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1.0 Scope

1. To ensure that the assembly of this product is carried out in line with predefined procedures, which enable the product to be produced to a high standard of quality, by minimising variation and improving reliability. It also provides detailed information that can be used by Quality officials to carryout audits on internal processes.

2.0 Quality Requirements

- 1. Any person/s involved in carrying out this process **MUST** be competent, or supervised by a competent person.
- 2. All personnel involved in this process are responsible for the quality of the finished product, so therefore **MUST** ensure that all operations are completed in full and inline with this procedure.
- 3. If at any point during the process, the quality of the product is jeopardised by factors beyond the control of the operator, then the Quality department **MUST** be informed immediately.

3.0 Safety

- 1. All appropriate Personal Protective Equipment (PPE) **MUST** be worn at all times during the process.
- 2. Any tools or machinery required during the assembly process **MUST** be used by competent personnel only.

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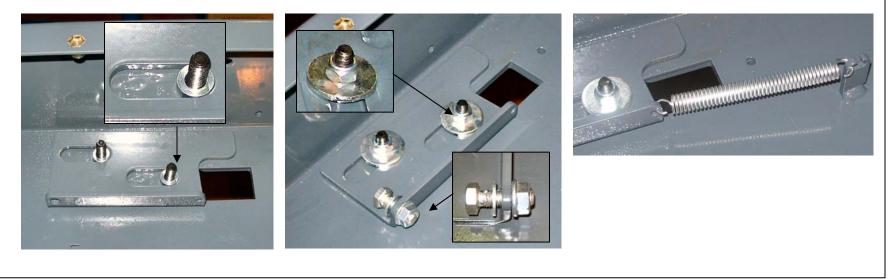
4.0 Method

- Using the correct rivnut tool, fit 6 x M8 hexagon rivnuts (8/8011) into the chassis. 1.
- 2. Fit the chassis (961/03000) onto the assembly fixture.



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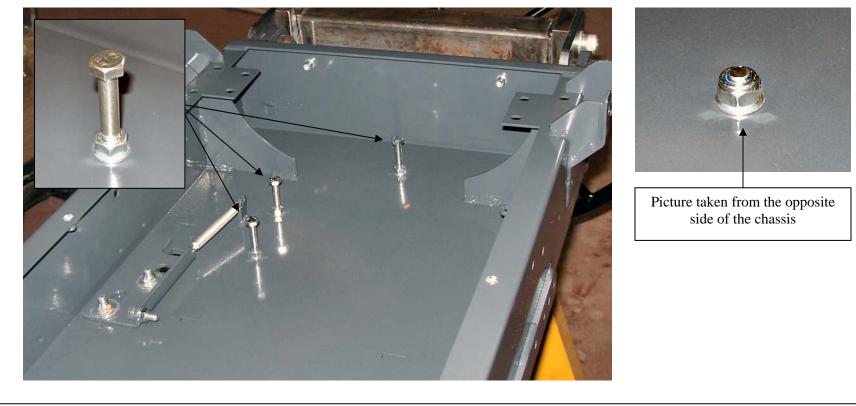
- 3. Apply some WD40 to the area of the chassis where the skip catch plate will be fitted.
- 4. Fit a catch spacer (961/99916) onto each of the M8 welded set screws on the inside of the chassis, and then fit the skip catch plate (961/99906) into position. Secure it in place using 2 x repair washers (05.3.062), and 2 x M8 nylock nuts (8/8008). Tighten the nuts to a torque value of **28NM**.
- 5. Fit an M8 x 25 cross drilled bolt (7/8060) with an M8 washer (4/8006) through the hole in the skip catch plate, and then secure it in position using an M8 flanged serrated nut (8/8020). Do not tighten the nut at this point in the build.
- 6. Fit one end of the tension spring (961/99925) onto the skip catch plate, and the other end onto the spring hook, which is welded into the inside of the chassis. Once fitted ensure that the skip catch operates without restriction. This can be done by pulling the skip catch back and releasing it, if the catch is operating correctly the spring tension will return the catch to its original position.



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7. Fit 3 x M8 x 55 bolts (9/8029), with 3 x M8 nuts (8/8001) and 3 x M8 washers (4/8006), through the holes in the underside of the chassis. Secure the bolts in place using 3 x M8 washers (4/8006) and 3 x M8 nylock nuts (8/8008). Tighten the nylock nuts so that only two threads from the bolt are left exposed; these are tightened to a torque value of **28NM**.

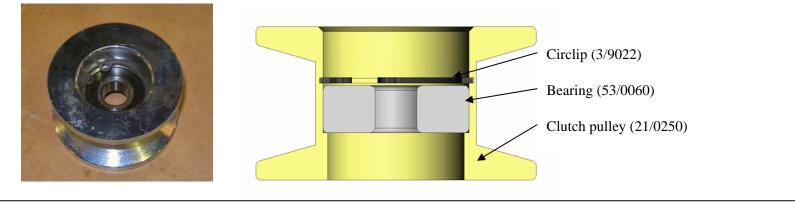


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8. Fit an M8 x 35 bolt (9/8003) with an x M8 nut (8/8001) through the hole in the chassis cross member. Secure the bolt in place using 1 x M8 washer (4/8006) and 1 x M8 nylock nut (8/8008). Again tighten the nut so that only two of the threads from the bolt are left exposed. Tighten the nylock nut to **28NM**.

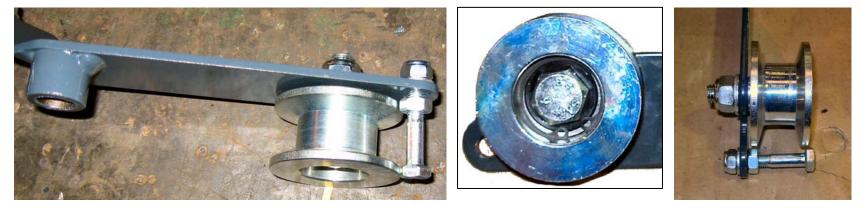


9. Press the bearing (53/0060) into the clutch pulley (21/0250), and secure in place using 1 x circlip (3/9022).



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- 10. Remove any excess paint from the underside of the clutch arm boss.
- 11. Fit the clutch pulley onto the clutch arm WA (961/01300), and secure it in place using 1 x clutch arm pulley spacer (961/99917), 1 x M12 x 45 bolt (9/12002), 1 x M12 washer (4/1204), and 1 x M12 nylock nut (8/12006). **NOTE**: The bolt is fitted through the pulley so that the head of the bolt is on the side of the pulley that has the circlip fitted; do not fit a washer onto this side of the pulley. Tighten the nylock nut to a torque value of **45NM**.
- 12. Fit an M8 x 45 bolt (9/8017) with an M8 nut (8/8001) through the hole in the clutch arm. Secure it in place using an M8 washer (4/8006) and an M8 nylock nut (8/8008). Do not tighten the nylock nut at this point in the build.



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- 13. Fit an M8 x 20 cross drilled bolt (7/8070) with an M8 washer (4/8006) through the clutch arm, and then secure it in position using an M8 flanged nut (8/8020). Do not tighten the nut at this point in the build.
- 14. Fit an M8 x 25 setscrew (7/8012) through the clutch arm, and then secure it in position using an M8 nylock nut (8/8008). Tighten the nut to a torque value of **28NM**.
- 15. Onto the threaded end of the M8 x 25 setscrew that you have previously fitted, fit a tension spring (961/99925), and then secure into position using an M8 nylock nut (8/8008). Tighten the nut so that it is a flush fit with the end of the setscrew. NOTE: Ensure that the spring is phased as shown in the picture below.



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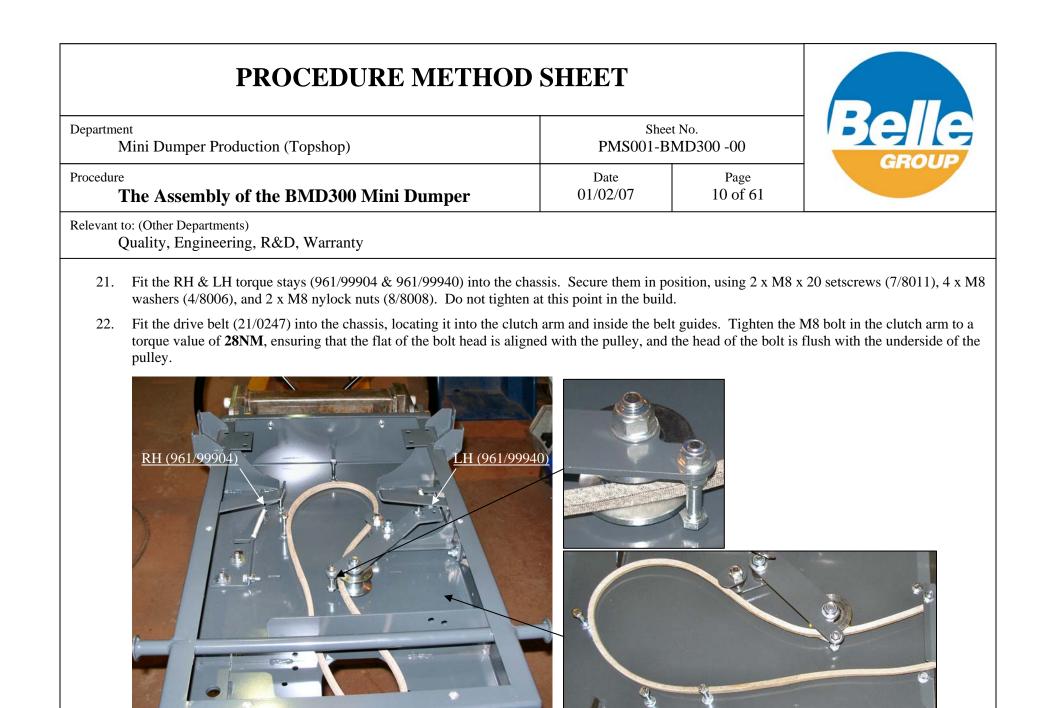
- 16. Fit the clutch arm onto the friction lever pivot WA (961/02600). Secure it in place using an M12 x 60 bolt (9/12010), 2 x M12 washers (4/1204), a clutch lever pivot (961/99960), and an M12 nylock nut (8/12006). Tighten the nut to a torque value of **20NM**, ensuring that the clutch pivots freely (without restriction) once tight.
- 17. Fit the belt guide WA (961/02800) onto the friction lever pivot WA. Secure it in place using an M12 x 50 coach bolt (9/12032), and an M12 binx nut (8/12001). Do not fully tighten at this point in the build.



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- 18. Fit the clutch arm assembly into the chassis. Secure it in place using 2 x M8 x 30 setscrews (7/8009), an M8 x 25 setscrew (7/8012), 6 x M8 washers (4/8006), and 3 x M8 nylock nuts (8/8008). Tighten to a torque value of **28NM**.
- 19. Phase the guide tube WA at 45 degrees, and pull it to the front of the slot. Holding the guide tube in the correct position tighten the binx nut to a torque value of **45NM**.
- 20. Attach the tension spring to the chassis hook.



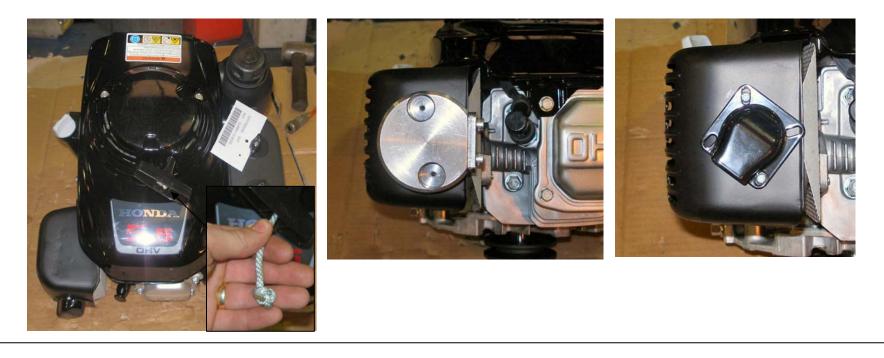


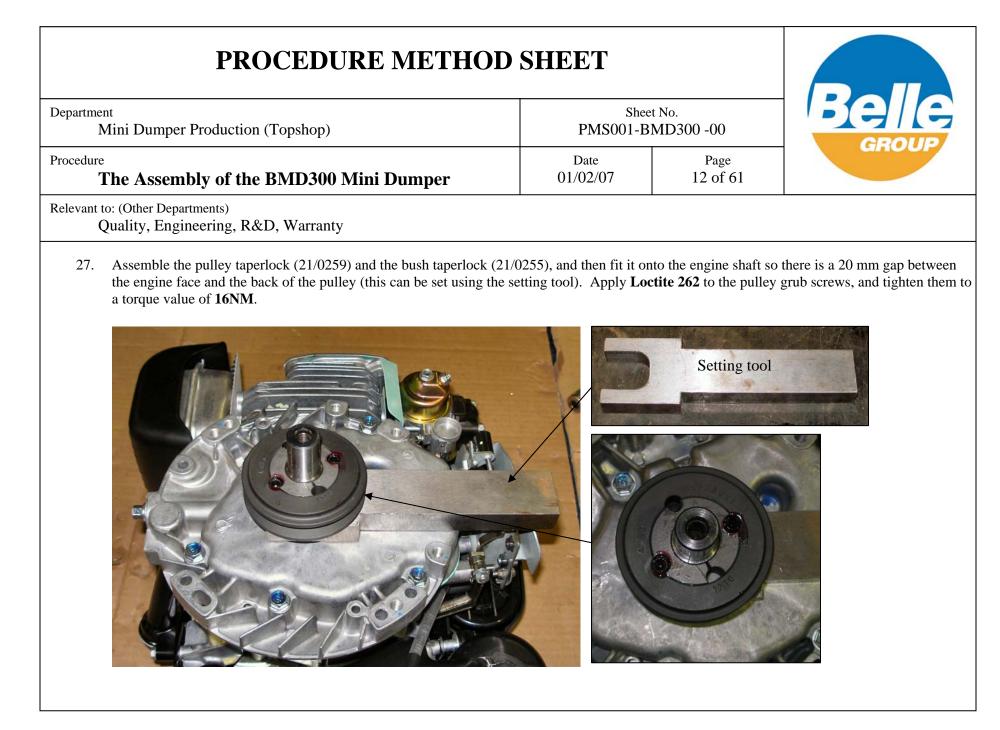
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- 23. Turn the recoil on the engine (20/0073) around by 180 degrees, so that the recoil handle is in the position shown in the bottom left hand photo.
- 24. Reduce the length of the recoil rope by 450mm, and then tie off using a double knot. Seal the end of the rope using a flame from a suitable lighter.
- 25. Using the drilling fixture, drill 2 x 3mm holes into the exhaust guard.
- 26. Fit the exhaust deflector (21/0236) to the exhaust guard, and secure it in place using 2 x 5/16 posi pan head screws (21.0.140).





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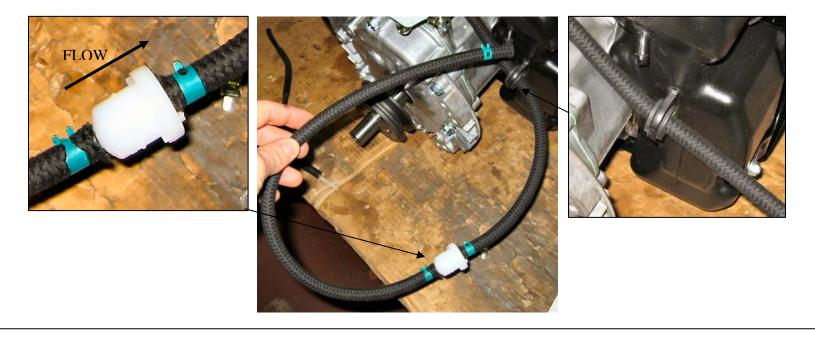
- 28. Remove the fuel hose, which is attached to the underside of the fuel tank and the carburettor fuel inlet, from the engine.
- 29. Fit one hose clamp (15.0.085) onto the end of the fuel hose (25/00006).
- 30. Fit the hose onto the carburettor, and secure it using the hose clip. Once fitted pass the hose through the hose guide on the engine.





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- 31. Remove the rubber grommet from the discarded fuel hose and fit it onto the newly fitted hose.
- 32. Fit the grommet back into position on the underside of the fuel tank.
- 33. Fit the fuel filter (21/0058) onto the fuel hose, ensuring that the arrow on the filter is directing the fuel flow towards the engine. Secure the filter to the hose using another hose clip.
- 34. Fit a hose clip onto either end of a new fuel hose. Once fitted take one end of the fuel hose and fit it onto the remaining connector on the fuel filter, securing it with one of the clips. The opposite end of the fuel hose is not fitted at this point in the build.



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35. Secure the fuel hose to the engine cowl using 1 x cable tie (1/0005).



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36. Fit the engine onto the chassis and secure it in place using, 3 x M8 x 45 bolts (9/8017) with 6 x M8 washers (4/8006), and 3 x M8 nylock nuts (8/8008), and also, 4 x 5/16" x 1" setscrews (02.3.020), with 4 x M8 spring washers (4/8003) and 4 x M8 washers (4/8006). Tighten all the fasteners to a torque value of **28NM**. Once secured into position fit the drive belt over the taper lock pulley.

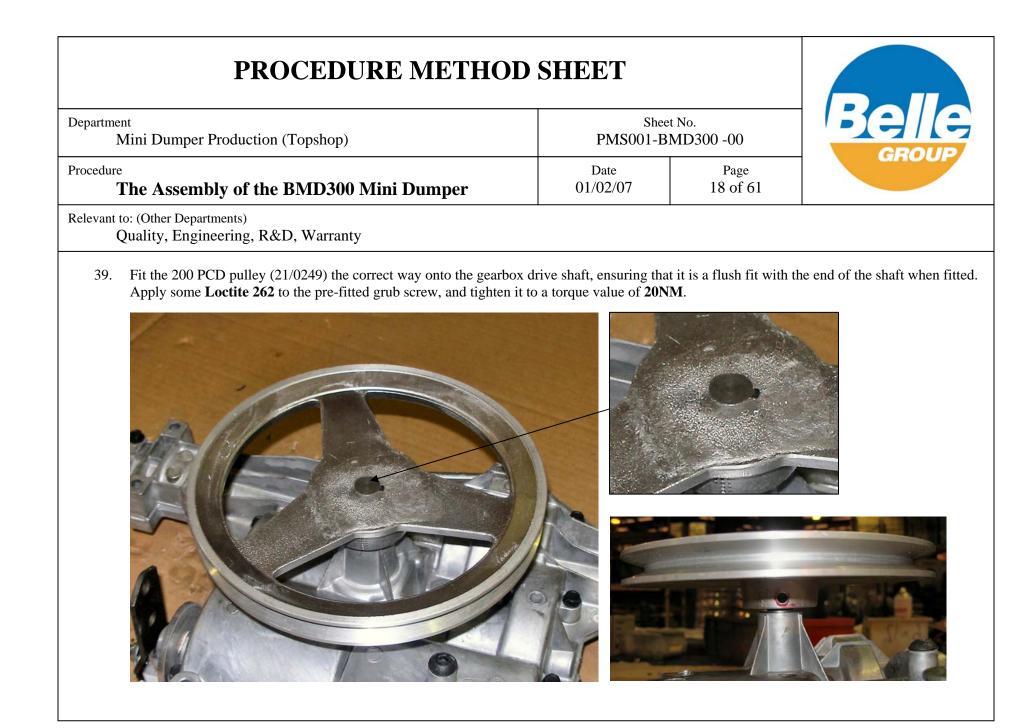


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- 37. Fit the gear change mechanism (961/99944) onto the gearbox (961/99922), and then secure it in place using a ¹/₄" x ³/₄" UNF setscrew (7/6038), with an M6 spring washer (4/6005) and a 30 OD thick washer (4/6015). Tighten to a torque value of **12NM**.
- 38. Fit the stepped key into the keyway on the drive shaft.





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40. Fit an M8 x 25 cross drilled bolt (7/8060), with an M8 washer (4/8006) through the hole in the brake lever. Secure it in place using a flange serrated nut (8/8020). Do not tighten the nut at this point in the build.



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- 41. Fit the gearbox assembly onto the chassis, locating the drive belt onto the gearbox pulley.
- 42. Fit the gearbox cross member (961/00401) onto the gearbox. Secure the cross member and gearbox into position using, 7 x M8 x 70 bolts (9/8022), an M8 x 80 bolt (9/8048), 16 x M8 washers (4/8006), and 8 x M8 nylock nuts (8/8008). Also fit the RH & LH torque stays onto the gearbox, and secure them in position using 2 x M8 x 16 tap screws (7/8059). Tighten all the fasteners, including the M8 x 20 setscrews that secure the torque stays to the chassis, to a torque value of **28NM**. **NOTE:** Ensure that all fasteners are fitted into position before beginning to tighten them to there desired torque value.



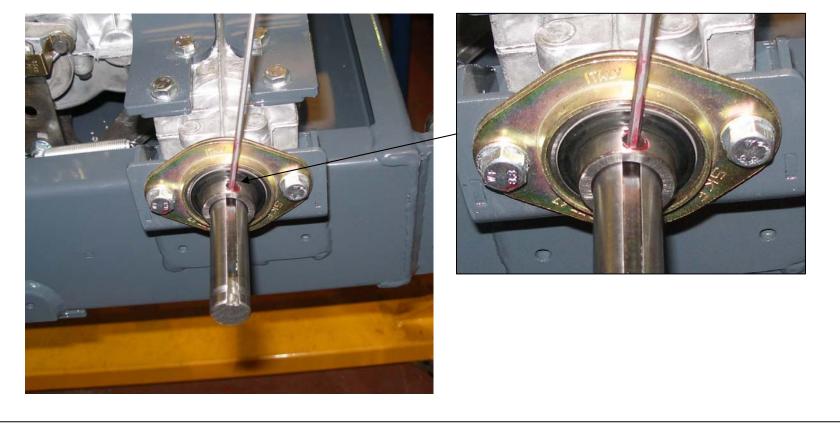
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43. Fit 2 x axle bearings (53/0061) between 2 x pressed 'V' steel housings (53/0064) and slide them onto the gearbox axle. Secure them in place using, 4 x M8 x 20 setscrews (7/8011), 8 x M8 washers (4/8006), and 4 x M8 nylock nts (8/8008). Tighten to a torque value of **28NM**.



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44. Align the bearings so that one of the grub screws can be screwed into the keyway on the axle. Apply Loctite 262 to both grub screws and tighten them onto the axle.



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- 45. Fit a key (06.8.003) into both keyways on the gearbox axle, ensuring that they are fitted fully up to the bearing faces.
- 46. Fit a front hub (961/99921) onto each gearbox axle. Secure them in place using an E-clip (3/1017), ensuring that it locates in the axle keyway as shown in the picture below.



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47. Fit a plastic dust cover (961/99923) onto both front hubs.



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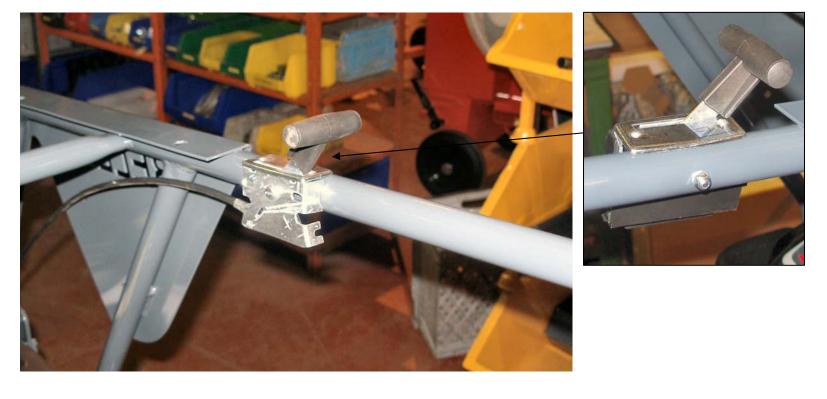
48. Fit the handle WA (961/00300) onto the chassis, and then secure it in place using 8 x M10 x 30 setscrews (9/10001), with 16 x M10 washers (4/1005), and 8 x M10 nylock nuts (8/10006). Tighten to a torque value of **50NM**.



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49. Fit the throttle lever c/w cable (74/0014) to the handle WA. Secure in place using an M5 x 45 slotted pan head screw (7/5164), with an M5 washer (4/5002), and an M5 nylock nut (8/5003).



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50. Fit the throttle cable into the top hole on the engine throttle lever, and clamp the outer cable securely in place using the clamp on the engine. Ensure that the choke is fully on when the throttle lever is pushed fully forward; when the choke is fully on, the black indicator on the carburettor is in the position shown below.



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51. Fit the plastic cover onto the throttle lever, ensuring that all the tags are clipped securely together.



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- 52. Fit the clutch lever with no clamp (74/0019) and the mechanical dead mans handle (961/99939) to the left hand handle. Set the levers at a distance of **155 mm** from the end of the handle, and then secure them in place using the pre-fitted cap screws, tightening them to a torque value of **10NM**.
- 53. Fit the clutch lever (74/0013) to the right hand handle, again setting it at a distance of **155 mm** from the end of the handle. Secure it in place using the pre-fitted cap screws, tightening them to a torque value of **10NM**.



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54. Fit a rubber handle grip $(74/0011)$ onto the end of each handle bar.			

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- 55. Fit a clutch cable (74/0015) to both black clutch levers, ensuring that the adjusters are wound fully into the levers. Tighten the M8 lock nuts to secure the cables into the levers.
- 56. Fit the brake cable (74/0018) to the dead mans handle, again ensuring that the adjuster is wound fully into the lever. Tighten the M8 lock nut to secure the cable into the dead mans handle.

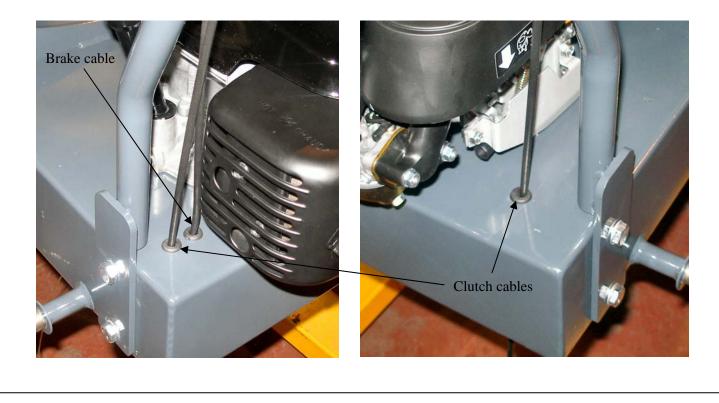


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57. Fit a rubber grommet (3/3009) to the end of each cable.

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58. Fit the two clutch cables into the two outer holes in the rear of the chassis, and then fit the brake cable through the remaining hole. Ensure that all grommets are located correctly into the holes.



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59. Using 2 x Cable ties (1/0005) secure all four cables to the handle WA as shown in the pictures below.



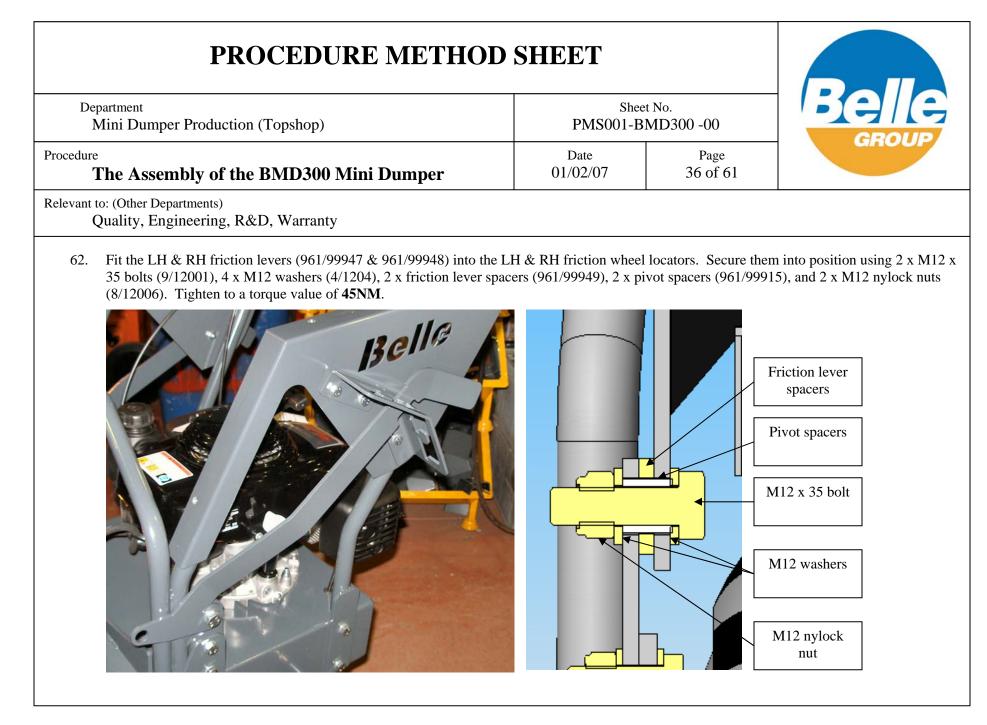
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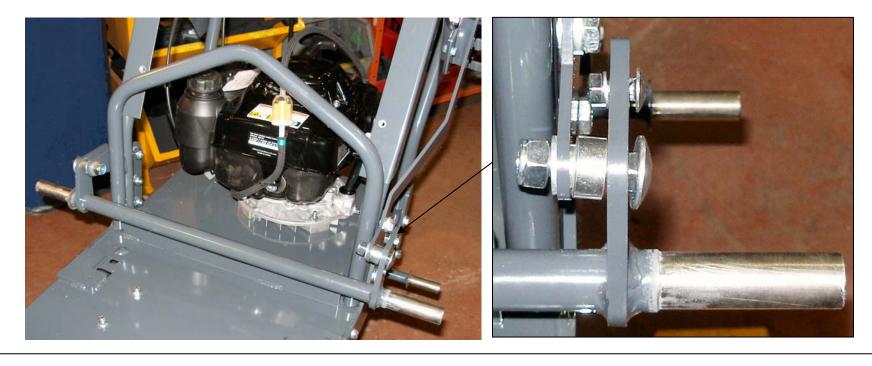
61. Fit the left hand friction wheel locator (961/99955) and the right hand friction wheel locator (961/99954) to the handle WA. Secure them in place using, 6 x M8 x 20 setscrews (7/8011), 12 x M8 washers (4/8006), and 6 x M8 nylock nuts (8/8008). Tighten all setscrews to a torque value of **28NM**.





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- 63. Ensure that the ends of the friction wheel axle WA (961/01600) are free from paint.
- 64. Fit the friction wheel axle WA (961/01600) into position and secure it in place using 2 x M12 x 45 coach bolts (9/12025), 2 x friction wheel pivot spacers (961/99934), 2 x M12 washers (4/1204), and 2 x M12 nylock nuts (8/12006). Do not tighten at this point in the build.
- 65. Fit 2 x M8 x 20 coach bolts (9/8055) to the friction axle. Secure it in position using 2 x M8 washers (4/8006) and 2 x M8 binx nuts (8/8002). Again do not tighten at this point in the build.



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- 66. Fit a spacer (961/99918) onto either end of the friction axle.
- 67. Fit a friction wheel (60/0439) onto either side of the friction axle, ensuring that the valve is on the outside of the machine. Secure it in position using a star cap washer (4/2501), which must be fitted using the correct fitment tool.

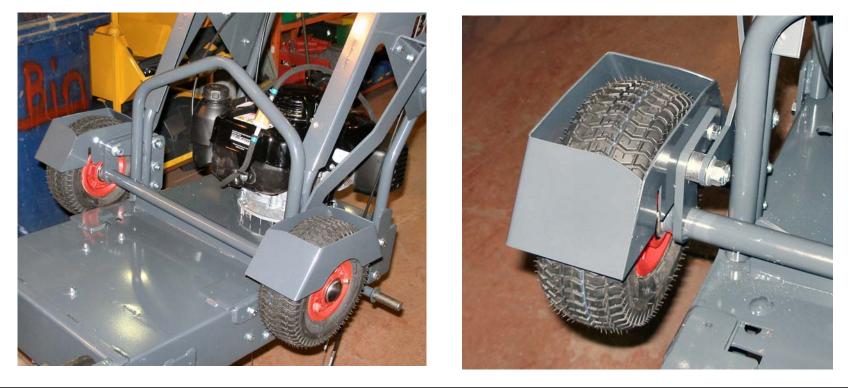




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68. Slide a mud guard (961/01700) onto either side of the friction axle. These locate between the heads of the M12 & M8 coach bolts and the friction axle WA. Secure the mud guards into position by tightening the coach bolts. Tighten the M12 coach bolts to a torque value of **45NM**, and the M8 coach bolts to a value of **28NM**. Once fitted ensure that the friction wheels operate correctly by moving the friction levers up and down.



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69. Fit the banjo fitting (158/99911) and 2 x bonded seals (10-100-0510) into the underside of the fuel tank (158.0.010), ensuring that the banjo fitting is phased correctly, and tightened to a torque value of **8NM**.



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- 70. Fit the rubber washer (4/50001) onto the fuel tank.
- 71. Fit the strainer (158.0.011) into the tank.
- 72. Screw the fuel cap (158.0.012) onto the fuel tank.



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73. Fit the tank assembly into the cowl (961/01200), and secure it in place using 2 x M10 x 25 setscrews (7/10005), 4 x M10 washers (4/1005), and 2 x M10 nylock nuts (8/10006). Tighten the setscrews to a torque value of **12NM**. **NOTE**: Ensure that the filler cap is in the centre of the cowl hole when tight.



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washers (4/6007), 2 x M6 washers (4/6001), and 2 x M6 nylock n	uts (8/6007). Tighten to a	torque value of 10NM .	1

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- 75. Fit the cowl onto the handle assembly. Secure it in place using, 6 x M6 x 16 button caps (7/4046) and 6 x M6 form C washers (4/6007). Tighten these to a torque value of **10NM**.
- 76. Fit the fuel hose onto the banjo fitting on the underside of the fuel tank, and secure it using the hose clip that was previously fitted onto the hose.







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77. Fit a nylon bush (961/99914) into the top of the cowl and into the chassis.



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- 78. Fit an M8 x 16 grub screw (7/8063) with an M8 nut (8/8001) into the lower gear selector boss (961/99935).
- 79. Fit the gear selector rod (961/01400) through the nylon bush in the cowl, through the lower gear selector boss, and partially through the nylon bush fitted into the chassis.



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- 80. Fit the gear selector lower pivot (961/00800) onto the bottom of the gear selector rod. **NOTE:** You will need to push the gear rod through the nylon bushes in order to fit the lower pivot.
- 81. Fit 2 x M8 x 16 dog point grub screws (7/8068), with 2 x M8 nuts (8/8001) into the gear selector lower pivot, aligning the grub screws with the pre-drilled holes in the gear selector rod. Tighten the grub screws to a torque value of **20NM**, and then tighten the M8 lock nuts.
- 82. Pull the lever fully down so that the lower pivot is in contact with the chassis. Now slide the lower gear selector boss up to the nylon bush and tighten the grub screw to **20NM**.



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picture below, ensuring that about 10 mm of adjustment is left in ea			

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84. Fit the skip catch cable through the cross drilled bolt in the skip catch plate and pull the cable taught. Tighten the flange serrated nut to secure the cable in place. Once tight check the operation of the skip catch plate by compressing the lever on the handle. If the cable is set correctly there should be no play in the lever, and the skip catch plate should operate without restriction.



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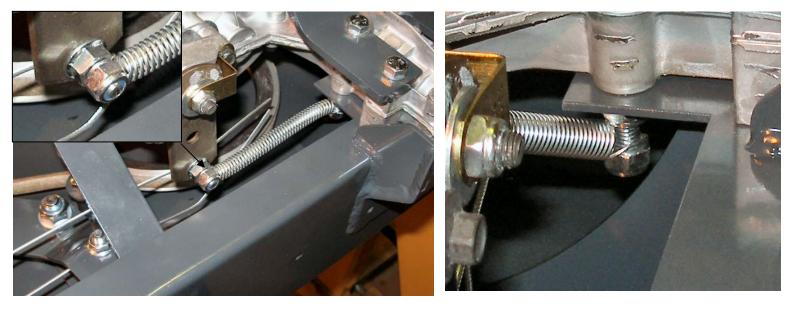
85. Fit the cable for the clutch lever through the cross drilled bolt in the clutch arm. Set the clutch arm at a distance of **235 mm** from the inside edge of the chassis cross member (see the photo below). Once set ensure that the clutch cable is taught, and then tighten the flange serrated nut to secure the cable into position. Tighten to a torque value of **28NM**. **NOTE:** Ensure that the tension spring is still attached to chassis spring hook.



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- 86. Fit the brake cable through the crossed drilled bolt, which was previously fitted into the brake mechanism on the gearbox. Do not tighten the flange serrated nut at this point in the build.
- 87. Fit a tension spring (961/99925) to the M8 x 80 bolt, which was used to secure the gearbox to the chassis. Secure the spring onto the bolt using an M8 nylock nut (8/8008). Tighten the nylock nut so that the nut is flush with the end of the bolt.
- 88. Fit the opposite end of the tension spring onto the crossed drilled bolt that the brake cable was previously fitted through. Secure the spring onto the cross drilled bolt using an M8 nylock nut (8/8008). Again tighten so that the nut is flush with the end of the bolt.
- 89. Ensure that the brake cable is pulled taught, and then tighten the M8 flange serrated nut to secure the cable in position.



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90. Check that the brake mechanism is operating correctly; Pull the transmission shifter plate, which is fitted to the gearbox, to the rear of the chassis. Now push the shifter plate forward one gear, this has now selected neutral. Locate two suitable levers into the front hubs and simultaneously push against them. If the brake is operating correctly then you will feel resistance. Now ask someone to compress the deadmans handle. The hubs should now turn freely. If this is not the case then the M8 nut in the centre of the gear mechanism will require adjustment until the brake operates correctly. **NOTE**: If you are unsure how to adjust the brake mechanism then please consult the quality department.



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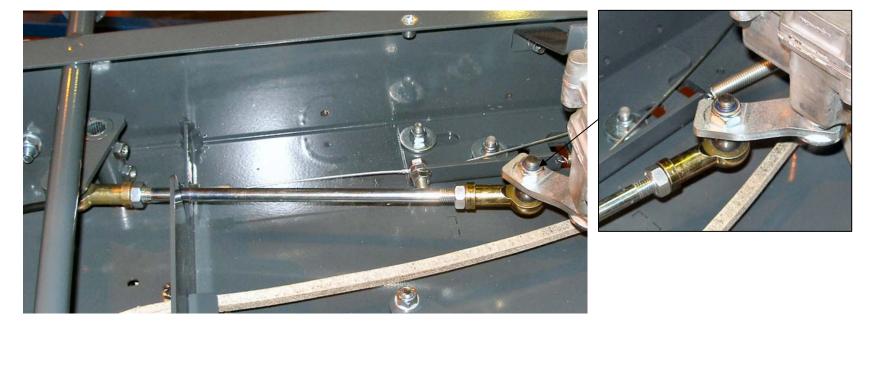
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- 91. Fit an M10 LH nut (8/10013) and an M10 RH nut (8/10003) onto the adjustable gear rod (961/99933).
- 92. Fit a LH rod end (3/5027) and a RH rod end (3/5026) onto the adjuster rod, ensuring that both are screwed fully onto the rod.
- 93. Set the rod ends at a distance of 238mm apart. **NOTE:** Ensure when setting the distance that both rod ends are equally unscrewed, this will enable maximum adjustment for the end user.
- 94. Once the distance has been set correctly, wind the M10 lock nuts up to the rod ends to prevent them from moving.



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- 95. Fit the LH rod end into the transmission shifter plate and the RH rod end into the gear selector lower pivot. Secure them in position using 2 x M10 nylock nuts (8/10006), tightening them to a torque value of **35NM**.
- 96. Fully tighten the M10 lock nuts on the adjuster rod, ensuring that the rod ends are kept inline with each other.



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97. Fit a pressed steel hub (961/99941) onto either side of the rear axle, and secure them in place using a starcap washer (00011), which must be fitted with the correct fitment tool.





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- 98. Fit 2 x LH wheels (60/0436) and 2 x RH wheels (60/0438) on to the wheel hubs, ensuring that the valves are facing outwards, and that the direction of the tyres is correct. Tighten the wheel nuts in a diagonal pattern to a torque value of **45NM**.
- 99. Using a suitable tyre inflator, inflate the four tyres to **30PSI** and the two friction wheels to **35PSI**.
- 100. Replace the plastic dust caps on the friction wheels with steel dust caps (60/0440), tightening them with a suitable spanner. **NOTE:** Do not over tighten.



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- 101. Fit an M8 x 16 set screw (7/8008), with an M8 spring washer (4/8003) and an M8 form C washer (4/8007) through the hole in the top of the cowl. Onto the setscrew fit an M8 300D washer (05.3.062) and an M8 dome nut (8/8022). Do not tighten at this point in the build.
- 102. Fit an M8 x 20 set screw (7/8011), with an M8 spring washer (4/8003) and an M8 form C washer (4/8007) through the other hole in the cowl. Onto the set screw fit a gear selector washer (961/99953) and an M8 dome nut (8/8022). Do not tighten at this point in the build.
- 103. Select reverse gear using the gear selector rod. Now set the rear dome head nut so that the flat of the nut is against the gear indicator on the selector rod. Holding the nut in position tighten the M8 x 16 setscrew to a torque value of **28NM**.
- 104. Select fourth gear by pushing the gear selector rod forward. Again set the dome head nut so that the flat of the nut is against the gear indicator. Holding the nut in position tighten the M8 x 20 setscrew to a torque value of **28NM**.



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105. Fit the gear selector handle grip (961/99932) onto the gear selector rod.

106. Fit a friction wheel lever cover (74/0020) onto the end of each friction wheel lever.



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- 107. Fill the engine with 0.65L of 10W/30S engine oil (1/0101).
- 108. Fill the fuel tank with some unleaded petrol. **NOTE**: Only enough petrol to carry out the functional test is required.



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- 109. Put the gear box into neutral.
- 110. Push the throttle lever fully forward, and then start the engine by pulling hard on the recoil handle.
- 111. Once started move the engine off choke by pulling pack on the throttle lever until you feel the throttle lever locate into the high rev position.
- 112. Attach the Tachometer to the HT lead.
- 113. Set the engine RPM at 3000 by adjusting the screw on the rear of the engine. Remove the Tachometer from the engine once the RPM is set to the correct level.

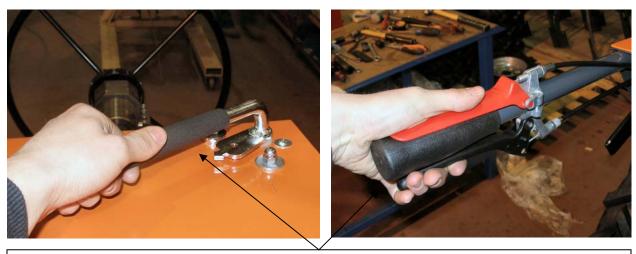




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- 114. With the machine still running select first gear. Press down on the brake lever to release the brake, and then check that the front wheels are not turning. If they do turn then this is an indication that there is to much tension in the drive belt, so the clutch arm could have been incorrectly set.
- 115. With the engine still running check that the machine has drive in each of the gears. This is done by selecting the appropriate gear using the gear selector rod, and then simultaneously pressing down on the brake lever and squeezing the clutch lever.
- 116. Turn the engine off by pulling back on the throttle lever. Now check that there is no fuel leaking from the fuel tank or the fuel hoses.
- 117. Remove the machine from the assembly fixture using a suitable lifting device.



Select the appropriate gear using the gear selector rod, and then simultaneously press down on the brake lever whilst squeezing the clutch lever.