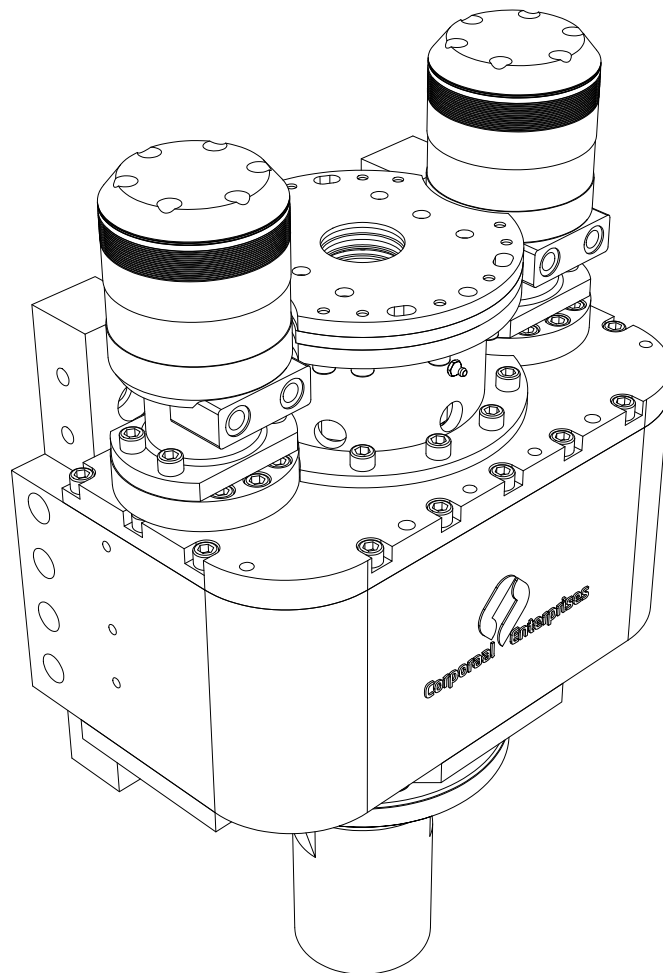


OPERATION MANUAL

CE8 RC ROTARY HEAD WITH BLOWDOWN MOUNT

VERSION 0.0



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INTRODUCTION

Since its foundation in September 2012, Corporaal Enterprises has developed products to help improve a broad range of drilling and mining industry operations. CE has designed the CE breakout bench range to fill a gap in the market for a high powered, compact, self contained, reliable & most importantly safe breakout tool to be used for drill hammer maintenance. This manual is specifically for the operation & maintenance of the 4-8CE™ Breakout bench. Before operating or maintenance of this equipment this manual must be read and fully understood by all involved. It is the responsibly of the managers/employers to ensure a copy of this manual is read by employee's that work with this equipment.

The machine should be destined only to the use for which it was explicitly designed. Any other use is to be considered inappropriate and therefore dangerous. Specifications are subject to change without notice or obligation to retrofit units already in the field. This manual will be constantly updated to remain current with new operations. Please contact CE if there are areas requiring further explanation or instruction. Material contained herein may not be reproduced in hole or in part without the express written permission of Corporaal Enterprises Pty Ltd.

DESCRIPTION OF USE

The CE8 Rotary Head is can be used in such applications as -
Reverse Circulation Drilling, Grade Control Drilling, Blast Hole drilling and Water Well Drilling.

WARRANTY - TERMS & CONDITIONS

WARRANTY

Limited Warranty.

(a) Consumables. Corporaal Enterprises PTY LTD warrants for a period of three (3) months after the date of shipment of the consumable products manufactured by it, or the performance of related services, under the Contract, that such consumable products are free from defects in materials and workmanship and such services are performed in a professional and workmanlike manner; provided, however, with respect to consumable products purchased through an authorized Corporaal Enterprises PTY LTD distributor, the warranty period shall commence on the date of purchase by the end-user.

(b) Capital Equipment. Corporaal Enterprises PTY LTD warrants for a period equal to the lesser of (i) three (3) months after the date of shipment, or (ii) the initial 250 operating hours.

(c) General Terms. Corporaal Enterprises PTY LTD further warrants that, to the extent applicable, as of the date of shipment or performance, all goods manufactured by it and services performed shall conform to the written specifications agreed between the parties. THIS IS Corporaal Enterprises PTY LTD'S ONLY WARRANTY. Corporaal Enterprises PTY LTD MAKES NO OTHER WARRANTY, INCLUDING WITHOUT LIMITATION, ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. As a condition to Corporaal Enterprises PTY LTD's warranty obligations, any goods claimed to be defective under the foregoing warranty must be returned to the facility designated by Corporaal Enterprises PTY LTD, which return shall be made promptly upon Purchaser's discovery of the alleged defect. With respect to consumable products purchased through an authorized Corporaal Enterprises PTY LTD distributor, the party making the warranty claim must also deliver to Corporaal Enterprises PTY LTD reasonable evidence of the date of purchase. Corporaal Enterprises PTY LTD shall perform its examination of the goods so returned by Purchaser and shall report the results of its examination to Purchaser within thirty (30) days following its receipt of such goods from Purchaser, or, if longer time is required to complete such examination, within such time as would be required through the exercise of reasonable diligence. As a further condition to Corporaal Enterprises PTY LTD's obligations hereunder for breach of warranty, Purchaser shall offer its reasonable cooperation and assist Corporaal Enterprises PTY LTD in the course of Corporaal Enterprises PTY LTD's review of any warranty claim. If requested by Purchaser, Corporaal Enterprises PTY LTD will promptly repair or replace at Corporaal Enterprises PTY LTD's expense. Goods that are non-conforming according to Corporaal Enterprises PTY LTD's warranty as set forth herein. All removal and installation of goods shall be at Purchaser's expense. Corporaal Enterprises PTY LTD reserves the right to reimburse Purchaser for an amount equal to the purchase price of any defective goods in lieu of providing repaired or replacement goods. Anything contained herein to the contrary notwithstanding, in no event shall Corporaal Enterprises PTY LTD be liable for breach of warranty or otherwise in any manner whatsoever for: (i) normal wear and tear; (ii) corrosion, abrasion or erosion; (iii) any goods, components, parts, software or services which, following delivery or performance by Corporaal Enterprises PTY LTD, has been subjected to accident, abuse, misapplication, modification, improper repair, alteration, improper installation or maintenance, neglect, or excessive operating conditions; (iv) defects resulting from Purchaser's specifications or designs or those of its contractors or subcontractors other than Corporaal Enterprises PTY LTD; (v) defects associated with consumable parts or materials, the lifetime of which is shorter than the warranty period set forth in this Section; (vi) defects associated with Purchaser's specifications or designs or those of its contractors or subcontractors other than Corporaal Enterprises PTY LTD; (vii) defects resulting from the manufacture, distribution, promotion or sale of Purchaser's own products; or (viii) accessories of any kind used by the Purchaser which are not manufactured by or approved by Corporaal Enterprises PTY LTD.

(d) Sourced Goods. If the defective parts or components are not manufactured by Corporaal Enterprises PTY LTD, the guarantee of the manufacturer of those defective parts or components is accepted by the Purchaser and is the only guarantee given to the Purchaser in respect of the defective parts or components. Corporaal Enterprises PTY LTD agrees to assign to the Purchaser on request made by the Purchaser the benefit of any warranty or entitlement to the defective parts or components that the manufacturer has granted to Corporaal Enterprises PTY LTD under any contract or by implication or operation of law to the extent that the benefit of any warranty or entitlement is assignable.

(e) Limitation on Liability. Except as provided for herein, in no event will Corporaal Enterprises PTY LTD be liable for any indirect, incidental, special, consequential, punitive or similar damages including, but not limited to, lost profits, loss of data or business interruption losses. In no event will the total, aggregate liability of Corporaal Enterprises PTY LTD under the Contract exceed the value of the Contract under which liability is claimed. The liability limitations shall apply even if Corporaal Enterprises PTY LTD has been notified of the possibility or likelihood of such damages occurring and regardless of the form of action, whether in contract, negligence, strict liability, tort, products liability or otherwise. The parties agree that these limits of liability shall survive and continue in full force and effect despite any termination or expiration of any Contract. Any action by Purchaser against Corporaal Enterprises PTY LTD must be commenced within one year after the cause of action has accrued. No employee or agent of Corporaal Enterprises PTY LTD is authorized to make any warranty other than that which is specifically set forth herein. The provisions in any specification, brochure or chart issued by Corporaal Enterprises PTY LTD are descriptive only and are not warranties.

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SAFETY

READ SAFE PRACTICES AND PROCEDURES, MANUAL, CATALOG INFORMATION AND PRODUCT LABELING PRIOR TO OPERATION.



Responsibility

It is the responsibility of the employer to train the employee in the proper usage of equipment and to ensure that they are used in proper manner. In many instances, injury results because of inadequate training and information being given to the employee. A part of every job instruction program should therefore have detailed training in the proper use of equipment being supplied to the employee and to all other staff working around or with the equipment.

Employers are responsible for the safe condition of tools and equipment used by employees, including tools and equipment.

Safe Practices

Failure to observe one or more of the following five safe practices accounts for most hand and power tool accidents:

1. ALWAYS WEAR CORRECT PPE ACCORDING TO THE JOB
2. SELECT THE RIGHT EQUIPMENT FOR THE JOB
3. KEEP EQUIPMENT IN GOOD CONDITION
4. USE EQUIPMENT CORRECTLY
5. KEEP A SAFE DISTANCE WHEN OPERATING

Safety Goggles must always be worn by persons in any area where hand and powered tools are being used.

All equipment should be kept clean, inspected on a regular basis, and repaired when signs of wear show.

Be especially careful not to place yourself in a position that could result in injury in during operation or in the event of a failure.

Never stand under or near loads being hoisted off the ground.

All equipment is only to be used for the mean which it was supplied to be used for. Do not alter or modify any part of this equipment or tooling.

Responsibility of Distributors

IT IS THE RESPONSIBILITY OF THE PURCHASERS OF CORPORAL ENTERPRISES PRODUCTS TO CONVEY THE INFORMATION IN THIS PUBLICATION AND ANY OTHER INFORMATION RELATING TO THE INDIVIDUAL PRODUCT, THROUGH THE CHANNELS OF DISTRIBUTION, DOWN TO AND INCLUDING THE INDIVIDUAL USING THE PRODUCT

NOTE:

In view of the fact that the actual use determines whether safety requirements have been met, the ultimate responsibility to comply rests with the end user.

MAINTENANCE

The maintenance by personnel are key to the longevity of equipment. All individuals who perform maintenance work must have the appropriate knowledge, accreditation and/or certification dependent on the degree of maintenance, whether it be operational, preventative or corrective maintenance. This applies both to company employees and to contracted maintenance services. Necessary maintenance logs must be kept up to date & filed for easy retrieval.

The following maintenance instructions are minimum requirements, check with your company policies and maintenance officers for any further company instructions regarding rotary head maintenance.

Operational maintenance

Before each shift, the below areas should be inspected and reported, if any signs of damage or ware become apparent .

1) Bolts are still fastened to torque specs according to size (see bolt torque chart FIG 1.1).

- 2) Grease nipples are in working condition.
- 3) Main shaft thread.
- 4) Whip check, air feed hose & hydraulic hosing condition.
- 5) Motor condition.
- 6) Rotary head mounting condition (free of rust, metal fatigue and bolts are still fastened to spec)
- 7) Over all rotary head and connected equipment condition. Any damage should be inspected and assessed to determinate coarse of action.

Periodical maintenance

Daily/24 hours

Using CASTROL LMX Grease give each grease point on rotary head (located on the sides of rotary head) 8cc's of grease (approximately five pumps of grease using a hand operated grease gun). Some grease may eject from pressure relief points between grease nipples.

First 1000 hours

Re-adjust preload bearing nut if necessary to bearing manufacturers recommended torque rating.

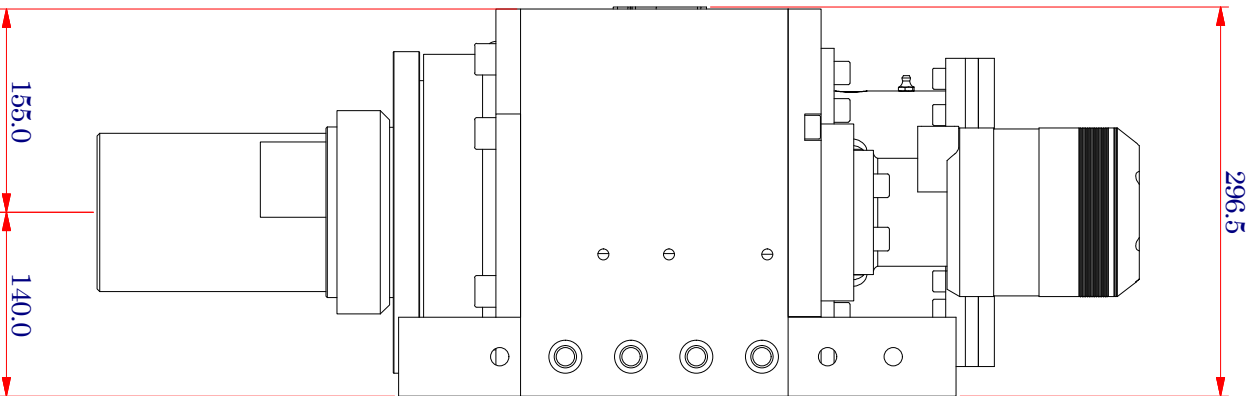
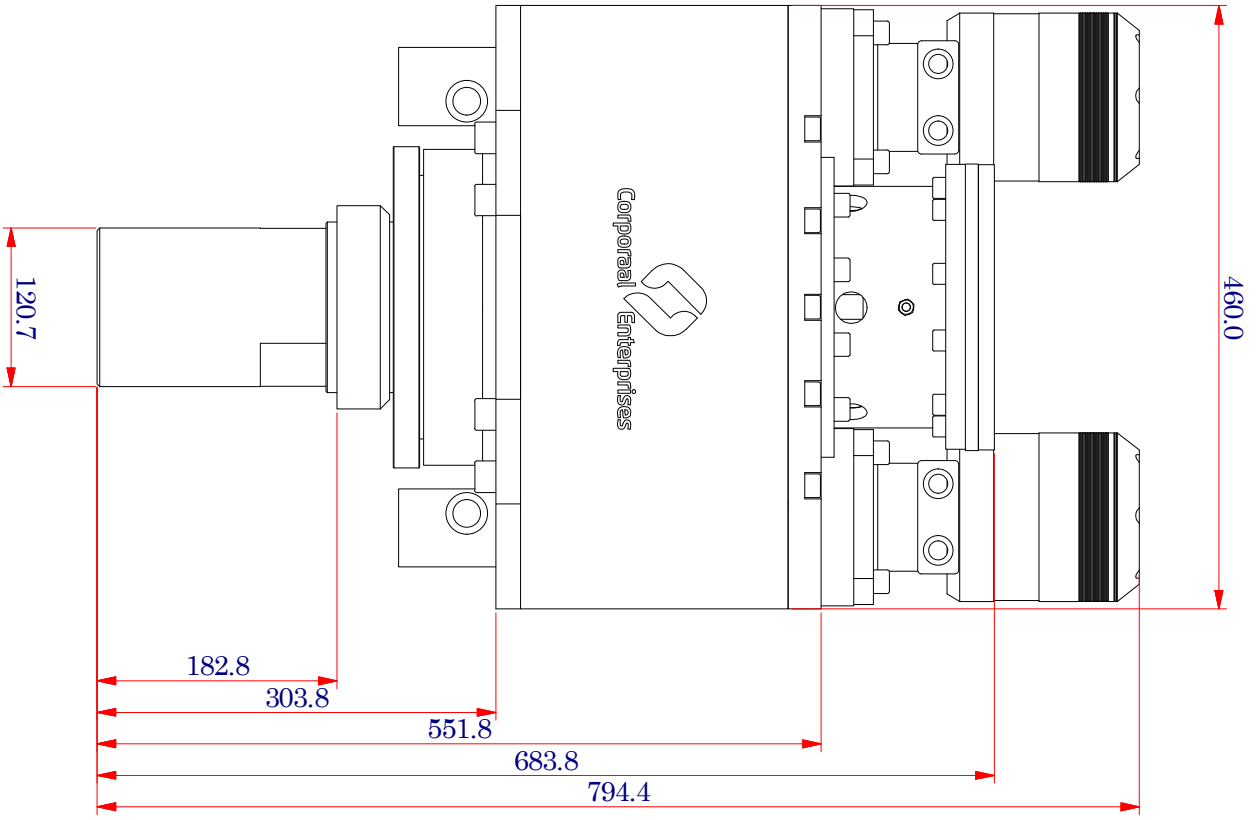
Yearly/6000 hours

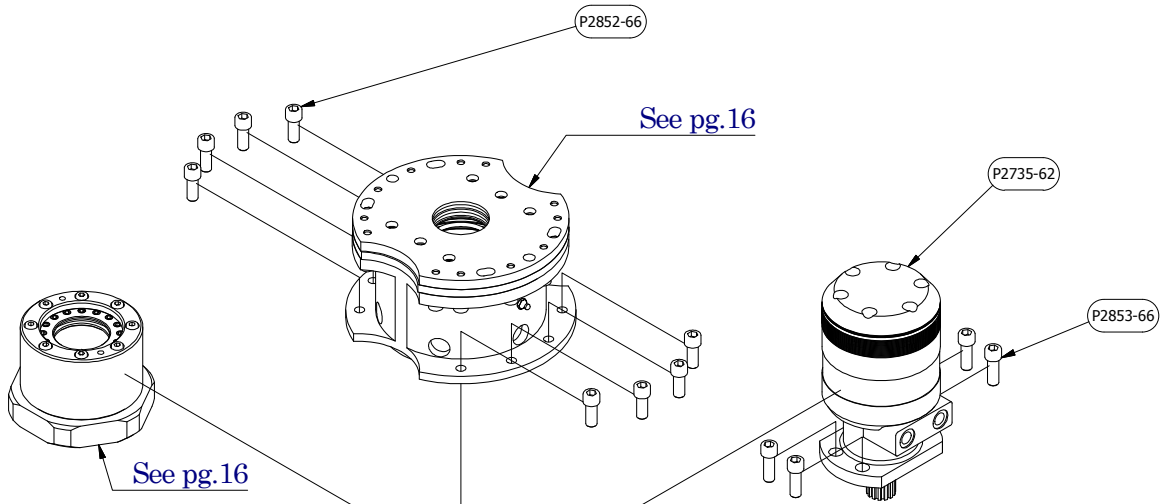
Check for signs of ware or damage on main shaft, bull shaft, bearings, seals, bolts, gears (external teeth & internal spline) & motors. Replace warn parts if necessary. Replace grease.

Metric Bolt Torque Table Estimated with clamp load as 75% of proof load as specified in ISO 898-1						
Property Class	8.8	10.9	12.9 Socket Head Cap Screw			
Minimum Tensile Strength MPa	M6 - M16: 800 M20 - M30: 830	1040	1220			
Nominal Size and Thread Pitch	Bolt Torque Specs in Foot Pounds or (Inch Pounds)					
	Dry	Lubed	Dry	Lubed	Dry	Lubed
M5 x 0.80	(54)	(41)	(78)	(59)	(91)	(68)
M6 x 1.00	(92)	(69)	(133)	(99)	(156)	(116)
M7 x 1.00	(156)	(116)	(222)	(167)	(260)	(195)
M8 x 1.25	(225)	(169)	(333)	(242)	(377)	(284)
M10 x 1.50	37	28	53	40	62	47
M12 x 1.75	65	49	93	69	108	81
M14 x 2.00	104	78	148	111	173	130
M16 x 2.00	161	121	230	172	269	202
M18 x 2.50	222	167	318	238	372	279
M20 x 2.50	314	235	449	337	525	394
M22 x 2.50	428	321	613	460	716	537
M24 x 3.00	543	407	776	582	908	681
M27 x 3.00	796	597	1139	854	1331	998
M30 x 3.50	1079	809	1543	1158	1804	1353
M33 x 3.50	1468	1101	2101	1576	2455	1842
M36 x 4.00	1886	1415	2699	2024	3154	2366

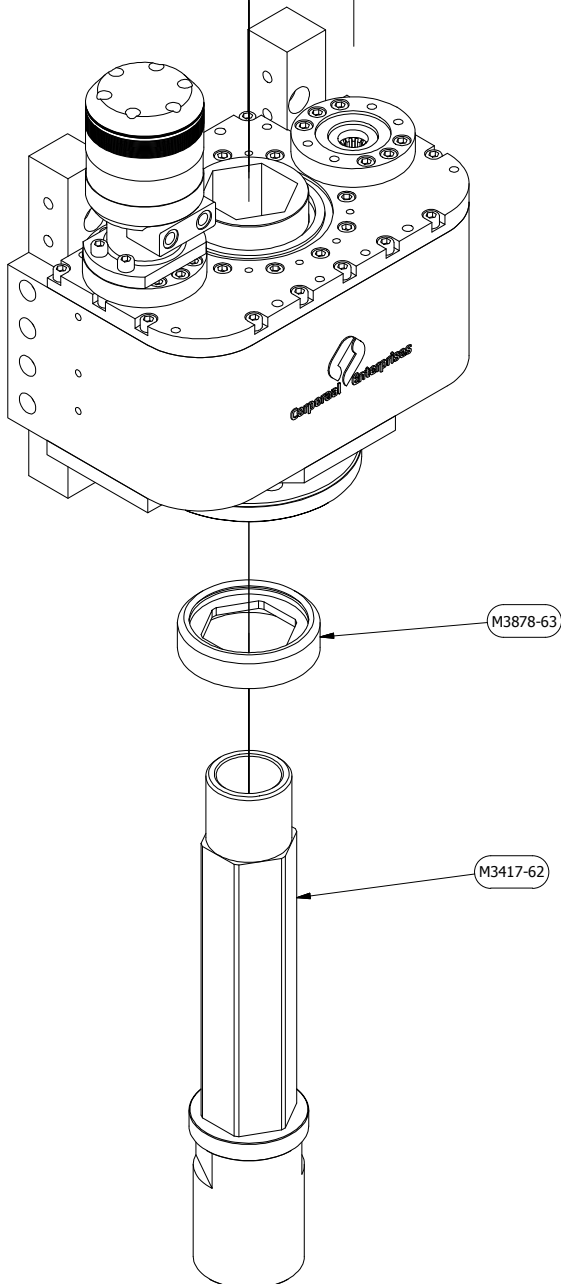
Lubed means cleaned dry bolts lubricated with a standard medium viscosity machine oil. Lubricate all contact areas of the bolts and washers. Lubricating the bolts is the suggested method.

FIG 1.1





PART No.	DESCRIPTION	QTY
P2735-62	PARKER MOTOR - TG0335	2
P2853-66	SOCKET HEAD CAP - M12 x 35	8
M3417-62	3 1/2" IF BOX SHAFT (NO FLOAT)	1
M3878-63	BLOW DOWN MOUNT CENTRALIZING RING	1
P2852-66	SOCKET HEAD CAP - M12 x 30	8



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CEB
ROTARY
HEAD

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