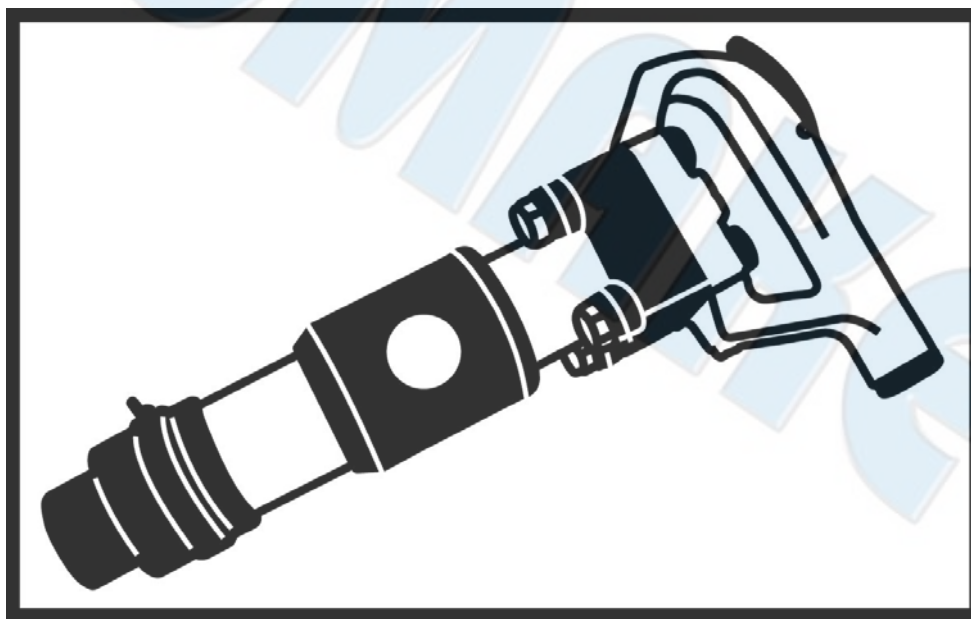




# SUMAKE PNEUMATIC TOOLS



## Air Chipping Hammer (Round) (Hex) ST-2102/R(H)

### Specification:

Blow Per Min	2,400 b.p.m.
Piston Diameter	1-1/8" (28.5 mm)
Piston Stroke	3" (77 mm)
Air Consumption	23 CFM (650 L/min)
Overall Length	14-1/5" (365 mm)
Air Inlet (PT)	3/8" (10 mm)
Air Hose (I.D.)	3/8" (10 mm)
Air Pressure	90 psi (6.3 bar)
Net Weight	17.5 lbs (7.95 kg)

### Noise and Vibration:

<b>Vibration</b> EN ISO 28927-10	<b>Noise</b> EN ISO 15744	<b>Remark</b>
Load: 14.69 m/s <sup>2</sup>  Uncertainty K= 1.5 m/s <sup>2</sup>	Sound Pressure Level load: 97.17 dB(A)	Please always wear ear protector at environment noise level > 80 dB(A) due to risk of impaired hearing!
	Sound power level load: 108.17 dB(A)	
	Uncertainty K= 3dB	

SUMAKE INDUSTRIAL CO., LTD

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ST-2102/R(H)-S-1409B-FYF



## 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 : **AIR CHIPPING HAMMER (ROUND) (HEX)**

Model/ Serial No. : **ST-2102/R(H)**

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 11148-4:2012

Name and Signature/Position

Mike Su – Managing Director

Date and Place

2013/6/28

Taipei, Taiwan

ST-2102/R(H)-D-1409B-FYF

## Foreword

We are the manufacturer and exporter of air tools since established. We have devote all our efforts in improving quality and tools' life. As well as the noise and vibration of tools. Bring all of you working efficiencies, profits, and enjoy using the tool is our principle.

## Features

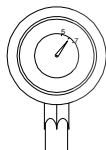
This air tool is a pneumatic tool that injects high efficiency into manual chipping, riveting, breaking of concrete and asphalt etc. Your care in handling it is, however, important if performance is to be realized over a long period of time. This booklet is prepared to equip you with the knowledge necessary to keep it on the job efficiently.

## Operator's instruction

### 1. Cautions for Use

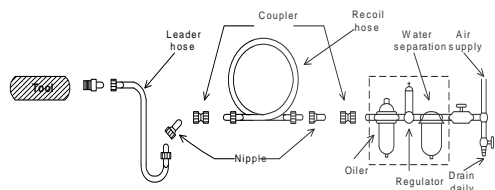
#### 1-1 Air pressure

Maximum performance is displayed at the proper sanding speed, obtainable at a gauge pressure of 6.2 bar. Range-wise, this is an air pressure from 5 to 7 bar (70 to 100 psi)



#### 1-2 Air line

Use a 3/8" air hose between the compressor and the tool. Compressed air is cooled and its water content separated, as soon as the air leaves the compressor.

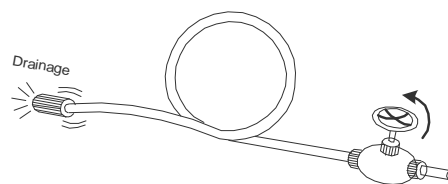


A portion of the water content, however, is condensed in the piping, and can enter the tool

mechanism, and may cause trouble. So, install an air filter and an oiler between the compressor and the tool. Use a 3 HP or larger compressor for each sander.

#### 1-3 Air hose

Clean the hose with a blast of compressed air before connecting the hose to air tool. This will prevent both moisture and dust within the hose from entering the tool and causing possible rust or malfunction. To compensate for unusually long hose (over 25 ft), the line pressure should be increased accordingly.



1-4 The approved eye protector, ear-muff, mouth-muffle, and gloves should be worn when operate this tool.

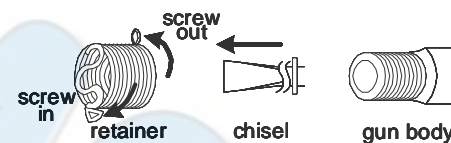
1-5 The working place shall be well ventilated.

1-6 Release the on-off device in the case of energy supply failure.

### 2. Operation, Adjusting And Replacing Method

#### 2-1 Inserting a chisel

First disconnect the air hose from this tool. Insert the desired chisel from the open end of the quick change retainer so that the retainer could hold the protuberance on the chisel shank. Secure the retainer and the chisel to the gun body by screw the retainer on the closed end in the clockwise direction. Loose the retainer and the chisel from the gun body by screw the retainer on the open end in the reverse direction.



#### 2-2 On-off device

Please note that the tool never running unless the insert tool is properly fixed on the gun body. To operate this tool, just push the trigger, which is on the grip, down. The tool continuously reciprocating as one push the trigger down and it stops running as the trigger is released.

For the sake of safety, put it on hanger or on a soft flat pad when not in use.

#### 2-3 Replace and adjusting

There is no user serviceable part inside this tool.

Please send the tool to a qualified personnel or our service section to repair or/and replace worn parts.

### 3. Maintenance

#### 3-1 Lubrication

Before connecting the hose, apply 4 or 5 drops of SAE #10 spindle oil at the air inlet. Use of a thicker oil can lead to reduced performance or malfunction. If a thicker oil is used by accident, wipe it away immediately. Also, every 3 or 4 hours of operation, oiling is necessary.

#### 3-2 Storage

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. Before storing and after operation, oil the tool at the air inlet with spindle oil and run it for a short time.

#### 3-3 Disposal

If the tool is too seriously damaged to be used anymore, drop it in a resource recycling can. Never drop it into fire.

#### 3-4 Ordering service Parts

For further operational and handling information or for replacement of parts and components, contact the sale agent from whom you purchased the tool or the service division of our company.

\* In ordering parts and components, give each part number, name and quantity.

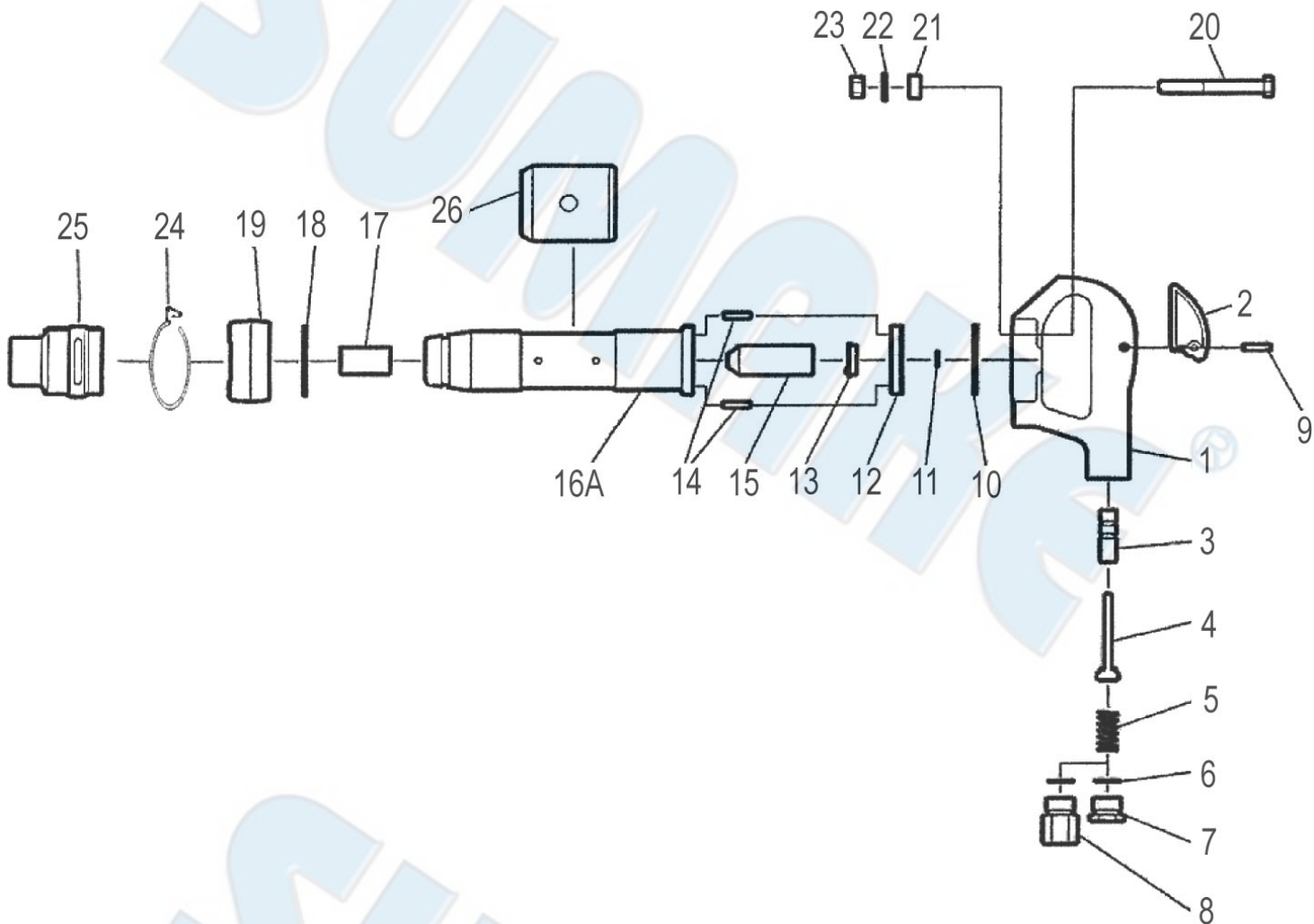
## Warning

1. This tool is not insulated for coming into contact with electric power source.
2. It is forbidden to use this tool in explosive atmospheres and do not put any combustible material near the workpiece since it might emit sparks when working on hard material.
3. Check the wear of the insert tool and the retainer before operating this tool.
4. Working with this tool will generate dust, depending on the material being worked on, could be harmful to the operator
5. This tool can cause the ejection of particles at chipping or demolishing work, hence the operator shall wear appropriate protective device and do not let other person near the work area.
6. The insert tool and the retainer on heavy types are exposed to heavy strains and can after a long period of use break due to fatigue.
7. Keep your body balance and beware of the break of the severed workpiece.
8. If one needs to use the free hand, although it is a source of vibration damage, we suggest place the hand by holding the tool in the part between the retainer and the grip and do not place the hand on the rear part by pushing the tool. The former posture provides the operator more balance than the latter one.
9. Always disconnect the tool from the air power source when maintenance, placing any insert tool, and not in use.
10. Never carry the tool by hose and beware of a whipping compressed air hose.
11. The workpiece shall be fixed by proper device.



ST-2102(3)(4)-I-1006A-FY

- ST-2102/R(H) 2" AIR CHIPPING HAMMER (ROUND) (HEX)
- ST-2103/R(H) 3.7" AIR CHIPPING HAMMER (ROUND) (HEX)
- ST-2104/R(H) 4" AIR CHIPPING HAMMER (ROUND) (HEX)



PARTS LIST

No.	Parts No.	Description	Q'ty
1	2102-01	Handle	1
2	2102-02	Trigger	1
3	2102-03	Bushing, Trottle Valve Stem	1
4	2102-04	Valve, Throttle (4 in. Overall)	1
5	2102-05	Spring, Throttle Valve	1
6	2102-06	O-Ring	1
7	2102-07	Bushing (3/8 NPT)	1
8	2102-08	Bushing (7/8-24)	1
9	2102-09	Pin, Roll (6*26)	1
10	2102-10	O-Ring	1
11	2102-11	Valve, Disc	1
12	2102-12	Seat, Valve	1
13	2102-13	Bumper, Valve Seat	1
14	2102-14	Pin, Dowel	2
15	2102-15	2" Piston [ST-2102]	1
	2103-15	3.7" Piston [ST-2103]	1

No.	Parts No.	Description	Q'ty
15	2104-15	4" Piston [ST-2104]	1
16	2102-16	2" Cylinder [ST-2102]	1
	2103-16	3.7" Cylinder [ST-2103]	1
	2104-16	4" Cylinder [ST-2104]	1
17	2102R-17	Bushing (Round)	1
	2102H-17	Bushing (Hex.)	1
18	2102-18	Ring, Absorber	1
19	2102-19	Flange, Cylinder	1
20	2102-20	Bolt, Handle	4
21	2102-21	Spacer, Vibration	4
22	2102-22	Spacer, Handle Bolt (Steel)	4
23	2102-23	Nut, Handle Bolt (Nylon)	4
24	2102-24	Spring, Retainer Lock	1
25	2102-25	Retainer, Oval Collar	1
26	2102-26	Deflector [ST-2102(3)]	1
	2104-26	Deflector [ST-2104]	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. For multiple hazards, read and understand the safety instructions before installing, operating, repairing, maintaining, changing accessories on, or working near the non-rotary percussive power tool. Failure to do so can result in serious bodily injury.
22. Only qualified and trained operators should install, adjust or use the non-rotary percussive power tool.
23. Do not modify this non-rotary percussive power tool. Modifications can 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 non-rotary percussive power tool if it has been damaged.
26. Tools shall be inspected periodically to verify that the ratings and markings required by this part of EN ISO 11148 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. Failure of the workpiece, of accessories or even of the inserted tool itself can generate high-velocity projectiles. Disconnect the non-rotary percussive power tool from the energy source when changing inserted tool or accessories.
2. Be aware that failure of the workpiece, or accessories, or even of the inserted tool itself can generate high-velocity projectiles.
3. Always wear impact-resistant eye protection during the operation of the non-rotary percussive power tool.
4. The grade of protection required should be assessed for each use.
5. For overhead work, wear a safety helmet.
6. The risks to others should also be assessed at this time.
7. Ensure that the workpiece is securely fixed.
8. Never operate a tool unless the inserted tool is retained in the tool with a proper retainer.
9. To avoid injury, retainer parts shall be replaced when they become worn, cracked or distorted.
10. Hold the inserted tool firmly against the work surface before starting the tool.

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

1. Use of the tool can expose the operator's hands to hazards, including impacts, cuts and abrasions and heat. Wear suitable gloves to protect the hands.
2. Operators and maintenance personnel shall 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 and 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. Avoid direct contact with the inserted tool during and after use as it can become hot.
8. Personal protective safety glasses shall be used; suitable gloves and protective clothing are recommended.

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

1. When using a non-rotary percussive power tool to perform work-related activities, the operator can experience discomfort in the hands, arms, shoulders, neck or other parts of the body.
2. While using a non-rotary percussive power tool, the operator should adopt a comfortable posture whilst maintaining a secure footing and



avoiding awkward off-balanced postures. The operator should change posture during extended tasks, which can help avoid discomfort and fatigue.

3. 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.

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

1. Disconnect the non-rotary percussive power tool from the energy supply before changing the inserted tool or accessory.
2. Only use sizes and types of accessories and consumables that are recommended by the non-rotary percussive power tool manufacturer.
3. Never use any chisel as a hand-struck tool. They are specifically designed and heat-treated for use only in non-rotary percussive power tools.
4. Never use blunt chisels, as they require excessive pressure and can break from fatigue. Blunt tool-pieces can increase vibration and, therefore, sharp tools should always be used.
5. Never cool a hot accessory in water. Brittleness and early failure can result.
6. Chisel breakage or tool damage can result from misuse of using the tool as a lever, e.g. prising. Take smaller "bites" to avoid getting stuck.
7. Avoid direct contact with the inserted tool during and after use, as it can be hot or sharp.

#### **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, such as electricity or other utility lines, can exist.
3. The non-rotary percussive power tool is not intended for use in potentially explosive atmospheres and is not insulated against coming into contact with electric power.
4. Make sure there are no electrical cables, gas pipes, etc., that can cause a hazard if damaged by use of the tool.

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

1. Dust and fumes generated when using non-rotary percussive power tools can cause ill health (for example cancer, birth defects, asthma and/or dermatitis); risk assessment and implementation of appropriate controls for these hazards are 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 non-rotary percussive power tool as recommended in the instruction handbook, to minimize dust or fume emissions.
4. Direct the exhaust so as to minimize the disturbance of dust in a dust-filled environment. Where dust or fumes are created, the priority shall be to control them at the point of emission.
5. 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.
6. Select, maintain and replace the consumable/inserted tool as recommended in the instructions, to prevent an unnecessary increase in dust or fumes.
7. Use respiratory protection in accordance with employer's instructions and 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 and implementation of appropriate controls for these hazards are essential.
3. Appropriate controls to reduce the risk may include actions, such as damping materials to prevent workpieces from "ringing".
4. Use hearing protection in accordance with employer's instructions and as required by occupational health and safety regulations.
5. Operate and maintain the non-rotary percussive power tool as recommended in the instruction handbook, to prevent an unnecessary increase in noise levels.
6. Select, maintain and replace the consumable/inserted tool as recommended in the instruction handbook, to prevent an unnecessary increase in noise.
7. If the non-rotary percussive power tool has a silencer, always ensure it is in place and in good working order when the non-rotary percussive power tool is operating.

#### **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 non-rotary percussive power tool, tell your employer and consult a physician.
4. Operate and maintain the non-rotary percussive power tool as recommended in the instruction handbook, to prevent an unnecessary increase in vibration. Do not hold the inserted tool with the free hand, as this increases vibration exposure.
5. 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.
6. Keep suspended handles in the central position and avoid pushing the handles into the end stops.

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

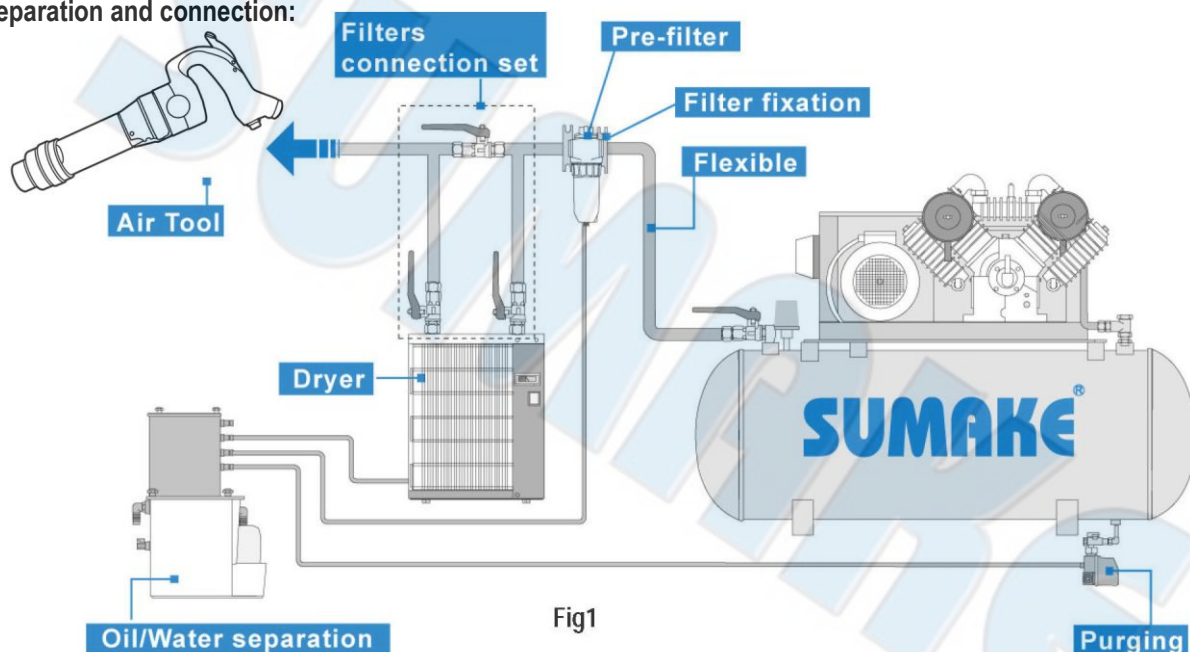
1. Air under pressure can cause severe injury.
2. Always shut off air supply, drain hose of air pressure and disconnect tool from air supply when not in use, before changing accessories or when making repairs.
3. Never direct air at yourself or anyone else.
4. Whipping hoses can cause severe injury. Always check for damaged or loose hoses and fittings.
5. Cold air shall be directed away from the hands.
6. Do not use quick-disconnect couplings at tool inlet. Use hardened steel (or material with comparable shock resistance) threaded hose fittings.

7. 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.
8. Do not exceed the maximum air pressure stated on the tool.
9. 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 non-rotary percussive 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#10-20 spindle 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 6.2bar (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.

