STANLEY
Engineered Fastening

INSTRUCTION AND SERVICE MANUAL

ORIGINAL INSTRUCTION

(EN) Hydro-Pneumatic Power Tool
(FR) Outil électrique hydropneumatique
(DE) Hydropneumatisches Setzgerät
(IT) Elettroutensile oleopneumatico
(PL) Narzędzie pneumatyczno-hydrauliczne
(ES) Herramienta hidroneumática
(NL) Hydropneumatisch gereedschap
(DA) Hydro-pneumatisk el-værktøj
(FI) Hydropneumaattinen sähkötyökalu
(NO) Hydropneumatisk verktøy
(SV) Hydropneumatiskt elverktyg
(PT) Ferramenta eléctrica hidropneumática

74290 - Model ESAFOR MK II

Hydro-Pneumatic Power Tool

STANLEY
Assembly Technologies

This instruction manual in ENGLISH is also translated in bellow following languages. On demand the requested instruction manual shall be provided.

CONTENTS


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


Always wear impact-resistant eye protection during operation of the tool. The grade of protection required should be assessed for each use.


Use hearing protection in accordance with employer's instructions and as required by occupational health and safety regulations.


Use of the tool can expose the operator's hands to hazards, including crushing, impacts, cuts and abrasions and heat. Wear suitable gloves to protect hands.

1. SAFETY DEFINITIONS

The definitions below describe the level of severity for each signal word. Please read the manual and pay attention to these symbols.

⚠ ***DANGER:*** Indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.

⚠ ***WARNING:*** Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.

⚠ ***CAUTION***: Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury.

⚠ ***CAUTION:*** Used without the safety alert symbol indicates a potentially hazardous situation which, if not avoided, may result in property damage.

Improper operation or maintenance of this product could result in serious injury and property damage. Read and understand all warnings and operating instructions before using this equipment. When using power tools, basic safety precautions must always be followed to reduce the risk of personal injury.

SAVE ALL WARNINGS AND INSTRUCTIONS FOR FUTURE REFERENCE

1.1 GENERAL SAFETY RULES

- For multiple hazards, read and understand the safety instructions before installing, operating, repairing, maintaining, changing accessories on, or working near the tool. Failure to do so can result in serious bodily injury.
- Only qualified and trained operators must install, adjust or use the tool.
- DO NOT use outside the design intent specified by Stanley Engineered Fastening.
- Use only parts, fasteners, and accessories recommended by the manufacturer.
- DO NOT modify the tool. Modifications can reduce the effectiveness of safety measures and increase the risks to the operator. Any modification to the tool undertaken by the customer will be the customer's entire responsibility and void any applicable warranties.
- Do not discard the safety instructions; give them to the operator.
- Do not use the tool if it has been damaged.
- Prior to use, check for misalignment or binding of moving parts, breakage of parts, and any other condition that affects the tool's operation. If damaged, have the tool serviced before using. Remove any adjusting key or wrench before use.
- Tools shall be inspected periodically to verify that the ratings and markings required by this part of ISO 11148 are legibly marked on the tool. The employer/user shall contact the manufacturer to obtain replacement marking labels when necessary.
- The tool must be maintained in a safe working condition at all times and examined at regular intervals for damage and function by trained personnel. Any dismantling procedure will be undertaken only by trained personnel. Do not dismantle this tool without prior reference to the maintenance instructions.

1.2 PROJECTILE HAZARDS

- Disconnect the air supply from the tool before performing any maintenance, attempting to adjust, fit or remove a nose assembly or accessories.
- Be aware that failure of the work piece or accessories or even of the inserted tool itself can generate high- velocity projectiles.
- Always wear impact-resistant eye protection during operation of the tool. The grade of protection required should be assessed for each use.
- The risks to others should also be assessed at this time.
- Ensure that the work piece is securely fixed.
- Warm against the possible forcible ejection of debris from the front of the tool.
- DO NOT operate a tool that is directed towards any person(s).

1.3 OPERATING HAZARDS

- Use of the tool can expose the operator's hands to hazards, including crushing, impacts, cuts and abrasions and heat. Wear suitable gloves to protect hands.
- Operators and maintenance personnel shall be physically able to handle the bulk, weight and power of the tool.
- Hold the tool correctly; be ready to counteract normal or sudden movements and have both hands available.
- Keep tool handles dry, clean, and free from oil and grease.
- Maintain a balanced body position and secure footing when operating the tool.
- Release the start-and-stop device in the case of an interruption of the air supply.
- Use only lubricants recommended by the manufacturer.
- Contact with hydraulic fluid should be avoided. To minimize the possibility of rashes, care should be taken to wash thoroughly if contact occurs.
- Material Safety Data Sheets for all hydraulic oils and lubricants is available on request from your tool supplier.
- Avoid unsuitable postures, as it is likely for these positions not to allow counteracting of normal or unexpected movement of the tool.
- If the tool is fixed to a suspension device, make sure that the fixation is secure.
- Beware of the risk of crushing or pinching if nose equipment is not fitted.
- DO NOT operate tool with the nose casing removed.
- Adequate clearance is required for the tool operator’s hands before proceeding.
- When carrying the tool from place to place keep hands away from the trigger to avoid inadvertent activation.
- DO NOT abuse the tool by dropping or using it as a hammer.

1.4 REPETITIVE MOTIONS HAZARDS

- When using the tool, the operator can experience discomfort in the hands, arms, shoulders, neck or other parts of the body.
- While using the tool, the operator should adopt a comfortable posture whilst maintaining a secure footing and avoiding awkward or off-balance postures. The operator should change posture during extended tasks; this can help avoid discomfort and fatigue.
- If the operator experiences symptoms such as persistent or recurring discomfort, pain, throbbing, aching, tingling, numbness, burning sensations or stiffness, these warning signs should not be ignored. The operator should tell the employer and consult a qualified health professional.

1.5 ACCESSORY HAZARDS

- Disconnect the tool from the air supply before fitting or removing the nose assembly or accessory.
- Use only sizes and types of accessories and consumables that are recommended by the manufacturer of the tool; do not use other types or sizes of accessories or consumables.

1.6 WORKPLACE HAZARDS

- Slips, trips and falls are major causes of workplace injury. Be aware of slippery surfaces caused by use of the tool and of trip hazards caused by the air line or hydraulic hose.
- Proceed with care in unfamiliar surroundings. There can be hidden hazards, such as electricity or other utility lines.
- The tool is not intended for use in potentially explosive atmospheres and is not insulated against contact with electric power.
- Ensure that there are no electrical cables, gas pipes, etc., which can cause a hazard if damaged by use of the tool.
- Dress properly. Do not wear loose clothing or jewellery. Keep your hair, clothing and gloves away from moving parts. Loose clothes, jewellery or long hair can be caught in moving parts.

1.7 NOISE HAZARDS

- Exposure to high noise levels can cause permanent, disabling hearing loss and other problems, such as tinnitus (ringing, buzzing, whistling or humming in the ears). Therefore, risk assessment and the implementation of appropriate controls for these hazards are essential.
- Appropriate controls to reduce the risk may include actions such as damping materials to prevent work pieces from “ringing”.
- Use hearing protection in accordance with employer's instructions and as required by occupational health and safety regulations.
- Select, maintain and replace the consumable/inserted tool as recommended in the instruction handbook, to prevent an unnecessary increase in noise.

1.8 VIBRATION HAZARDS

- Exposure to vibration can cause disabling damage to the nerves and blood supply of the hands and arms.
- Wear warm clothing when working in cold conditions and keep your hands warm and dry.
- If you experience numbness, tingling, pain or whitening of the skin in your fingers or hands, stop using the tool, tell your employer and consult a physician.
- Where possible Support the weight of the tool in a stand, tensioner or balancer, because a lighter grip can then be used to support the tool.

- Operate and maintain the assembly power tool as recommended in the instruction's handbook, to prevent an unnecessary increase in vibration levels.
- Select, maintain and replace the consumable/inserted tool as recommended in the instruction handbook, to prevent an unnecessary increase in vibration levels.
- Hold the tool with a light but safe grip, taking account of the required hand reaction forces, because the risk from vibration is generally greater when the grip force is higher.

1.9 ADDITIONAL SAFETY INSTRUCTION FOR PNEUMATIC POWER TOOLS

- The operating supply air must not exceed 7 bar (102 PSI).
- Air under pressure can cause severe injury.
- Never leave operating tool unattended. Disconnect air hose when tool is not in use, before changing accessories or when making repairs.
- Never direct air at yourself or anyone else.
- Whipping hoses can cause severe injury. Always check for damaged or loose hoses and fittings.
- Prior to use, inspect airlines for damage, all connections must be secure. Do not drop heavy objects on hoses. A sharp impact may cause internal damage and lead to premature hose failure.
- Cold air shall be directed away from hands.
- Whenever universal twist couplings (claw couplings) are used, lock pins shall be installed and whip check safety cables shall be used to safeguard against possible hose-to-tool or hose-to-hose connection failure.
- DO NOT lift the placing tool by the hose. Always use the placing tool handle.
- Vent holes must not become blocked or covered.
- Keep dirt and foreign matter out of the hydraulic system of the tool as this will cause the tool to malfunction.

2. SPECIFICATIONS

2.1 INTENT OF USE

The 74290 Tool is designed to convert round holes in to hexagonal holes. The latter are produced by means of a drill. Then the tool, equipped with punch and reference die, is to be inserted into the hole, where it removes other material in order to obtain a hexagon hole, ready to receive threaded hexserts.

In this way it is possible to easily and rapidly install threaded inserts which, owing to the hexagon profile, guarantee the on-rotation of the joint, with evident advantages regarding the production process and the offered performances, compared to round threaded inserts or other competitor technologies (nuts, welded nuts, etc...).

The use of this tool for threaded inserts enlarges the range of application (up to now it was restricted to the employment of pre punched sheets) for box type design pieces, low volume series production and in situ applications.

For further details regarding the preparation of the hole in relation to the type of material and the thickness, see page 12.

DO NOT use under wet conditions or in the presence of flammable liquids or gases.

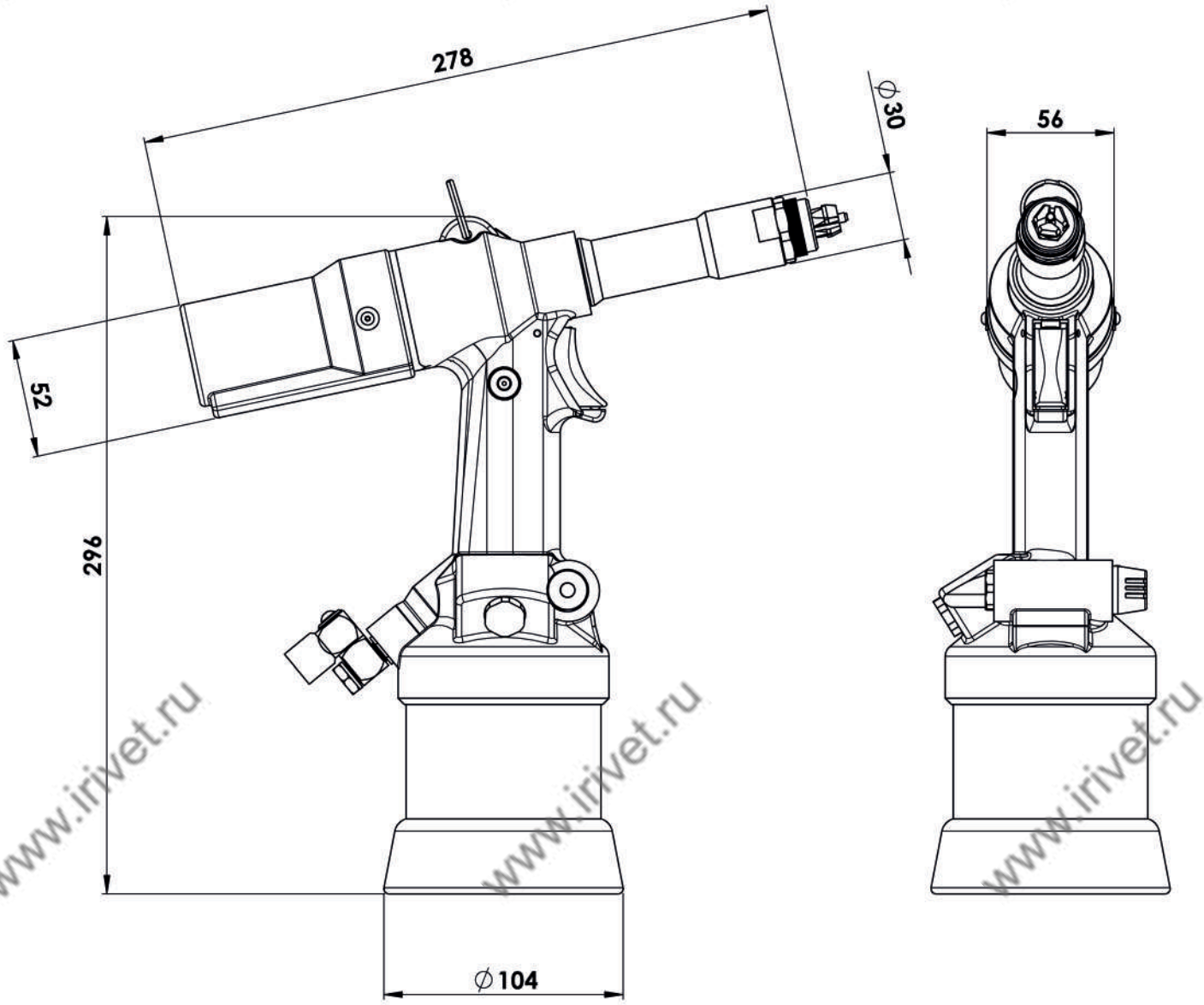
2.2 PLACING TOOL SPECIFICATION

Air Pressure	Minimum - Maximum	5-7 bar (75-100 lbf/in^2)
Free Air Volume Required	@ 5 bar/75 lbf/in^2	8 litres (0.28 ft^3)
Stroke	Maximum	6.5 mm (0.256 in)
Pull Force	@ 5.5 bar/ 2400 kgf	23.5 kN (5,290 lbf)
Weight	Without nose equipment	2.2 kg (4.85 lb)

Noise values determined according to noise test code ISO 15744 and ISO 3744.		**74290**
A-weighted sound power level dB(A), L_{WA}	Uncertainty noise: k_{WA} = 3.0 dB(A)	89.4 dB(A)
A-weighted emission sound pressure level at the work station dB(A), L_{pA}	Uncertainty noise: k_{pA} = 3.0 dB(A)	87.4 dB(A)
C-weighted peak emission sound pressure level dB(C), $L_{pC, peak}$	Uncertainty noise: k_{pC} = 3.0 dB(C)	89.8 dB(C)

Vibration values determined according to vibration test code ISO 20643 and ISO 5349		**74290**
Vibration emission level, a_{hd}:	Uncertainty vibration: k = 0.94 m/s^2	2.36 m/s^2
Declared vibration emission values in accordance with EN 12096		

2.3 TOOL DIMENSIONS



Dimensions shown in bold are millimeters.

3. PUTTING IN SERVICE

IMPORTANT - READ THE SAFETY RULES ON PAGE 4 - 6 CAREFULLY BEFORE PUTTING INTO SERVICE.

- Select relevant size nose equipment and install.
- Connect the placing tool to the air supply. Test pull and return cycles by depressing and releasing the trigger **40**.
- Set the tool for desired stroke/pressure.

⚠ ***CAUTION:*** Correct supply pressure is important for proper function of the installation tool. Personal injury or damage to equipment may occur without correct pressures. The supply pressure must not exceed that listed in the placing tool specification.

3.1 PRELIMINARY OPERATIONS

Every day, before using the tool, carry out the operations described in section "LUBRICATION".
Before connecting the tool to the air supply, blow compressed air through the feed pipe, in order to eliminate any trace of condensation water or foreign matter.

LUBRICATION: Prior to connecting the air hoses, pour a small quantity of light hydraulic oil into the air admission fitting

3.2 AIR SUPPLY

All tools are operated with compressed air at an optimum pressure of 5 and 7 Bar. We recommend the use of pressure regulators and automatic oiling/filtering systems on the main air supply. These should be fitted within 3 metres of the tool (see diagram below) to ensure maximum tool life and minimum tool maintenance.

Air supply hoses should have a minimum working effective 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.

We recommend to operate the tool at the minimum pressure necessary to obtain the requested hole, to consume less air and the maximum tool life is ensured.

Read servicing daily details page 13.

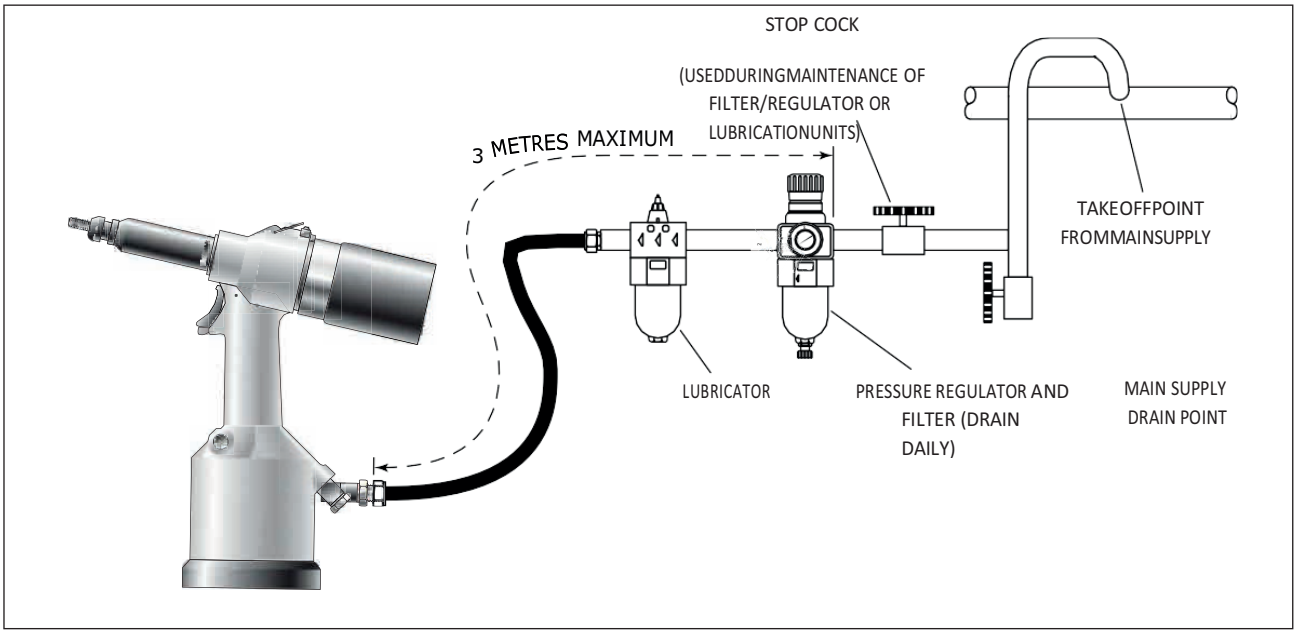


Fig. 2

3.3 TOOL CONFIGURATION

The tool is able to punch hexagon holes, designated to receive metric threaded hexagon inserts type M4, M5, M6, M8, M10. According to the hole to be realized, the appropriate equipment can be ordered under the relative part number (see Table on Page 12).

3.4 PRINCIPLE OF OPERATION

Connect the tool provided with the appropriate equipment to the air supply (see table of recommended air pressures in relation to the material to be punched).

Fig.1 Fig.2 Fig.3 Fig.4 Fig.5

Fig.1 Workpiece with round hole.

Fig.2 Insert the punch fixed onto the 74290 Tool into the previously drilled round hole.

Fig.3 Depress the trigger. In this way the rod 24 advances and the punch blades extend on the hole walls, now the punch is ready to stamp.

Fig.4 In the following the punch removes excess sheet material to create a hexagon hole suitable to place the hexagon insert.

At the end of this phase the punch retracts from the hole and removes the punching scrap. In general the scrap is ejected via the punching effect and the return of the punch into the rear position. Scrap will be expelled without jamming the punch.

Fig.5 The workpiece, with the hexagon hole stamped by the 74290 tool, is now ready to fit a threaded hexsert.

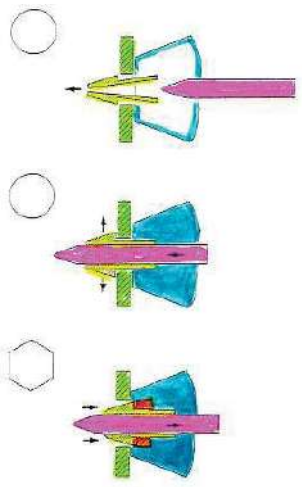
- Make sure that no scraps are left on the punch.
- The tool now is ready for a new operating phase.

Transforms round holes into hexagonal holes for use of Hexsert® threaded inserts M4 - M10. Thickness range of workpiece (respective punch equipment has to be ordered seperately):

Aluminium	M4, M10:	0.5 - 2.5 mm
	M5 - M8:	0.5 - 4.5 mm
Steel	M4:	0.5 - 1.5 mm
	M5 - M10:	0.5 - 3.0 mm
Stainless Steel	M4 - M10:	0.5 - 1.5 mm

3.5 OPERATING SEQUENCE

- Place the punch mounted onto the 74290 Tool tool inside the round hole.
- Fully depress the trigger of the 74290 tool. The piston extends the punch and automatically perforates the sheet material. In doing this, a punched hexagon hole is produced. A threaded hexsert can now be inserted by means of the Stanley Engineered Fastening tool models 74200 and 74202.



4. 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 using the selection tables on page 12.

4.1 FITTING INSTRUCTIONS

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

The fitting procedure is very simple and described in the following:

Item numbers in **bold** refer to illustration below on Page 16:

- Disconnect the tool from the air supply.
- Unscrew the outer casing **4** and the coupling sleeve **5**, if mounted on the tool.
- Place the punch **1** onto the rod **24**, which protrudes from the connection **6** and tighten the parts **6** and **5** using the **17** mm spanner.
- Reattach the outer casing **4**.
- Screw the die **2**, first onto the counter lock nut **3** and then onto the casing **4**.
- The locking of the die with the counter lock nut, with respect to punch **1**, depends on the thickness of the material on which to realize the hexagon punching. Then fit the counter lock nut with a screw nut wrench.

4.2 SERVICE 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 part should be replaced by a new part.
- Particularly check wear on Punch.
- Assemble according to fitting instructions.

4.3 74290 NOSE ASSEMBLY COMPONENTS

Nose tips vary in shape according to the insert type. Each nose assembly represents a unique assembly of components which can be ordered individually. Component numbers refer to the illustration on page 16. We recommend some stock as items will need regular replacement. .

(1) Adapter kit is required **74290X07555** (included)

(2) Adapter kit is required (included)

rev. 01/2011

	THIS COMPLETE EQUIPMENT - complite equipment	Punch	Punch Adapter	Matrix	Thickness/grip	ø Forum/hole	indicative across flats	kit adapter
ALLUMINIO- aluminum								
M4	**74290-00004**	74290-09571	74290-09102	74290-09211	0,5 à 2,5	6,2 à 6,3	6.2	no
M5	**74290-00005**	74290-99641	74290-09102	74290-09221	0,5 à 4,5	7,2 à 7,3	7.2	no
M6	**74290-00006**	74290-99741	74290-09102	74290-09231	0,5 à 4,5	9,3 à 9,4	9.2	no
M8	**74290-00008**	74290-99821	74290-09102	74290-09241	0,5 à 4,5	11,3 à 11,5	11.2	no
M10	**74290-00010(2)**	74290-09881	74290-07000	74290-09251	0,5 à 2,5	13,4 à 13,6	13.2	7429000010kit.
	The equipment described below is compatible with aluminum, but we do not recommend use on this material. They need a thorough cleaning for every work cycle (forming hexagon)							
M4	**74290-00014(1)**	74290-06571	74290-09102	74290-06211	0,5 à 2,5	6,2 à 6,3	6.2	74290x07555
M5	**74290-00015**	74290-06641	74290-09102	74290-06221	0,5 à 4,5	7,2 à 7,3	7.2	no
M6	**74290-00016**	74290-06741	74290-09102	74290-06231	0,5 à 4,5	9,3 à 9,4	9.2	no
M8	**74290-00018**	74290-06821	74290-09102	74290-06241	0,5 à 4,5	11,3 à 11,5	11.2	no
M10	**74290-00020(2)**	74290-06881	74290-07000	74290-06251	0,5 à 2,5	13,4 à 13,6	13.2	7429000010kit.
ACCIAIO - steel								
M4	**74290-00014(1)**	74290-06571	74290-09102	74290-06211	0,5 à 1,5	6,2 à 6,3	6.2	74290x07555
M5	**74290-00015**	74290-06641	74290-09102	74290-06221	0,5 à 3,0	7,2 à 7,3	7.2	no
M6	**74290-00016**	74290-06741	74290-09102	74290-06231	0,5 à 3,0	9,3 à 9,4	9.2	no
M8	**74290-00018**	74290-06821	74290-09102	74290-06241	0,5 à 3,0	11,3 à 11,5	11.2	no
M10	**74290-00020(2)**	74290-06881	74290-07000	74290-06251	0,5 à 3,0	13,4 à 13,6	13.2	7429000010kit.
INOX- stainless								
M4	**74290-00014(1)**	74290-06571	74290-09102	74290-06211	0,5 à 1,5	6,2 à 6,3	6.2	74290x07555
M5	**74290-00015**	74290-06641	74290-09102	74290-06221	0,5 à 1,5	7,2 à 7,3	7.2	no
M6	**74290-00016**	74290-06741	74290-09102	74290-06231	0,5 à 1,5	9,3 à 9,4	9.2	no
M8	**74290-00018**	74290-06821	74290-09102	74290-06241	0,5 à 1,5	11,3 à 11,5	11.2	no
M10	**74290-00020(2)**	74290-06881	74290-07000	74290-06251	0,5 à 1,5	13,4 à 13,6	13.2	7429000010kit.

5. SERVICING THE TOOL

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

⚠ **CAUTION: Never use solvents or other harsh chemicals for cleaning the non-metallic parts of the tool. These chemicals may weaken the materials used in these parts.**

⚠ **CAUTION: Before maintenance, remove any dangerous substances that may have accumulated due to work processes.**

⚠ **CAUTION: The employer is responsible for ensuring that tool maintenance instructions are given to the appropriate personnel.**

⚠ **CAUTION: The operator should not be involved in maintenance or repair of the tool unless properly trained.**

⚠ **CAUTION: The tool shall be examined regularly for damage and malfunction.**

⚠ **CAUTION: Read Safety Instructions on page 4 to 6.**

5.1 DAILY SERVICING

- 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 correct.
- Inspect the punch in the nose assembly for wear or damage. If any, renew.

5.2 WEEKLY SERVICING

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

5.3 SERVICE KIT

For all servicing we recommend the use of the service kit (part number 74290-03000) tools below:

SERVICE TOOLS			
Description	**Part**	**Description**	**Part**
Spanner 32 mm	For part No. **18**	Allan key 5 mm	For part No. **35**
Spanner 20 mm (part of outfit)	For part No. **7**	Allan key 2 mm	For part No. **33**
Vice with soft jaws	For part No. **37**	Spanner 12 mm	For part No. **75**
Flat-nose pliers	For part No. **12**	Hook device	For part No. **83, 28**
Spanner 10 mm	For part No. **73**	Spanner 17 mm	For part No. **31**
Tubular socket wrench 25 mm	For part No. **62**	Spanner 22 mm	For part No. **4**
Allen key 12 mm	For part No. **64**	Pin Punch	For part No. **38**

6. 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.

⚠ **WARNING: Read Safety Instructions on page 4 to 6.**

⚠ **WARNING: The employer is responsible for ensuring that tool maintenance instructions are given to the appropriate personnel.**

⚠ **WARNING: The operator should not be involved in maintenance or repair of the tool unless properly trained.**

⚠ **WARNING: The tool shall be examined regularly for damage and malfunction.**

The airline 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.

Prior to dismantling the tool it is necessary to remove the nose assembly. For simple removal instructions see the nose assemblies section, pages 11.

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

6.1 TRIGGER UNIT

- Remove the pin **38** and extract the trigger unit **39-40-41-42**.

6.2 VERTICAL TRIGGER UNIT (FROM 43 TO 48)

- To remove this unit it is necessary to disassemble the PNEMATIC PISTON ASSY.

6.3 PNEUMATIC PISTON UNIT

- Unscrew the oil drain screw **35** and bleed the oil.
- Place the tool in an upside-down position in a vice. Take care to use soft jaws so not to damage the body **37**.
- Unscrew the **2** nuts **73** (key 10 mm), extract the end plug lock **75** and pay attention to piston **68** which could violently eject due to spring **65**.
- Unscrew the rod guide **62** by means of a **25** mm barrel wrench. In this condition the vertical trigger unit (from **43** to **48**) can be extracted by pressing the rod **43**.
- If necessary, separate stem **66** from piston **68**, but remember that these two parts for the reassembling must be joint applying **LOCTITE 222** sealing onto the thread of bolt **76**.

6.4 HYDRAULIC PISTON UNIT

- Unscrew the outer casing **4**, the coupling sleeve **5** and the piston connection **6**. Unscrew the **2** screws **33** an d extract protect ion **21**. Unscrew lock screw **26** and move the pipe **27** inside the cylinder **19**.
- Detach piston **7** from the piston-rod-punch unit. For this purpose insert the **20** mm wrench behind piston **7** and the **32** mm wrench in head **18**, then unscrew. Unscrew the screws **17** and extract limit stop **16** and spring **15**, then pull out the hydraulic piston.
- To replace the lip seal **83** remove the Seeger circlip ring **12**.

6.5 PISTON-ROD-PUNCH UNIT

- Place the pneumatic cylinder at the respective circumference sparing into the vise.
- Draw off the spring **25**.
- Unscrew the head **18** with a **32** mm wrench.
- In this way the parts **24**, **23**, **22** can be extracted.

⚠ **CAUTION: 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 16-17).

6.6 MOLYKOTE 55M GREASE

Grease can be ordered as a single item, the part number is shown in the service kit page 13.

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.

ENNVIRONMENT
Scrape up for incinerating 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.

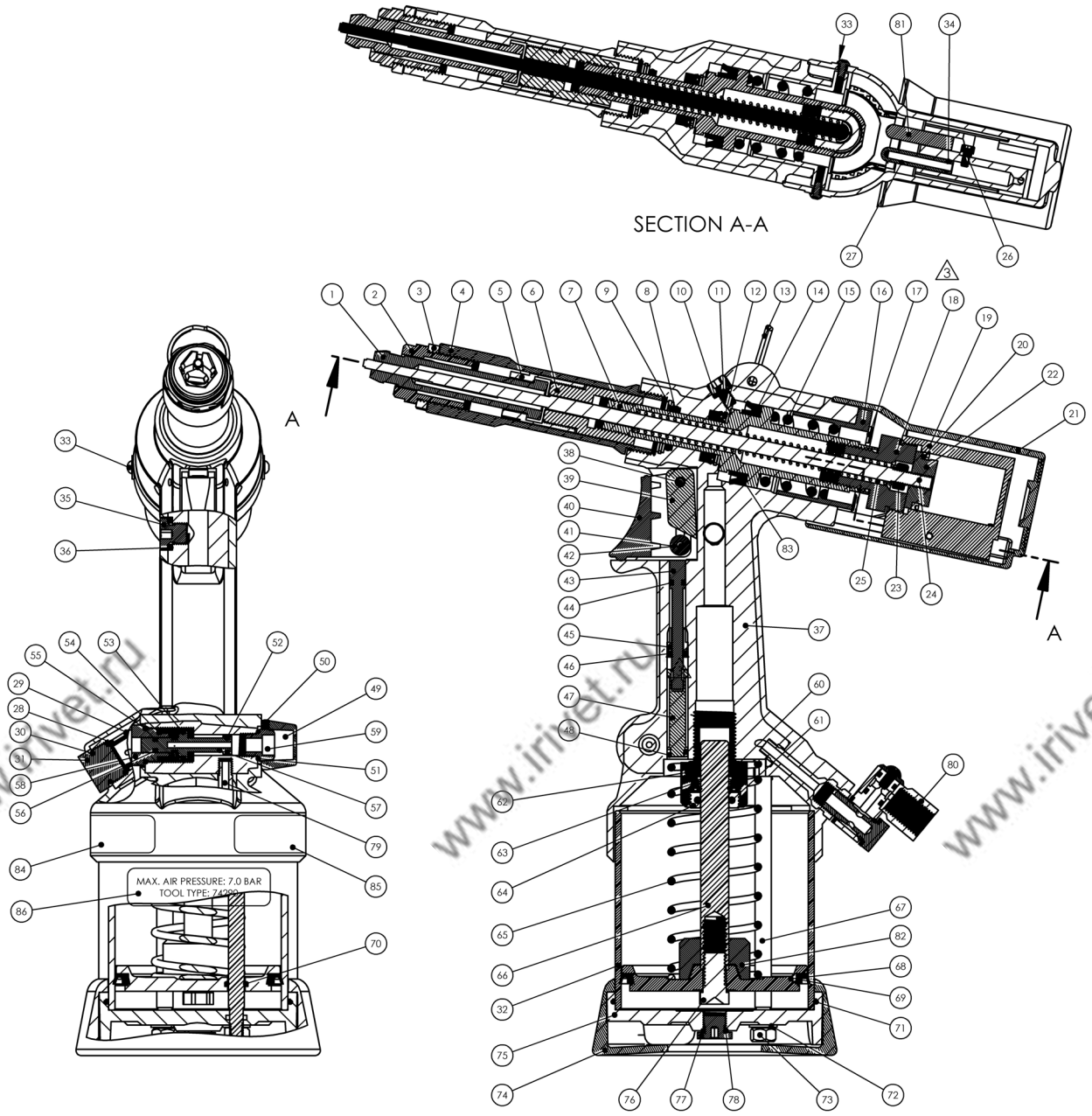
STORAGE
Away from heat and oxidizing agent

6.7 PROTECTING THE ENVIRONMENT

Assure conformity with applicable disposal regulations. Dispose all waste products at an approved waste facility or site so as not to expose personnel and the environment to hazards.

7. GENERAL ASSEMBLIES

7.1 GENERAL ASSEMBLY OF BASE TOOL 74290



7.2 GENERAL ASSEMBLY PARTS LIST 74290

Parts List for MKII Tool - 74290-03000

ITEM	PART N°	DESCRIPTION	QTY	ITEM	PART N°	DESCRIPTION	QTY	ITEM	PART N°	DESCRIPTION	QTY
1	see manual	punch	1	31	74290-03012	end plug	1	61	07003-00134	O-ring	1
2	see manual	die	1	32	74290-03013	cylinder jacket	1	62	74200-12015	rod guide	1
3	see manual	counter lock nut	1	33	74290-03014	fastening screw M3	2	63	74200-12014	washer	1
4	07555-00315	outer casing	1	34	74200-12060	O-ring	2	64	74200-12013	nut	1
5	74290-09102	coupling sleeve	1	35	07005-01274	oil drain screw	1	65	07555-00205	spring	1
6	07555-00314	piston connection	1	36	74290-03015	screw washer	1	66	74290-03018	stem	1
7	74290-03001	piston	1	37	74290-03016	body	1	67	74290-03019	tie rods	2
8	07003-00028	O-ring	1	38	74200-12026	pin	1	68	74290-03020	pneumatic piston	1
9	74200-12099	washer	1	39	74200-12024	push wedge	1	69	74290-03021	lip seal	1
10	74200-12049	bleed washer	1	40	74200-12025	trigger	1	70	74290-03022	O-ring	2
11	07001-00329	bleed screw	1	41	74200-12023	roll	1	71	74290-03023	O-ring	1
12	07004-00033	Seeger circlip ring	2	42	74200-12022	pin	1	72	74290-03024	washer	2
13	74290-03002	suspension ring	1	43	74200-12020	trigger rod	1	73	74290-03025	nuts	2
14	74200-12053	lip seal	1	44	07003-00315	O-ring	1	74	74290-03026	rubber base	1
15	07555-00317	spring	1	45	74200-12019	guide	1	75	74290-03027	end plug lock	1
16	74290-03003	limit stop	1	46	74200-12018	lip seal	1	76	74290-03028	bolt	1
17	74290-03004	screw M4	4	47	74290-03017	valve plug	1	77	74200-12103	plug	1
18	07555-00320	rod cylinder head	1	48	07003-00027	O-ring	1	78	07003-00029	O-ring	4
19	74290-03005	rod cylinder	1	49	74200-12302	deflector	1	79	74290-03029	air inlet pipe	1
20	07555-00324	seal rod cylinder	1	50	74200-12301	set screw	1	80	74200-12700	Air Connector	1
21	74290-03006	protection	1	51	74200-12033	washer 1/8	1	81	74290-03033	Anti Rotation Plug	1
22	07555-00323	pusher piston	1	52	07003-00046	O-ring	1	82	74290-03032	Stroke Stop	1
23	07265-03206	nut	1	53	07003-00026	O-ring	1	83	07265-02004	Lip Seal	1
24	74290-03007	pusher	1	54	74200-12104	spring	1	84	07007-01526	CE & UKCA Label	1
25	07555-00321	spring	1	55	07003-00086	O-ring	1	85	73200-02022	Safety Label	1
26	74290-03008	pipe lock screw M3	1	56	07003-00040	O-ring	1	86	07007-02221	74290 Label	1
27	74290-03009	Delrin pipe	1	57	74200-12028	valve piston	1				
28	74290-03010	retarder	1	58	74200-12027	nut	1				
29	74290-03011	O-ring	2	59	74200-12034	silencer	1				
30	74200-12029	O-ring	1	60	07003-00100	O-ring	1				

8. 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 be reduced and fasteners are not fully placed by one operation of the trigger.

8.1 OIL DETAILS

The recommended oil for priming is Hyspin® VG32 available in 0.5l (part number 07992-00002) or one gallon containers (part number 07992-00006). Please see safety data below.

8.2 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 authorized 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.

8.3 PRIMING PROCEDURCE

⚠ **CAUTION: Ensure that the oil is perfectly clean and free from air bubbles.**

⚠ **CAUTION: The tool must remain on its side throughout the priming sequence.**

⚠ **CAUTION: All operations should be carried out on a clean bench, with clean hands, in a clean area.**

⚠ **CAUTION: Care MUST be taken, at all times, to ensure that no foreign matter enters the tool, or serious damage may result.**

8.4 OIL TOP UP

- Place the tool in horizontal position.
- Unscrew the oil drain screw **35** using a 5 mm Allan key.
- Pour the recommended oil into the hole leading to the chamber in which the piston rod runs.
- Make sure that the screw washer **36** is in the correct position.
- Screw again with moderation the oil drain screw **35** using the Allan key.
- Now bleed the tool. This operation is necessary to ensure that all air bubbles are eliminated.
- Make sure the drain screw **11** is tightly closed, unscrew the same ONLY BY ONE TURN using an Allan key, then connect the tool to the air supply and depress the trigger.
- Wait until oil appears around the drain screw **11**, then retighten. Clean the excess oil.
- Release the trigger.
- Open the oil drain screw **35** using an Allan key.
- Top up with priming oil to reset level. Replace the screw washer **36** and the oil drain screw **35** in position and close tightly.
- Prior to operating the tool it is necessary to fit the appropriate tip equipment and to adjust the tool stroke.

9. FAULT DIAGNOSIS

SYMPTOM	POSSIBLE CAUSE	REMEDY
Air Leakage from Pipe Connection **27**	O-Ring Defective	REPLACE
Punching Rod does not properly extend the punch inside the hole	Tail jaws switched off.	Switch on tail jaws
Punching Rod does not advance / return	Debris material between Rod and Punch	If necessary disassemble the equipment (Head) including the punch, then clean
Hexagon seats too small	Punch worn Rod diameter diminished	REPLACE visually check that the diameter is not smaller than 3,95mm
Tool is not able to produce the seat	Punch worn stroke too small	REPALCE Visually check the Oil level by opening the oil drain screw **35**. If necessary Top Up with prescribed Oil.
Pneumatic return spring 65 broken or excessively stressed	REPLACE	If possible operate with lower Air Pressure
Oil Leakage	FRONT: Lip Seal **83** worn or scored or hydraulic piston rod scored.	REPLACE the worn or damaged parts to restore the tightness.
	BACK: Washer **14** worn or scored or the finish of internal cylinder is scored.	Top-Up Oil.
	LOWER PART: Washer **63** is worn or pneumatic piston rod scored.	
Air Leakage	AT THE TRIGGER: Check O-Rings **44**	REPLACE If Worn
	AT AIR ESCAPE: Check wear condition of LIP seal **69**.	
	AT AIR PIPE CONNECTION 27: Check the correct installation of pipe and wear condition of O-Rings **34**.	

10. EC DECLARATION OF CONFORMITY

We, **Stanley Engineered Fastening, Stanley House, Works Road, Letchworth Garden City, Hertfordshire, SG6 1JY UNITED KINGDOM,** declare under our sole responsibility that the product:

Description:	**74290 Hydro-Pneumatic Tool**
Model:	**74290**

to which this declaration relates is in conformity with the following harmonized standards:

ISO 12100:2010	EN ISO 3744:2010
EN ISO 11202:2010	EN ISO 11148-1:2011
EN ISO 4413:2010	BS EN 28662-1:1993
EN ISO 4414:2010	EN ISO 20643:2008+A1:2012
EN ISO 28927-5:2009+A1:2015	ES100118-rev 17:2017

Technical documentation is compiled in accordance with Annex VII, in accordance with the following Directive: **2006/42/EC The Machinery Directive** (Statutory Instruments 2008 No 1597 - The Supply of Machinery (Safety) Regulations refers).

The undersigned makes this declaration on behalf of STANLEY Engineered Fastening

A. K. Seewraj
Director of Engineering, UK
Avdel UK Limited, Stanley House, Works Road, Letchworth Garden City, Hertfordshire,
SG6 1JY UNITED KINGDOM

Place of issue:	**Letchworth Garden City, UK**
Date of issue:	**01-01-2021**

The undersigned is responsible for compilation of the technical file for products sold in the European Union and makes this declaration on behalf of Stanley Engineered Fastening.

Matthias Appel
Team Leader Technical Documentation
Stanley Engineered Fastening, Tucker GmbH, Max-Eyth-Str.1,
35394 Gießen, Germany

This machinery is in conformity with Machinery Directive 2006/42/EC

STANLEY
Engineered Fastening

11.UK DECLARATION OF CONFORMITY

We, **Stanley Engineered Fastening, Stanley House, Works Road, Letchworth Garden City, Hertfordshire, SG6 1JY UNITED KINGDOM,** declare under our sole responsibility that the product:

Description:	**74290 Hydro-Pneumatic Tool**
Model:	**74290**

to which this declaration relates is in conformity with the following designated standards:

ISO 12100:2010	EN ISO 3744:2010
EN ISO 11202:2010	EN ISO 11148-1:2011
EN ISO 4413:2010	BS EN 28662-1:1993
EN ISO 4414:2010	EN ISO 20643:2008+A1:2012
EN ISO 28927-5:2009+A1:2015	ES100118-rev 17:2017

Technical documentation is compiled in accordance with the Supply of Machinery (Safety) Regulations 2008, S.I. 2008/1597 (as amended).

The undersigned makes this declaration on behalf of STANLEY Engineered Fastening

A. K. Seewraj
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SG6 1JY UNITED KINGDOM

Place of issue:	**Letchworth Garden City, UK**
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Engineered Fastening