

Service Manual





Battery Powered Tool

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This manual is only for use by TFS authorized distributors and repair centres.

IMPORTANT: The warranty is invalidated if the installation tool is not identified with a relevant serial number label. The label is positioned internally, at the base of the handle, on the left moulding, 41. When replacing the moulded body a new label, 83, must be inserted and marked by hand with the tool's original serial number.

ANNUAL/500,000 CYCLE SERVICE

- Every 500,000 cycles the tool should be completely dismantled and new components should be used where worn, damaged or recommended. All 'O' rings and seals should be renewed and lubricated with MolyKote 111 grease before assembling.
- For an easy complete service, Textron Fastening Systems offer a complete service kit as detailed below.

Service Kit: 71600-99990

Spanners are specified in inches and across flats unless otherwise stated

Part No.	Description	Part No.	Description
07900-00006	Spatular	07900-00748	Threaded Sleeve Bullet
07900-00008	⁷ / ₁₆ x ¹ / ₂ Spanner	07900-00747	Valve Seat Tool
07900-00012	⁹ /16 x ⁵ /8 Spanner	07900-00749	Threaded Sleeve Tool
07900-00015	⁵ / ₈ x ¹¹ / ₁₆ Spanner	07900-00750	Valve Needle Sleeve
07900-00243	Screwdriver - Small	07900-00751	3mm Allen Key - Short Reach
07900-00333	Screwdriver - Medium	07900-00753	Circlip Pliers - Small
07900-00469	2.5mm Allen Key	07900-00754	Priming Pump
07900-00737	Piston Seal Sleeve	07900-00755	Grease - MolyKote 111 - 100g tube
07900-00738	Piston Seal Tool	07900-00756	Loctite [®] 243 Threadlocker
07900-00739	Piston Bullet	07900-00757	Scalpel
07900-00740	Cylinder Collar	07900-00760	Pozi Screwdriver
07900-00741	Guide Tube	07900-00788	Service Kit Storage Case
07900-00742	Insertion Rod	07900-00768	Reservoir Bullet
07900-00743	End Cap Assembly Tool	07900-00769	Trigger Tool
		07992-00020	Grease - Moly-Lithium

Before dismantling:

- Disconnect the battery before any servicing or dismantling is attempted, unless specifically instructed otherwise.
- Care must be taken at all times to ensure that conditions are clean so that no foreign matter enters the tool or serious damage may result.
- Empty the oil from the tool following the first three steps of the priming procedure. Refer to the priming procedure on pages 14 and 15 of the Instruction Manual.
- Remove the nose equipment.

For a complete service of the tool, we advise that you proceed with dismantling of sub-assemblies in the order shown on page 5. After dismantling the tool we recommend that you replace all seals.

On reassembly it is essential to prime the tool and fit an appropriate nose assembly prior to operating.



MOULDED BODY ASSEMBLY

IMPORTANT: The warranty is invalidated if the installation tool is not identified with a relevant serial number label. The label is positioned internally, at the base of the handle, on the left moulding, 41. When replacing the moulded body a new label, 83, must be inserted and marked by hand with the tool's original serial number.

The moulded body assembly includes items 1, 2, 33, 41 to 45, 47, 48, 53, 54, 81 and 83. These parts are only available as a complete Body Moulding Assembly Kit (part number 71600-99600), unless the individual part numbers are provided in the parts list.

- Remove and discard label 42 from the right moulding 43 to reveal the hidden screw.
- Remove the nose tip spanner 53 and two nose tips from the moulded body.
- Place the tool on its side and using the pozi screwdriver unscrew all eight pozi screws 45 in the moulded body.
- Remove the right moulding 43 leaving the main internal mechanism within the left moulding 41 as shown on page 10.
- Remove the vent screen 54, battery retainer spring 47 and dowel pin 48 from the left moulding 41.
- Before removing the main internal mechanism ensure that the electrical control circuit **5** and the reservoir **73** are released from the mounting points within the moulding.
- Holding the tool by the motor and gearbox assembly 3 remove the main internal mechanism from the moulding.

Assemble in reverse order to dismantling noting the following points:

- Place the main internal mechanism into the left moulding 41, first ensuring that the electrical control circuit 5 and the reservoir 73 are correctly placed within the mounting positions provided. The circuit board must be positioned so that the heat sink is facing forward and the black and blue wires are at the top. The contact holder 4 must be positioned with the positive symbol in the left moulding 41 as shown in the diagram below.
- The contact holder is designed to enable correct orientation in the mouldings. Care must be taken to ensure that the raised portion on the right moulding **43** fits within the indent on the negative side of the contact holder **4**.
- When replacing the right moulding **43** take care to ensure that no wires are trapped and correct alignment with the electrical control circuit **5** and the vent screen **54** are achieved.

• When the moulded body is fully assembled with all eight pozi screws 45, insert new case label 42 on the right moulding 43. IMPORTANT: Correct orientation of the contact holder 4 must be achieved when assembling into mouldings 41 and 43. Incorrect assembly will cause short circuit and failure of electrical control circuit.



PUMP ASSEMBLY

The pump assembly includes items **29**, **35**, **36**, **37**, **49**, **51** and one of the following plunger seal combinations, either seals (**37** and **50** 2 off) or (**37**, **84** and **85**). These parts are only available <u>fully assembled</u> as a complete Pump Assembly Kit (part number 71600-99601), unless the individual part numbers are provided in the parts list.

- Completely remove the main internal mechanism from the left and right mouldings 41, 43, as described on page 5.
- To gain access to the pump attachment screws **29** the trigger assembly, items **34**, **40**, must be removed. Using the circlip pliers remove one circlip **67** from pin **66**. Push the pin out allowing the trigger lever **34** and trigger button **40** to be removed.
- Hold the main internal mechanism and pump block 51 securely in position and using the 3 mm allen key remove the four attachment screws 29. Remove the complete pump assembly from the housing 24. Care must be taken when removing the pump assembly as the plunger 36 will be spring loaded.
- Remove the plunger 36 and spring 35 from the pump block 51 taking care not to damage the seals, plunger surface and the pump block bore.
- Remove 'O' ring **49** from housing **24** and discard.

Assemble in reverse order to dismantling noting the following points:

- Clean the plunger 36 and apply a small amount of Molykote 111 grease to the seals using the spatula.
- Clean the pump block 51 bore and then lubricate with Molykote 111 grease using the spatula.
- Place spring 35 over the sealed plunger, align the end of the plunger with the pump block 51 bore and push into place until the seals are no longer visible. When inserting the plunger take care not to damage the seals on the rim of the pump block bore.
- Apply a light film of Loctite[®] 243 threadlocker to all four screws 29.
- Attach the pump assembly onto the housing 24 as before using four screws 29 and the 3 mm allen key.
- Finally assemble the trigger assembly, items 34, 40, and pin 66 in reverse order to dismantling.

MOTOR, GEARBOX AND ELECTRICAL ASSEMBLY

The motor, gearbox and electrical assembly includes items **3**, **4**, **5**, **28**, **38** and **52**. These parts are only available as a complete assembly (part number 71600-99602), unless the individual part numbers are provided in the parts list.

- Completely remove the main internal mechanism from the left and right mouldings 41, 43, as described on page 5.
- Remove the 'pump assembly' as described above.
- Using the small screwdriver remove the two screws 28 that retain the micro-switch to the switch bracket 27.
- Using the 3 mm allen key remove all three screws 38 and washers 52 attaching the gearbox to the housing 24.
- Remove the complete motor, gearbox and electrical assembly 3, 4 and 5 from the housing 24.

Assemble in reverse order of dismantling noting the following points:

- Ensure that the motor and gearbox assembly, when connected to the housing **24**, is orientated so that the groove in the gearbox mounting plate is at the top.
- Apply Loctite[®] 243 threadlocker to all three screws 38.
- DO NOT USE UNDUE FORCE when inserting the three screws 38 into the housing 24.



HEAD ASSEMBLY

The head assembly consists of three assembly kits, Cylinder Assembly Kit (part number 71600-99603), Piston Assembly Kit (part number 71600-99604) and Head Seal Kit (part number 71600-99605) containing items 6 to 18, 21, 22, 23, 30 and 32. These parts are only available as complete kits unless the individual part numbers are provided in the parts list.

- Completely remove the main internal mechanism from the left and right mouldings 41, 43, as described on page 5.
- Remove the complete motor, gearbox and electrical assembly 3, 4 and 5 as described on page 6.
- Unscrew locknut 31 and jaw spreader housing 20 from the piston 18.
- Using the 3 mm and 2.5 mm allen keys remove screws 11, 23, 30, clamping the cylinder 32 to the housing 24.
- Remove the head assembly from the housing. Remove 'O' ring 56 from the housing and discard.
- Grip the head assembly in a vice using soft jaws to avoid damage.
- Using the end cap assembly tool unscrew and remove the cylinder cap assembly, items 6, 7, 8, 9 from the rear of the cylinder 32. Care must be taken as the cylinder cap 7 will be spring loaded.
- Remove and discard the spring 10 from inside the cylinder 32.
- Push the piston 18 to the rear and out of the cylinder 32 taking care not to damage the cylinder bore.
- Using the medium screwdriver enter the rear of the cylinder 32, lever the rod seal 15 from the groove and cut through with a scalpel taking care not to damage the cylinder bore or the seal groove. Using the spatula push the rod seal, followed by bearing ring 16 and 'O' ring 17 to the rear and out of the cylinder. If at any time the cylinder bore or seal groove become damaged the cylinder must be replaced.
- Using a scalpel cut through and remove the piston seal 14 from the piston 18. Then remove bearing ring 13 and 'O' ring 12. Take care not to damage the piston when cutting the seal.

Assemble in reverse order to dismantling noting the following points:

- Clean all components before assembling.
- To aid assembly of seals apply a light coating of Molykote 111 grease to both the seals and the assembly tools.
- Lubricate the cylinder 32 bore and seal grooves with Molykote 111 grease. Insert the bearing ring 16 into place within cylinder. With the aid of the spatula insert the 'O' ring 17. Place the rod seal 15 onto the insertion rod ensuring correct orientation. Push the guide tube into the cylinder bore and push the insertion rod with the seal into place through the guide tube ensuring seal is correctly seated. Pull the insertion rod out then the guide tube.
- Lubricate the piston 18 shaft and seal grooves with Molykote 111 grease and fit 'O' ring 12 and bearing ring 13. Place the piston seal sleeve over the piston shaft, then slide the piston seal 14 over the sleeve and into position using the piston seal tool ensuring correct orientation.
- Insert the cylinder collar into the back of the cylinder 32. Screw the piston bullet onto the piston 18 and push the piston with the seals through the cylinder collar as far as it will go. Unscrew the bullet off the piston and remove the cylinder collar.
- Apply a light coating of Moly-lithium grease to the surface and ends of the spring 10 before inserting onto the piston 18 within the cylinder.
- Screw the cylinder cap assembly, items 6, 7, 8, 9, into the cylinder 32 using the 'T'-bar and end cap assembly tool.
- Insert 'O' ring 56 into the housing and lubricate with Molykote 111 grease.
- Fit the head assembly to the housing 24 using the three screws 11, 23, 30, coated with Loctite[®] 243 threadlocker.

TRIGGER MECHANISM

The trigger mechanism includes items **34**, **40**, **58** to **69**. These parts are only available as a complete Trigger Mechanism Kit (part number 71600-99606), unless the individual part numbers are provided in the parts list.

- Completely remove the main internal mechanism from the left and right mouldings 41, 43, as described on page 5.
- Using the circlip pliers remove one circlip 67 from pin 66. Push the pin out allowing the trigger lever 34 and trigger button 40 to be removed.
- Using the circlip pliers carefully remove circlip 68 from the valve needle 61, followed by shim 69, trigger plate 65 and spring 60. Discard the spring 60.
- Using the threaded sleeve tool unscrew and remove the threaded sleeve 64 from the housing 24. Remove 'O' ring 62 from the threaded sleeve and discard.
- Remove the valve needle **61** from the housing **24**, then remove and discard the spring **60** from the valve needle **61**. Using a scalpel cut 'O' ring **63** from the valve needle taking care not to damage the seal groove.
- Using the valve seat tool unscrew the valve seat 59 and remove from the housing 24. Remove bonded seal 58 from valve seat and discard.

Assemble in reverse order to dismantling noting the following points:

- Clean all components before assembling.
- Lubricate valve needle 61 shaft and seal groove with Molykote 111 grease and place the valve needle tool over the end of the valve needle 61. Slide 'O' ring 63 over the valve needle sleeve and into the seal groove on valve needle. Remove the valve needle sleeve from the valve needle.
- Lubricate threaded sleeve 64 with Molykote 111 grease and place the threaded sleeve bullet over the end of the threaded sleeve. Slide 'O' ring 62 over the threaded sleeve bullet and into the seal groove on threaded sleeve. Remove bullet from threaded sleeve.
- DO NOT USE UNDUE FORCE when inserting the valve seat 59 into the housing 24.
- When fitting threaded sleeve **64** into housing **24**, ensure the component is screwed fully down until stopping against the valve seat **59**.
- When fitting trigger plate 65, ensure correct orientation is achieved.
- Using the trigger tool and pin 66 in place of the trigger lever 34, fully compress the trigger plate 65 into the threaded sleeve 64 against the spring 60. The end of the valve needle 61 will become exposed. Place the shim 69 over the valve needle and then insert the circlip 68 into the groove using the circlip pliers. Release and remove the trigger tool.

HOUSING ASSEMBLY

The housing assembly consists of items **24** to **27**, **38** and **75**, all of which are available as individual parts. The assembly also contains items **39**, **55**, **56**, **57**, **70** and **76**. These parts are only available as a complete Housing Hydraulic Kit (part number 71600-99607).

- Completely remove the main internal mechanism from the left and right mouldings 41, 43, as described on page 5.
- Do not remove screws 25, 38, from the housing 24.
- Using medium screwdriver unscrew seal screw 75 from housing 24. Remove 'O' ring 76 from seal screw.
- Using medium screwdriver unscrew inlet check valve 70 from housing 24.
- In order to remove outlet check valve 55 the head assembly must be removed as described on page 7.
- Using medium screwdriver unscrew outlet check valve 55 from housing 24. Remove 'O' ring 57 from outlet check valve and discard.
- Assemble in reverse order to dismantling.



RESERVOIR ASSEMBLY

The reservoir assembly includes items **21**, **22**, **25**, **78**, **82** and **71** to **74**. These parts are only available as a complete Reservoir Assembly Kit (part number 71600-99608), unless the individual part numbers are provided in the parts list.

- Completely remove the main internal mechanism from the left and right mouldings 41, 43, as described on page 5.
- Using the 3 mm allen key remove screw 21 and bonded seal 22 from reservoir 73.
- Using the spatular remove 'O' ring 72 from reservoir 73 and discard.
- Remove reservoir 73 from reservoir adapter 74.
- Using the 2.5 mm allen key, remove screw 25 attaching reservoir adapter 74 to housing 24.
- Remove reservoir adapter 74 from housing 24.
- Remove 'O' ring 71 from reservoir adapter 74 and discard.
- Do not remove the filter 78, or the 'O' ring 82, from the reservoir adapter 74 unless damaged. If removed discard both items.

Assemble in reverse order to dismantling noting the following points:

- Lubricate both 'O' ring 71 and seal groove on reservoir adapter. Place 'O' ring 71 in reservoir adapter 74.
- Using 2.5 mm allen key and screw 25 fit reservoir adapter 74 to housing noting correct orientation with the holes.
- Slide open end of reservoir **73** over reservoir adapter **74** and into position within the groove.
- Place the reservoir bullet over the closed end of reservoir 73. Slide 'O' ring 72 completely over the bullet until it falls into place around the end of the reservoir 73, holding it in securely around the reservoir adapter 74.
- Ensure that the reservoir **73** is correctly positioned on the reservoir adapter **74**, so that the flat face on the metal part of the reservoir is at the top.

IMPORTANT: Check the tool against daily and weekly servicing.

Priming is ALWAYS necessary after the tool has been dismantled and prior to operating.

TROUBLESHOOTING

SYMPTOM	POSSIBLE CAUSE	REMEDY P	AGE REF.
Fastener fails to break	Trigger mechanism springs worn	Replace trigger mechanism	8
Jaws will not release	Damaged spring in head assembly	Fit new spring	7
broken stem of fastener			
Tool fails to operate -	Pump plunger jammed	Replace pump spring	6
motor operational:			
if head piston static	Inlet check valve faulty	Replace inlet check valve	8
if head piston pulsing	Outlet check valve faulty	Replace outlet check valve	8
Tool fails to operate -	Motor or gearbox failure	Test and replace any defective equipme	ent 6
motor not operational	Electrical control circuit failure	Test and replace any defective equipme	ent 6



EM	PART N°	DESCRIPTION	QTY	SPARES 0	крек оту	ITEM	PART N°	DESCRIPTION	QTY SI	PARES	JRDER QT
	71600-02004	Lid torsion spring	-	0	50	45	07001-00652	Pozi screw	8	0	50
	see note 📀	Collector lid	-	0		46	07007-01954	Battery	-	2	-
~	see note	Motor & gearbox assembly	-	•		47	71600-02022	Battery retainer spring	-	0	10
_	see note	Contact holder	-	•		48	07007-01957	Dowel pin	-	0	50
10	see note	Electrical control circuit	-	•		49	07003-00353	O-ring	-	0	50
۰ <u>۰</u>	07004-00102	Circlip	-	0	50	50	see note 8	O-ring	2	0	
~	see note	Cylinder cap	-	0		51	see note 🛛	Pump block	-	0	
~	see note	Piston sleeve	-	0		52	07002-00156	Steel washer	с	•	50
~	see note 🚯	O-ring	-	0		53	71600-02024	Nose tip spanner	-	0	10
0	see note 🛛	Compression spring	, -	0		54	see note 📀	Vent screen	-	0	
-	07001-00650	Socket csk head screw	-	0	50	55	see note	Outlet check valve	-	0	
12	see note 🚯	O-ring (piston)	-	o		56	see note 6 &	O-ring (housing)	-	000	
3	see note 🚯	Piston bearing ring	-	o		57	see note	O-ring for item 55	-	0	
4	see note 🚯	Piston seal	-	o		58	see note 🔕	Bonded seal	-	0	
5	see note 🚯	Rod seal	-	0		59	see note 🔕	Valve seat	-	0	
9	see note 🚯	Cylinder bearing ring	-	o		09	see note 🔕	Compression spring	2	0	
2	see note 🚯	O-ring (cylinder)	-	o		61	see note 🔕	Valve needle	-	0	
8	see note	Piston	-	0		62	see note 🔕	O-ring	-	0	
6	07003-00277	O-ring	-	2	50	63	see note 🔕	O-ring	-	0	
Q	71210-02101	Jaw spreader housing	-	2	-	64	see note 🔕	Threaded sleeve	-	0	
5	07001-00654	Button head screw	2	000	50	65	see note 🕹	Trigger plate	-	0	
22	07003-00194	Bonded seal	2	00	50	66	see note 🔕	Pin	-	0	
53	07001-00646	Socket cap head screw	-	o	50	67	07004-00104	Circlip	2	0	50
24	71600-02009	Housing	-	2	-	68	07004-00103	Circlip	-	0	50
25	07001-00647	Socket cap head screw	2	ø	50	69	see note 🔕	Steel shim washer	-	0	
26	07002-00155	Steel washer	-	>	50	70	see note 6	Inlet check valve	-	0	
72	71600-02014	Switch bracket	-	2	10	71	see note 8	O-ring	-	ø	
8	07001-00648	Slotted cheese head screw	2	•	50	72	see note 8	O-ring	-	ø	
6	07001-00651	Socket cap head screw	4	0	50	73	see note 8	Reservoir	-	ø	
õ	07001-00645	Socket cap head screw	-	o	50	74	see note 6	Reservoir adapter	-	ø	
5	71600-02026	Locknut	-	2	10	75	71600-02013	Seal screw	-	2	-
22	see note 💿	Cylinder	-	0		76	see note 6	Orring	-	0	
33	see note O	Nose tip holder	-	0		77	07007-01965	Battery charger - 220/240V~50Hz (UK)	-	2	-
34	see note 🔕	Trigger lever	-	0			07007-01966	Battery charger - 220/240V~50Hz (Europe)	-	2	-
35	see note \\ 8	Compression spring	-	Ø			07007-01967	Battery charger - 220/240V~50Hz (Australia)	-	2	-
36	see note 🛿	Plunger	-	0			07007-01968	Battery charger - 110V~60Hz (USA, Canada)	-	2	-
37	see note 8	O-ring	-	0			07007-01969	Battery charger - 100V~50/60Hz (Japan)	-	2	-
80	07001-00649	Socket cap head screw	4	•	50	78	see note 6	Filter	-	ø	
39	see note G	Bonded seal	-	0		79	07007-01960	Storage case	-	2	-
ę	see note 🔕	Trigger button	-	0		80	07900-00759	Tool Instruction Manual - UK version	-	2	-
ŧ	see note 📀	Left moulding	-	0		81	see note 📀	Collector lid buffer	-	0	
42	71600-02028	Case label RH	2	0	10	82	see note 🚯	'O' Ring	-	ø	
43	see note 📀	Right moulding	-	0		83	71600-02035	Blank serial number label	-	0	50
44	71600-02027	Case label LH	-	0	10	84	see note 🛛	Energised PTFE seal	-	0	
						85	see note 🛛	Energised lip leal	-	0	

Note 0

Motor, Gearbox and Electrical Assembly (part number 71600-99602). These items are only available as a complete assembly unless individual part numbers are given, where the minimum order quantity shall apply. Pump Assembly Kit (part number 71600-99601). These items are only available as a complete assembly unless individual part numbers are given, where the minimum order quantity shall apply.

Reservoir Assembly Kit (part number 71600-99608). These items are only available as a complete assembly kit unless individual part numbers are given, where the minimum order quantity shall apply 0 Ø

Trigger Mechanism Kit (part number 71600-99666). These items are only available as a complete assembly kit unless individual part numbers are given, where the minimum order quantity shall apply

Housing Hydraulic Kit (part number 71600-99607). These items are only available as a complete kit.

Cylinder Assembly Kit (part number 71600-95603). These items are only available as a complete assembly kit unless individual part numbers are given, where the minimum order quantity shall apply. 0000

Piston Assembly Kit (part number 71600-99604). These items are only available as a complete assembly kit unless individual part numbers are given, where the minimum order quantity shall apply.

Head Seal Kit (part number 71600-99605). These items are only available as a complete assembly kit unless individual part numbers are given, where the minimum order quantity shall apply.

Body Moulding Assembly Kit (part number 71600-99600). These items are only available as a complete assembly kit unless individual part numbers are given, where the minimum order quantity shall apply. 001

These items are available as individual spares subject to the minimum order quantity.

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