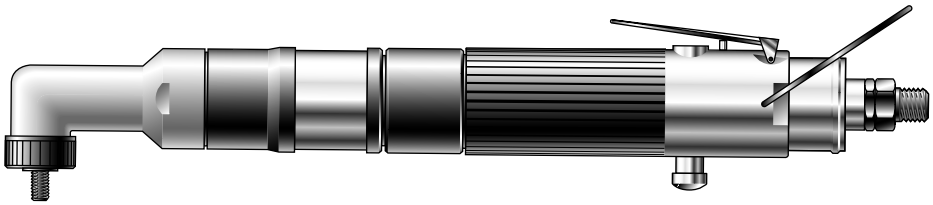
Avdel®

An Acument™ Global Technologies Company

Instruction Manual

Pass onto user to read and keep for reference



Threaded Insert Power Tool

07412

AVDEL policy is one of continuous development. Specifications shown in this document may be subject to changes which may be introduced after publication. For the latest information always consult Avdel.

SPECIFICATIONS FOR 07412 TOOL

AIR PRESSURE	Minimum - Maximum	**5 - 7 bar**	70 - 100 lbf/in^2
FREE AIR VOLUME REQUIRED	@ 5.5 bar / 80 lbf/in^2	**288 litres/min**	10 ft^3/min
MOTOR SPEED	@ 75 lb/in^2	**350 RPM**	
CYCLE TIME	Approximately	**5 seconds**	
NOISE LEVEL		**75 dB(A)**	
WEIGHT	Without nose equipment	**1.3 kg**	2.86 lb
VIBRATION	Less than	**2.5 m/s^2**	8 ft/s^2

CONTENTS

SAFETY

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

☒ DO NOT USE OUTSIDE THE DESIGN INTENT.

☒ DO NOT USE EQUIPMENT WITH THIS TOOL/MACHINE OTHER THAN THAT RECOMMENDED AND SUPPLIED BY AVDEL.

☒ ANY MODIFICATION UNDERTAKEN BY THE CUSTOMER TO THE TOOL/MACHINE, NOSE ASSEMBLIES, ACCESSORIES OR ANY EQUIPMENT SUPPLIED BY AVDEL OR THEIR REPRESENTATIVES, SHALL BE THE CUSTOMER'S ENTIRE RESPONSIBILITY. AVDEL WILL BE PLEASED TO ADVISE UPON ANY PROPOSED MODIFICATION.

☒ 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 IN AVDEL PROCEDURES. DO NOT DISMANTLE THIS TOOL/MACHINE WITHOUT PRIOR REFERENCE TO THE MAINTENANCE INSTRUCTIONS. CONTACT AVDEL WITH YOUR TRAINING REQUIREMENTS.

☒ 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 1974” APPLIES. ANY QUESTION REGARDING THE CORRECT OPERATION OF THE TOOL/MACHINE AND OPERATOR SAFETY SHOULD BE DIRECTED TO AVDEL.

☒ THE PRECAUTIONS TO BE OBSERVED WHEN USING THIS TOOL/MACHINE MUST BE EXPLAINED BY THE CUSTOMER TO ALL OPERATORS.

☒ ALWAYS DISCONNECT THE AIRLINE FROM THE TOOL/MACHINE INLET BEFORE ATTEMPTING TO ADJUST, FIT OR REMOVE NOSE EQUIPMENT.

☒ DO NOT OPERATE A TOOL/MACHINE THAT IS DIRECTED TOWARDS ANY PERSON(S).

☒ ENSURE THAT VENT HOLES DO NOT BECOME BLOCKED OR COVERED AND THAT HOSES ARE ALWAYS IN GOOD CONDITION.

In addition to the general safety rules opposite, the following specific safety points must also be observed:

☒ THE OPERATING PRESSURE SHALL NOT EXCEED 7 BAR - 100 LBF/IN^2.

☒ DO NOT OPERATE THE TOOL WITHOUT FULL NOSE EQUIPMENT IN PLACE.

☒ WHEN USING THE TOOL, THE WEARING OF SAFETY GLASSES IS REQUIRED BOTH BY THE OPERATOR AND OTHERS IN THE VICINITY TO PROTECT AGAINST FASTENER PROJECTION, SHOULD A FASTENER BE PLACED 'IN AIR'. WE RECOMMEND WEARING GLOVES IF THERE ARE SHARP EDGES OR CORNERS ON THE APPLICATION.

☒ 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.

☒ WHEN CARRYING THE TOOL FROM PLACE TO PLACE KEEP HANDS AWAY FROM THE TRIGGER/LEVER TO AVOID INADVERTENT START UP.

☒ ALWAYS ADOPT A FIRM FOOTING OR A STABLE POSITION BEFORE OPERATING THE TOOL AND BE AWARE OF A TORQUE REACTION ON THE HANDS WHEN THE TOOL IS OPERATING, PARTICULARLY DURING THE REVERSING SEQUENCE. GRIP THE TOOL FIRMLY TO BE ABLE TO COUNTER THE TORQUE REACTION, BUT NOT TOO TIGHTLY.

☒ KEEP HANDS AWAY FROM THE ROTATING DRIVE SCREW AND THE NOSE END OF THE TOOL. IF A FASTENER BECOMES JAMMED ON THE DRIVE SCREW, SHUT OFF THE AIR SUPPLY AND DRAIN THE SUPPLY LINE TO THE TOOL BEFORE ATTEMPTING TO DISLODGE IT.

☒ THE TOOL IS NOT ELECTRICALLY INSULATED.

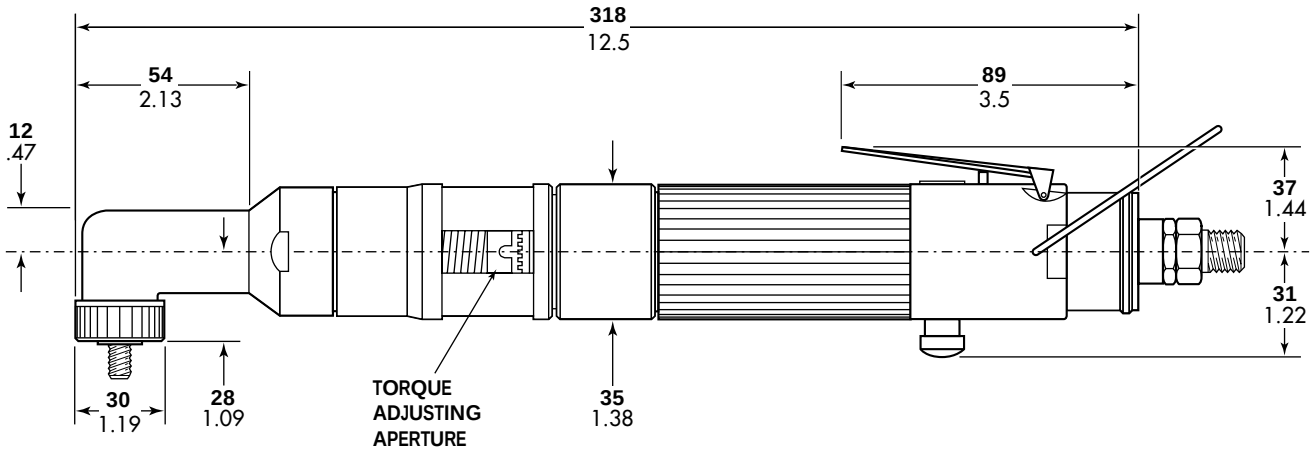
(!) THIS TOOL IS NOT DESIGNED FOR USE IN COMBUSTIBLE OR EXPLOSIVE ATMOSPHERES.

NTENT OF USE

The pneumatic 07412 type tool is designed to place Avdel threaded inserts at high speed making it ideal for batch or flow-line assembly in a wide variety of applications throughout all industries.

Use the selection table page 9 to select a complete tool which will be fitted with the correct nose equipment for the threaded insert selected.

It is also possible to order the base tool only (part number 07412 - 00400). For details of nose equipment see pages 8 and 9.



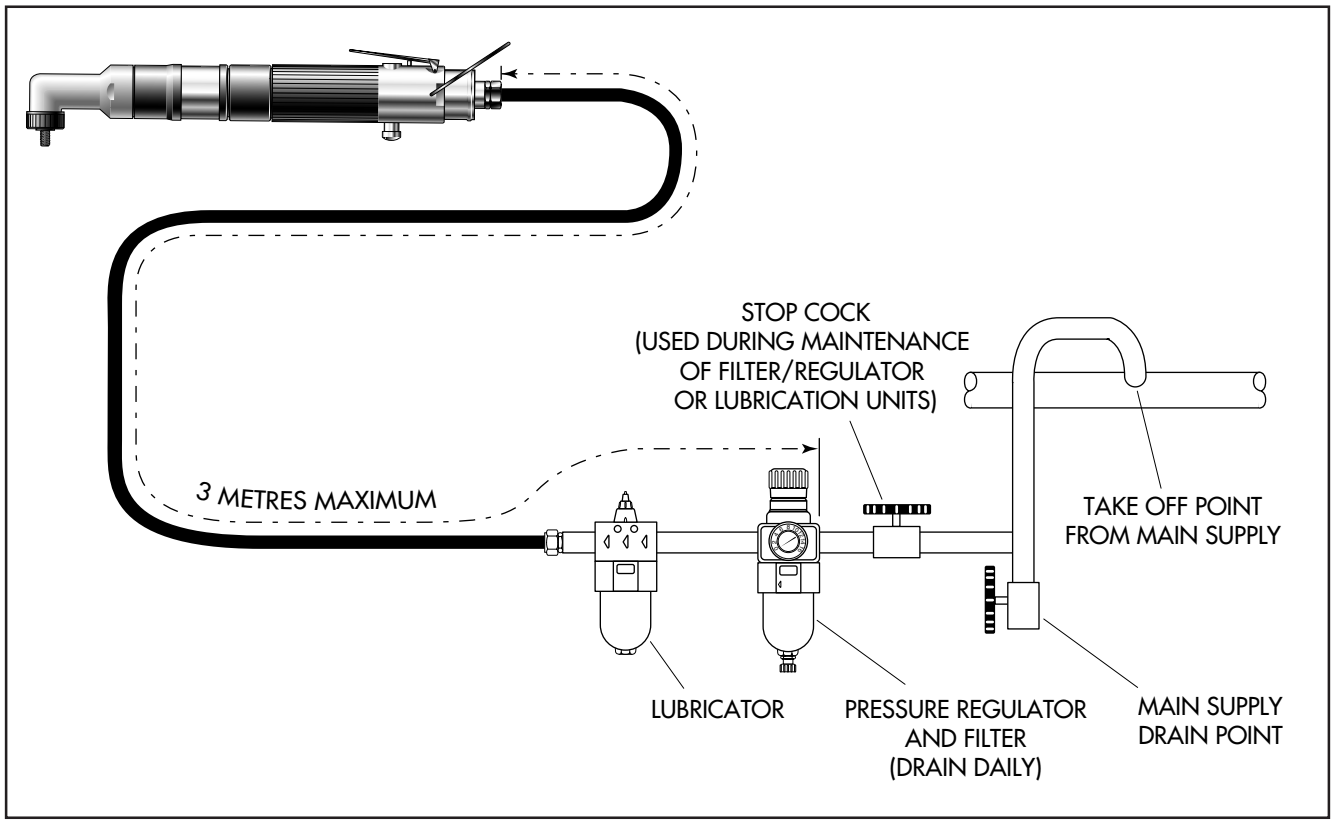
Dimensions shown in bold are millimetres.
Other dimensions are in inches.

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 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.

Read servicing daily details page 10.



OPERATING PROCEDURE

IMPORTANT

When placing Standard Nutserts, lubricate the drive screw of the tool every 25 placings. This is best achieved by wiping the drivescrew with a sponge soaked with STP Lubricant part number 07992-00013

OPTION 1

- Ensure that the correct nose equipment is fitted.
- Connect the tool to the air supply.
- Place the insert into the prepared hole of the application.
- Locate the drivescrew of the tool into the insert.
- Operate the throttle lever (item 33 page 15) and hold. The drivescrew will screw and collapse the insert.
- To release the tool from the insert, press the reverse valve button (item 51 page 15) whilst still holding the throttle lever down. The drivescrew will reverse out of the insert.

OPTION 2

- Ensure that the correct nose equipment is fitted.
- Connect the tool to the air supply.
- Screw the insert lip first onto the drivescrew of the tool.
- With the insert on the tool, locate it into the prepared hole of the application.
- Operate the throttle lever (item 33 page 15) and hold. The drivescrew will screw and collapse the insert.
- To release the tool from the insert, press the reverse valve button (item 51 page 15) whilst still holding the throttle lever down. The drivescrew will reverse out of the insert.

CLUTCH ADJUSTMENT

Whether supplied as a assembly (part number 08412-00380) or within a complete tool, the clutch is supplied unset.

Correct clutch setting is necessary to ensure optimum deformation of the insert. If the deformation is insufficient (clutch torque too low) the insert will rotate in the application. If the deformation is excessive (clutch torque too high), thread distortion will occur and extensive wear on the drivescrew may lead to fracture.

IMPORTANT

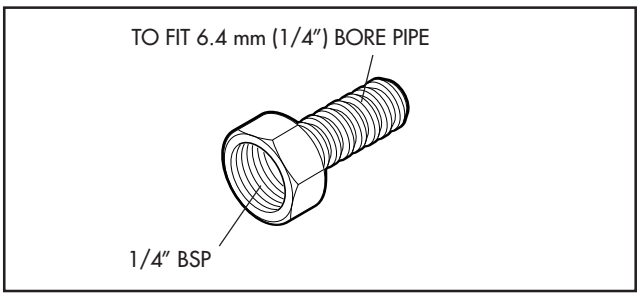
The air supply to the tool must be disconnected when adjusting the torque of the clutch

- Slide round the cover of the clutch housing (item 68 page 15) until you can see the serrations of the adjustment nut of the clutch (item 15 page 15).
- Using the clutch adjuster key supplied with the tool, turn the adjustment nut clockwise to decrease the torque or anti-clockwise to increase the torque.
- Turn the key one full turn at a time and test the tool having rotated the clutch housing cover back in place. Repeat as required.
- After dismantling the clutch, we suggest that you set the torque to its minimum by turning the key fully clockwise then adjust by turning the key anti-clockwise two turns at a time until the correct torque is acheived.

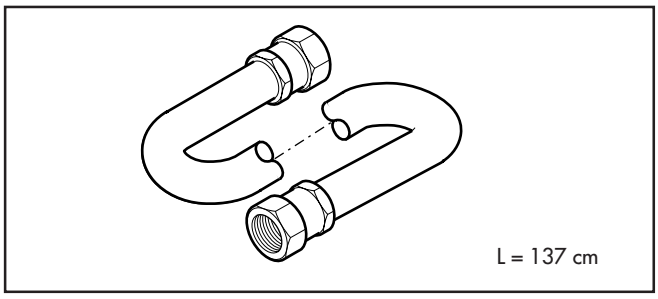
ACCESSORIES

Two different accessories are available to make the connection to your air supply:

Hose Connector
part nº 07005-00276



Hose Assembly
part nº 07008-000324



NOSE EQUIPMENT

If you have purchased a complete tool, it will already be fitted with the correct nose equipment for your insert.

It is essential that the correct nose equipment is fitted prior to operating the tool. By knowing your original complete tool part number or the details of the insert to be placed, you will be able to order a complete combination of nose equipment by referring to the table opposite.

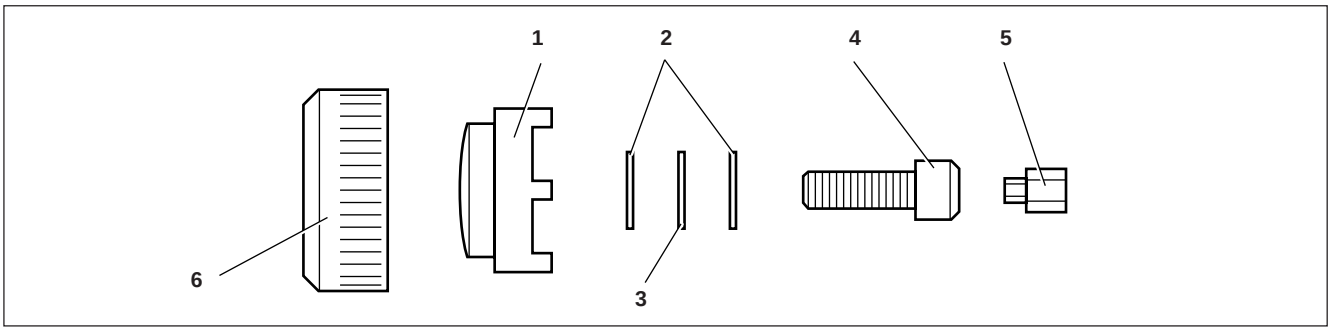
FITTING INSTRUCTIONS

IMPORTANT

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

Before fitting the nose equipment, ensure the clutch on the tool is set to the correct torque for the insert being placed. (Torque settings are shown on the table opposite.)

- Ensure spring (item 83 page 15) is fitted to the base tool.
- Insert drive shaft **5** into head of tool.
- Place washer **2** onto drive screw **4**, then bearing washer **3** and second washer **2**, as shown on illustration below.
- Lubricate as per servicing instructions below.
- Slide nose **1** onto drive screw **4** noting orientation.
- Push this sub-assembly onto the drive shaft aligning the hexagon of the drive shaft with the hexagonal hole in the drive screw.
- Screw on locking cap **6** to retain nose equipment components.



SERVICING INSTRUCTIONS

Nose equipment should be serviced at weekly intervals.

- Remove the complete nose equipment using the reverse procedure to the 'Fitting Instructions'.
- Any worn or damaged part should be replaced by a new part.
- Particularly check wear on drivescrew, thrust washers and thrust bearing.
- Lubricate thrust washers and thrust bearings with high pressure grease (eg Shell Alvania E.P.I.)
- Check spring is not distorted.

- Assemble according to fitting instructions.

NOSE EQUIPMENT COMPONENTS

The table below lists all nose equipment available. Each complete tool includes a unique combination of components which can be ordered individually. Components numbers refer to the text and illustration opposite. We recommend some stock as items will need regular replacement. Read the servicing instructions opposite carefully.

7412 TOOL SELECTION								
INSERT SIZE	TORQUE SETTING lbf/in	COMPLETE TOOL PART Nº	1	2	3	4	5	6
STANDARD NUTSERTS (9500-9538)								
3/16 BSW	30 - 35	07412-00016	07412-06106	07412-03805	07420-04106	07001-00147	07412-01106	07412-00218
3 MM	7 - 9	07412-00083	07412-06803	07412-03803	07410-04803	07001-00153	07412-01803	07412-00218
4 MM	22 - 24	07412-00084	07412-06804	07412-03804	07420-04708	07001-00154	07412-01804	07412-00218
5 MM	30 - 35	07412-00085	07412-06805	07412-03805	07420-04106	07001-00155	07412-01805	07412-00218
6 BA	7 - 9	07412-00036	07412-06306	07412-03306	07410-04306	07001-00135	07412-01306	07412-00218
4 BA	14 - 16	07412-00034	07412-06304	07412-03304	07420-04304	07001-00034	07412-01304	07412-00218
2 BA	30 - 35	07412-00032	07412-06106	07412-03805	07420-04106	07001-00024	07412-01106	07412-00218
4 UNC	7 - 9	07412-00054	07412-06306	07412-03306	07410-04306	07001-00143	07412-01306	07412-00218
6 UNC	14 - 16	07412-00056	07412-06304	07412-03304	07420-04304	07001-00144	07412-01304	07412-00218
6 UNF	14 - 16	07412-00076	07412-06304	07412-03304	07420-04304	07001-00140	07412-01304	07412-00218
8 UNC	22 - 24	07412-00058	07412-06804	07412-03804	07420-04708	07001-00145	07412-01508	07412-00218
8 UNF	22 - 24	07412-00078	07412-06804	07412-03804	07420-04708	07001-00141	07412-01508	07412-00218
10 UNC	30 - 35	07412-00050	07412-06805	07412-03805	07420-04106	07001-00108	07412-01805	07412-00218
10 UNF	30 - 35	07412-00070	07412-06805	07412-03805	07420-04106	07001-00142	07412-01805	07412-00218
THIN SHEET NUTSERT (9650)								
3 MM	-	07412-01083	07412-08883	07412-03803	07410-04803	07001-00153	07412-01803	07412-00218
4 MM	25 - 27	07412-01084	07412-08884	07412-03804	07420-04708	07001-00154	07412-01804	07412-00218
6 BA	-	07412-01036	07412-08883	07412-03306	07410-04306	07001-00135	07412-01306	07412-00218
4 BA	25 - 27	07412-01034	07412-08884	07412-03304	07420-04304	07001-00034	07412-01304	07412-00218
4 UNC	-	07412-01054	07412-08883	07412-03306	07410-04306	07001-00143	07412-01306	07412-00218
4 UNF	-	07412-01074	07412-08883	07412-03306	07410-04306	07001-00139	07412-01306	07412-00218
6 UNC	25 - 27	07412-01056	07412-08884	07412-03304	07420-04304	07001-00144	07412-01304	07412-00218
6 UNF	25 - 27	07412-01076	07412-08884	07412-03304	07420-04304	07001-00140	07412-01304	07412-00218
8 UNC	25 - 27	07412-01058	07412-08884	07412-03804	07420-04708	07001-00145	07412-01508	07412-00218
8 UNF	25 - 27	07412-01078	07412-08884	07412-03804	07420-04708	07001-00141	07412-01508	07412-00218

SERVICING THE TOOL

Regular servicing should be carried out and a comprehensive inspection performed annually or every 200000 cycles, whichever is soonest.

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 the air hose to the tool. If there is a filter fitted, drain it.
- Check that the nose equipment is correct.

WEEKLY

- Fully dismantle and service nose equipment (see intructions page 8).
- Lubricate the clutch spring with high pressure grease (eg. Shell Alvania E.P.I.).
- Check the clutch torque setting (see procedure in clutch section page 7).
- Check for air leaks in the air supply hose and fittings.

For lubricating internal tool parts other than those described previously, use Moly Lithium Grease EP3753 (part number 07992-00020)

MOLY LITHIUM GREASE EP 3753 **SAFETY DATA**	
FIRST AID SKIN: As the grease is completely water resistant it is best removed with an approved emulsifying skin cleaner. INGESTION: Make the individual drink 30ml Milk of Magnesia, preferably in a cup of milk. EYES: Irritant but not harmful. Irrigate with water and seek medical attention. **ENVIRONMENT** Scrape up for burning or disposal on approved site.	**FIRE** FLASH POINT: Above 220°C. Not classified as flammable. Suitable extinguishing media: CO_2, Halon or water spray if applied by an experienced operator. **HANDLING** Use barrier cream or oil resistant gloves **STORAGE** Away from heat and oxidising agent.

MAINTENANCE

Every 200000 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 Moly Lithium grease EP 3753 before assembling.

IMPORTANT

Safety Instructions appear on pages 2 & 3.

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 airline must be disconnected before any servicing or dismantling is attempted, unless specifically instructed not to.

It is recommended that any dismantling operation be carried out in clean conditions.

Item **numbers in bold** refer to the General Assembly drawing and parts list (pages 14 and 15).

Prior to dismantling the tool it is necessary to remove the nose equipment. For simple removal instructions see the nose equipment section, page 5, 8 and 9.

For total tool servicing we advise that you proceed with dismantling the sub-assemblies in the order shown on pages 11, 12 and 13.

RIGHT-ANGLE HEAD

- Grip the tool in a vice, gripping on the flats of backhead **43**.
- Unscrew the locking cap and remove the nose, washers, bearing washer, drive screw and drive shaft, taking care not to lose spring **83**.
- Pull out shaft **82** from right angled head casing **80** together with bevel gear **2**, bearing **21** and retaining sleeve **84**.
- Support bearing **21**, press shaft **82** through the bearing, bevel gear **2** and retaining sleeve **84**.
- Unscrew right angle head casing **80** from clutch housing **11** (left hand thread) and remove spring **6**, shims **77**, **78** or **79**, washer **5**, spacer **4** and pull out the drive shaft assembly from right angled head **80**.
- Remove shim (or shims) **81**.
- Unscrew locking screw **85** and remove lock washer **1**, bevel gear **2** and bearing **3** from drive shaft **76**.
- Press out needle bearing **86** from right angled head casing **80**.

- Assemble in reverse order of dismantling.

CLUTCH

- Remove cover **68** from clutch housing **11** and unscrew clutch housing **11** from ring gear **17** (left hand thread).
- Remove drive plate **7** and pull out clutch assembly.
- Remove 'O' ring **16** from clutch spindle **13**.
- Insert the chuck adjusting key in adjustment plate assembly **14** so that the teeth on the key locate with the teeth on the adjustment nut **15**. Rotate the chuck key in a clockwise direction to unscrew adjustment nut **15** from clutch spindle **13**.
- Slide off adjustment plate assembly **14** (do not remove the three balls from this assembly), clutch spring **12** and thrust pad **71**.
- Carefully lever off ring **70** and remove two retaining ring halves **69**.
- Over a suitable container, slide back drive jaw **72** and remove key **73**, pins **10** and balls **9**.
- Slide off bearing **74** and slide back front jaw **8** to release sixteen balls **75**.

- Assemble in reverse order of dismantling.

BACKHEAD ASSEMBLY

- Hold Backhead assembly in a vice.
- Unscrew front gear assembly from the tool using a spanner on the flats of ring gear **17** and unscrew the inner ring gear assembly using a spanner on the flats of ring gear **63**.
- Remove spacer **24** and remove the tool from the vice.
- Tap front end of tool on a wooden block. The motor assembly will slide out. Return the tool to the vice, then unscrew motor housing **53** with plastic sleeve **56** from backhead **43** remove gasket **52**. Do not seperate plastic sleeve and motor housing. This leaves the backhead assembly, the motor assembly and the front and inner gear assembly to be dismantled using a strap wrench if necessary.
- Pull the sides of bail **44** apart to spring it out of its retaining holes.
- Drive out roll pin **35** and remove lever **33**.
- Unscrew nipple **41** from inlet body **40**.
- Unscrew inlet body **40** from backhead **43**.
- Remove circlip **39** from inlet body **40** and remove filter **37**, silencing disc **38**, spring **42** and 'O' ring **45**.
- Unscrew throttle valve screw **48** and remove fibre air seal **46**, spring **47** and valve **34**.
- Remove 'O' ring **36** from valve **34**.
- Ease off retaining clip **49** and push out retaining pin **50** to release reverse valve **51**.
- Remove circlip **29**, valve cover **30** and conical spring **31**.
- Do NOT remove valve bush **32** from backhead **43**.

- Assemble in reverse order to dismantling.

FRONT GEAR ASSEMBLY (Previously removed)

- Hold ring gear **17** and from the front end tap out the internal assembly.
- Remove spacer **65**.
- Remove bearing **21** from planet gear spindle **67**.
- Push out two planet gear shafts **18** and slide out 2 off planet gears **19**.
- Needle bearings **64** maybe pushed out of planet gears **19**.
- Press out bearing **66** from ring gear **17**.

- Assemble in reverse order to dismantling.

REAR GEAR ASSEMBLY

- Pull off spacer **59**.
- Grip ring gear **63** and tap out the internal assembly from the front end.
- Remove two bearings **21** and spacer **61** from planet gear spindle **20**.
- Push out two planet gear shafts **23** and slide out two planet gears **22** complete with needle bearings **60**.
- Press needle bearings **60** out of planet gears **22**.
- Remove retaining ring **62** from ring gear **63**.

- Assemble in reverse order to dismantling.

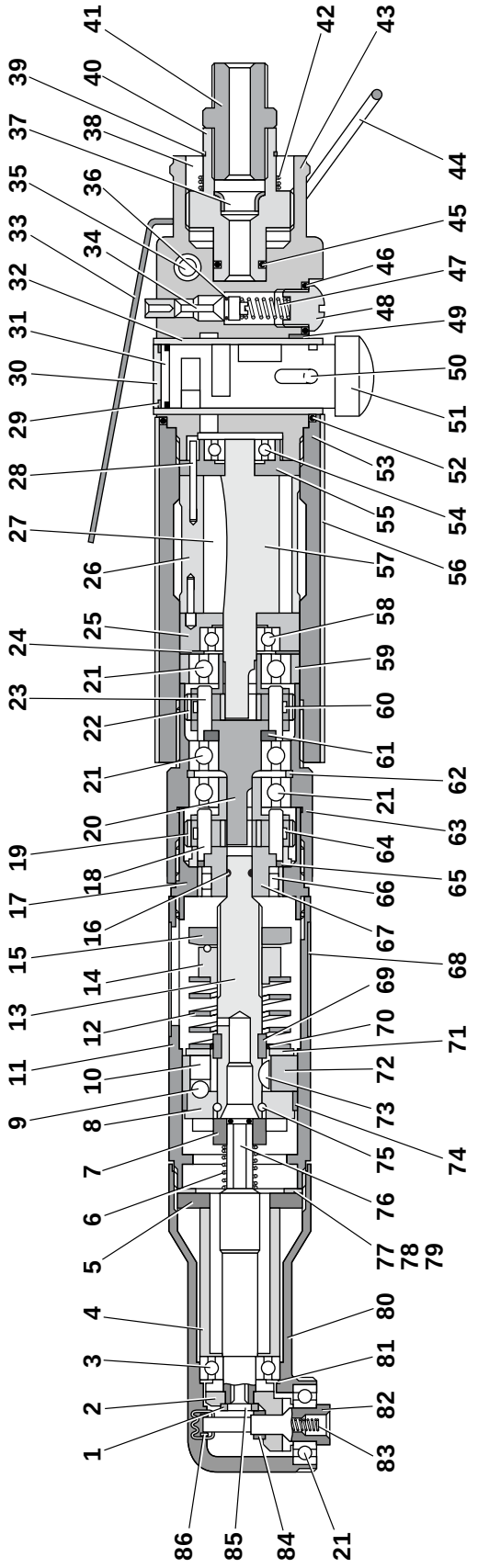
MOTOR ASSEMBLY (Previously removed)

- Remove locating pin **28**.
- Grip front end plate **25** by hand and tap the splined end of rotor **57** with a soft hammer so as not to damage the splines and remove the front end plate and bearing assembly from the rotor .
- Remove rotor cylinder **26** complete with the two locating pins.
- Remove five rotor blades **27** from rotor **57**.
- Support rear end plate **55** in a tube with a bore diameter as close as possible to the largest diameter of the rotor **57** and tap the non-splined end of the rotor **57** to remove it from the rear end plate and bearing assembly.
- With a punch tap out bearing **54** from rear end plate **55** and bearing **58** from front end plate **25**.

- Assemble in reverse order to dismantling, ensuring the following:
- The locating pin correctly locates the motor assembly to the backhead assembly before screwing on the motor housing.
- Front end plate **25** and rear end plate **55** that abut the rotor cylinder **26** are clean and free from burrs and surface marking. If
- necessary, lap faces that abut the rotor cylinder on a flat fine grade of abrasive paper. Press bearings into front and rear end plates **25** & **55**.
- Support the bearings in the rear end plate **55** on its inner ring and tap the rotor on its splined end with a soft hammer into the bearing until the rotor locates against the rear end plate.
- Support the inner face of the end plate as close as possible to the largest diameter of the rotor **57** and tap the non-splined end of the rotor until a clearance of 0.040 mm (0.0015 in) / 0.065 mm (0.0025 in) is obtained between the inner face of the rear end plate and the rotor.
- This clearance is to be checked when pulling the rotor away from the rear end plate and bearing assembly.
- Spin the rotor to ensure that it will rotate freely in the rear end plate bearing.
- Locate the rotor cylinder by the locating pin to the rear end plate, checking that the ports in the end plate match with those in the rotor cylinder.
- Insert the five rotor blades into the rotor and locate correctly the front end plate to the rotor cylinder using the locating pin.
- Ensure that the rotor will spin freely in the assembly. This is best checked by placing the motor assembly in a vee block and squeezing the front and rear end plate against the cylinder.

IMPORTANT

Check the tool against daily and weekly servicing.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07412-00400 PARTS LIST

ITEM	PART Nº	DESCRIPTION	QTY	SPARES	ITEM	PART Nº	DESCRIPTION	QTY	SPARES	ITEM	PART Nº	DESCRIPTION	QTY	SPARES
01	08412-00208	WASHER	1	-	32	08550-00412	BUSH	1	1	63	08410-00249	RING GEAR	1	1
02	08412-00206	GEAR	2	1	33	08550-00404	LEVER	1	1	64	08410-00206	NEEDLE BEARING	2	2
03	08412-00205	BEARING	1	-	34	08550-00407	VALVE	1	-	65	08410-00251	SPACER	1	1
04	08412-00246	SPACER	1	1	35	08441-01002	PIN	1	1	66	08410-00252	BEARING	1	1
05	08412-00248	WASHER	1	-	36	08434-00202	'O' RING	1	1	67	08410-00204	PLANET GEAR SPINDLE	1	-
06	08412-00203	SPRING	1	2	37	08550-00423	FILTER	1	1	68	08550-00403	COVER	1	1
07	08412-00243	DRIVEN PLATE	1	1	38	08550-00408	SILENCING DISC	1	1	69	08410-00256	RETAINING RING HALF	2	2
08	08281-00405	DRIVEN JAW	1	-	39	08550-00414	CIRCLIP	1	1	70	08410-00263	RING	1	1
09	08410-00266	BALL	6	-	40	08550-00409	INLET BODY	1	1	71	08446-00412	THRUST PAD	1	1
10	08550-00402	PIN	1	1	41	08433-00221	NIPPLE	1	1	72	08410-00264	DRIVE JAW	1	-
11	08412-00252	CLUTCH HOUSING	1	1	42	08550-00413	SPRING	1	1	73	08430-00223	KEY	1	1
12	08430-00230	CLUTCH SPRING	1	-	43	08550-00422	BACKHEAD	1	1	74	08410-00268	BEARING	1	1
13	08446-00448	CLUTCH SPINDLE	1	1	44	08430-00209	BAIL	1	1	75	08430-00221	BALL	16	1
14	08446-00403	ADJUSTMENT PLATE ASSEMBLY	1	-	45	08520-00215	'O' RING	1	1	76	08412-00244	DRIVE SHAFT	1	1
15	08446-00402	ADJUSTMENT NUT	1	1	46	08412-00236	SEAL	1	1	77	08412-00249	SHIMS 'A'	AS REQUIRED	
16	08414-00209	'O' RING	1	-	47	08550-00421	SPRING	1	-	78	08412-00250	SHIMS 'B'	AS REQUIRED	
17	08410-00203	RING GEAR	1	1	48	08412-00237	SCREW	1	1	79	08412-00251	SHIMS 'C'	AS REQUIRED	
18	08410-00205	PLANET GEAR SHAFT	2	-	49	08550-00420	RETAINING CLIP	1	1	80	08412-00245	RIGHT ANGLE HEAD	1	1
19	08410-00250	PLANET GEAR	2	-	50	08550-00416	RETAINING PIN	1	-	81	08412-00247	SHIM	1	1
20	08410-00207	PLANET GEAR SPINDLE	1	1	51	08550-00419	REVERSE VALVE	1	1	82	08412-00217	SHAFT	1	1
21	08410-00245	BEARING	4	-	52	08550-00410	GASKET	1	1	83	08412-00219	SPRING	1	1
22	08410-00246	PLANET GEAR	2	1	53	08550-00417	MOTOR HOUSING	1	1	84	08412-00220	SLEEVE	1	1
23	08410-00247	PLANET GEAR SHAFT	2	-	54	08524-00205	BEARING	1	1	85	08412-00209	SCREW	1	1
24	08410-00244	SPACER	1	1	55	08524-00204	REAR END PLATE	1	-	86	08412-00207	NEEDLE BEARING	1	1
25	08412-00234	FRONT END PLATE	1	1	56	08412-00242	SLEEVE	1	-	87	08412-00253	NAMEPLATE	1	NOT SHOWN
26	08415-00236	ROTOR CYLINDER	1	-	57	08524-00203	ROTOR	1	-	88	08415-02121	PIN	2	NOT SHOWN
27	08410-00242	ROTOR BLADE	5	5	58	08412-00241	BEARING	1	-	89	08446-00414	CHUCK KEY	1	NOT SHOWN
28	08412-00231	PIN	1	1	59	08410-00209	SPACER	1	-	90	08551-00402	PROTECTIVE CAP	1	NOT SHOWN
29	08550-00405	CIRCLIP	1	1	60	08430-00703	NEEDLE BEARING	2	-	91	07900-00354	TIE ON SAFETY LABEL	1	NOT SHOWN
30	08550-00411	VALVE COVER	1	-	61	08410-00248	SPACER	1	-					
31	08550-00406	SPRING	1	-	62	08410-00208	RETAINING RING	1	-					

Note: The complete clutch can be ordered as an assembly part number 08412-00380.

FAULT DIAGNOSIS

FAULT DIAGNOSIS TABLE

SYMPTOM	POSSIBLE CAUSE	REMEDY
Tool runs slowly	→ Insufficient air pressure	→ Adjust air pressure at base of handle. 5 - 7 bar maximum.
	→ Incorrect bore of hose	→ Ensure bore of hose is 6.4 mm minimum
	→ Insufficient air volume	→ Ensure there is no restriction in the air supply or connections
	→ Tool not properly lubricated internally	→ Lubricate as per instructions (see page 10)
Tool fails to start	→ Tool not properly lubricated	→ Lubricate as per instructions (see page 10)
	→ Restricted air pressure/volume	→ Ensure there is no restriction in the air supply
Tool runs permanently in reverse mode	→ Reverse valve stuck	→ Lubricate as per instructions (see page 10)
Tool runs permanently in forward mode	→ Valve stem sticking	→ Lubricate as per instructions (see page 10)
Inserts not pulling up	→ Torque setting too low	→ Adjust to correct setting (see page 7)
	→ Insufficient air pressure/volume	→ Adjust air pressure/volume
	→ Inserts out of grip	→ Select correct insert
	→ Lack of lubrication on insert	→ Change batch of inserts
	→ Lack of lubrication on drive screw (Standard Nutserts only)	→ Lubricate drive screw correctly (see page 6)
	→ Insert thread restricted	→ Change Inserts
	→ Drive screw thread worn	→ Replace drive screw
	→ Incorrect insert/drive screw	→ Replace with correct insert/drive screw
Standard Nutserts centres falling out	→ Dirty Nutserts	→ Clean Nutserts
	→ Clutch torque setting too low	→ Adjust to correct setting
	→ Application thickness below minimum recommended grip	→ Change to correct Insert
	→ Oversize hole in application	→ Correct hole size in application
Worn drive screws	→ Clutch torque setting too high	→ Adjust to correct setting (see page 7)
	→ Drive screw not lubricated	→ Lubricate drive screw regularly when using standard Nutserts
	→ Inserts not lubricated	→ Change batch of inserts
	→ Tool not held correctly	→ Ensure tool is held square to application
	→ Incorrect insert/drive screw threads	→ Replace with correct insert/drive screw
	→ Restricted insert threads	→ Change batch of inserts

Engineered Fastening and Assembly Systems

CE

Declaration of Conformity

We, *Avdel UK Limited, Mundells, Welwyn Garden City, Herts, AL7 1EZ*

declare under our sole responsibility that the product

type 07412

Serial Nº _____

to which this declaration relates is in conformity with the following standards or other formative documents

EN292 part 1 and part 2

ISO 8662 part 1 and part 7

ISO 3744 and PNEUROP test code PN8TC1

ISO PREN792 part 6

following the provisions of the Machine Directive 98/37/EC
This box contains a power tool which is in conformity with Machines Directive 98/37/EC. The 'Declaration of Conformity' is contained within.

Welwyn Garden City - date of issue _____

A. Seewraj
Product Engineering Manager - Automation Tools

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