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Contractors tools

Pneumatic Chipping Hammer CHP3/CHP3R



Operation & Maintenance Guide

Chipping Hammer Operation & Maintenance Guide

OPERATING AIR PRESSURE:-

CHP3 Pneumatic chipping hammer is mainly used for chipping of all metal components in the industries of boiler, ship building, metallurgy etc as well as in other industries especially for chipping of irregular or narrow surface. These chippers are also used for cleaning sand, chip burr, pouring of riser for various kinds of castings, to chip out all kinds of metal welding seam, to break all kind of brick walls and concrete walls. They are also used for splitting/breaking or digging all kinds of construction stones.

DAILY BEFORE OPERATION :-

Daily before use and after each eight hours of service, dis-connect air hose and pour about one teaspoonful of recommended oil in to the air inlet of tool. Blow out air line to clear it off accumulated dirt and moisture. Connect tool and operate it to allow oil to be carried to cylinder.

RECOMMENDED LUBRICANTS :-

	ABOVE 27°C 80°F	5°C-27°C 40°F-80°F	BELOW 5°C 40°F
SHELL	Toona R. 72	Toona R. 41	Toona R.27
MOBIL	Almo 529	Almo 527	Almo 525
ESSO		Arox.EP.65	Arox EP.45
CALTEX	Rando Oil 150	Rando Oil 100	Rando Oil 46
CP			Airolene Tool Oil
TEXACO	Regal oil F (R&O)	Regal Oil PE (R&O)	Regal Oil B (R&O)
DALTRON	Silkolene 881	Silkolene 548/T	Silkolene 773
BURMAH CASTROL	Castrol RD Oil 3	Castrol Rd Oil Light	Magna SPX
BP POWER PETROLEUM	RD220 HP60-C	RD150 HP20-C	RD80 HP10-C
DUCKHAM	Garnet 7	Garnet 6	Zero Fio 5
STERNOL	Merlin 87	Merlin 71	Merlin 54
PETROFINA	Purifoc 53	Purifoc 46	Purifoc 32
CHEVRON	Vistac Oil 18X	Vistac Oil 19X	Vistac Oil 9X
IOC	Servoneum 100	-----	-----
HP	Numatic 100	-----	-----

COMPRESSED AIR SUPPLY :-

The pneumatic chipping hammers work best at 90 psig air pressure. For its maximum efficiency, it is essential to operate the chipper on a clean, dry supply of compressed air at 90 psig inlet pressure. Air piping should be a minimum of 13mm I.D. hose size or larger and length should not be more than 12 meters.

The installation of a FRL (filter - regular - lubricator) unit is strongly recommended to eliminate pressure fluctuations, to get purified dry air and should be located as near to the chipper as the operation will allow.

SAFETY INSTRUCTIONS :-

- 1) Never run the chipper with loose connections. Use correct size of hose - i.e. Inner diameter of hose should be minimum 13mm. Keep hoses in good condition. Check hose for signs of wear and ensure that they are secure. Accidental dis-connection while hose is pressurized can make the hose whip and can be safety hazard.
- 2) Do not exert excessive pressure against the work surface.
- 3) Never operate the chipping hammer over the rated 90 psig air pressure .
- 4) Use chisel only with 14.7 Hex & dia 17.5mm up to 60mm length. Do not use worn out chisel - at shank as well as at cutting edge.
- 5) Never run the chipper without putting chisel in its place. It may damage some internal parts. Always start the chipper after resting the chisel point on some work portion.

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PROBLEMS AND PROBABLE CAUSES & SOLUTIONS.		
TROUBLE SHOOTING		
PROBLEM	PROBABLE CAUSES	SOLUTION
Chipper does not run	The assembled parts, may not be in their respective positions.	Dismantle the chipper and re-assemble in proper order as per the view attached.
	Stem (6) does not push steel Ball (5). Stem (6) may be worn Out.	Replace stem (6) and check movement of stem (6) within bush (7).
	Throttle lever (9) worn out. It does not push stem (6) properly.	Replace throttle lever (9).
	Piston (17) stuck.	Remove chisel (20) and push a rod of dia 12.7mm So that piston (17) is lifted up.
	Piston (17) worn out too much.	Clearance has become more between cylinder bore & piston. Replace piston (17).
	Too thick lubricated piston (17).	Dismantle, clean and apply light oil and re-assemble.
Chipper runs sluggishly.	Low air pressure	Increase air pressure to 80-90 psig.
	Insufficient air flow (cfm)	Check hoses etc. for leakages.
	Insufficient lubrication of air.	Add a small amount of light - weight non-detergent Oil into hose.
	Excessive moisture in air	Install adequately sized moisture separator in air line between chipper and air receiver of compressor. Drain air receiver and piping regularly.
If the suggested remedies fail to correct problem, Dis-assemble and inspection must be performed to determine cause.		

Assembly and Disassembly :-

Disconnect the chipper from air supply and press the throttle lever (9), so that all air trapped inside will be blown out. Remove chisel (20) and retainer (19), unscrew and remove it.

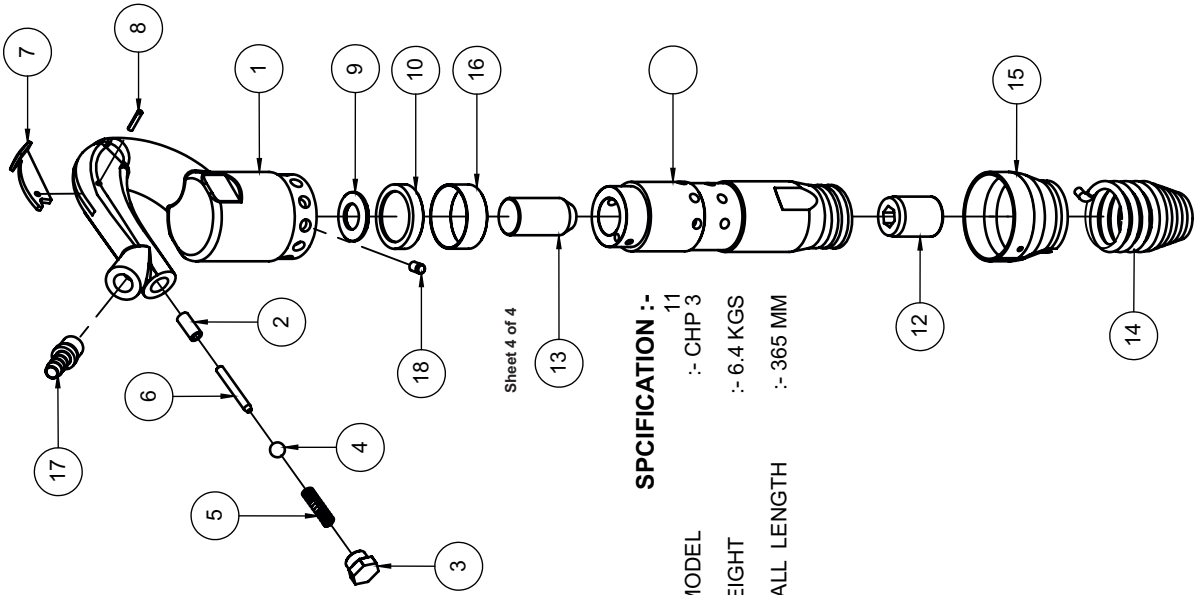
With the help of expander remove exhaust deflector (15) and see that there will be handle lock pin (14) in one of the hole. Find it and take it out.

Hold the handle (10) in a vice with soft jaws and with the help of spanner, unscrew cylinder (16). After little loosening of cylinder(16), remove chipper from vice jaws, hold it vertically straight, chisel end downwards and unscrew cylinder (16) slowly. When cylinder (16) comes out, there will be a disc spring washer (11), below it is a valve case lid (12) and ring valve (13). Remove all these three parts and turn the cylinder(16) upside down so that the piston (17) within it will slide out.

Then unscrew plug for spring (3), so that a spring (4) and steel ball (5) will come out. Pull out stem(6). Do not try to remove bush(7) as it is press fitted in the handle (10). If at all necessary tap out lever pin (8) and throttle lever (9) will come out.

Clean all parts in suitable solvent, examine them for wear and tear, replace any damaged components. Coat parts with light oil and re-assemble carefully in reverse sequence.

Exploded view of Pneumatic Chipping Hammer



Sheet 4 of 4

SPECIFICATION :-

MODEL :- CHP 3
WEIGHT :- 6.4 KGS
O/ALL LENGTH :- 365 MM

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	454 01 01	HANDLE	1
2	454 25 12	BRASS BUSH FOR STEM	1
3	454 21 05	PLUG FOR SPRING	1
4	454 90 18	STEEL BALL	1
5	454 50 15	SPRING FOR STEEL BALL	1
6	454 21 06	STEM	1
7	454 03 02	THROTTLE LEVER	1
8	454 90 19	LEVER PIN	1
9	454 51 16	DISC SPRING WASHER	1
10	454 21 07	VALVE CASE LID	1
11	454 21 09	CYLINDER	1
12	454 21 11	CHISEL SLEEVE	1
13	454 21 10	PISTON	1
14	454 51 17	SPRING TYPE RETAINER	1
15	454 30 13	EXHAUST DEFLECTOR	1
16	454 21 08	RING VALVE	1
17	454 21 04	HOSE ADAPTOR	1
		HOSE ADAPTOR FOR HANDLE 454 MP 0225 454 CP 0225	1

IMPACT ENERGY :- MORE THAN 7.4 FOOT POUNDS
 FREQUENCY :- 3200 BPM
 AIR CONSUMPTION :- LESS THAN 44 CFM
 CYLINDER BORE :- 30 MM
 PISTON STROKE :- 70 MM
 I.D. OF HOSE :- 12 MM
 INLET AIR PRESSURE :- 80-90 PSIG
 DO NOT EXCEED 100 PSIG AT TOOL
 SHANK :- 14.7 MM A/F HEX. DIA 17.5 MM X 60 MM LONG