39	S4B4BM+15.2 39CDX -0 BG
			42	S4B4BM+15.2 42CDX -0 BG
	HB		46	S4B4BM+15.2 46CDX -0 BG
			48	S5B4BM+15.2 48CDX -0 BG
	HA		50	S5B4BM+15.2 50CDX -0 BG
			55	S5B4BM+15.2 55CDX -0 BG
	S9		60	S5B4BM+15.2 60CDX -0 BG
			63	S5B4BM+15.2 63CDX -0 BG

^d Requires use of Shimano MU-UR510 or MU-UR520 Motor Unit

S5 in the part number indicates 5-bolt spiders, S4 indicates 4-bolt.

"BG" at the end of Part Number specifies inclusion of an ISO compliant Black Guard. Alternatively "NG" would specify No Guard.

DRIVE SELECTION STEPS

Identify rear hub choice.



Determine correct spider assembly part number based on desired front sprocket tooth count and target beltline.



Identify rear sprocket type needed, and choose appropriate rear sprocket part number.

SHIMANO EP801 / EP600 / EP500 ASSEMBLY SELECTION CHART				
COMPATIBLE HUBS	REAR SPROCKET TYPE	NOMINAL BELTLINE	FRONT SPROCKET TEETH	CENTERED NODE ASSEMBLY PART NUMBER
				Mounting Plane: 34.1mm
Shimano Inter-5E (Mechanical & Di2 ^d)	YU	45.5mm	39	S4S6BM+15.6 39CDX -3.1 BG
			42	S4S6BM+15.6 42CDX -3.1 BG
Shimano Nexus 7/8 Disc, Alfine 8/11 (Mechanical & Di2 ^d)	XU ^c		46	S4S6BM+15.6 46CDX -3.1 BG
				S4S6BM+15.6 46CDC -3.1 BG
enviolo (135mm OLD)	E9 ^c /EV ^c		50	S4S6BM+15.6 50CDX -3.1 BG
				S4S6BM+15.6 50CDC -3.1 BG
			55	S4S6BM+15.6 55CDX -3.1 BG
				S4S6BM+15.6 55CDC -3.1 BG
enviolo (148mm OLD) MY22	EV ^c	48.7mm	46	S4S6BM+14.6 46CDX -0 BG
			50	S4S6BM+14.6 50CDX -0 BG
			55	S4S6BM+14.6 55CDX -0 BG
enviolo (148mm OLD) MY24+ Rohloff SpeedHUB 500/14 (148mm OLD) "SL" Carrier	E9	50.0mm	46	S4S6BM+15.6 46CDX -0 BG
				S4S6BM+15.6 46CDC -0 BG
	RS		50	S4S6BM+15.6 50CDX -0 BG
				S4S6BM+15.6 50CDC -0 BG
			55	S4S6BM+15.6 55CDX -0 BG
				S4S6BM+15.6 55CDC -0 BG

^d Requires use of Shimano MU-UR510 or MU-UR520 Motor Unit
^c CDC sprockets are approved only for mid-drive motors producing 75Nm or less of torque.



DRIVE SELECTION STEPS

Identify rear hub choice.



Determine correct spider assembly part number based on desired front sprocket tooth count and target beltline.



Identify rear sprocket type needed, and choose appropriate rear sprocket part number.

STEPS E6100 ASSEMBLY SELECTION CHART

COMPATIBLE HUBS	REAR SPROCKET TYPE	NOMINAL BELTLINE	FRONT SPROCKET TEETH	CENTERED NODE ASSEMBLY PART NUMBER
				Mounting Plane: 33.6mm
Shimano Inter-5E (Mechanical & Di2 ^d) Shimano Nexus 7/8 Disc, Alfine 8/11 (Mechanical & Di2 ^d) enviolo (135mm OLD)	YU	45.5mm	39	S4S6BM+14.6 39CDX -3.1 BG
			42	S4S6BM+14.6 42CDX -3.1 BG
	XU^c		46	S4S6BM+14.6 46CDX -3.1 BG
				S4S6BM+14.6 46CDC -3.1 BG
			50	S4S6BM+14.6 50CDX -3.1 BG
				S4S6BM+14.6 50CDC -3.1 BG
	E9^c/EV^c		55	S4S6BM+14.6 55CDX -3.1 BG
				S4S6BM+14.6 55CDC -3.1 BG
enviolo (148mm OLD) MY22	EV^c	48.7mm	46	S4S6BM+14.6 46CDX -0 BG
			50	S4S6BM+14.6 50CDX -0 BG
			55	S4S6BM+14.6 55CDX -0 BG

^d Requires use of Shimano MU-UR510 or MU-UR520 Motor Unit

^c CDC sprockets are approved only for mid-drive motors producing 75Nm or less of torque.

* Compatibility with "T" Touring Cover only. Interference may occur with "C" City Cover. Custom covers may eliminate this interference.

"BG" at end of Part Number specifies inclusion of an ISO compliant Black Guard. Alternatively "NG" would specify No Guard.

All are 4-bolt spiders as indicated by S4 in the part number.

DRIVE SELECTION STEPS

Identify rear hub choice.



Determine correct spider assembly part number based on desired front sprocket tooth count and target beltline.



Identify rear sprocket type needed, and choose appropriate rear sprocket part number.

STEPS E5100 / E5000 ASSEMBLY SELECTION CHART

COMPATIBLE HUBS	REAR SPROCKET TYPE	NOMINAL BELTLINE	FRONT SPROCKET TEETH	CENTERED NODE ASSEMBLY PART NUMBER
				Mounting Plane: 39.65mm
Shimano Inter-5E (Mechanical & Di2 ^d) Shimano Nexus 7/8 Disc, Alfine 8/11 (Mechanical & Di2 ^d) enviolo (135mm OLD)	YU	45.5mm	39	S4S5BM+9.0 39CDX -3.1 BG
			42	S4S5BM+9.0 42CDX -3.1 BG
	XU^c		46	S4S5BM+9.0 46CDX -3.1 BG
				S4S5BM+9.0 46CDC -3.1 BG
	E9^c/EV^c		50	S4S5BM+9.0 50CDX -3.1 BG
				S4S5BM+9.0 50CDC -3.1 BG
			55	S4S5BM+9.0 55CDX -3.1 BG
				S4S5BM+9.0 55CDC -3.1 BG
enviolo (148mm OLD) MY22	EV^c	48.7mm	46	S4S5BM+9.0 46CDX -0 BG
			50	S4S5BM+9.0 50CDX -0 BG
			55	S4S5BM+9.0 55CDX -0 BG

^d Requires use of Shimano MU-UR510 or MU-UR520 Motor Unit
^c CDC sprockets are approved only for mid-drive motors producing 75Nm or less of torque.
* Compatibility with "T" Touring Cover only. Interference may occur with "C" City Cover. Custom covers may eliminate this interference.

"BG" at end of Part Number specifies inclusion of an ISO compliant Black Guard. Alternatively "NG" would specify No Guard.
All are 4-bolt spiders as indicated by S4 in the part number.





TQ-HPR50/HPR60

DRIVE SELECTION STEPS

Identify rear hub choice.



Determine spider part number, and front sprocket mounting surface.



Identify rear sprocket type needed, and choose appropriate front and rear sprockets.

TQ ASSEMBLY SELECTION CHART

COMPATIBLE HUBS	REAR SPROCKET TYPE	NOMINAL BELTLINE	SPIDER*	FRONT SPROCKET MOUNTING SURFACE†	SPIDER MOUNTING SURFACE
				Mounting Plane: 43.25mm	
enviolo (148mm OLD) MY24+	E9°	50.0mm	W0189	A	INBOARD TAB
Rohloff SpeedHUB 500/14 (148mm OLD) "SL" Carrier	RS				
Rohloff SpeedHUB 500/14 (148mm OLD)	RS	51.7mm	W0188	B	INBOARD TAB
Rohloff SpeedHUB 500/14 (135/142mm OLD)	RS	54.7mm	W0188	B	OUTBOARD TAB
3X3 NINE (135/142mm OLD)	HB				
3X3 NINE (148mm OLD)	HA				
Revolute HUB1 (135/142/148mm OLD)	S9				
Classified Powershift Hub (142mm OLD)					

† See Sprocket Orientation in the Components Module.

* Requires use of FSA 4-Bolt spiders listed.

TQ COMPATIBLE FRONT SPROCKETS

FRONT SPROCKET TYPE		DESCRIPTION	TOOTH COUNT				
			39	42	46	50	55
CDX	4AA	4-Bolt 104mm BCD	XF1139B4AA	XF1142B4AA	XF1146B4AA	XF1150B4AA	XF1155B4AA
CDC	4AT	4-Bolt 104mm BCD			CF11464AT ^c	CF11504AT ^c	CF11554AT ^c

^c CDC sprockets are approved only for mid-drive motors producing 75Nm or less of torque.

DRIVE SELECTION STEPS

Identify rear hub choice.



Determine spider part number, and front sprocket mounting surface.



Identify rear sprocket type needed, and choose appropriate front and rear sprockets.

YAMAHA PW-X4 / PWseries S2 CONFIGURATION CHART

COMPATIBLE HUBS	REAR SPROCKET TYPE	NOMINAL BELTLINE	SPIDER*	FRONT SPROCKET MOUNTING SURFACE†
enviolo (148mm OLD) MY22	EV^c	48.7mm	W0170	A
Rohloff SpeedHUB 500/14 (148 mm OLD)	RS	51.7mm	W0170	B
Rohloff SpeedHUB 500/14 (135/142 mm OLD)	RS	54.7mm	W0171	B
3X3 NINE (135/142mm OLD)	HB			
3X3 NINE (148mm OLD)	HA			
Revolute HUB1 (135/142/148mm OLD)	S9			
Classified Powershift Hub (142mm OLD)				

YAMAHA PWseries ST, CE CONFIGURATION CHART

COMPATIBLE HUBS	REAR SPROCKET TYPE	NOMINAL BELTLINE	SPIDER*	FRONT SPROCKET MOUNTING SURFACE†
enviolo (148mm OLD) MY22	EV^c	48.7mm	W0025	A
Rohloff SpeedHUB 500/14 (148mm OLD)	RS	51.7mm	W0024	A
Rohloff SpeedHUB 500/14 (135/142mm OLD)	RS	54.7mm	W0024	B
3X3 NINE (135/142mm OLD)	HB			
3X3 NINE (148mm OLD)	HA			
Revolute HUB1 (135/142/148mm OLD)	S9			
Classified Powershift Hub (142mm OLD)				

* Requires use of FSA Spider listed. Sprocket mounts to inboard tab of spider. Verify spider and driver interface with FSA. Contact Gates Carbon Drive for any other aftermarket spider application with Yamaha.

^c CDC sprockets are approved only for mid-drive motors producing 75Nm or less of torque.

† See Sprocket Orientation in the Components Module.

YAMAHA PWseries ST, CE COMPATIBLE FRONT SPROCKETS

FRONT SPROCKET TYPE		DESCRIPTION	TOOTH COUNT				
			39	42	46	50	55
CDX	4AA	4-Bolt 104mm BCD	XF1139B4AA	XF1142B4AA	XF1146B4AA	XF1150B4AA	XF1155B4AA
CDC	4AT	4-Bolt 104mm BCD			CF11464AT ^c	CF11504AT ^c	CF11554AT ^c

^c CDC sprockets are approved only for mid-drive motors producing 75Nm or less of torque.



DRIVE SELECTION STEPS

Identify rear hub choice.



Determine correct spider assembly part number based on desired front sprocket tooth count and target beltline.



Identify rear sprocket type needed, and choose appropriate rear sprocket part number.

ZF CENTRIX ASSEMBLY SELECTION CHART

COMPATIBLE HUBS	REAR SPROCKET TYPE	NOMINAL BELTLINE	FRONT SPROCKET TEETH	CENTERED NODE ASSEMBLY PART NUMBER
				Mounting Plane: 48.5mm
Shimano Inter-5E (Mechanical & Di2 ^d) Shimano Nexus 7/8 Disc, Alfine 8/11 (Mechanical & Di2 ^d) enviolo (135mm OLD)	YU	45.5mm	46	S5ACBM+1 46CDX -3.1 BG
			48	S5ACBM+1 48CDX -3.1 BG
			50	S5ACBM+1 50CDX -3.1 BG
	XU		55	S5ACBM+1 55CDX -3.1 BG
			60	S5ACBM+1 60CDX -3.1 BG
			63	S5ACBM+1 63CDX -3.1 BG
enviolo (148mm OLD) MY24+ Rohloff SpeedHUB 500/14 (148mm OLD) "SL" Carrier	E9	50mm	46	S5ACBM+1 46CDX -0 BG
			48	S5ACBM+1 48CDX -0 BG
			50	S5ACBM+1 50CDX -0 BG
	RS		55	S5ACBM+1 55CDX -0 BG
			60	S5ACBM+1 60CDX -0 BG
			63	S5ACBM+1 63CDX -0 BG

^d Requires use of Shimano MU-UR510 or MU-UR520 Motor Unit

"BG" at end of Part Number specifies inclusion of an ISO compliant Black Guard. Alternatively "NG" would specify No Guard.



CDN SPIDERS

Gates CDN Spider Assemblies are designed for use with torque sensing bottom brackets. The spider assemblies are compatible with BBs made by Ananda, AutoRQ, Bafang, LDS, MIVICE, Truckrun and others. Compatibility charts for select hub-motors are located in the [Applications Module](#).

A wide range of BB width options exist, and can be integrated into various additional hub-motors. Contact Gates for assistance.



CDN SPIDERS ASSEMBLIES CHART

TOOTH COUNT	SPIDER OFFSET	SPROCKET OFFSET	PART NUMBER	EXPECTED AVAILABILITY DATE
46	+4.0	-3.6	T5U1BM+4.0 46CDN -3.6 BG*	Q1 2025
50	+4.0	-3.6	T5U1BM+4.0 50CDN -3.6 BG*	Q1 2025
55	+4.0	-3.6	T5U1BM+4.0 55CDN -3.6 BG*	Q1 2025
60	+4.0	-3.6	T5U1BM+4.0 60CDN -3.6 BG*	Q1 2025
50	+4.0	-0	T5U1BM+4.0 50CDN -0 BG*	Q1 2025
55	+4.0	-0	T5U1BM+4.0 55CDN -0 BG*	Q1 2025
60	+4.0	-0	T5U1BM+4.0 60CDN -0 BG*	Q1 2025
46	+5.8	-3.6	T5U1BM+5.8 46CDN -3.6 BG*	AVAILABLE NOW
50	+5.8	-3.6	T5U1BM+5.8 50CDN -3.6 BG*	AVAILABLE NOW
55	+5.8	-3.6	T5U1BM+5.8 55CDN -3.6 BG*	AVAILABLE NOW
60	+5.8	-3.6	T5U1BM+5.8 60CDN -3.6 BG*	AVAILABLE NOW
50	+5.8	-0	T5U1BM+5.8 50CDN -0 BG*	AVAILABLE NOW
55	+5.8	-0	T5U1BM+5.8 55CDN -0 BG*	AVAILABLE NOW
60	+5.8	-0	T5U1BM+5.8 60CDN -0 BG*	AVAILABLE NOW
46	+5.8	-3.6	T5U1BM+11.2 46CDN -3.6 BG*	AVAILABLE NOW
50	+11.2	-3.6	T5U1BM+11.2 50CDN -3.6 BG*	AVAILABLE NOW
55	+11.2	-3.6	T5U1BM+11.2 55CDN -3.6 BG*	AVAILABLE NOW
60	+11.2	-3.6	T5U1BM+11.2 60CDN -3.6 BG*	AVAILABLE NOW
50	+11.2	-0	T5U1BM+11.2 50CDN -0 BG*	AVAILABLE NOW
55	+11.2	-0	T5U1BM+11.2 55CDN -0 BG*	AVAILABLE NOW
60	+11.2	-0	T5U1BM+11.2 60CDN -0 BG*	AVAILABLE NOW
46	+14.2	-3.6	T5U1BM+14.2 46CDN -3.6 BG*	Q1 2025
50	+14.2	-3.6	T5U1BM+14.2 50CDN -3.6 BG*	Q1 2025
55	+14.2	-3.6	T5U1BM+14.2 55CDN -3.6 BG*	Q1 2025
60	+14.2	-3.6	T5U1BM+14.2 60CDN -3.6 BG*	Q1 2025
50	+14.2	-0	T5U1BM+14.2 50CDN -0 BG*	Q1 2025
55	+14.2	-0	T5U1BM+14.2 55CDN -0 BG*	Q1 2025
60	+14.2	-0	T5U1BM+14.2 55CDN -0 BG*	Q1 2025

*"BG" at end of Part Number specifies inclusion of an ISO compliant Black Guard. Alternatively "NG" would specify No Guard. All are 4-bolt spiders as indicated by S4 in the part number.

Gates ST Direct Mount sprockets are designed for use with torque sensing bottom brackets. The direct mount sprockets are compatible with BBs made by Ananda, AutoRQ, Bafang, LDS, MIVICE, Truckrun and others.

A wide range of BB width options exist, and can be integrated into various hub-motors. Contact Gates for assistance.



ST DIRECT MOUNT SPROCKETS

TOOTH COUNT	OFFSET	PART NUMBER
60	+4.0	ST1160U1AT+4.0

Currently there is only one size available.

For volume needs, please contact Gates to discuss additional size or offset options.

ST 4MM OFFSET CHART

BB BRAND	BB MODEL	THREAD	BB SHELL	SPINDLE	MOUNTING PLANE	BL
Ananda	S15 151mm	BSA	68	151	45.5	49.5
Ananda	S15 151mm	BSA	73	151	45.5	49.5
Ananda	S15 165mm	BSA	84	165	53.5	57.5
Ananda	S15 181mm	BSA	100	181	61.5	65.5
AutorQ	duraTORQ / cityTORQ	BSA	68	145	43	47
AutorQ	duraTORQ / cityTORQ	BSA	73	155	45.5	49.5
AutorQ	duraTORQ / cityTORQ	BSA	84	166	52	56
AutorQ	duraTORQ / cityTORQ	BSA	100	182	59	63
AutorQ	duraTORQ / cityTORQ	BSA	120	202	69	73
Bafang	PA 211	BSA	68	148	42.3	46.3
Bafang	PA 231	BSA	73	148	44.8	48.8
Bafang	PA 241	BSA	84	160	50.3	54.3
Bafang	PA 221	BSA	100	167	58.3	62.3
Bafang	PA 251	BSA	110	187	63.3	67.3
Bafang	PA 261	BSA	120	200	68.3	72.3
LDS	BBST 1.0-68mm	BSA	68	145	43	47
LDS	BBST 1.0	BSA	73	155	45.5	49.5
LDS	BBST 1.0 84mm	BSA	84	166	52	56
MVICE	ISIS 73	T47	73	142	44.4	48.4
MVICE	S200	BSA	68	148	45.5	49.5
MVICE	S200	BSA	73	148	45.5	49.5
Truckrun	68-148	BSA	68	148	43	47
Truckrun	73-167	BSA	73	167	45.5	49.5
Truckrun	TORG2B -100mm	BSA	100	177	59	63

CRANKSETS

S550 CDX



S550 CRANKSET*

SPROCKET SERIES	CDX
MOUNTING TYPE	2-Piece Direct Mount
MATERIAL	Forged Alloy-Polished
CRANK ARM LENGTH	170, 175
CRANK FINISH/COLOR	Matte Black
TOOTH COUNT	46, 50, 55
ISO COMPLIANT GUARD	Available**
BOTTOM BRACKET	External Included

*S550 crank arms and sprockets also sold separately

**Available on complete cranksets only

S550 PRE-ASSEMBLED CRANKSET FOR USE WITH CDX SPROCKETS

TEETH	PART NUMBER	ARM LENGTH	BELTLINE (MM)
46	FC550 170BM 46CDX -0/45.5 BG	170	45.5
46	FC550 175BM 46CDX -0/45.5 BG	175	
50	FC550 170BM 50CDX -0/45.5 BG	170	
50	FC550 175BM 50CDX -0/45.5 BG	175	
55	FC550 170BM 55CDX -0/45.5 BG	170	
55	FC550 175BM 55CDX -0/45.5 BG	175	
46	FC550 170BM 46CDX -0/54.7 BG	170	54.7
46	FC550 175BM 46CDX -0/54.7 BG	175	
50	FC550 170BM 50CDX -0/54.7 BG	170	
50	FC550 175BM 50CDX -0/54.7 BG	175	
55	FC550 170BM 55CDX -0/54.7 BG	170	
55	FC550 175BM 55CDX -0/54.7 BG	175	

"BG" at end of Part Number specifies inclusion of an ISO compliant Black Guard. Alternatively "NG" would specify No Guard.

S301
CDC



S301 CRANKSET

SPROCKET SERIES	CDC
MOUNTING TYPE	5-Bolt 130mm BCD
MATERIAL	Forged 6061 crank arms with 24mm chromoly spindle
CRANK ARM LENGTH	170, 175
CRANK FINISH/COLOR	Matte Black with Gloss etched branding
TOOTH COUNT	46, 50, 55
ISO COMPLIANT GUARD	Included, aluminum 6061 anodized
BOTTOM BRACKET	Included, 68/73 mm BSA

GATES S301 CRANKSET FOR USE WITH CDC SPROCKETS

TEETH	PART NUMBER*	ARM LENGTH	BELTLINE (MM)
46	FC S301 170 BM 46T CDC 45.5 BSA68/73	170	45.5
46	FC S301 175 BM 46T CDC 45.5 BSA68/73	175	
50	FC S301 170 BM 50T CDC 45.5 BSA68/73	170	
50	FC S301 175 BM 50T CDC 45.5 BSA68/73	175	
55	FC S301 170 BM 55T CDC 45.5 BSA68/73	170	
55	FC S301 175 BM 55T CDC 45.5 BSA68/73	175	

CRANKSETS

S250
CDC/CDN



S250 CRANKSET

SPROCKET SERIES	CDC or CDN
MOUNTING TYPE	5-Bolt 130mm BCD
MATERIAL	Forged Alloy
CRANK ARM LENGTH	170, 175
CRANK FINISH/COLOR	Black or Silver; Matte with Polished Face
TOOTH COUNT	46, 50, 55, 60
ISO COMPLIANT GUARD	Included
BOTTOM BRACKET	JIS Square Taper, Not Included

GATES S250 CRANKSET FOR USE WITH CDC OR CDN SPROCKETS

TEETH	PART NUMBER*	ARM LENGTH
46	FC250 170 BKC465 CDC000 GDBK	170
46	FC250 175 BKC465 CDC000 GDBK	175
50	FC250 170 BKC505 CDC000 GDBK	170
50	FC250 175 BKC505 CDC000 GDBK	175
55	FC250 170 BKC555 CDC000 GDBK	170
55	FC250 175 BKC555 CDC000 GDBK	175
60	FC250 170 BKC605 CDC000 GDBK**	170
60	FC250 175 BKC605 CDC000 GDBK**	175

For beltline and bottom bracket selection, refer to the Sprocket Application Information chart in the Components module.
“BG” or “SG” at end of Part Number specifies inclusion of an ISO compliant Black Guard or Silver Guard.
*For complete list of available assemblies see price list
**60T is only available in CDC

S150
CDN



S150 CRANKSET

SPROCKET SERIES	CDN
MOUNTING TYPE	5-Bolt 130mm BCD
MATERIAL	Forged Alloy
CRANK ARM LENGTH	170, 175
CRANK FINISH/COLOR	Matte Black or Matte Silver
TOOTH COUNT	46, 50, 55
ISO COMPLIANT GUARD	Available
BOTTOM BRACKET	JIS Square Taper, Not Included

GATES S150 CRANKSET FOR USE WITH CDN SPROCKETS

TEETH	PART NUMBER	ARM LENGTH
46	FC S150 JIS 170 46T	170
46	FC S150 JIS 175 46T	175
50	FC S150 JIS 170 50T	170
50	FC S150 JIS 175 50T	175
55	FC S150 JIS 170 55T	170
55	FC S150 JIS 175 55T	175

For beltline and bottom bracket selection, refer to the Sprocket Application Information chart in the Components module.

S075 CDN/ST

Gates S075 Crank Arms are for use with CDN Spider Assemblies and ST Direct Mount Sprockets when paired with JIS torque sensing bottom brackets.



S075 CRANKSET

SPROCKET SERIES	CDN / ST
FITMENT	Square Taper
MATERIAL	Forged Aluminum
CRANK ARM LENGTH	160, 170
CRANK FINISH/COLOR	Matte Black
TOOTH COUNT	N/A
ISO COMPLIANT GUARD	N/A
BOTTOM BRACKET	JIS Square Taper, Not Included

Country of Origin: China

S075 CRANK ARMS FOR CDN SPIDER ASSEMBLIES AND ST DIRECT MOUNT SPROCKETS

PART NUMBER	ARM LENGTH
FC S075 JIS 160 BLACK	160
FC S075 JIS 170 BLACK	170

S050
ST



S050 CRANKSET

SPROCKET SERIES	ST
FITMENT	Square Taper
MATERIAL	Forged Aluminum
CRANK ARM LENGTH	160, 170
CRANK FINISH/COLOR	Black or Matte Silver
TOOTH COUNT	46*, 50, 60
ISO COMPLIANT GUARD	Included
BOTTOM BRACKET	JIS Square Taper, Not Included

Country of Origin: China

S050 CRANKSET FOR USE WITH ST SPROCKETS

TEETH	PART NUMBER	ARM LENGTH
46*	FC S050 JIS 160BM 46T	160
46	FC S050 JIS 170BM 46T	170
46	FC S050 JIS 170SM 46T	170
50	FC S050 JIS 170BM 50T	170
60	FC S050 JIS 160BM 60T	160
70	FC S050 JIS 170BM 70T	170

For beltline and bottom bracket selection, refer to the Sprocket Application Information chart in the Components module.
ST components are not compatible with any CT component.
*Ideal for Pre-Teen 26" models



BELT DRIVE



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17572-M6-PA 2025/09

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