



**ROCKLABS**

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**ROCKLABS LABORATORY HYDRAULIC  
CRUSHER/BREAKER**

**MANUAL**

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## INSTALLATION

The crusher is packed in several containers. The body of the crusher is packed in a box, the electric pump is packed in the original manufacturer's (ENERPAC) cardboard box and the safety surround is dismantled and wrapped in cardboard.

Unpack all components carefully. Discard all containers.

Before bolting the crusher on to a suitably strong bench, assemble the safety surround.

### Safety Surround

The safety surround is designed to prevent small chips of rock from flying through the air away from the crusher when rocks are being broken. The surround enables a rock specimen to be held by hand while the moving plate travels downwards to contact the rock. To ensure maximum illumination of the crusher during operation, the safety surround has a clear perspex roof.

The safety surround has a laminated timber back wall and floor. Reassemble the surround and bolt the crusher on to the bench, through the surround floor.

REMEMBER : EVEN WITH THE SURROUND IN PLACE, USE GOGGLES OR FACE SHIELD WHEN USING THE CRUSHER TO ENSURE THAT NO ROCK PARTICLES CAN DAMAGE THE EYES

**SAFETY**

**SAFETY**

**SAFETY**

### Electric Pump

The pump is connected to the crusher with the hoses provided, ensuring that the hoses are connected to the correct fitting on the crusher. When the two-way lever points to Advance, the crusher plates should descend.

As with all hydraulic devices, it is essential to remove all the air from the hoses, ram, etc. once installation is complete and occasionally during operation. This is easily done with the air-bleed screw on the front bottom left of the pump. Lift the pump above the top of the hydraulic ram and run the ram up and down a few times. Any air will then be displaced by oil and the air will collect in the pump and be ejected through the air-bleed.

### Use of the Foot Switch

The pump is a standard Enerpac air or electric pump, fitted with a hand operated switch. On electric pumps, the switch is a two position switch; a normal "run" position and a spring loaded "jog" position that remains on only by holding the switch lever against the spring.

Where the crusher is being used for large numbers of samples, we recommend that a foot-operated switch be wired to the "run" position. Using a foot to turn the pump on and off leaves the hands free to place samples in the crusher, brush the crushed material into a receptacle etc., speeding up the production rate.

### Neoprene Crusher Plate Surround

The PVC surround shown in our brochure has been replaced by a better quality, neoprene model because the PVC surround tended to scratch easily. The surround is made to be a tight, press-fit around the lower tungsten carbide plate and it can be removed for cleaning or attached semi-permanently with a little adhesive.

If the surround becomes damaged and is difficult to clean, a spare is provided and further spares are always available by air post.



## OPERATION

**Breaking :** The hydraulic ram has a maximum force of 29 tonnes and this is sufficient to break any rock that will fit between the breaking bars. FULL EYE PROTECTION MUST BE WORN AT ALL TIMES, in case of flying chips.

When fully extended the top bar will not touch the bottom bar. This is to prevent damage from bar-to-bar contact.

As supplied, the breaker bars are fitted in the side-to-side position, suitable for breaking rock samples. For splitting drill core, the bars can be rotated 90 degrees and the core fed through from front to back.

**Crushing :** The bottom crusher plate is mounted on a spacer to ensure that only pieces of 50mm or less are crushed. This means that the top plate can descend on to the bottom plate and could damage it, if there was no sample between the plates. Always ensure that the two plates do not touch each other.

FULL EYE PROTECTION MUST BE WORN AT ALL TIMES

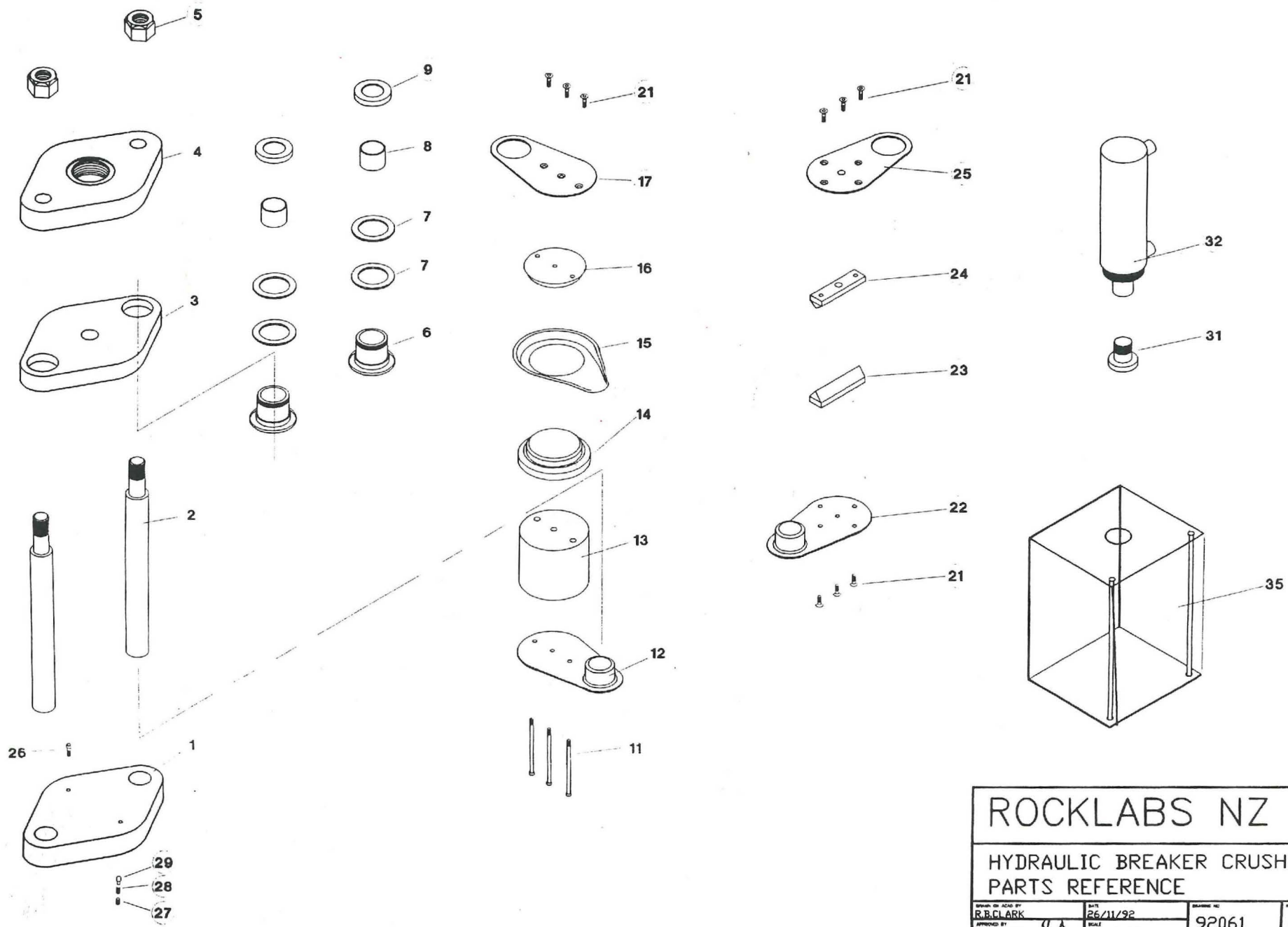
When crushing, do not just continue pumping until the maximum force is reached. This will eventually weaken the internal safety pressure spring and the maximum force will then begin to reduce or the spring will need replacing. For crushing, a force of only 10 tonnes is normally adequate. Experience will show that as soon as a rock is broken, further force will just press the small pieces together, achieving nothing extra and taking longer time.

**Cleaning :** Cleaning is very easy. Use a small hard brush and a damp cloth, compressed air or other technique, depending on your facilities. The tungsten carbide components can be polished occasionally with a mild household liquid abrasive cleaner. Always leave the tungsten carbide surfaces dry or they can corrode.

## HYDRAULIC BREAKER/CRUSHER

### Drawing 92061

Drawing Number	Part Number	Description	Number Required
1	HC1	Bottom Plate	1
2	HC2	Column	2
3	HC3	Moving Plate	1
4	HC4	Top Plate	1
5	HC5	Nut	2
6	HC6	Column Bush	2
7	HC7	Teflon Bronze Washer	4
8	HC8	UHMW Bush	2
9	HC9	Locking Ring	2
11	HC11	Crushing Plate Bolt (Long)	3
12	HC12	Bottom Crushing Swing Plate	1
13	HC13	Spacer	1
14/16	HC14/16	Crushing Plate	2
15	HC15	Neoprene Plate Surround	1
17	HC17	Top Crushing Swing Plate	1
21	HC21	Cap Screws	9
22	HC22	Bottom Splitter Swing Plate	1
23/24	HC23/24	Splitter Bars	2
25	HC25	Top Splitter Swing Plate	1
26	HC26	Swing Plate Stop Cap Screw	3
27	HC27	Grub Screws	1
28	HC28	Button Spring	2
29	HC29	Button Spring Plate Stop	2
31	HC31	Hydraulic Ram Nut	1
32	HC32	Hydraulic Ram	1
35	HC35	Safety Surround	1



ROCKLABS NZ  
 HYDRAULIC BREAKER CRUSHER  
 PARTS REFERENCE

DESIGNED BY R.B. CLARK	DATE 26/11/92	DRAWING NO. 92061	REV. A
APPROVED BY 26/11/92	SCALE 1=10 e A3		