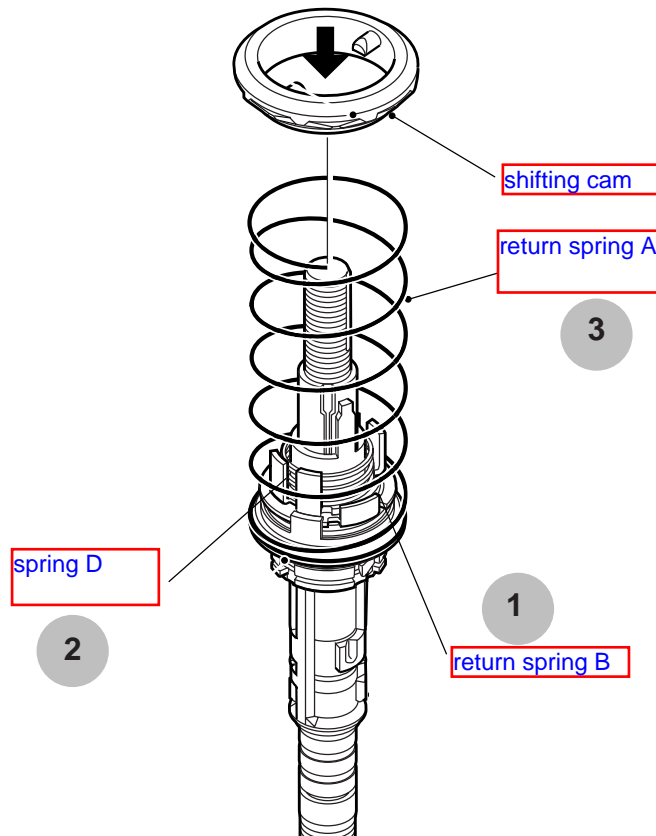




Functional description of shifting unit



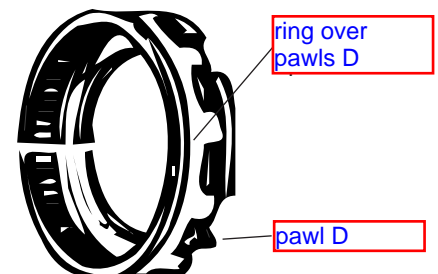
1. Return spring B
This spring turns the internal shift unit back into first gear.

2. Spring D
This spring prevents the pawls from breaking when switching under too high a load. Depending on the pedal pressure and the gear selected, the spring begins to tension and the shifting process is only initiated when the pedal pressure is reduced.

3. Shifting cam & spring A
This spring presses the shifting cam down when shifting from 5th to 6th gear and the pawls A are released. The shifting process is therefore somewhat rougher and delayed compared to other gears.

SG-7C20 / SG-7C21 (hub gear with coaster brake) Over the pawls D (ring gear no. 2) there is a black comb-like ring. This ring protects the hub from broken pawls during braking. During the braking process, the ring slides over the pawls D and encloses it. This prevents the pawls from snapping into the hub shell. When the bike accelerates again, the ring releases it again with a pawl D.

ring gear unit 2

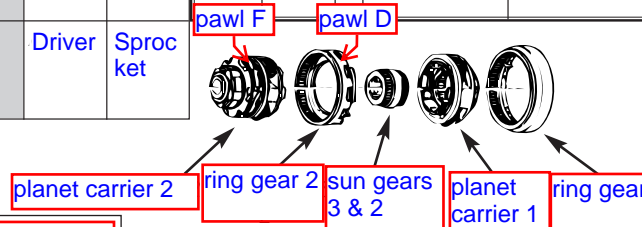


Gear	power transmission											Gear combination				gear ratio	
	Hub-shell	Pawl F	roller carrier *2		planet carrier 2	planet carrier 1	Planet gear 1	Ring gear 1	Pawl C *1	Driver	Sprocket	Increase	Reduction				
1	Hub-shell	Pawl F	roller carrier *2		planet carrier 2	planet carrier 1	Planet gear 1 Sun gear 1 Pawl E-1	Ring gear 1	Pawl C *1	Driver	Sprocket	N	+	SG 1	high	1 : 0,632	
2	Hub-shell	Pawl F	roller carrier *2		planet carrier 2	planet carrier 1	Planet gear 1 Sun gear 2 Pawl E-2	Ring gear 1	Pawl C	Driver	Sprocket	N	+	SG 2	low	1 : 0,741	
3	Hub-shell	Pawl D	Ring gear 2	Planet gear 2 Sun gear 4 Pawl E-4	planet carrier 2	planet carrier 1	Planet gear 1 Sun gear 1 Pawl E-1	Ring gear 1	Pawl C	Driver	Sprocket	SG 4	low	+	SG 1	high	1 : 0,843
4	Hub-shell	Pawl D	Ring gear 2	Planet gear 2 Sun gear 4 Pawl E-4	planet carrier 2	planet carrier 1	Planet gear 1 Sun gear 2 Pawl E-2	Ring gear 1	Pawl C	Driver	Sprocket	SG 4	low	+	SG 2	low	1 : 0,989
5	Hub-shell	Pawl D	Ring gear 2	Planet gear 2 Sun gear 3 Pawl E-3	planet carrier 2	planet carrier 1	Planet gear 1 Sun gear 2 Pawl E-2	Ring gear 1	Pawl C	Driver	Sprocket	SG 3	high	+	SG 2	low	1 : 1,145
6	Hub-shell	Pawl D	Ring gear 2	Planet gear 2 Sun gear 4 Pawl E-4	planet carrier 2	planet carrier 1	pawl A			Driver	Sprocket	SG 4	low	+	N	1 : 1,335	
7	Hub-shell	Pawl D	Ring gear 2	Planet gear 2 Sun gear 3 Pawl E-3	planet carrier 2	planet carrier 1	pawl A			Driver	Sprocket	SG 3	high	+	N	1 : 1,545	
Braking *2	Hub-shell	braking sleeve	roller carrier		planet carrier 2	planet carrier 1	pawl B			Driver	Sprocket						

N = direct gear
SG = sun gear

*1 = not for SG-7R41 / 42
*2 = in coaster brake version

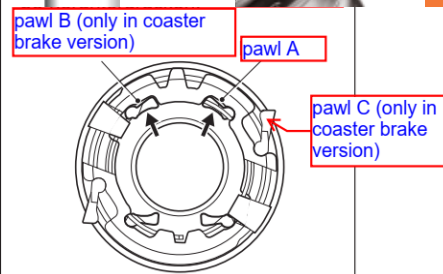
Note: Combinations high / high and N / N are not used.



Power transmission

SHIMANO INTER97

SG-7C20
SG-7C21
SG-7C22



Pawls A engage with right-side planet cage when the gear shifting cam is released (gears 6, 7).
Pawls B engage while backpedalling and activate coaster brake (also hiding pawls C by means of a comb-like ring).
Pawls C engage with ring gear 1 while pedalling (in a roller brake version ring gear 1 is an integral part of a driver).

Pawls E-1/2/3/4 are the ones locking each sun gear (1,2,3,4) to the axle.