Scell-it®

E-312NP-2

E-312NP-2

Pneumatic Rivet nut Setting Tool

USER MANUAL

FOR RIVET NUTS
M3 TO M12

Scell-it®

SAFETY RULES

This instruction manual must be read with particular attention to the following safety rules, by any person installing, operating, or servicing this tool.

1 Do not use outside the design intent.

2 Do not use equipment with this tool/machine other than that recommended.

3 Any modification undertaken by the customer to the tool/machine, nose assemblies, accessories or any equipment supplied shall be the customer's entire responsibility.

4 The tool/machine must be maintained in a safe working condition at all times and examined at regular intervals for damage and function by trained competent personnel. Any dismantling procedure shall be undertaken only by personnel trained.

5 The tool/machine shall at all times be operated in accordance with relevant Health and Safety legislation. In the U.K. the "Health and Safety at Work etc. Act 197 4" applies.

6 The precautions to be observed when using this tool/machine must be explained by the customer to all operators.

7 Always disconnect the air line from the tool/machine inlet before attempting to adjust, fit or remove a nose assembly.

8 Do not operate a tool/machine that is directed towards any person(s) or the operator.

9 Always adopt a firm fooling or a stable position before operating the tool/machine.

10 Ensure that vent holes do not become blocked or covered.

11 The operating pressure shall not exceed 7 bar.

12 Do not operate the tool if it is not fitted with a complete nose assembly or swivel head unless specifically instructed otherwise.

13 Care shall be taken to ensure that spent stems are not allowed to create a hazard.

14 If the tool is fitted with a stem collector, it must be emptied when half full.

15 If the tool is fitted with a stem deflector, it should be rotated until the aperture is facing away from the operator and other person(s) working in the vicinity.

16 When using the tool, the wearing of safety glasses is required both by the operator and others in the vicinity to protect against fastener ejection, should a fastener be placed 'in air'. We recommend wearing gloves if there are sharp edges or corners on the application.

17 Take care to avoid entanglement of loose clothes, ties, long hair, cleaning rags etc. in the moving parts of the tool which should be kept dry and clean for best possible grip.

18 When carrying the tool from place to place keep hands away from the trigger/lever to avoid inadvertent start up.

19 Excessive contact with hydraulic fluid oil should be avoided. To minimize the possibility of rashes, care should be taken to wash thoroughly.

20 C.O.S.H.H. data for all hydraulic oils and lubricants is available on request from your tool supplier.

CONTENTS

Safety Rules		2
Specifications	Tool Specification	4
	Tool Dimensions	4
Putting into Service	Air Supply	5
	Stroke Adjustment	6
	Operating Procedure	6
Nose Assemblies	Fitting Instructions	7
	Servicing Instructions	7
Servicing the Tool	Daily / Weekly	8
	Molykote® 55m Lithium Grease Safety Data	8
Maintenance	Tool Servicing	9
	Pneumatic Cylinder	9
	Rod Guide	9
	Trigger	10
	Differential Valve	10
	Head Assembly	10
	Rear Casing	10
	Distributor	10
	Hydraulic Piston and Air Motor Assembly	11
General Assembly of Base Tool		12
	Parts List for	13
	Service Kit	14
Priming	Oil Details	15
	Hyspin® VG 32 Oil Safety Data	15
	Priming Procedure	15
Fault Diagnosis	Symptom, Possible Cause and Remedy	16-17

MAIN SPECIFICATIONS

Intent of use

The hydro-pneumatic tool is designed to place TOOL threaded inserts at high speed - making it ideal for batch or flow-line assembly in a wide variety of applications throughout all industries.

A complete tool is made up of the base tool and the appropriate nose assembly for the insert.

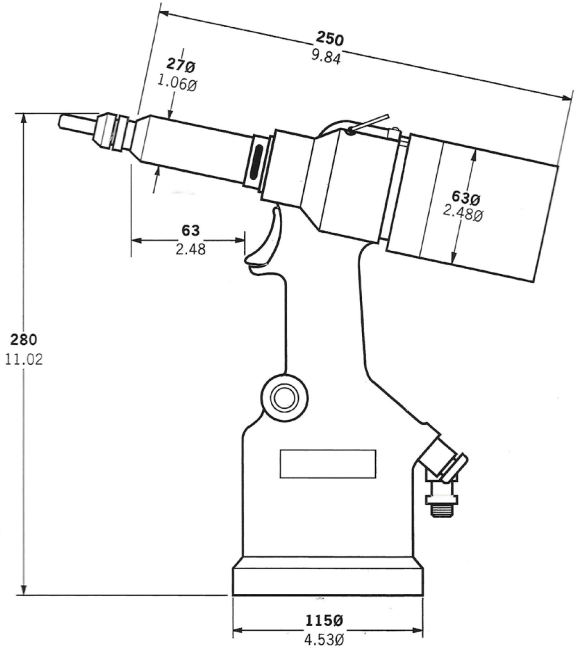
Nose assemblies must be fitted as described in this manual.

Tool specification

Air Pressure	Minimum - Maximum	5-7 bar (75-100 lbf/in')
Free Air Volume Required	@ 5 bar/75 lbf/in'	8 litres (0.28 ft^3)
Stroke	Maximum	7 mm (0.276 in)
Motor Speed	Spin On	2,000 rpm
	Spin Off	2,000 rpm
Pull Force	@ 5 bar/75 lbf/in'	19.1 kN (4,300 lbf)
Cycle Time	Approximately	2.5 seconds
Noise Level	Less than	75 dB(A)
Weight	Without nose equipment	2.2 kg (4.85 lb)
Vibration	Less than	2.5 m/s^2 (8 ft/s^2)

Tool dimensions

FOR RIVET NUTS
M3 TO M12



Dimensions shown in bold are millimetres.
Other dimensions are in inches.

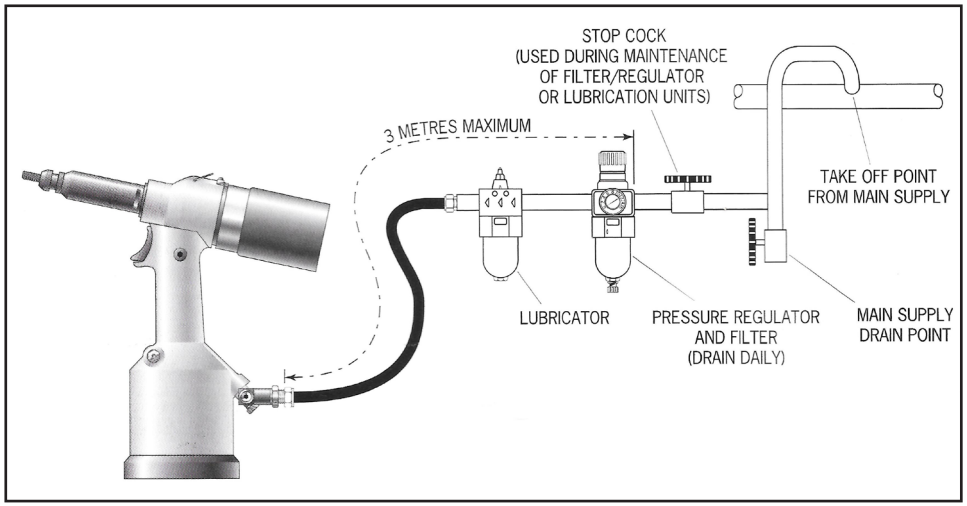
PUTTING INTO SERVICE 1/2

Air supply

All tools are operated with compressed air at an optimum pressure of 5.5 bar. We recommend the use of pressure regulators and automatic cooling/filtering systems on the main air supply. These should be mounted within 3 metres of the tool (see diagram below) to ensure maximum tool life with minimum tool maintenance.

The flexible hoses should have a minimum effective working pressure rating of 150% of the maximum pressure produced in the system or 10 bar, whichever is the highest. Air hoses should be oil resistant, have an abrasion resistant exterior and should be armoured where operating conditions may result in hoses being damaged. All air hoses MUST have a minimum bore diameter of 6.4 millimetres or 1/4 inch.

Read servicing daily details in this manual.



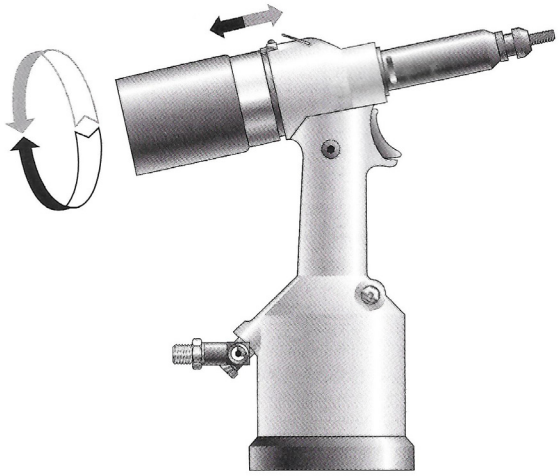
PUTTING INTO SERVICE 2/2

Stroke adjustment

This adjustment is necessary to ensure optimum insert deformation. Is is suggested, therefore, that a test plate with the same thickness and hole size as the workpiece be used.

If deformation is insufficient, the insert will rotate inside the application.
If deformation is excessive, thread distortion will occur and possibly drive screw fracture.

The stroke is adjusted by the amount the rear casing (**86**) is screwed in or out. To shorten stroke, screw in; to lengthen stroke, unscrew the rear casing but never more than 5 turns from the fully 'IN' position unless dismantling the tool. Adjust until optimum deformation is obtained.
Lock the stroke set finger (**88**) into the rear casing.



Operating procedure

- Connect the tool to the air supply.
- Offer up insert, lip first, to the drive screw. A slight pressure on the trigger will start the motor and automatically thread the insert up against the nose and stop.
- Insert fastener squarely into application.
- Fully depress the trigger. This will both place the insert into the application and reverse it off the drive screw.

Item numbers in **bold** refer to the General Assembly drawing and Parts List (pages 12-13).

NOSE ASSEMBLIES

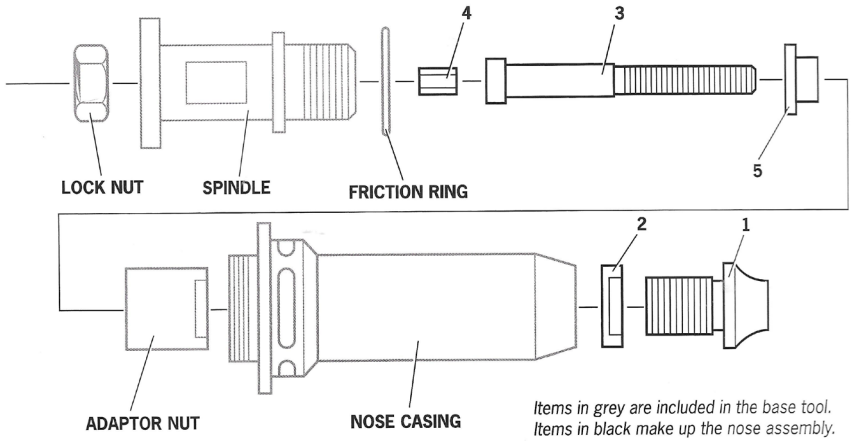
It is essential that the correct nose assembly is fitted prior to operating the tool. By knowing the details of the fastener to be placed, you will be able to order a new complete nose assembly if required.

Fitting instructions

IMPORTANT : The air supply must be disconnected when fitting or removing nose assemblies unless specifically instructed otherwise.

Item numbers in **bold** refer to illustration below:

- If still fitted, remove the nose casing and the adaptor nut.
- Insert Drive Shaft **4** into spindle.
- Fit Drive Screw **3** onto Drive Shaft **4**.
- Insert Reducing Sleeve **5 (**if specified) into the adaptor nut.
- Screw the adaptor nut onto the spindle.
- Hold the spindle with a spanner* and tighten the adaptor nut clockwise.
- While holding the adaptor nut with the spanner*, tighten the lock nut anti-clockwise.
- Screw on the nose casing and Nose Tip **1** with the nose tip Lock Nut.
- The reverse operation is carried out for equipment removal.
- With tool still disconnected from air supply, screw one insert onto drive screw manually - making sure the insert is flush with the end of the drive screw.
- Set nose tip in exact position and lock nose tip nut clockwise with a spanner*.
- Remove the insert from drive screw.



Servicing Instructions

Nose assemblies should be serviced at weekly intervals.
- Remove the complete nose assembly using the reverse procedure to the 'Fitting Instructions'.
- Any worn or damaged parts should be replaced with a new part.
- Particularly check wear on the Drive Screw
- Assemble according to fitting instructions (see above).

SERVICING THE TOOL

Regular servicing should be carried out and a comprehensive inspection performed annually or every 500,000 cycles, whichever is sooner.

IMPORTANT : The employer is responsible for ensuring that tool maintenance instructions are given to the appropriate personnel. The operator should not be involved in maintenance or repair of the tool unless properly trained.

Daily

- Daily, before use or when first putting the tool into service, pour a few drops of clean, light lubricating oil into the air inlet of the tool if no lubricator is fitted on air supply. If the tool is in continuous use, the air hose should be disconnected from the main air supply and the tool lubricated every two to three hours.
- Check for air leaks. If damaged, hoses and couplings should be replaced by new items.
- If there is no filter on the pressure regulator, bleed the air line to clear it of accumulated dirt or water before connecting air hose to tool.
- Check that the nose assembly is correct.
- Check the stroke of the tool is adequate to place selected insert. (See stroke adjustment page 6).
- Inspect the drive screw in the nose assembly for wear or damage. Renew if necessary.

Weekly

- Check for oil leaks and air leaks on air supply hose and fittings.

Molykote® 55m Lithium Grease Safety Data

Grease can be ordered as a single item, the part number is shown in the Service Kit page 14.

First Aid

SKIN: Wipe off and wash with soap and water.

INGESTION: No adverse effects are normally expected. Treat symptomatically.

EYES: Irritant but not harmful. Irrigate with water and seek medical attention.

Environment

Scrape up for incineration or disposal on approved site.

Fire

FLASH POINT: 101 °C
Not classified as flammable.
Suitable extinguishing media: Carbon dioxide, foam, dry powder or fine water spray.

Handling

Plastic or rubber gloves should be worn.

Storage

Away from heat and oxidising agent.

MAINTENANCE

Every 500,000 cycles the tool should be completely dismantled and components replaced where worn, damaged or when recommended. All 'O' rings and seals should be replaced with new ones and lubricated with Molykote® 55M grease before assembling.

IMPORTANT : The employer is responsible for ensuring that tool maintenance instructions are given to the appropriate personnel. The operator should not be involved in maintenance or repair of the tool unless properly trained

The air line must be disconnected before any servicing or dismantling is attempted unless specifically instructed otherwise. It is recommended that any dismantling operation be carried out in clean conditions. Before proceeding with dismantling, empty the oil from the tool. Remove Oil Plug **42 and** Oil Seal Washer **43.**

Prior to dismantling the tool it is necessary to remove the nose assembly. For simple removal instructions see the nose assemblies section, page 7.

For total tool servicing we advise that you proceed with dismantling of sub-assemblies in the order shown below.

Pneumatic Cylinder

- Remove Rubber Base **2**.
- Place tool, base uppermost in vice fitted with soft jaws.
- Using a spanner*, unscrew end plug **3**. Pneumatic Piston **9** should move upward under Spring **11** pressure (it may be necessary to exert hand pressure to Pneumatic Piston **9**).
- Remove 'O' Ring **4**.
- Withdraw Pneumatic Piston **9**.
- Remove Lip Seal **8** and 'O' Ring **36**.
- Hold Piston Rod **10** in soft vice jaws to avoid scratching rod diameter.
- Separate Piston Rod **10** from Pneumatic Piston **9** by unscrewing piston rod fastening Bolt **5** using a spanner*.
- Inspect Air Supply Tube **12** for damage or distortion. (Air tube is screwed internally into handle and set in position with Loctite® 222) If it is necessary to remove air tube, the base of the air tube will require warming to a temperature of 100°c to soften the Loctite® adhesive. The Air Supply Tube **12** can then be unscrewed from the handle using an Allen key*.
- Check Spring **11** is not distorted or damaged. Replace any damaged seals and springs.

- Assembly is in reverse order to dismantling.

Rod Guide

- With tool in upside down position in vice, unscrew Rod Guide **15** using a spanner* and T-bar*.
- Withdraw Rod Guide **15**.
- Unscrew locknut **13** using an Allen key*, remove Seal **14** and 'O' Ring **98**.
- Remove 'O' Ring **16**.
- Replace any damaged seals.

- Assembly is in reverse order to dismantling.

MAINTENANCE

Trigger
- With tool held in vice, remove Pin **26** using a pin punch*.
- Remove Trigger **25**, Pin **22**, Roller **23** and Push Wedge **24**.
- Gently push on the head of Trigger Rod **20** and remove together with 'O' Rings **7** and **21**, Guide **19**, Lip Seal **18** and Plug **17**.

- Assembly is in reverse order to dismantling. Ensure lip of Lip Seal **18** is towards head of tool.

Differential Valve
- Using special flat spanner* unscrew valve locking plug **27**, withdraw and remove Spring **104** and '0' Ring **29**.
- Using a spanner* remove Silencer **34** and nylon Washer **33** .
- Push Valve Piston **28** out from its housing together with '0' Rings **30**, **31** and **32**.
- Check Spring **104** for distortion and renew if required.

- Assemble in reverse order of dismantling.

Head Assembly
- Remove Nose equipment prior to commencing dismantling.
- Using spanners* remove Spindle **44** and Locknut **45**.
- Remove return spring locknut **46** using a spanner*.
- Remove return spring **47**, washer **99** and locking ring **102**.
- Check return spring **47** for distortion and renew if required.

- Assemble in reverse order of dismantling.

Rear Casing
- Using an Allen key* remove Screws **40** from stroke set finger **88** and lift off bridge washer **95**.
- Disengage stroke set finger **88** by pushing it back against spring **89**.
- Unscrew rear casing **86**.
- Remove rear casing rubber band **87** if necessary.
- Extract circlip **84** using circlip pliers* and remove sintered silencer **85**.

- Complete assembly in reverse order of dismantling.

Distributor
- Using an Allen key* remove two Screws **40**.
- Withdraw Distributor **83** together with air motor end plug **81** and 'O' rings **82** & **31** taking care not to drop Ball **79** and push rod **78**.
- Using an Allen key* remove four countersunk socket head Screws **58** and withdraw Stroke Stop **57**.
- Pull out two Air Supply Tubes **59** and four 'O' Rings **60**.

- Assemble in reverse order of dismantling.

MAINTENANCE

Hydraulic Piston and Air Motor Assembly
- Wrap adhesive tape around Hydraulic Piston **54** thread and move assembly backwards slowly and firmly. Using circlip pliers* remove Circlip **52** and Front Seal **51**.
- Remove 'O' Rings **76** and **77**.
- Using two spanners* separate the Hydraulic Piston **54** from Air Motor Casing **75**. Shim Adjustment Ring **55**, Movement Pivot **56** and '0 Ring **101** will come out with Hydraulic Piston **54**.
- Remove air motor assembly out of Air Motor Casing **75**, using circlip pliers*remove Circlip **61**, then tap Air Motor Casing **75** on bench to free components.
- Parts **62** to **74** can be pulled out as an assembly, taking care not to drop Pin **74**.
- Remove Bearing **62**, Planet Gear Spindle **63**, three Planets **64**, Planet Gear **65** and Spacer **66**.
- Using a soft mallet tap splined head of Rotor **70**.
- Bearing **67** and Front End Plate **68** will come out with Stator **69** and five Rotor Blades **71**. (Rotor **70** remains in place).
- Place Rear End Plate **72** in vice with soft jaws.
- Using a pin punch* tap centre of Rotor **70** to remove Bearing **73**. (turn Rotor **70** upside down and Bearing **73** will come out).
- When assembling air motor, rear side of Rotor **70** must just touch Rear End Plate **72** without any axial gap, (any existing gap will disappear when Bearing **73** is fully located).
- When inserting air motor into Air Motor Casing **75** carefully align parts so that Pin **74** locates in centre hole between spin on/off ports of air motor casing **75** and Rear End Plate **72**.
- When assembling Hydraulic Piston **54** onto air motor assembly, tighten parts by hand and blow air into one of the outer ports of air Motor Casing **75**, checking to see air motor rotates freely.
- When assembling front Seal **51** ensure larger diameter faces rear of tool.

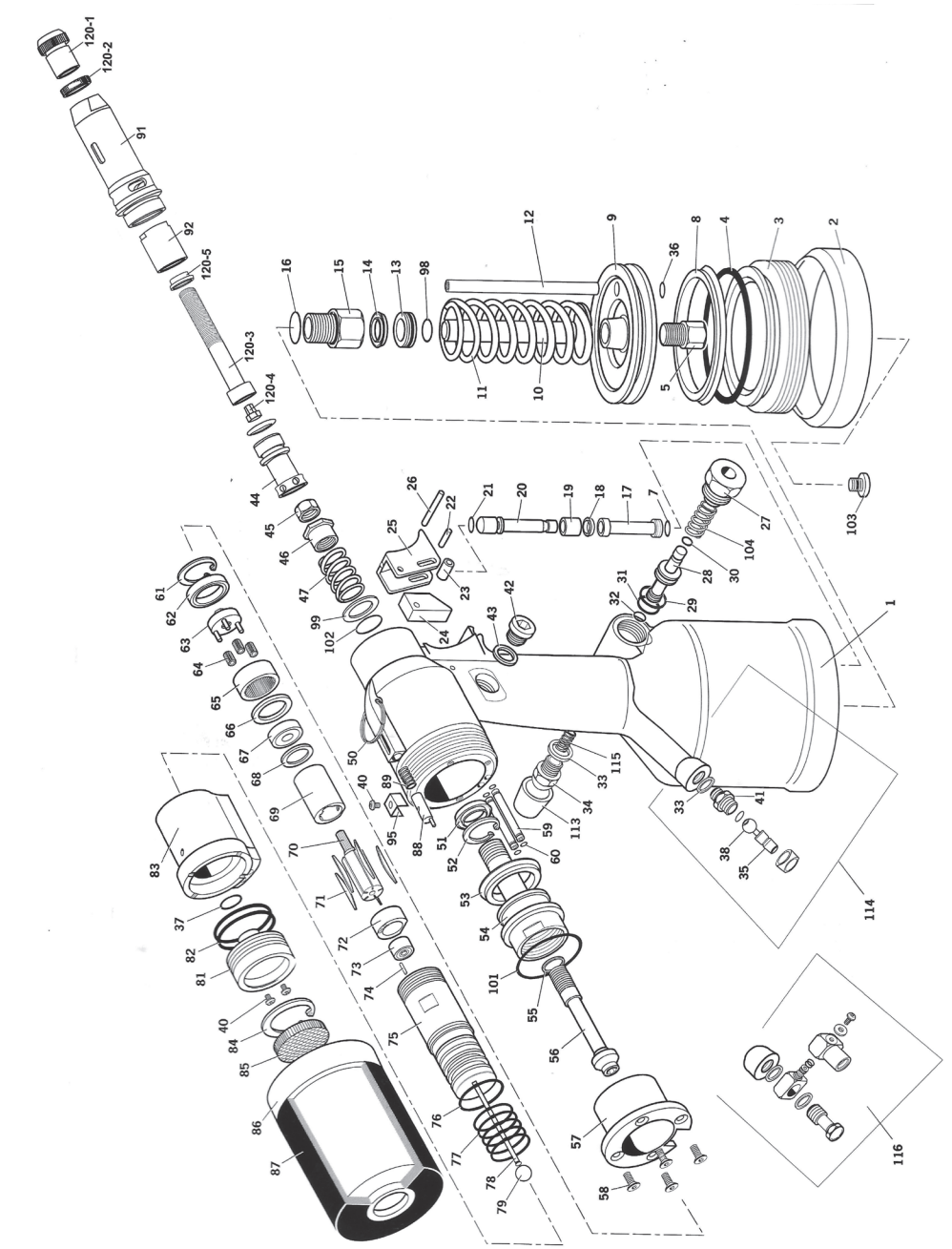
- Complete assemble in reverse order to dismantling.

IMPORTANT : Check the tool against daily and weekly servicing.
Priming is ALWAYS necessary after the tool has been dismantled and prior to operating

Item numbers in **bold** refer to the General Assembly drawing and Parts List (pages 12-13).

* Refers to items included in the 74200-99990 Service kit. For complete list see page 14.

GENERAL ASSEMBLY OF BASE TOOL



PARTS LIST

ITEM	PART No	DESCRIPTION	QTY	REC. SPARES
01	12001	HEAD & HANDLE	1	-
02	12002	RUBBER BASE	1	1
03	12003	END PLUG (SCREWED)	1	-
04	12004	'O' RING	1	1
05	12005	PISTON ROD FASTENING BOLT	1	-
07	00027	'O' RING	2	2
08	12008	LIP SEAL (PNEUMATIC PISTON)	1	1
09	12009	PNEUMATIC PISTON	1	-
10	12010	PISTON ROD (INTENSIFIER)	1	-
11	00205	SPRING	1	1
12	12012	AIR SUPPLY TUBE	1	1
13	12013	LOCK NUT	1	-
14	12014	SEAL	1	1
15	12015	ROD GUIDE	1	-
16	00100	'O' RING	1	1
17	12017	PLUG	1	-
18	12018	LIP SEAL	1	1
19	12019	GUIDE	1	-
20	12020	TRIGGER ROD	1	-
21	00315	'O' RING	1	1
22	12022	PIN	1	1
23	12023	ROLLER	1	1
24	12024	PUSH WEDGE	1	-
25	12025	TRIGGER	1	1
26	12026	PIN	1	1
27	12027	VALVE LOCKING PLUG	1	-
28	12028	VALVE PISTON	1	-
29	00086	'O' RING	1	1
30	00040	'O' RING	1	1
31	00026	'O' RING	1	1
32	00046	'O' RING	1	1
33	12033	⅛"NYLON WASHER	4	4
34	12034	⅛"SILENCER	1	1
35	12035	AIR INLET BLOCK	1	-
36	00029	'O' RING	4	4
37	00109	'O' RING	1	1
38	12038	SWIVELLING INLET	1	-
40	00420	M4 BUTTON SOCKET HD SCREW	3	3
41	12041	¼"DOUBLE MALE CONNECTOR	1	-
42	01274	OIL PLUG	1	1
43	12043	OIL SEAL WASHER	1	1
44	12044	SPINDLE	1	1
				1
				1
				1
				1
45	00803	LOCK NUT	1	1
46	12046	RETURN SPRING LOCKNUT	1	1
47	12047	RETURN SPRING	1	1
50	03021	SUSPENSION RING	1	1
51	02004	FRONT SEAL	1	1
52	00033	CIRCLIP	1	1
53	12053	SEAL	1	1
54	12054	HYDRAULIC PISTON	1	-
55	12055	SHIM ADJUSTMENT RING	1	1
56	12056	MOVEMENT PIVOT	1	1
57	12057	STROKE STOP	1	-
58	00427	M5 CSK SOCKET HEAD SCREW	4	4
59	12059	PNEU.MOTOR AIR SUPPLY TUBE	2	2
60	12060	'O' RING	4	4
61	12061	CIRCLIP OF MOTOR	1	1
62	12062	BEARING OF MOTOR	1	-
63	12063	PLANET GEAR SPINDLE OF MOTOR※	1	-
64	09208	PLANET OF MOTOR※	3	-
65	12065	PLANET GEAR OF MOTOR※	1	-
66	12066	SPACER OF MOTOR※	1	-
67	09206	BEARING OF MOTOR※	1	-
68	09210	FRONT END PLATE OF MOTOR※	1	-
69	09211	STATOR OF MOTOR※	1	-
70	12070	ROTOR OF MOTOR※	1	-
71	09213	ROTOR BLADE OF MOTOR※	5	5
72	09214	PEAR END PLATE OF MOTOR※	1	
73	09215	BEARING OF MOTOR※	1	-
74	09216	PIN OF MOTOR※	1	1
75	12075	AIR MOTOR CASING※	1	-
76	00305	'O' RING	1	1
77	00306	'O' RING	5	5
78	12078	PUSH ROD 80 MM LONG※	1	1
79	12079	BALL (RUBBER)	1	1
81	12081	AIR MOTOR END PLUG	1	-
82	12082	'O' RING	2	2
83	12083	DISTRIBUTOR※	1	-
84	12084	CIRCLIP	1	1
85	12085	SINTERED SILENCER	1	1
86	12086	REAR CASING※	1	-
87	12087	REAR CASING RUBBER BAND※	1	1
88	12088	STROKE SET FINGER	1	1
89	12089	SPRING	1	1
90	00028	LOCKING RING	2	2
91	12091	NOSE CASING	1	-
92	12092	ADAPTOR NUT (UP TO M12)※	1	1
95	12095	BRIDGE WASHER	1	1
98	00134	'O' RING	1	1
99	12099	WASHER	1	1
100	01526	LABEL	1	N/1
101	12121	'O' RING	1	1
102	00020	'O' RING	1	1
103	12103	PLUG	1	1
104	12104	SPRING	1	N/1
113	12300	DEFLECTOR ASSEMBLY	1	N/1
114	12700	INLET ASSEMBLY	1	
115	00401	SPRING	1	
116	12700	INLET ASSEMBLY	1	1
120-1	01201	NOSE TIP OF NOSE ASSEMBLY	1	1
120-2	01202	LOCK NUT OF NOSE ASSEMBLY	1	1
120-3	01203	SCREW OF NOSE ASSEMBLY	1	1
120-4	01204	SHAFT OF NOSE ASSEMBLY	1	1
120-5	01205	SLEEVE OF NOSE ASSEMBLY	1	1

SERVICE KIT

For all servicing we recommend the use of the service kit (part number 74200-99990) supplied in its own plastic case.

SERVICE KIT 74200-99990					
Part Number	**Description**	**QTY**	**Part Number**	**Description**	**QTY**
07900-00618	PUSHER	1	**07900-00393**	14mm/15mm SPANNER	1
07900-00619	GUIDE BUSH	1	**07900-00409**	12mm/13mm SPANNER	1
07900-00478	Ø 3mm PIN PUNCH	1	**07900-00626**	11mm SPANNER	1
07900-00624	Ø 4mm PIN PUNCH	1	**07900-00469**	2.5mm ALLEN KEY	1
07900-00157	INTERNAL CIRCLIP PLIERS	1	**07900-00351**	3mm ALLEN KEY	1
07900-00161	EXTERNAL CIRCLIP PLIERS	1	**07900-00224**	4mm ALLEN KEY	1
07900-00625	SOFT MALLET	1	**07900-00225**	5mm ALLEN KEY	1
07900-00623	25mm SOCKET	1	**07900-00620**	12mm ALLEN KEY	1
07900-00006	SPATULA	1	**07900-00456**	T BAR	1
07900-00434	32mm SPANNER	1	**07992-00075**	MOLYKOTE 55M (100 gm TUBE)	1
07900-00621	28mm SPANNER	1	**07900-00627**	PLASTIC CASE	1
07900-00637	17mm SPANNER	1	**07900-00632**	17mm/19mm SPANNER	1
07900-00643	PUSHER KNOB	1			

PRIMING

Priming is ALWAYS necessary after the tool has been dismantled and prior to operating. It may also be necessary to restore the full stroke after considerable use, when the stroke may have been reduced and fasteners are not now being fully placed by one operation of the trigger.

Oil Details

The recommended oil for priming is Hyspin® VG32 available in 0.5l or one gallon containers. Please see safety data below.

Hyspin® VG 32 Oil Safety Data

First Aid

SKIN: Wash thoroughly with soap and water as soon as possible. Casual contact requires no immediate attention. Short term contact requires no immediate attention.
INGESTION: Seek medical attention immediately. DO NOT induce vomiting.
EYES: Irrigate immediately with water for several minutes. Although NOT a primary irritant, minor irritation may occur following contact.

Fire: Flash point 232°C. Not classified as flammable. Suitable extinguishing media: CO2, dry powder, foam or water fog. DO NOT use water jets.

Environment: WASTE DISPOSAL: Through authorised contractor to a licensed site. May be incinerated. Used product may be sent for reclamation.
SPILLAGE: Prevent entry into drains, sewers and water courses. Soak up with absorbent material.

Handling: Wear eye protection, impervious gloves (e.g. of PVC) and a plastic apron. Use in well ventilated area.

Storage: No special precautions.

Priming Procedure

IMPORTANT : All operations should be carried out on a clean bench, with clean hands in a clean area. Ensure that the oil is perfectly clean and free from air bubbles.
Care MUST be taken at all times, to ensure that no foreign matter enters the tool, or serious damage may result. The tool must remain on its side throughout the priming sequence

- Place tool on its side, Oil Plug **42** side up.
  Pull back stroke set finger **88** and unscrew rear casing **86** by a maximum of 5 turns from the fully 'IN' position.
- With an Allen key, unscrew Oil Plug **42** and remove with Oil Seal Washer **43**.
- Fill tool with priming oil rocking gently to expel air.
- Replace Oil Seal Washer **43** and Oil Plug **42** and tighten.
- You must now bleed the tool. This operation is to ensure air bubbles are eliminated from the oil circuit.
- Release the Trigger.
- Using an Allen key ropen Oil Plug **42**.
- Top-up with priming oil to reset level. Replace Oil Seal Washer **43** and Oil Plug **42** and fully tighten.
- It is necessary to fit the appropriate nose equipment and adjust the tool stroke prior to operating the tool.

Item numbers in **bold** refer to General Assembly drawings and Parts List (pages 12-13).

FAULT DIAGNOSIS

Symptom	Possible Cause	Remedy	Page Ref
Pneumatic motor runs slowly	Air leak from motor	Check for worn seals. Replace	12
	Low air pressure	Increase	5
	Air way blockage	Clear restriction in air supply	
	Worn drive screw	Replace	7
	Vanes jamming	Lubricate tool through air inlet	
Insert does not deform properly	Stroke incorrectly set	Adjust	6
	Air pressure outside the tolerance	Adjust	6
	Low oil level	Prime tool	15
	Insert out of grip	Check grip range of Insert	
Drivescrew turns independent of motor	Worn or damaged drive shaft	Replace	
	Worn or damaged drive screw	Replace	7
	Adaptor nut loose	Tighten	7
	Locking ring **90** missing	Fit new locking ring	12
Insert will not place onto drivescrew	Incorrect Insert thread size	Change to correct insert	
	Incorrect drive screw fitted	Change to correct drive screw	
	Worn or damaged drive screw	Replace	
	Nose equipment incorrectly assembled	Disconnect air supply, re-fit nose equipment carefully	5-6
Tool is jammed on placed insert	Excessive force/ Defective insert/ Worn or defective drive screw	DO NOT DEPRESS TRIGGER. Unlock force locking device and bring rear casing forward to zero stroke position. Depress trigger. Tool should spin off. Reset stroke. If unable to reset, disconnect air to tool. Insert a 4 mm 0 pin through nose casing slots into Spindle **44**. Turn until drive screw leaves. Insert. Use new insert and drive screw.	
Drive screw breaks	Force of tool excessive Side load on drive screw	Re-set force Hold tool square to application when placing Insert	

Item numbers in **bold** refer to General Assembly drawings and Parts List (pages 12-13).

Symptom	Possible Cause	Remedy	Page Ref
Tool does not spin on	Screw adaptor nut loose	Tighten	
	No air supply	Connect	5
	Insufficient gap between Lock Nut **45** and Spindle **44**	Adjust gap to between 1.5 - 2 mm	12
	Push rod **78** too short	Replace	12
	Air motor jammed	Lubricate tool at air inlet. If insufficient dismantle and clean air motor thoroughly	
Trigger inoperative	Static friction	Depress trigger a few times	
	Low air pressure	Increase air pressure	
	Valve piston remains stuck	Depress trigger several times. Lubricate tool through air inlet. If unsuccessful, dismantle, clean and lubricate trigger elements	
Drive screw does not return and/or keeps spinning off	Lip Seal **18** is defective	Replace	9
Tool does not spin off	Adaptor Nut **92** loose	Tighten	
	No air supply	Connect	
	Rear casing unscrewed by more than 5 turns	Set tool stroke	
	'O' ring **82** leaking air	Replace	12
	Distributor stuck	Lubricate	
	Air motor jammed	Lubricate tool at air inlet. If insufficient dismantle and clean air motor thoroughly.	

Item numbers in **bold** refer to General Assembly drawings and Parts List (pages 12-13).

NOTES