

Starline®

air



**3/4" (20mm)
HEAVY DUTY IMPACT WRENCH
MODEL - CAT 48**

**OPERATING & MAINTENANCE
INSTRUCTIONS**



0805

HAND-ARM VIBRATION

Employers are advised to refer to the HSE publication "Guide for Employers".

All hand held power tools vibrate to some extent, and this vibration is transmitted to the operator via the handle, or hand used to steady the tool. Vibration from about 2 to 1500 herz is potentially damaging and is most hazardous in the range from about 5 to 20 herz.

Operators who are regularly exposed to vibration may suffer from Hand Arm Vibration Syndrome (HAVS), which includes 'dead hand', 'dead finger', and 'white finger'. These are painful conditions and are widespread in industries where vibrating tools are used.

The health risk depends upon the vibration level and the length of time of exposure to it.....in effect, a daily vibration dose.

Tools are tested using specialised equipment, to approximate the vibration level generated under normal, acceptable operating conditions for the tool in question. For example, a grinder used at 45° on mild steel plate, or a sander on softwood in a horizontal plane etc.

These tests produce a value 'a', expressed in metres per second per second, which represents the average vibration level of all tests taken, in three axes where necessary, and a second figure 'K', which represents the uncertainty factor, i.e. a value in excess of 'a', to which the tool could vibrate under normal conditions. These values appear in the declaration on page 7.

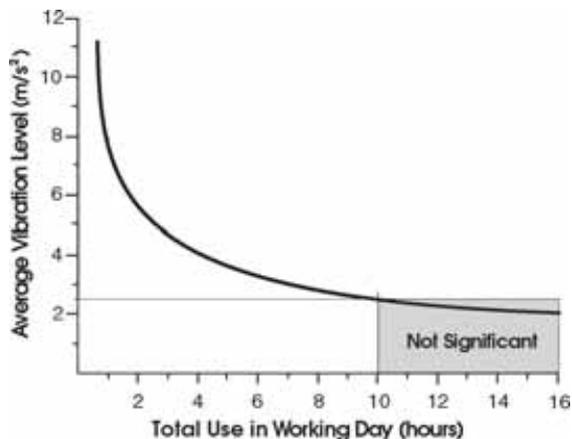
You will note that a third value is given in the specification - the highest measured reading in a single plane. This is the maximum level of vibration measured during testing in one of the axes, and this should also be taken into account when making a risk assessment.

'a' values in excess of 2.5 m/s² are considered hazardous when used for prolonged periods. A tool with a vibration value of 2.8 m/s² may be used for up to 8 hours (cumulative) per day, whereas a tool with a value of 11.2 m/s² may be used for ½ hour per day only.

The graph below shows the vibration value against the maximum time the respective tool may be used, per day.

The uncertainty factor should also be taken into account when assessing a risk. The two figures 'a' and 'K' may be added together and the resultant value used to assess the risk.

It should be noted that if a tool is used under abnormal, or unusual conditions, then the vibration level could possibly increase significantly. Users must always take this into account and make their own risk assessment, using the graph as a reference.



Some tools with a high vibration value, such as impact wrenches, are generally used for a few seconds at a time, therefore the cumulative time may only be in the order of a few minutes per day. Nevertheless, the cumulative effect, particularly when added to that of other hand held power tools that may be used, must always be taken into account when the total daily dose rate is determined.

Please read these instructions carefully before operating the tool

Thank you for purchasing this CLARKE Heavy Duty Impact Wrench, designed for heavy automotive and industrial use, and incorporating adjustable power settings, forward and reverse action and a twin hammer impact mechanism.

Before using the wrench, please read this leaflet thoroughly and follow the instructions carefully, in doing so you will ensure the safety of yourself and that of others around you, and you can look forward it giving long and satisfactory service.

GUARANTEE

This CLARKE product is guaranteed against faulty manufacture for a period of 12 months from the date of purchase. Please keep your receipt as proof of purchase.

This guarantee is invalid if the product is found to have been abused or tampered with in any way, or not used for the purpose for which it was intended.

Faulty goods should be returned to their place of purchase, no product can be returned to us without prior permission.

This guarantee does not effect your statutory rights.

SPECIFICATIONS

Drive Size	3/4" square
Max. Torque	500lbft
Air Inlet	1/4" BSP
Min. Hose Size (ID)	8mm (5/16")
Ave. Air Consumption	7.5 CFM
Air Pressure Max.	90 PSI (6.2 BAR)
Net Weight	5 kg
Vibration Level*	16.49m/s ² *
Sound Pressure Level**	107dBA **

* **Please refer to 'Hand Arm Vibration' on Page 2. The total, cumulative time that this tool should be used, per day, should be measured in minutes .**

Declared vibration emission value in accordance with EN12096

Measured vibration emission value - a:	16.49m/s ²
Uncertainty value - K:	3.20m/s ²
Highest measured reading in a single plane	16.45m/s ²
Values determined according to EN28622-2	

** **Sound Pressure levels were determined when tightening a 20mm bolt, in a horizontal plane, to 500lbft. Levels may vary depending upon conditions of use. A risk assessment should be carried out, on site, to determine actual levels and appropriate measures taken to avoid damage to hearing.**

SAFETY PRECAUTIONS

IMPORTANT

Failure to follow these precautions could result in personal injury, and/or damage to property.

1. **ALWAYS** wear BS approved impact resistant safety goggles. (Eye glasses are NOT safety glasses).
2. **ALWAYS** wear face or dust mask (where dust is created).
3. **ALWAYS** wear BS approved Ear Defenders, as considerable noise is generated, depending upon application. (see specifications)
4. **ALWAYS** disconnect the tool when not in use, before changing accessories and before carrying out any maintenance
5. **ALWAYS** have trigger in the OFF position when connecting to an air supply.
6. **ALWAYS** keep a safe distance between yourself and other people when using the tool.
7. **ALWAYS** maintain the tool with care. Keep it clean for best and safest performance.
8. **DO NOT** wear ill fitting clothing, remove watches and rings.
9. **DO NOT** locate Quick Change couplings at the tool. They add weight and could fail due to vibration.
10. **DO NOT** over-reach. Keep your proper footing and balance at all times.
11. **DO NOT** force or misuse the tool. It will do a better and safer job at the rate for which it was designed.
12. **DO NOT** abuse hoses or connectors. **NEVER** carry a tool by the hose, or yank it to disconnect from the air supply. Keep hoses away from heat, oil and sharp edges. Check hoses for weak or worn condition before use, and ensure that all connections are secure.
13. **DO NOT** exceed 90 psi at the tool.
14. **DO NOT** use hand sockets, as these could shatter with serious consequences. Use only impact wrench sockets, which **MUST** be in good condition.
15. **DO NOT** use extension bars unless absolutely necessary - use deep sockets when possible.
16. **NEVER** operate the tool unless it is attached to the work - the speed of rotation could cause the socket to be thrown from the wrench
17. **DO NOT** modify the tool in any way.
18. **DO NOT** allow anyone to use the tool unless they are physically capable of handling its' bulk weight and power.

AIR SUPPLY

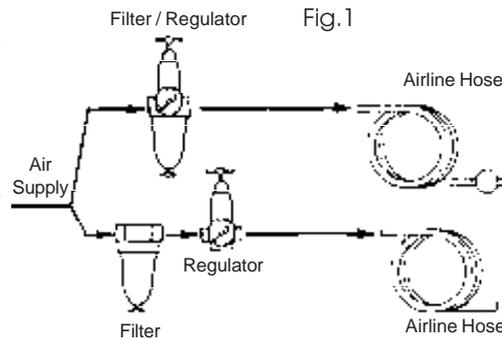
Tools of this type, operate on a wide range of air pressures. It is recommended that air pressure to this tool does not exceed 90 PSI, at the tool when running. Higher pressure and unclean air, will shorten the tools' life because of faster wear, and could be a safety hazard.

Water in the air line will cause damage to the tool, ensure it is properly maintained at all times.

The recommended procedure to connect this tool to an air supply, is shown at fig.1 below. The air inlet used for connecting air supply, has a standard 1/4" BSP thread.

Line pressure, or hose inside diameter, should be increased to compensate for unusually long air hoses (over 10m).

Minimum hose diameter should be 8mm (5/16") ID., and fittings should have the same inside dimensions.



OPERATION

Select an appropriate impact socket, which must be in good condition, and fits the tool shank and nut closely. (**NEVER** use standard hand sockets)

Forward and Reverse is obtained by pushing the lever, on the side of the tool, to the 'F' or 'R' position.

Tool power is adjusted by turning the knob, at the base of the tool, to one of the settings etched in the knob. The lower the number, the lower the power setting.

Turn the regulator to its lowest setting, then apply the wrench to a nut or bolt of known tightness (or torque setting), size, thread pitch, and thread condition as those on the job.

Start the tool, in the **FORWARD** position, and gradually turn the regulator until the nut or bolt moves very slightly **in the direction in which it was set**. The tool is now set to duplicate that tightness. For future use, note that setting.

When critical torque values are not required, turn nut or bolt until it fits snugly, and then turn a further one quarter to one half a turn - slightly more if gaskets are used between surfaces.

For additional power on disassembly work, turn the regulator to its highest setting.

This tool is rated at 3/4" bolt size, and is downgraded for spring 'U' bolts, tie bolts, long cap screws, double depth nuts, badly rusted conditions, and spring loaded fasteners as these conditions absorb much of the impact power.

Soak rusted nuts in penetrating oil, and break rust seal before turning off with the tool.

IMPORTANT: Where the torque setting is critical, the final tightening of nuts or bolts, must be by hand using a properly calibrated torque wrench.

MAINTENANCE

Daily

1. Before use, drain water from air tank, air line and compressor.
2. If no line Lubricator is used, ensure that oil is applied to the tool (see below).

Weekly

Clean the air inlet filter screen (within parts list item 31).

Monthly

Oil the Hammer mechanism at least once per month, by removing the hex. socket screw in the side of the tool, and injecting a few drops of oil, (SAE30).

For lubricating the air motor, an air line lubricator should be used, with Clarke Air Line Oil, adjusted to 2 drops per minute. If this is not possible, run a few drops of oil through the tool. It may be entered into the tool air inlet, (ensuring the strainer is clear), or into the hose at the nearest connection to the air supply. Then run the tool.

Clarke Air Line Oil is available from your CLARKE dealer, part no. 3050825.

Be aware that factors other than the tool may effect its operation and efficiency, such as reduced compressor output, excessive drain on the airline, moisture or restrictions in the line, or the use of connectors of improper size or poor condition which will reduce air supply.

Grit or gum deposits in the tool may also reduce efficiency. This condition can be corrected by cleaning the air strainer and flushing out the tool with gum solvent oil, or failing this, the tool should be disassembled, thoroughly cleaned, dried and reassembled.

If the tool runs erratically or becomes inefficient, and the air supply is sound, dismantle the air motor and hammer mechanism and replace worn or damaged parts, or take the tool to your CLARKE dealer.

Keep the tool clean at all times, and ensure that the hex. socket screws securing the hammer case remain tight.

ACCESSORIES

A wide range of Airline accessories is available, including Filter/Regulators, Lubricators, High Pressure Hoses from 5 to 100 Metres, etc.

Contact your CLARKE dealer for further information, or CLARKE International Spare Parts Department on 020 8988 7400

DISPOSAL



When disposing of this product, ensure it is disposed of according to all local ordinances

SPARE PARTS AND SERVICING

Contact your nearest dealer, or CLARKE International, on one of the following numbers.

PARTS & SERVICE - 020 8988 7400

PARTS & SERVICE E-Mail: [Parts\(or Service\)@clarkeinternational.com](mailto:Parts(or Service)@clarkeinternational.com)

PARTS LIST

Item	Description	Qty	Part No.	Item	Description	Qty	Part No.
1	Protecting Rubber	1	28-0030	27	Rear Rubber	1	28-0031
2	Seal	1	00-4205	28	Washer	3	00-1802
3	Housing	1	28-0001	29	O-ring	3	00-4111
4	Screw	1	00-0614	30	Valve Sleeve	1	28-0002
5	Anvil Bushing	1	28-0014	31	Reverse Valve	1	28-0003
6	Anvil Collar	1	28-0016	32	Rear Gasket	1	28-0027
7	O-ring	1	00-4118	33	O-ring	1	00-4106
8	Spacer	1	28-0017	34	Air Regulator	2	28-0008
9	Anvil	1	28-0015	35	Screw	2	00-0802
10	Hammer Pin	1	28-0019	36	Exhaust Deflector	1	28-0012
11	Hammer Cage	1	28-0018	37	Pin	1	28-0009
12	Hammer	1	28-0020	38	Spring	1	28-1031
13	Cam	1	28-0021	39	Screw	1	00-0610
14	Seal	2	00-4206	40	Trigger	1	28-0004
15	O-ring	1	00-4108	41	Pin	1	00-3301
16	Front Plate	1	28-0022	42	Pin	1	00-3305
17	Rotor Blade	6	28-0024	43	Valve Stem	1	28-0005
18	Rotor	1	28-0023	44	Spring	1	28-0011
19	Cylinder	1	28-0025	45	Hose Adapter	1	25-1010
20	Washer	1	28-0034	46	Ball Bearing	1	00-2313
21	Ball Bearing	1	00-2312	47	O-ring	1	00-4114
22	Rear Plate	1	28-0026				
23	Rear Cover	1	28-0028				
24	Washer	4	00-1803				
25	Screw	4	00-0119				
26	Screw	3	00-0110				

