



SHIMANO NEXUS 3-SPEED HUB

SG-3C41

SERVICE MANUAL

vol. 1



SHIMANO

Disassembly of the Inter-3 hub

SG-3C41

Note:

Unit parts should never be disassembled. If they are, problems may result.

When replacing parts, replace the whole internal assembly or unit part.



Tools

Note:

Before carrying out disassembly, have ready the hub spanners (TL-7S20/ TL-HS20) and internal hub grease.



Screwdriver (Left)

TL-7S20 (Center)

Hub spanners
Part No. 130 9890
17mm x 22mm(2 pcs.)

TL-HS20 (Right)

Hub spanners
Part No. 320 9001
15mm / 17mm (2 pcs.)

1. Hold the two bevelled surfaces of the hub axle on the brake arm side in a vice and remove the dust cap with a screwdriver.



Screwdriver

Vice

Note:

Do not damage the threads of the hub axle.

2. Turn the brake arm unit upside down and hold the two bevelled surfaces of the hub axle on the sprocket side in a vice.



Note:

Do not damage the threads of the hub axle.



TL-7S20

Remove the left hand lock nut from the hub axle, and then remove the stop nut.



Left hand lock nut

Stop nut

3. Remove the brake arm unit.



4. Remove the hub shell.



Now it can be replaced with the new internal assembly.

Internal assembly for quick disassembly and assembly



Part No.

[SG-3C41]

Y-35U 98010 (Axle Length 168 mm)

Y-33R 98020 (Axle Length 175 mm)

Y-35U 98020 (Axle Length 178 mm)

[SG-3C41-DX]

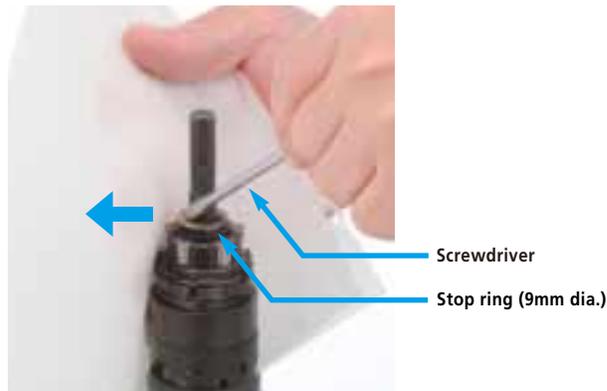
Y-35U 98010 (Axle Length 168 mm)

Y-33R 98020 (Axle Length 175 mm)

5. Remove the brake shoe unit.



- 6.** Remove the stop ring with a screwdriver.
At this time, the stop ring come off with great force.
Be careful of the safety using cloth and so on.



- 7.** Remove the carrier unit and the ring gear unit at the same time while turning the ring gear unit slightly to the left and right.



After removing them at the same time, remove the carrier unit from the ring gear unit.



- 8.** Remove ball retainer K while pressing in pawl A-1 and pawl C on the driver unit a screwdriver.



Note:
Be careful not to bend ball retainer K.

- 9.** Turn the axle unit with driver unit upside down and hold the two bevelled surfaces of the axle in a vice.



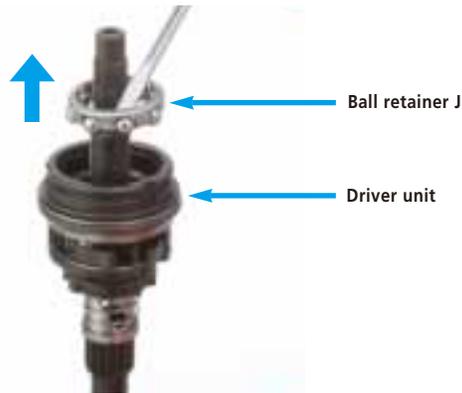
Note:
Do not damage the threads of the hub axle.



Remove the right hand lock nut and the right hand cone with dust seal from the hub axle.



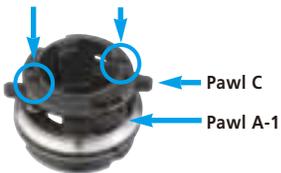
10. Remove ball retainer J from the driver unit.



11. While pushing the two pawls C on the driver unit with your fingers, remove the driver unit.

Note:

Be careful not to let pawl pin B fall out.



While pushing pawls C with your fingers

Note:

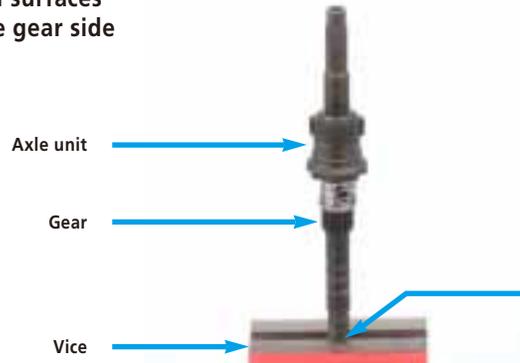
Do not disassemble the axle unit, otherwise it may cause problems with gear shifting.

This completes the disassembly of the Inter-3 hub.



Assembly of the Inter-3 hub

1. Hold the two bevelled surfaces of the axle unit on the gear side in a vice.

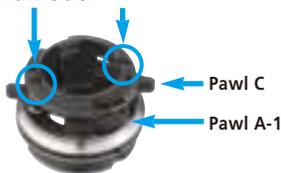


Note:
Do not damage the threads of the hub axle.

2. While pushing the two pawls C on the driver unit with your fingers, place the driver unit onto the axle unit.

Note:

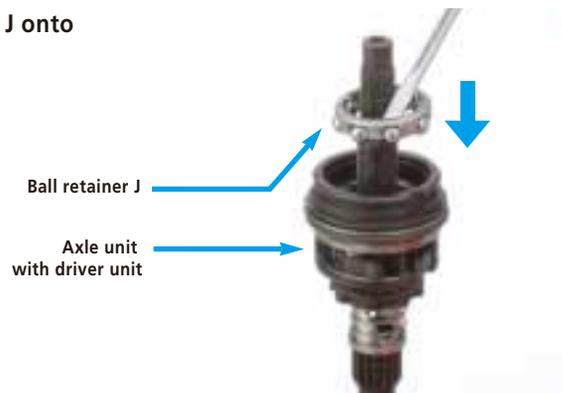
Be careful not to let pawl pin B fall out.



While pushing pawls C with your fingers



3. Place ball retainer J onto the driver unit.



Note:
Be careful of the setting direction. 
Apply a liberal coating of internal hub grease.



4. Screw the right hand cone with dust seal onto the hub axle as far as it will go, and then secure it by tightening the right hand lock nut.



Install the right hand lock nut and the right hand cone with dust seal onto the hub axle.



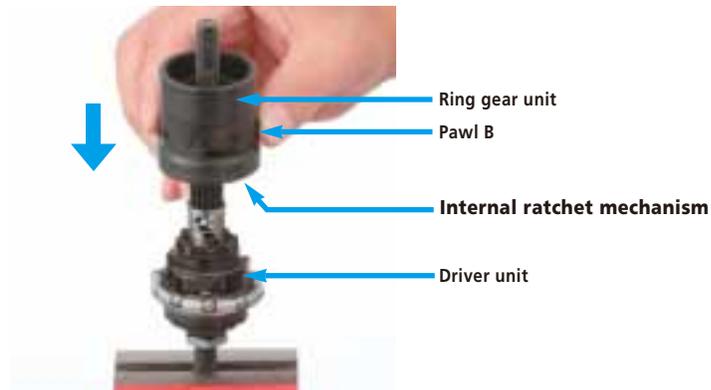
- 5.** Turn the axle unit with driver unit upside down and hold the two bevelled surfaces of the axle on the sprocket side in a vice.
- Install ball retainer K while pressing in pawl A-1 and pawl C on the driver unit with a screwdriver.



Note:
 Be careful of the setting direction.  
 Apply a liberal coating of internal hub grease.
 Be careful not to bend ball retainer K.



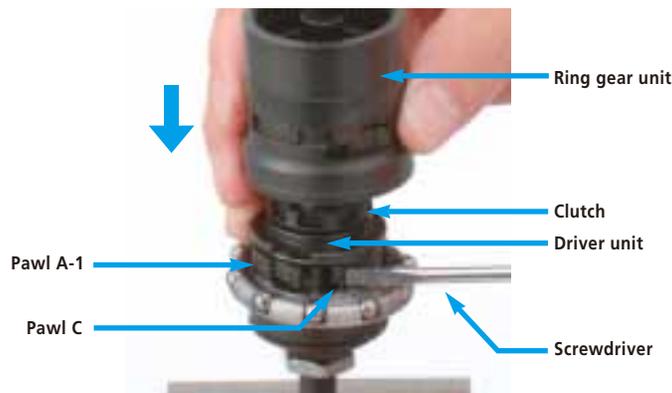
- 6.** While pushing the two pawls B on the ring gear unit with your fingers, push the two pawls A-1 and the two pawls C on the driver unit one by one with a screwdriver and install the ring gear unit to the driver unit.



Note:

Check that pawl B is not hooked onto the clutch.

Check that pawls A-1 and the pawls C are engaged with the ratchet mechanism in the ring gear unit.



Turn the ring gear to the left and right while pushing down on the sprocket and check that it has an angle of play of approximately 10°.

Apply a liberal coating of internal hub grease to the gear inside the ring gear unit.



- 7.** Engage the teeth of the planetary gear of the carrier unit with the teeth of the ring gear unit while turning the carrier unit slightly to the left and right and pushing it onto the ring gear unit.

Note:

Apply a liberal coating of internal hub grease to the planetary gear (in 4 places) inside the carrier unit.



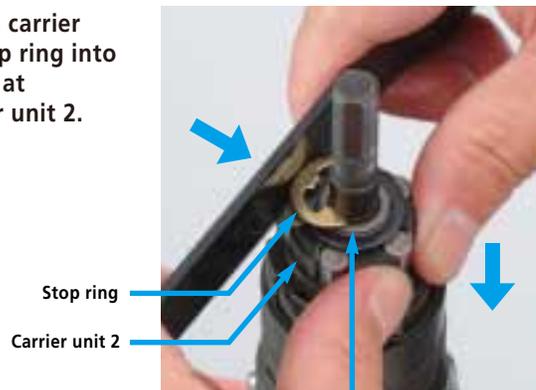
Check:

Check that the stop ring groove of the hub axle is visible from the edge of the carrier unit after the carrier unit has been installed.

Teeth of carrier unit planetary gear
Teeth of ring gear unit



- 8.** While pushing down carrier unit 2, insert the stop ring into the hub axle groove at the surface of carrier unit 2.



Stop ring
Carrier unit 2

Note:

After inserting the stop ring, check that there is a small amount of play in the carrier unit in the vertical direction.

If there is no vertical play and the carrier unit turns stiffly, turn the internal assembly upside down and hold the hub axle in a vice. Then loosen the right hand lock nut and the right hand cone with dust seal to adjust until there is sufficient play.

Check:

Check to be sure that the stop ring groove on the hub axle is visible from the edge of carrier unit 2 while carrier unit 2 is pushed down.



Stop ring groove of hub axle should be visible

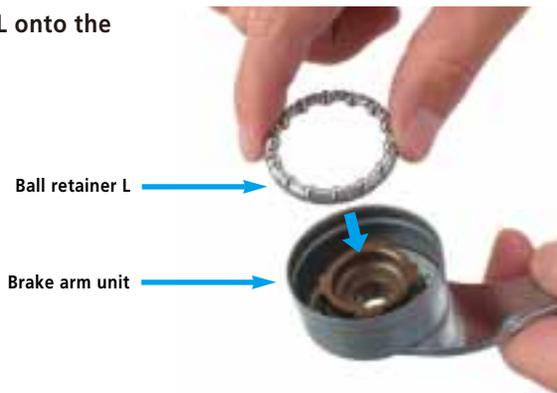
- 9.** While turning the hub shell counterclockwise slightly, place it onto the internal assembly.



Hub shell

Internal assembly

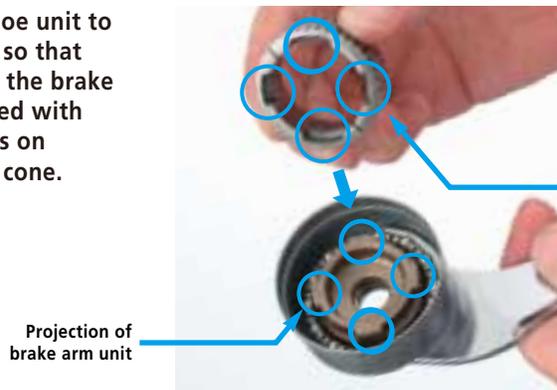
10. Place ball retainer L onto the brake arm unit.



Note:
Be careful of the setting direction.
Apply a liberal coating of internal hub grease.



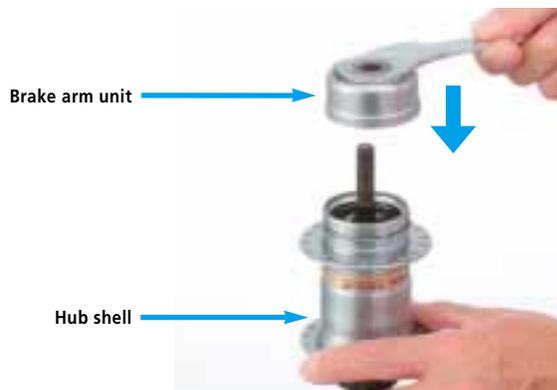
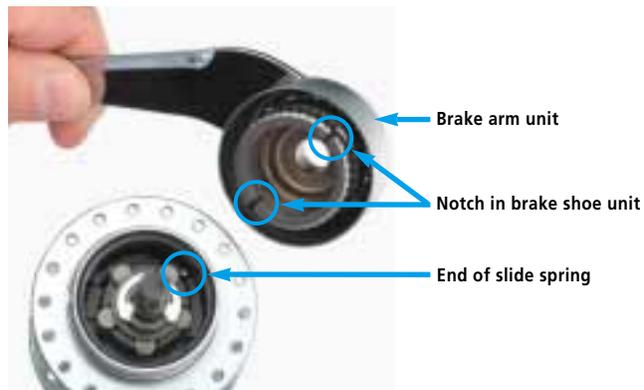
11. Install the brake shoe unit to the brake arm unit so that the four indents of the brake shoe unit are aligned with the four projections on the brake arm unit cone.



Note:
Apply a liberal coating of internal hub grease to the brake shoe unit.



12. Pass the brake arm unit with brake shoe over the hub axle, align the notch in the brake shoe unit with the end of the slide spring on the carrier unit, and then install the brake arm unit to the hub shell.



13. Screw on the stop nut to adjust so that the hub shell can be turned smoothly without any play. After adjusting, secure the stop nut with the left hand lock nut.



TL-7S20

Tightening torque:
12-20 Nm (120-200 kgfcm)



14. Turn the sprocket side upside down and hold the two bevelled surfaces of the hub axle on the brake arm in a vice and install the dust cap to hub shell.

Check:

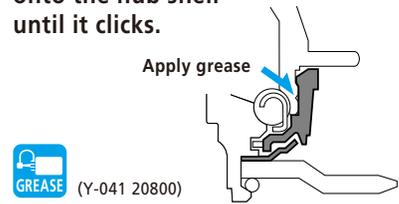
After installing right-hand dust cap A to the hub shell, turn the hub shell counterclockwise and check that it turns smoothly. If the hub shell does not turn smoothly, re-install right-hand dust cap A.



Note:

Apply a coating of internal hub grease to the inside of right-hand dust cap A to waterproof it.

Push right-hand dust cap A firmly onto the hub shell until it clicks.



This completes the assembly of the Inter-3 hub.

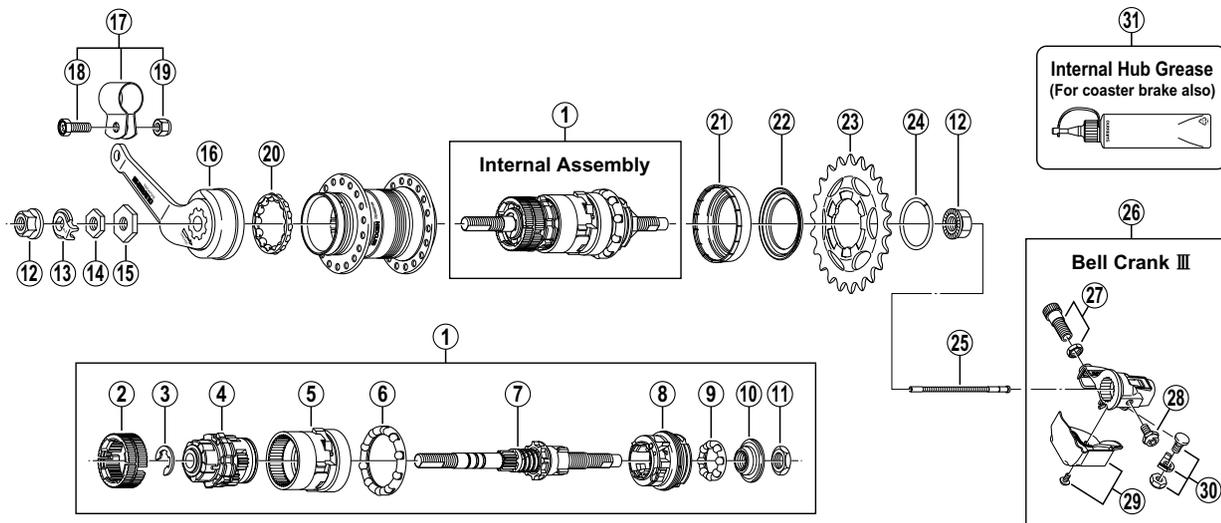


Spare parts list

SHIMANO NEXUS 3-SPEED HUB w/Coaster Brake

SG-3C41

Inter-3 Hub
Left Side Non-turn Washer Spec.

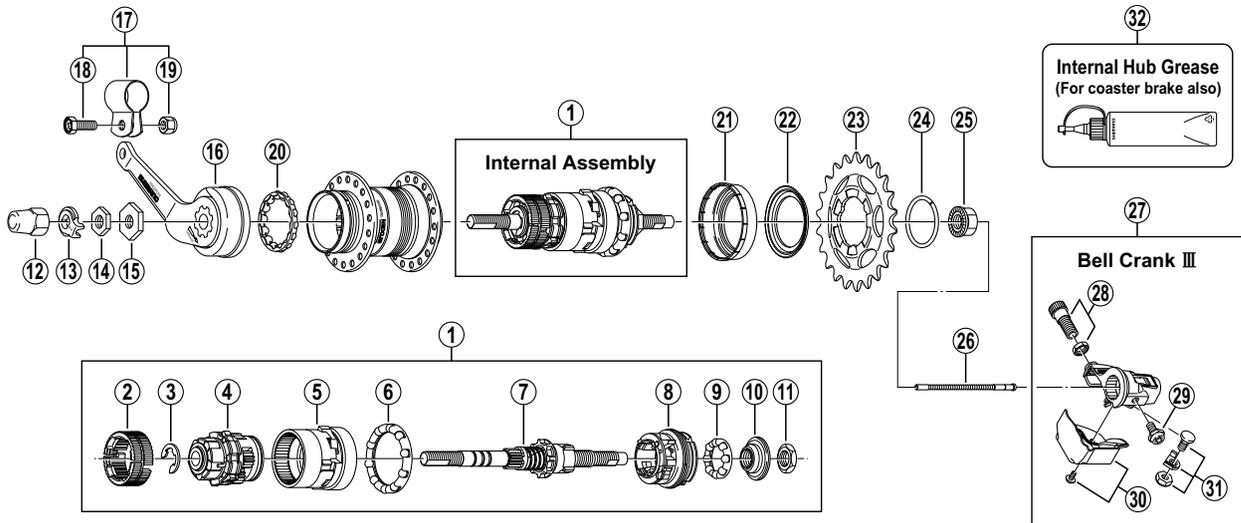


Q'TY	ITEM NO.	SHIMANO CODE NO.	DESCRIPTION
	1	Y-35U 98010	Internal Assembly (Axle Length 168 mm)
		Y-33R 98020	Internal Assembly (Axle Length 175 mm)
		Y-35U 98020	Internal Assembly (Axle Length 178 mm)
	2	Y-33R 90600	Brake Shoe Unit
	3	Y-325 32000	Stop Ring (φ9 mm)
	4	Y-33R 90700	Carrier Unit
	5	Y-33R 90800	Ring Gear Unit
	6	Y-33R 90220	Ball Retainer K (7/32" x 10)
		Y-33R 98050	Axle Unit (Axle Length 168 mm)
	7	Y-33R 98040	Axle Unit (Axle Length 175 mm)
		Y-35U 98030	Axle Unit (Axle Length 178 mm)
	8	Y-33R 90400	Driver Unit
	9	Y-33R 90210	Ball Retainer J (7/32" x 8)
	10	Y-33R 90500	Right Hand Cone w/Dust Seal
		Y-321 39040	Right Hand Lock Nut (4.5 mm) for Axle Length 168 mm / 178 mm
	11	Y-325 30100	Right Hand Lock Nut (9.9 mm) for Axle Length 175 mm
	12	Y-220 15010	Flange Nut
	13	Y-33Z 20200	Non-turn Washer 2 (Yellow)
		Y-33R 49010	Left Hand Lock Nut (3 mm) for Axle Length 168 mm / 178 mm
	14	Y-33R 49020	Left Hand Lock Nut (5 mm) for Axle Length 175 mm
	15	Y-33R 48010	Stop Nut (3 mm)
	16	Y-35U 98040	Brake Arm Unit
		Y-33F 98090	Brake Arm Clip Unit (5/8")
	17	Y-33F 98100	Brake Arm Clip Unit (3/4")
	18	Y-75M 06000	Clip Screw (M6 x 16)
	19	Y-317 27200	Clip Nut
	20	Y-33R 90200	Ball Retainer L (3/16" x 14)
	21	Y-33R 05000	Right Hand Dust Cap A
	22	Y-33R 52001	Right Hand Dust Cap B
		Y-322 03200	Sprocket Wheel 16T (Black)
		Y-73T 21830	Sprocket Wheel 18T (Black)
		Y-73T 21930	Sprocket Wheel 19T (Black)
		Y-73T 22030	Sprocket Wheel 20T (Black)
		Y-73T 22130	Sprocket Wheel 21T (Black)
		Y-73T 22230	Sprocket Wheel 22T (Black)
		Y-73T 22330	Sprocket Wheel 23T (Black)
	23		
	24	Y-321 20010	Snap Ring C
		Y-33R 98080	Push Rod (81.85 mm) for Axle Length 168 mm
	25	Y-33S 98180	Push Rod (86.85 mm) for Axle Length 175 mm / 178 mm
	26	Y-33S 95100	Bell Crank III Unit
	27	Y-33S 98010	Cable Adjusting Bolt & Nut
	28	Y-33S 57000	Bell Crank Body Fixing Bolt
	29	Y-33S 98020	Bell Crank Cover & Fixing Screw
	30	Y-33S 98030	Inner Cable Fixing Bolt Unit
	31	Y-041 20800	Internal Hub Grease (Net. 100g)

Spare parts list

SHIMANO NEXUS 3-SPEED HUB w/Coaster Brake

SG-3C41-DX Inter-3 Hub Left Side Non-turn Washer Spec.



Q'TY	ITEM NO.	SHIMANO CODE NO.	DESCRIPTION
	1	Y-35U 98010	Internal Assembly (Axle Length 168 mm)
		Y-33R 98020	Internal Assembly (Axle Length 175 mm)
	2	Y-33R 90600	Brake Shoe Unit
	3	Y-325 32000	Stop Ring (φ9 mm)
	4	Y-33R 90700	Carrier Unit
	5	Y-33R 90800	Ring Gear Unit
	6	Y-33R 90220	Ball Retainer K (7/32" x 10)
	7	Y-33R 98050	Axle Unit (Axle Length 168 mm)
		Y-33R 98040	Axle Unit (Axle Length 175 mm)
	8	Y-33R 90400	Driver Unit
	9	Y-33R 90210	Ball Retainer J (7/32" x 8)
	10	Y-33R 90500	Right Hand Cone w/Dust Seal
	11	Y-321 39040	Right Hand Lock Nut (4.5 mm) for Axle Length 168 mm
		Y-325 30100	Right Hand Lock Nut (9.9 mm) for Axle Length 175 mm
	12	Y-314 14010	Cap Nut (3/8")
	13	Y-33Z 20200	Non-turn Washer 2 (Yellow)
	14	Y-33R 49010	Left Hand Lock Nut (3 mm) for Axle Length 168 mm
		Y-33R 49020	Left Hand Lock Nut (5 mm) for Axle Length 175 mm
	15	Y-33R 48010	Stop Nut (3 mm)
	16	Y-35U 98050	Brake Arm Unit
	17	Y-33F 98090	Brake Arm Clip Unit (5/8")
		Y-33F 98100	Brake Arm Clip Unit (3/4")
	18	Y-75M 06000	Clip Screw (M6 x 16)
	19	Y-317 27200	Clip Nut
	20	Y-33R 90200	Ball Retainer L (3/16" x 14)
	21	Y-33R 05000	Right Hand Dust Cap A
	22	Y-33R 52001	Right Hand Dust Cap B
	23	Y-322 03220	Sprocket Wheel 16T (Silver)
		Y-322 03420	Sprocket Wheel 18T (Silver)
		Y-322 03520	Sprocket Wheel 19T (Silver)
		Y-322 03620	Sprocket Wheel 20T (Silver)
		Y-330 60000	Sprocket Wheel 21T (Silver)
		Y-330 60100	Sprocket Wheel 22T (Silver)
		Y-330 60200	Sprocket Wheel 23T (Silver)
	24	Y-321 20010	Snap Ring C
	25	Y-220 15010	Flange Nut
	26	Y-33R 98080	Push Rod (81.85 mm) for Axle Length 168 mm
		Y-33S 98180	Push Rod (86.85 mm) for Axle Length 175 mm
	27	Y-33S 95100	Bell Crank III Unit
	28	Y-33S 98010	Cable Adjusting Bolt & Nut
	29	Y-33S 57000	Bell Crank Body Fixing Bolt
	30	Y-33S 98020	Bell Crank Cover & Fixing Screw
	31	Y-33S 98030	Inner Cable Fixing Bolt Unit
	32	Y-041 20800	Internal Hub Grease (Net. 100g)

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