



ski-doo[®]
Snowmobiles

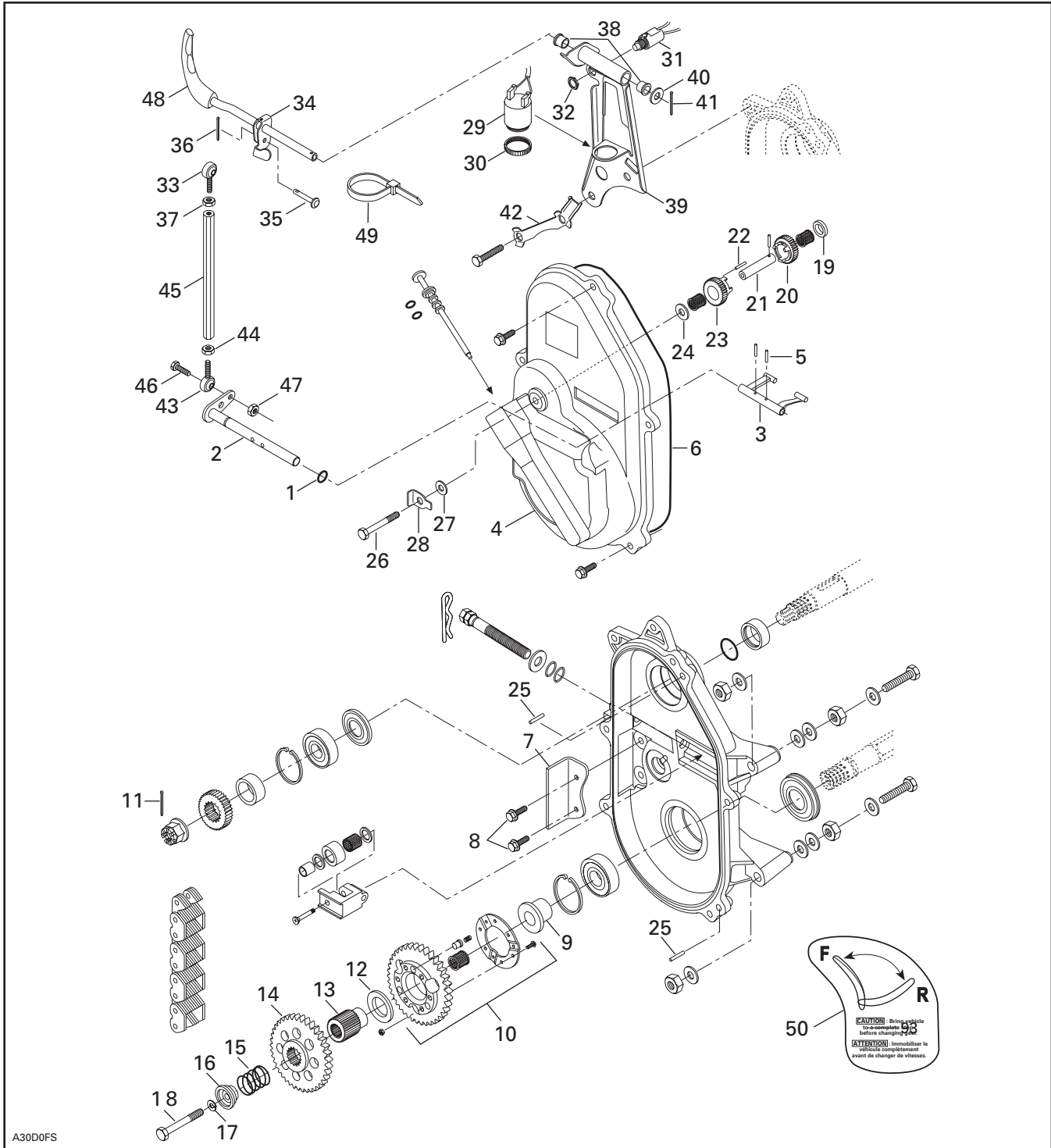
**REVERSE TRANSMISSION KIT
(P/N 860 423 500)**

◆ **WARNING**

For safety reasons, this kit must be installed by an authorized Bombardier snowmobile dealer. Should removal of a locking device be required when undergoing disassembly/assembly, always replace with a new one. This instruction sheet should be given to the purchaser. This kit is designed for specific applicable models only. It is not recommended for vehicles other than those for which it was sold

NOTE: Installation time is approximately 2.2 hours.

PARTS TO BE INSTALLED



A30D0FS

1. O-Ring
2. Fork Shaft
3. Fork
4. Chaincase Cover
5. Spring Pin (2)
6. O-Ring
7. Chain Slider
8. Taptite Hexagonal Bolt (2)
9. Retaining Ring
10. Lower Sprocket Assembly, 44 Tooth
11. Cotter Pin
12. Washer
13. Coupling Shaft
14. Sliding Sprocket, 56 Tooth
15. Release Spring
16. Cap
17. Lock Washer M10
18. Hexagonal Bolt M10 x 50
19. Ring
20. Drive Sprocket, 19 Tooth
21. Reverse Shaft Assembly
22. Rubber Alignment Pin
23. Reverse Sprocket, 19 Tooth
24. Thrust Washer
25. Dowel Pin (2)
26. Hexagonal Bolt M8-90

27. Copper Washer M8
28. Locking Tab
29. Backup Alarm
30. Plastic Nut
31. Switch Assembly
32. Nut
33. Ball Joint RH Side Thread
34. Welded Handle
35. Clevis Pin
36. Cotter Pin
37. Tie Rod Jam Nut M6
38. Flanged Bushing (2)
39. Handle Support
40. Washer
41. Cotter Pin
42. Locking Tab
43. Ball Joint LH Side Thread
44. Jam Nut LH Side Thread
45. Rod
46. Hexagonal Bolt M6 x 20
47. Elastic Nut M6
48. Handle Grip
49. Locking Tie (2)
50. Decal
51. Chain

INSTRUCTIONS

CHAINCASE PREPARATION

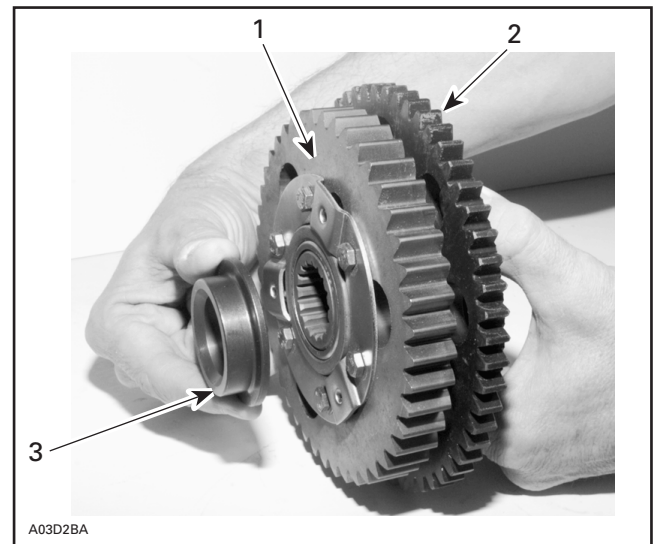
1. Remove tuned pipes and muffler.
2. Remove chain tension.

Chaincase Cover

1. Install O-ring **no. 1** on fork shaft **no. 2** and spread grease on it.
2. Install fork **no. 3** and shaft in new chaincase cover **no. 4**.
3. Secure with spring pins **no. 5**.
4. Install O-ring **no. 6** in cover.

Finalizing Chaincase Assembly

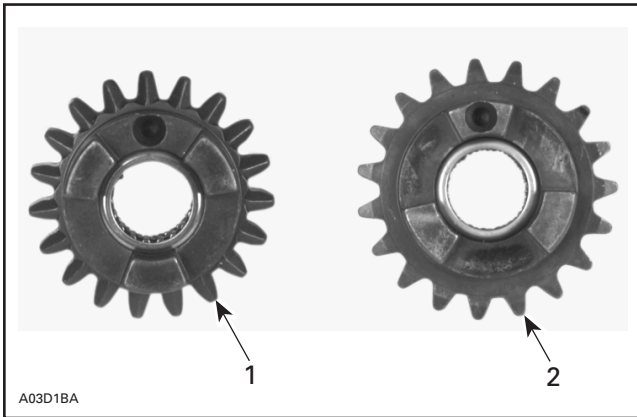
1. Install chain slider **no. 7** and secure with bolts **no. 8**.
2. Install retaining ring **no. 9** and lower sprocket ass'y **no. 10** over drive axle and properly mesh with chain. Change chain **no. 51** if required.



1. 44 tooth gear
2. 56 tooth gear
3. Retaining ring

3. Reinstall spacer and upper sprocket, then torque castellated nut to 75 N•m (55 lbf•ft). Secure nut with a new cotter pin **no. 11**.

4. Install washer **no. 12** onto coupling shaft **no. 13** then insert between sliding sprocket and lower sprocket ass'y.
5. Install sliding sprocket **no. 14**, release spring **no. 15**, cap **no. 16**, lock washer **no. 17** and bolt **no. 18**.
6. Apply Loctite 271 (red) on bolt threads, use sparingly. Torque bolt 42 to 45 N•m (31 to 33 lbf•ft).
7. On reverse shaft **no. 21**, install ring **no. 19** with drive sprocket **no. 20**, making sure to properly position spring pin in housing slot.
8. Install rubber alignment pin **no. 22** and reverse sprocket **no. 23**. Drive sprocket hole and reverse gear hole must be aligned to insert rubber alignment pin.
9. Install thrust washer **no. 24**.

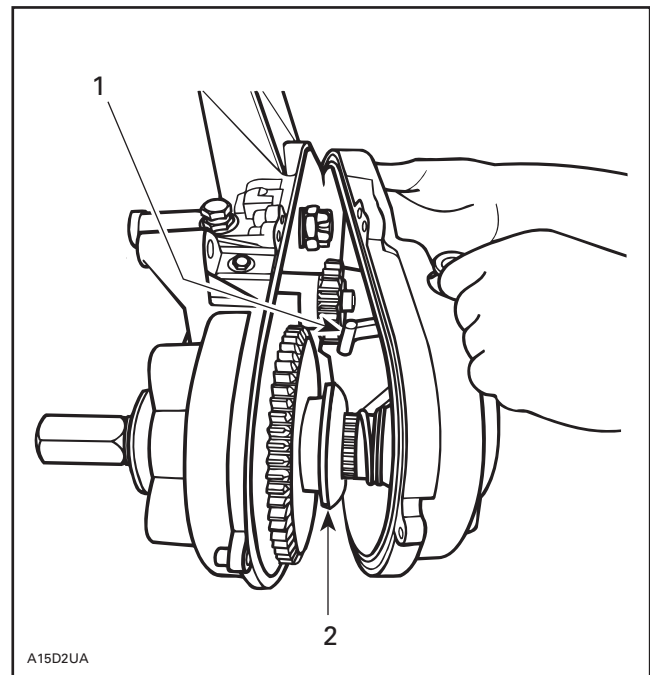


1. Reverse sprocket (hole between dogs)
2. Drive sprocket (hole on dog)

10. Insert dowel pins **no. 25** into chaincase.
11. Fully tighten chain adjusting screw by hand, then back off only far enough for hair pin to engage in locking hole.
12. Join chaincase cover to chaincase by passing fork tabs behind sliding sprocket lip.

▼ CAUTION

Chaincase cover must completely lay against chaincase.



1. Fork tabs
2. Sliding sprocket lip

13. Tighten chaincase bolts in a criss-cross sequence beginning with top center.
14. Install reverse shaft bolt **no. 26** with copper washer **no. 27** against chaincase cover and locking tab **no. 28** against bolt head. Position angle end of tab to rear then torque bolt 13.5 to 17 N•m (123 to 155 lbf•in). Bend locking tab against bolt head.

SHIFTING LINKAGE ASSEMBLY

1. Screw jam nut **no. 37** to ball joint **no. 33** then ball joint to bar **no. 45** upper end.
2. Screw jam nut **no. 44** to ball joint **no. 43** then ball joint to bar lower end.
3. Secure lower ball joint to fork shaft using bolt **no. 46** and nut **no. 47**. Both jam nuts **no. 37** and **no. 44** will serve as shifter rod (bar) adjusters.
4. Install 2 flanged bushings **no. 38** into handle support **no. 39** and insert welded handle **no. 34**. Install washer **no. 40** and secure with cotter pin **no. 41**.

Backup Alarm Installation

1. Install backup alarm **no. 29** into hole provided in handle support, secure using plastic nut **no. 30**.
2. Install switch assembly **no. 31** into hole provided in handle support and secure using nut **no. 32**.

SHIFTING LINKAGE ASSEMBLY INSTALLATION

1. Drill 12.5 mm (1/2 in) hole in console. Refer to alignment embossment behind console for positioning.
2. Release locking tabs then remove bolts that are retaining brake caliper to chaincase.
3. Slide handle portion of shifting linkage ass'y through hole in console. Position handle support so as the 2 lower holes align with existing holes for brake caliper.
4. Install locking tab **no. 42** and secure using existing bolts. Bend locking tabs into place.
5. Insert ball joint **no. 33** in welded handle, secure with clevis pin **no. 35** and Cotter pin **no. 36**.
6. Connect terminals to the alarm, make sure that RED/BLUE wire is connected to alarm negative post. Connect tab connector housing to vehicle harness. Secure wiring harness with locking tie **no. 49**.
7. Install grip **no. 48**.

ADJUSTMENTS

1. Shift into reverse gear.

NOTE: If it is impossible to shift into reverse gear, shorten tie-rod and try again. Turn the brake disk to free the gears. If it is still impossible, check if the fork engages in the sliding gear or disassemble the cover to inspect components.

2. Completely loosen tie rod jam nut **no. 37** on the gear shift linkage.
3. Turn shifter handle in reverse position making sure all play is removed.

NOTE: It is normal to feel a slight friction when shifting into gear.

4. Statically test transmission operation in forward and reverse positions.
5. Hold linkage and tighten tie rod jam nut **no. 37**.
6. Adjust backup alarm so that it sounds when transmission is in reverse gear while engine is running.
7. Install decal **no. 50** on console above handle.

FILLING WITH OIL

1. Fill chaincase with chaincase oil (P/N 413 801 900). Oil capacity is approximately 250 mL (8 oz).
2. Check oil level with dipstick, oil level must be between the marks.



1. Oil level marks



1. Dipstick

3. Reinstall tuned pipes and muffler.
4. Test drive to ensure proper operation of transmission.

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1.	414 773 200	O-Ring	Joint torique
2.	504 147 500	Fork Shaft	Arbre de fourchette
3.	504 075 800	Fork	Fourchette
4.	504 146 800	Chaincase Cover	Couvercle du carter de chaîne
5.	414 772 500	Spring Pin (2)	Goupille-ressort (2)
6.	414 362 300	O-Ring	Joint torique
7.	504 146 900	Chain Slider	Coulisseau de chaîne
8.	210 251 180	Taptite Hexagonal Bolt (2)	Boulon hexagonal autotaraudeur (2)
9.	504 076 300	Retaining Ring	Bague de retenue
10.	581 096 800	Lower Sprocket Assembly, 44 Tooth	Pignon inférieur complet, 44 dents
11.	371 006 300	Cotter Pin	Goupille fendue
12.	504 094 300	Washer	Rondelle
13.	504 097 700	Coupling Shaft	Arbre d'accouplement
14.	504 096 800	Sliding Sprocket, 56 Tooth	Pignon coulissant, 56 dents
15.	504 096 600	Release Spring	Ressort de rappel
16.	504 099 100	Cap	Capuchon
17.	234 100 602	Lock Washer M10	Rondelle-frein M10
18.	222 005 065	Hexagonal Bolt M10 x 50	Boulon hexagonal M10 x 50
19.	504 078 700	Ring	Bague
20.	581 096 900	Drive Sprocket, 19 Tooth	Pignon d'entraînement, 19 dents
21.	580 590 600	Reverse Shaft Assembly	Arbre de marche arrière (complet)
22.	570 048 600	Rubber Alignment Pin	Tige d'alignement de caoutchouc
23.	581 122 200	Reverse Sprocket, 19 Tooth	Pignon de marche arrière, 19 dents
24.	504 077 300	Thrust Washer	Rondelle de butée
25.	732 620 001	Dowel Pin (2)	Goupille d'assemblage (2)
26.	207 089 044	Hexagonal Bolt M8-90	Boulon hexagonal M8-90
27.	504 082 900	Copper Washer M8	Rondelle de cuivre M8
28.	504 150 000	Locking Tab	Patte de verrouillage
29.	414 792 102	Backup Alarm	Avertisseur de marche arrière
30.	414 805 101	Plastic Nut	Écrou de plastique
31.	515 175 100	Switch Assembly	Interrupteur (complet)
32.	732 610 075	Nut	Écrou
33.	414 773 400	Ball Joint RH Side Thread	Joint à rotule à filetage à DROITE
34.	504 147 700	Welded Handle	Poignée soudée
35.	415 103 800	Clevis Pin	Axe de chape
36.	371 801 200	Cotter Pin	Goupille fendue

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37.	232 061 414	Tie Rod Jam Nut M6	Contre-écrou de la barre d'accouplement M6
38.	572 106 000	Flanged Bushing (2)	Douille à épaulement (2)
39.	504 151 826	Handle Support	Support de poignée
40.	503 095 100	Washer	Rondelle
41.	371 800 800	Cotter Pin	Goupille fendue
42.	507 031 900	Locking Tab	Patte de verrouillage
43.	414 773 500	Ball Joint LH Side Thread	Joint à rotule à filetage à GAUCHE
44.	232 066 414	Jam Nut LH Side Thread	Contre-écrou à filetage à GAUCHE
45.	504 147 400	Rod	Barre d'accouplement
46.	207 162 044	Hexagonal Bolt M6 x 20	Boulon hexagonal M6 x 20
47.	232 561 414	Elastic Nut M6	Écrou d'arrêt élastique M6
48.	570 064 600	Handle Grip	Poignée
49.	414 115 200	Locking Tie (2)	Attache (2)
50.	418 001 603	Decal	Autocollant
51.	412 106 900	Chain	Chaîne