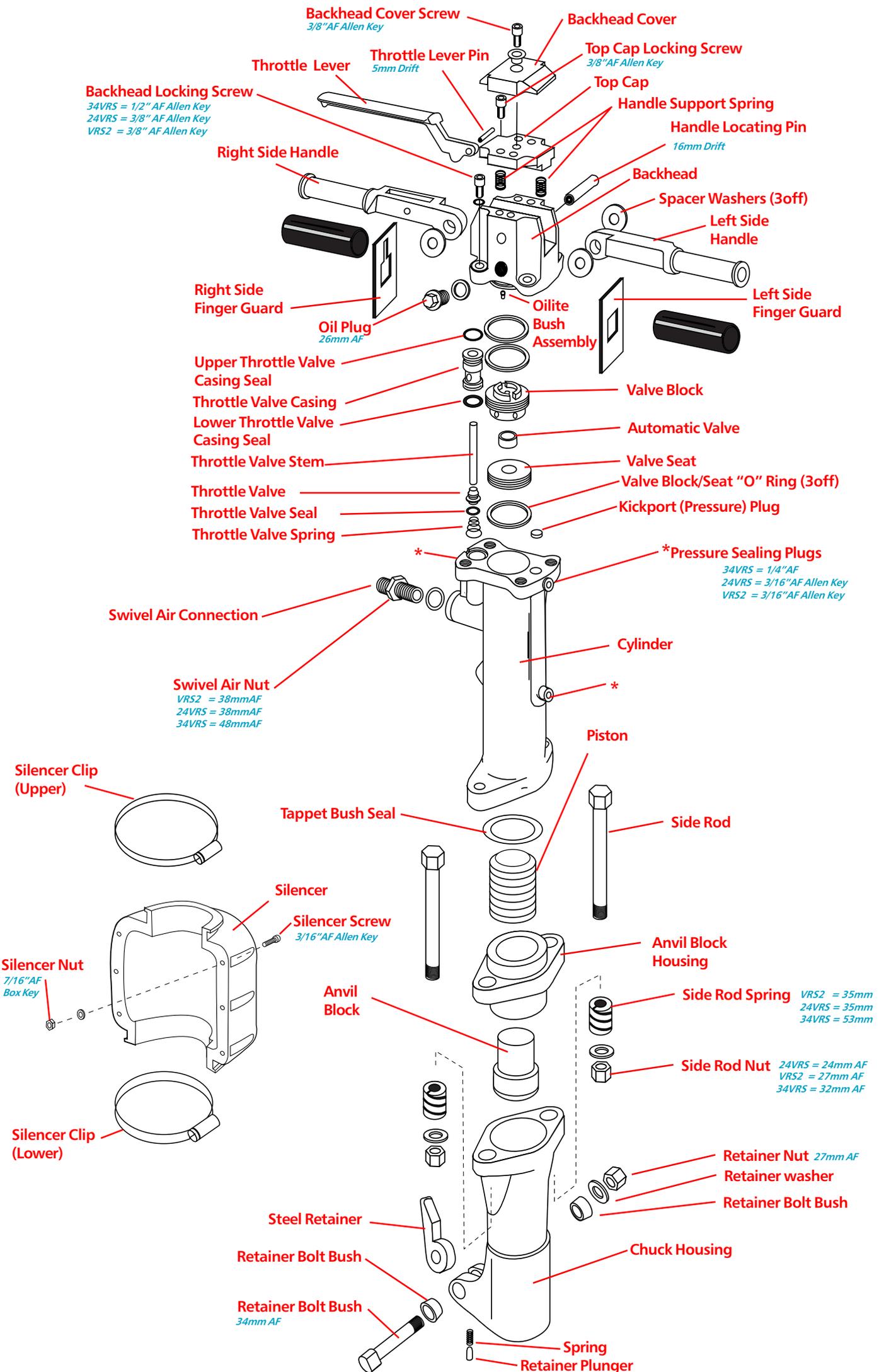


# Workshop Manual

## VIBRATION REDUCED BREAKERS



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# Macdonald Vibration Reduced Breakers

## Operation 1 - To Remove Backhead Assembly

(A) Grip the breaker horizontally in a vice, with the inlet connection upwards, ensuring the grip is on the backhead/cylinder flanges, as shown in photograph 1(a).



(B) Slacken the 4 backhead locking screws as shown in photograph 1(b). (note: since thread locking compound has been used to ensure these screws will not loosen due to vibration, a 600 mm long lever is required to break the initial bond between screw and cylinder).



(C) Remove breaker from vice and re-locate vertically, by gripping only on cylinder top flange as shown in photograph 1(c).



(D) Remove the 4 backhead cover screws and lift off back head assembly as shown in photograph 1(d).



## Operation 2 - To Remove Throttle Valve Assembly.

(A) Insert a screwdriver blade into the slot under the throttle valve casing top flange and lever out the throttle valve casing and associated parts as shown in photograph 2(a). (note: if a throttle valve incorporating an o-ring seal has been fitted, either glue the o-ring in place with super glue or fit a new style throttle valve which does not require an o-ring seal). Replace other seals if damaged.



## Operation 3 - To Remove Valve Block Assembly.

A) Grip top spigot of valve block with pliers and ease out of cylinder using rocking motion as shown in photograph 3(a).



(B) Lift out valve - photograph 3(b).



(C) To remove valve seat - remove the breaker from the vice, invert it and bump the cylinder top flange on a piece of wood at a slight angle to enable the piston to knock the valve seat from the cylinder - photograph 3(c). If the piston is seized or stuck in the cylinder the valve seat may be removed using suitable external circlip pliers.



## Operation 4 - To Remove Chuck Housing And Tappet Bushing Assembly.

(A) Grip breaker in vice as described in 1(a), above.



(B) Using a suitable wrench, loosen and remove side rod nuts - photograph 4(b).



(C) Remove side rod washers and springs and ease chuck housing assembly away from side rods, to expose tappet and tappet bushing, as shown in photograph 4(c).



(D) Remove tappet and pull tappet bushing from cylinder. (Note: it may be necessary to loosen the silencer to expose the cylinder lower flange so that a screw driver may be used to lever the tappet bushing out of the cylinder). Photograph 4(d).



After carrying out operations 1(a) through 4(d) drive piston out of cylinder towards nearest end using a suitable steel drift and hammer.

## Operation 5 - To Remove Seized Piston.

After carrying out operations 1(a) through 4(d) drive piston out of cylinder towards nearest end using a suitable steel drift and hammer.

## Operation 6 - To Replace Throttle Lever Or Handles.

(A) Grip backhead in vice and remove backhead cover (where fitted) - photograph 6(a).

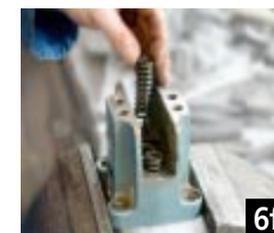
(B) Turn backhead on it's side in vice and remove oil plug - photograph 6(b).

(C) Re - grip back head securely in vice on cylinder locating flange. Loosen and remove 4 top cap locking screws and lift off top cap - photograph 6(c).

(D) Drive out handle locating pin, using 16mm diameter drift - photograph 6(d).

(E) Lift out handles and (G) Remove backhead from vice and grip right side handle as shown in photograph 6(g).

(H) Lift out throttle lever photograph 6(h).



## Operation 7 To Remove Steel Retainer From Chuck Housing.

(A) Grip chuck housing in vice and loosen and remove retainer nut using 2 suitable wrenches as shown in photograph 7(a).

(B) Hold down steel retainer and rotate out retainer bolt by turning anti-clockwise - photograph 7(b).

(C) Remove the remaining retainer bolt bush - photograph 7(c).

(D) Lift out retainer - photograph 7(d). The retainer plunger is now exposed and may be lifted out to expose the steel retainer spring, which in turn may be removed - photograph 7(e).



## Operation 8 To Remove Inlet Connection From Cylinder.

(A) Grip cylinder in vice as described in 1(a), and remove inlet connection as shown in photograph 8(a). Note: since the inlet connection is fitted to the cylinder using thread locking compound, it may be necessary to use an extended wrench or a hammer to loosen it initially.



## Operation 9 To Remove Silencer.

(A) Loosen and remove lower and upper silencer clips - photograph 9(a).

(B) Loosen and remove the silencer screws and nuts from the top side of the silencer - photograph (9b).

(C) Open and remove silencer from cylinder as shown in photograph 9(c).

