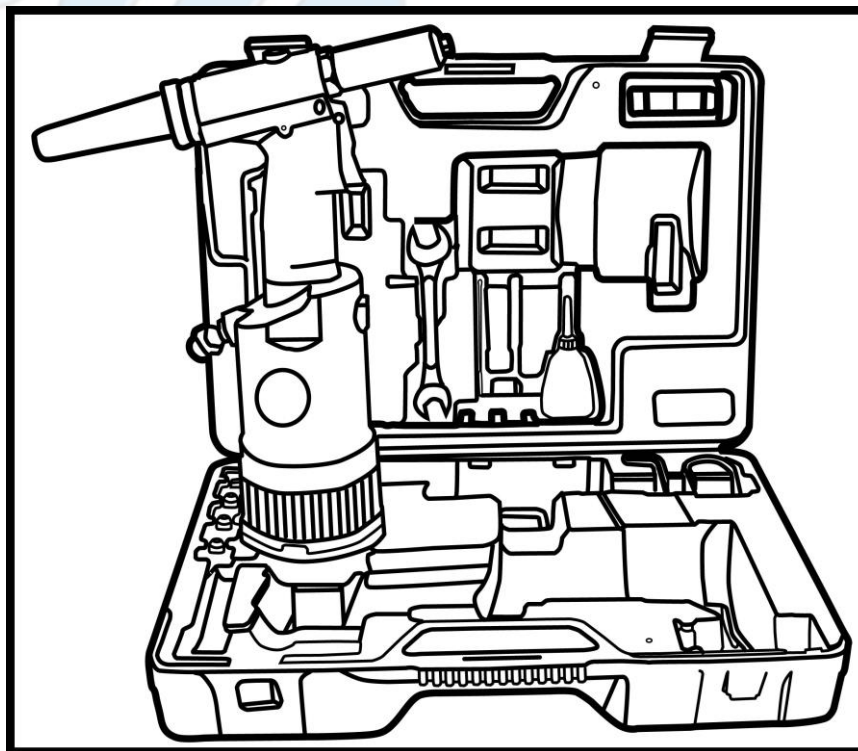




# SUMAKE PNEUMATIC TOOLS



## 1/4" (6.4mm) Air Hydraulic Riveter (Non-Vacuum Type) ST-66157

### Specification:

Riveting Capacity	1/8", 5/32", 3/16", 1/4" (3.2mm, 4.0mm, 4.8mm, 6.4 mm)
Stroke Length	3/4" (19 mm)
Traction Power	3500 lbs (1600 kg)
Overall Length	11-3/4" (300 mm)
Air Inlet (PT)	1/4" (6.35 mm)
Air Hose (I.D.)	3/8" (10 mm)
Air Pressure	90 psi (6.3 bar)
Net Weight	3.5 lbs (1.6 kg)

### Noise and Vibration:

Vibration EN ISO 20643	Noise EN ISO 15744	Remark
Load: < 2.5 m/s <sup>2</sup>  Uncertainty K= 1.5 m/s <sup>2</sup>	Sound Pressure Level No load: 76 dB(A)	Please always wear ear protector at environment noise level > 80 dB(A) due to risk of impaired hearing!
	Sound power level No load: 87 dB(A)	
	Uncertainty K= 3dB	

SUMAKE INDUSTRIAL CO., LTD

4F,NO.351,Yanguang St.,Neihu District TAIPEI, TAIWAN, ZIP:114-91

ST-66157-S-1311B-FPF

PLEASE READ ALL OF THESE INSTRUCTIONS CAREFULLY BEFORE USING THE

## ST-66157

### AIR HYDRAULIC RIVETER.

#### **Safety Instructions**

- WEAR SAFETY GLASSES OR GOGGLES while using the riveter – rivets are dispensed with force and at high speed, and may cause damage or bodily harm.
- DO NOT leave riveter plugged into air supply when not in use.
- NEVER point riveter towards or at someone.
- KEEP OUT OF REACH OF CHILDREN AT ALL TIMES.

#### **GENERAL INFORMATION**

- Features**
- Double O-Seal avoids oil leakage
  - Air shut-off valve conserves air usage
  - Vacuum air flow is adjustable
  - Air Return head design minimizes repairs
  - Easy access to spent mandrels

The ST-66157 comes with 1/8", 5/32" and 3/16", 1/4" nosepieces for open-end rivets. The 1/4" nosepiece is factory-installed on the tool; one each of the 1/8" and 5/32", 3/16" nosepieces are included in accessory bag.

#### **Specifications:**

Tool weight:	3.4 pounds
Length of Tool:	332mm
Air Pressure:	85-110 psi
Pulling Power (lbs):	3500
Stroke Length:	19mm
Hydraulic Oil:	Texaco R&O-68 or any equivalent (36Cst=4.3EI 50° C)

#### **Riveter Accessories**

Your ST-66157 Riveter comes with the following accessories:

- 1 each 1/8" & 5/32", 3/16" Nosepieces (#1) for open end rivets
- Safety Cap (#22)
- Universal Joint (#45)
- Tool Hanger (#53) attaches to top of Riveter
- Oil Filer (#71)
- Wrenches (#72, #73, #74)

## Tool Preparation before Operation

1. Prior to each operation of the Riveter, you must choose the size rivet you'll be using. *If setting 1/4" rivets, no changes to the tool are necessary* (1/4" nosepiece is factory-installed on tool).
2. To change nosepiece only: remove Nosepiece (#1) from Riveter. Unscrew by turning Nosepiece counter-clockwise. Choose Nosepiece that corresponds to size rivet you are using. Screw Nosepiece onto Riveter by turning clockwise (you will be pushing the Jaws into the tool as you're attaching Nosepiece). Use the 11mm wrench included with accessories to loosen and tighten the Nosepiece.
3. If setting 1/8" or 5/32", 1/4" rivets, you need to remove Nosepiece (#1) and Head (#2) from Riveter. Use 11mm wrench to loosen Nosepiece. Unscrew Jaw Housing (#3) from Jaw Housing Coupler (#7); when Housing is removed, Jaw Pusher (#5) as well as 3 pieces of Jaws (#4) will be loose inside Housing. Remove Jaw Pusher (#5) and set aside.
4. Replace Jaws back into the Housing (as detailed in step 3). Screw Housing back onto Jaw Housing Coupler (#7). Securely tighten Housing onto Coupler using 14mm wrench (included in Accessory bag). Hold Coupler securely with another 14mm wrench to prevent it from turning while tightening Housing onto it.
5. **NOTE:** Jaws must be correctly positioned inside Housing for optimal performance. Place 3 pieces of Jaws down into small end of Housing. The narrow ends of jaws face downward and protrude out the small end of Housing. The long serrated edges face inward toward each other. **MAKE SURE THE 3 JAW PIECES ARE IN THE CORRECT POSITION** – Riveter will not operate correctly if Jaw pieces are not properly inserted. You may need to adjust how far each piece of Jaw protrudes through small opening, to insure they are equally distributed.
6. Carefully screw Head (#2) back onto tool securely. Making sure the Jaw pieces stay in place. Lastly, screw correct Nosepiece onto tool (e.g. Note: you will be pushing jaws back into tool slightly as you are attaching Nosepiece. Use 11mm Wrench (included in Accessory bag) to tighten Nosepiece onto tool.
7. Attach Safety Cap (#22) to back of Riveter by pressing it firmly onto the back of the tool. This is a pressure fitting, and does not screw on.
8. Cycle air through tool after air supply is connected to insure correct alignment of jaws.

## Operating Instructions

1. Attach a 1/4" NPT (Quick Connect Valve) to the Universal Joiner (#45). Plug air supply into Quick Connect Valve; air supply should operate at no higher than 115 PSI.
2. Insert mandrel of rivet into Riveter.
3. Mandrel will be ejected into Safety Cap once Trigger is released. Safety Cap #22 must be kept in place to keep spent mandrels from flying out of back of Riveter. Tilt Riveter backwards (or unscrew safety cap) to remove spent mandrels.
4. This tool is fitted with an air shut-off valve which conserves air usage. When Riveter is set on a flat surface, a valve on the bottom of the tool shuts off the air to the tool. To use Riveter after air supply has been closed off, remove the tool from the flat surface and squeeze the Trigger to recharge with air. You may then proceed to set rivets.

## Care and Maintenance

Regular service should be performed on this tool for best performance and longer life of tool.

1. Keep Safety Cap free of spent mandrels.
2. Insure that jaws are clean and free of metal shavings, dirt and oil. To access Jaws, remove Nosepiece (#1) and Head (#2) from Riveter. Jaws will be loose in narrow end of Head. Remove the 3 Jaw pieces, clean serrations with a wire brush or steel wool to remove debris. Once Jaws are clean, carefully reassemble by inserting 3 pieces of Jaws into narrow end of Head, with serrations of jaws facing inward towards each other. Tighten Head (#2) onto tool.

Screw Nosepiece onto Riveter by turning clockwise. You will be pushing the Jaws into the tool as you're attaching Nosepiece; securely tighten Nosepiece to Riveter with wrench.

3. Keep oil at optimum level. With use of tool there may be a gradual loss of oil. When you notice a reduction in the stroke, you need to add a small amount of oil.

- Change nosepiece to largest diameter that the tool accepts. This is necessary in order to test the tool after the oil has been filled.
- Remove air supply to Riveter, and remove Oil Plug (#17) on top of Riveter using Allen wrench (included).



Remove Oil Plug

- Use proper oil as listed under Specifications. Put small amount of oil in a saucer or cup; place syringe nozzle (syringe included) down into oil, then draw plunger of syringe back to fill body of syringe. Fill to 9.
- Screw syringe nozzle into Riveter in top hole where Oil Plug (#17) was removed. Very slowly push in plunger of syringe to deliver oil into tool.



Add Oil

- Unscrew syringe nozzle from Riveter and insert Oil Plug (#17) back into Riveter; tighten Oil Plug firmly. Reconnect Riveter to air supply and depress trigger 2-3 times.
- To test oil level, insert rivet into Nosepiece (use largest diameter rivet that tool accepts). Check to see if rivet mandrel can be inserted completely into Nosepiece – head of rivet must touch Nosepiece. If rivet cannot be completely inserted into tool, too much oil has been added and some must be removed.



Insert Rivet



Rivet Head touches  
Nosepiece

- To remove excess oil, unscrew Oil Plug (#17) approximately 1/4 turn. Depress and release the trigger to cycle air through the Riveter – oil will leak from the top of the tool at the Oil Plug hole as trigger is depressed.



Remove Excess Oil

- Wipe excess oil off of tool as you continue to depress and release the trigger as needed, until rivet head touches the Nosepiece. Once tool is properly adjusted, tighten Oil Plug (#17) completely with Allen wrench.



Tighten Oil Plug

- Save plunger for future use.





## EC DECLARATION OF CONFORMITY

We: **SUMAKE INDUSTRIAL CO., LTD.**

**4F, No. 351, Yangguang St., Neihu District, Taipei City, Taiwan**

declare in sole responsibility that the equipment

Equipment : **1/4"(6.4MM) AIR HYDRAULIC RIVETER (NON-VACUUM TYPE)**

Model/ Serial No. : **ST-66157**

to which this declaration applies, complies with these normative documents:

- Machinery Directive: 2006/42/EC

and conforms to the following EN standard,

- EN ISO 12100: 2010
- EN ISO 11148-1:2011

Name and Signature/Position

Mike Su – Managing Director

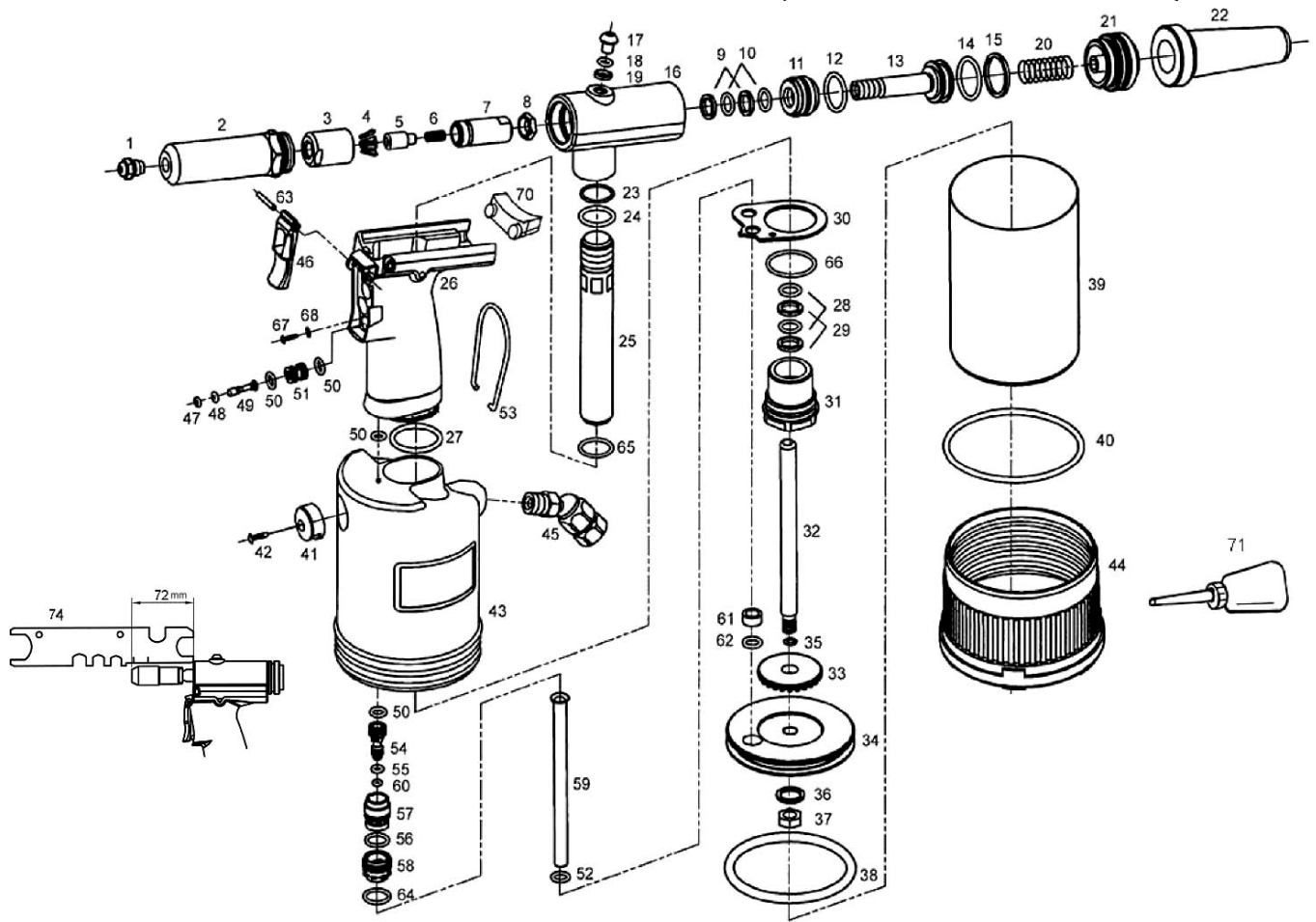
Date and Place

2012/6/25

Taipei, Taiwan

ST-66157-D-1311B-FPF

# ST-66157 1/4" AIR HYDRAULIC RIVETER (NON-VACUUM TYPE)



## PARTS LIST

No.	Parts No.	Description	Q'ty
1	66157-01A	1/4" Nosepiece	1
	66157-01B	3/16" Nosepiece	1
	66157-01C	5/32" Nosepiece	1
	66157-01D	1/8" Nosepiece	1
2	66157-02	Head	1
3	66157-03	Jaw Housing	1
4	66157-04	Jaws	3
5	66157-05	Jaw Pusher	1
6	66157-06	Spring	1
7	66157-07	Jaw Housing Coupler	1
8	66157-08	Nut	1
9	66157-09	X-Ring Washer	2
10	66157-10	X-Ring Seal	2
11	66157-11	Hydraulic Plug	1
12	66157-12	O-Ring	1
13	66157-13	Hydraulic Plunger	1
14	66157-14	O-Ring Seal	1
15	66157-15	O-Ring Washer	1
16	66157-16	Hydraulic Section	1
17	66157-17	Oil Plug	1
18	66157-18	O-Ring Seal	1
19	66157-19	Fill Washer	1
20	66157-20	Hyd. Return Spring	1
21	66157-21	Screw Plug	1
22	66157-22	Safety Cap	1
23	66157-23	O-Ring	1
24	66157-24	O-Ring	1
25	66157-25	Valve Pipe	1
26	66157-26	Hydraulic Handle	1
27	66157-27	O-Ring Seal	1
28	66157-28	X-Ring Seal	2
29	66157-29	O-Ring Washer	2
30	66157-30	Pipe Washer	1
31	66157-31	Screw Plug	1
32	66157-32	Plunger Rod	1
33	66157-33	Cushion	1
34	66157-34	Piston	1
35	66157-35	O-Ring Seal	1

36	66157-36	Washer	1
37	66157-37	Nut	1
38	66157-38	O-Ring Seal	1
39	66157-39	Cylinder Cup	1
40	66157-40	O-Ring Seal	1
41	66157-41	Exhaust Cap	1
42	66157-42	Screw	1
43	66157-43	Cylinder Body	1
44	66157-44	Cylinder Cap	1
45	66157-45	Universal Joint	1
46	66157-46	Trigger	1
47	66157-47	O-Ring Seal	1
48	66157-48	O-Ring Seal	1
49	66157-49	Trigger Stem	1
50	66157-50	O-Ring Seal	4
51	66157-51	Trigger Bush	1
52	66157-52	O-Ring Seal	1
53	66157-53	Hanging Ring	1
54	66157-54	Throttle Valve	1
55	66157-55	O-Ring	1
56	66157-56	O-Ring Seal	1
57	66157-57	Upper Bush	1
58	66157-58	Lower Bush	1
59	66157-59	Valve Tube	1
60	66157-60	O-Ring	1
61	66157-61	Bush	1
62	66157-62	O-Ring	1
63	66157-63	Roll Pin	1
64	66157-64	O-Ring Seal	1
65	66157-65	O-Ring Seal	1
66	66157-66	O-Ring Seal	1
67	66157-67	Screw	1
68	66157-68	Washer	1
70	66157-70	Rubber Plug	1
71	66157-71	Oil Filer	1
72	66157-72	Hex. Wrench	1
73	66157-73	Spanner	1
74	66157-74	Wrench	1





Read all these safety instructions before operating this product and save these instructions.

The tool has been manufactured in conformity with the instruction of EU machine directive. The EU mark will be considered void in the event of inexpert repairs, the use of non-original parts and in case of non-observance of the safety instructions in the user's manual.

Possible direct or indirect consequential damages are not the responsibility of SUMAKE Industrial co., Ltd.

#### **General safety rules:**

1. Watch the tool at all times when in use.
2. People under the influence of alcohol or drugs are not allowed to use, repair or maintain the tool.
3. Keep unqualified persons, children, etc. away from the tool.
4. Keep work area clean and with sufficient daylight or artificial lighting. The work area on which the machine is used must be cleaned up. Disorder is a potential cause of accidents.
5. Danger of explosion. Never use oxygen and combustible gas as an air supply for the tool which may be ignited by spark and cause fire or explosion.
6. Never use gasoline or other flammable liquids to clean the tool.
7. Do not use air tools in potentially explosive atmospheres such as in the presence of flammable liquids, cleaning solvents, fluid energy or stored gases.
8. Do not expose air tools to rain. Do not use air tools in damp or wet locations.
9. When a fault or failure is detected, the tool must immediately be disconnected from the air supply and returned for repair.
10. It is not permitted to modify the tool in any way.
11. When not in use, keep tools in a dry place, either locked up or in a high place, out of the reach of children.
12. Do not force small air tools to do the job of a heavy –duty task. Do not use air tool for purpose of which was not intended.
13. Wear suitable ear protection at environment noise level >80dB(A) and safety spectacles when using the tool. Always wear approved safety goggles if work in dusty. This also applies to other persons in the nearby vicinity.
14. Do not wear loose clothing or jewelry. They can be caught in moving parts. Rubber gloves and non-skid foot wear are recommended when working outdoors. Wear protective hair covering to contain long hair.
15. Keep proper footing and balance at all times.
16. Use clamps or a vice to hold work-piece. It is safer than using your hand and free both hands to operate the air tool.
17. When not use, before performing service or changing accessories, please disconnect tool from air compressor.
18. Do not carry plugged in air tool with your finger on the switch trigger. Be sure switch is in the "OFF" position when connecting to air supply.
19. Watch what you are doing. Use common sense, even unsafe situation or unbalanced positions, particularly when you are tired.
20. Air powered tools can vibrate in use. Vibration, repetitive motions or uncomfortable positions may be harmful to your hands or arms. Stop using any tool if discomfort, tingling feeling or pain occurs. Seek medical advice before resuming use.
21. Multiple hazards. Read and understand the safety instructions before installing, operating, repairing, maintaining, changing accessories on, or working near the power tool. Failure to do so can result in serious bodily injury.
22. Only qualified and trained operators should install, adjust or use the power tool.
23. Do not modify this power tool. Modifications may reduce the effectiveness of safety measures and increase the risks to the operator.
24. Do not discard the safety instructions – give them to the operator.
25. Do not use the power tool if it has been damaged.
26. Tools shall be inspected periodically to verify the ratings and markings required by this document are legibly marked on the tool. The employer/user shall contact the manufacturer to obtain replacement marking labels when necessary.

#### **Safety precautions for projectile hazards**

1. Disconnect the power tool from the energy source when changing inserted tool or accessories.
2. Failure of the work piece, or accessories, or even of the inserted tool itself may generate high velocity projectiles.
3. Always wear impact-resistant eye protection during operation of the tool. The grade of protection required should be assessed for each use.
4. The risks to others should also be assessed at this time.
5. Ensure that the work piece is securely fixed.
6. Check that the protection against ejection of fastener and/or stem is in place and is operative.
7. Warn against the possible forcible ejection of installation mandrels from the front of the power tool.

#### **Safety precautions for operating hazards**

1. Use of the tool may expose the operator's hands to hazards including crushing, impacts, cuts and abrasions and heat. Wear suitable gloves to protect hands.
2. Operators and maintenance personnel must be physically able to handle the bulk, weight and power of the tool.
3. Hold the tool correctly: be ready to counteract normal or sudden movements – have both hands available.
4. Maintain a balanced body position and secure footing.
5. Release the start and stop device in the case of an interruption of the energy supply.
6. Use only lubricants recommended by the manufacturer.
7. That unsuitable postures may not allow counteracting of normal or unexpected movement of the tool.
8. If the power tool is fixed to suspension device make sure that the fixation is secure.
9. Risk of crushing if nose equipment is not fitted.



### **Safety precautions for repetitive motions hazards**

1. When using a power tool, the operator may experience discomfort in the hands, arms, shoulders, neck, or other parts of the body.
2. While using a power tool, the operator should adopt a comfortable posture. Maintain secure footing and avoid awkward or off-balanced postures. The operator should change the posture during extended tasks which may help avoid discomfort and fatigue.
3. If the operator experience symptoms such as persistent or recurring discomfort, pain, throbbing, aching, tingling, numbness, burning sensation or stiffness, these warning signs should not be ignored. The operator should tell the employer and consult a qualified health professional.

### **Safety precautions for accessory hazards**

1. Disconnect power tool from energy supply before changing the inserted tool or accessory.
2. Only use sizes and types of accessories and consumables that are recommended by the power tool manufacturer.

### **Safety precautions for workplace hazards**

1. Slips, trips and falls are major causes of workplace injury. Be aware of slippery surfaces caused by use of the tool and also of trip hazards caused by the air line or hydraulic hose.
2. Proceed with care in unfamiliar surroundings. Hidden hazards may exist, such as electricity or other utility lines.
3. This power tool is not intended for use in potentially explosive atmospheres and is not insulated from coming into contact with electric power.
4. Make sure there are no electrical cables, gas pipes etc. that could cause a hazard if damaged by use of the tool.

### **Safety precautions for dust and fume hazards**

1. Dusts and fumes generated when using power tools can cause ill health (for example: cancer, birth defects, asthma and/or dermatitis); risk assessment of these hazards and implementation of appropriate controls of is essential.
2. Risk assessment should include dust created by the use of the tool and the potential for disturbing existing dust.
3. Operate and maintain the power tool as recommended in these instructions, to minimise dust or fume emissions.
4. Direct the exhaust so as to minimise disturbance of dust in a dust filled environment
5. Where dusts or fumes are created, the priority shall be to control them at the point of emission.
6. All integral features or accessories for the collection, extraction or suppression of airborne dust or fumes should be correctly used and maintained in accordance with the manufacturer's instructions.
7. Use respiratory protection as instructed by your employer or as required by occupational health and safety regulations.

### **Safety precautions for noise hazards**

1. Unprotected 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).
2. Risk assessment of these hazards and implementation of appropriate controls of is essential.
3. Appropriate controls to reduce the risk may include actions such as damping materials to prevent work pieces from 'ringing'.
4. Use hearing protection as instructed by your employer or as required by occupational health and safety regulations.
5. Operate and maintain the power tool as recommended in these instructions, to prevent an unnecessary increase in noise.
6. If the tool has a silencer, always ensure it is in place and in good working order when the tool is operating.
7. Select, maintain and replace the consumable/inserted tool as recommended in these instructions, to prevent an unnecessary increase in noise.

### **Safety precautions for vibration hazards**

1. Exposure to vibration can cause disabling damage to the nerves and blood supply of the hands and arms.
2. Wear warm clothing when working in cold conditions and keep your hands warm and dry.
3. If you experience numbness, tingling, pain or whitening of the skin in your fingers or hands, stop using the assembly power tool for non-threaded mechanical fasteners, tell your employer and consult a physician.
4. Support the weight of the tool in a stand, tensioner or balancer, because the operator can then use a lighter grip to support the tool.

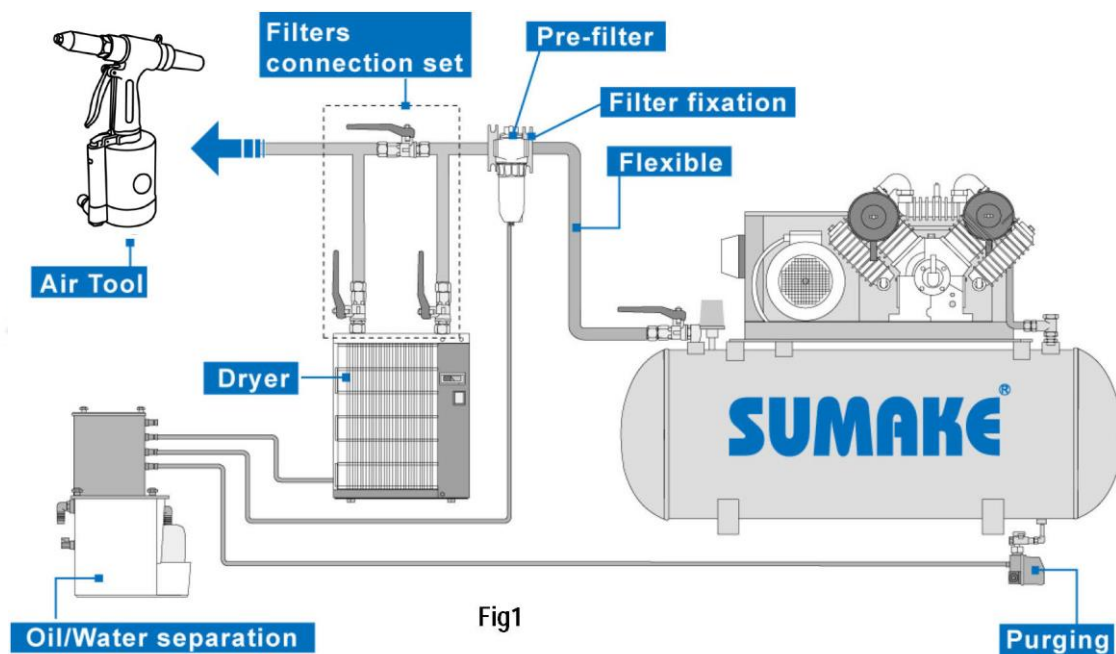
### **Additional safety instructions for pneumatic power tools**

1. Always shut off air supply, drain hose of air pressure and disconnect tool from air supply when not in use, before changing accessories or when making repairs.
2. Never direct air at yourself or anyone else.
3. Whipping hoses can cause severe injury. Always check for damaged or loose hoses and fittings.
4. Cold air shall be directed away from the hands.
5. Whenever universal twist couplings (claw couplings) are used, lock pins shall be installed and whipcheck safety cables shall be used to safeguard against possible hose-to-tool and hose-and-hose connection failure.
6. Do not exceed the maximum air pressure stated on the tool.
7. Never carry an air tool by the hose.

### **Specific safety instructions**

Warnings shall be given about any specific or unusual hazards associated with the use of the power tool. Such warnings shall indicate the nature of the hazard, the risk of injury and the avoidance action to take.

## General preparation and connection:



1. Before connecting the air hose, apply 4 to 5 drops of SAE 10W-20 (ISO Viscosity Grade 46/32) Hydraulic Oil at the air inlet. Also, every 3 to 4 hours of operation, oiling is necessary. Twist Teflon thread tape to ensure a proper seal air inlet. Then tighten the air coupler into air tool.
2. The supplied compressed air must be clean and dry, with the appropriate oil mist. Use an air treatment unit; filter, regulator and lubricator.
3. Please refer Fig.1 illustration shows the correct mode of connection to the air supply system which will increase the efficiency and useful life of the tool.
4. The quick connect coupling and hose must have sufficient air flow capacity. We recommend an air hose with a diameter of 10mm (3/8").
5. To ensure a good performance. The operation pressure at the compressed air inlet should not exceed 6.3bar (90psi) (unless indicated otherwise). Higher operating pressures may cause damaged or excessive wear. Operating pressures below 5.3bar may cause pressure or power loss.



### Risk of injury

1. Compressed air can inflict serious injuries. Therefore never point the air hose at another person or yourself.
2. Shut – off the air supply and disconnect the tool in case:
  - You want to change or replace accessories.
  - You want to clean, repair or maintain the tool.
  - The tool is not going to use for some times.
3. Check compressed air hose before use. If it is damaged, broken, torn, or deformed, the hose is not to be connected to the tool.
4. Always check the pneumatic couplings before using the tool. If they show signs of damage, fracture, cracking or excessive corrosion, the respective tool or the air hose is not to be used.
5. Use only qualified adapters and connectors, In case of wear they are to be replaced immediately.
6. Only use air pipes that are fit for the use at maximum pressure.

### Maintenance instruction:

1. Dry the filter (fig1) and the air inlet of the tool.
2. Lubricate the quick connect coupling to prevent blocking.
3. Air tool require lubrication throughout the life of the tool. The air motor and bearing uses compressed air to start the tool. The moisture in compressed air will rust the air motor; you must lubricate the motor daily.
4. Avoid storing the tool in a location subject to high humidity. If the tool is left as it is used, the residual moisture inside the tool can cause rust.
5. Before storage, lubricate tool and run it for a few seconds.
6. Regular inspection of spindles, threads, and clamping devices in respect of wear and tolerances for location of abrasive products.
7. If the tool is too seriously damage to be used anymore, recycle raw material instead of disposing as waste. The machine, accessories and packaging should be sorted for environmental-friendly recycling. Check with your local authority or retailer for recycling advice.
8. Keep Safety Cap free of spent mandrels.
9. Insure that jaws are clean and free of metal shavings, dirt and oil.
10. Keep oil at optimum level. With use of tool there may be a gradual loss of oil. When you notice a reduction in the stroke, you need to add a small amount of oil.

