Competition Bulletin

no. C75-8

READ, SIGN AND PASS ON TO SERVICE MANAGER & MECHANICS

Sales Dept. _____
Parts Dept. _____
Service Manager _____
Mechanics _____

Subject **AIR FILTER DEFLECTOR**
Models **ALL**
Serial nos. **ALL**
Date **JANUARY 6th, 1976**

Several Bulletins have been issued stressing the importance of air filter maintenance and hopefully most Can-Am owners are religiously following our advise. (Ref: Competition Bulletins 5 and 6).

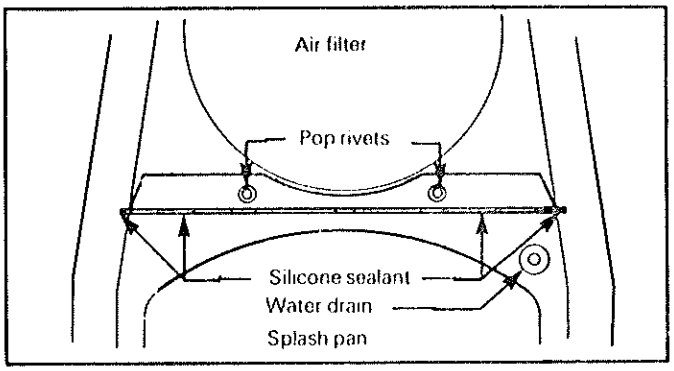
To further improve the situation, we are pleased to pass on a race preparation tip that really pays off in less air filter contamination.

By installing an air filter deflector plate, many of the dirt particles can be trapped before they reach the filter element.

1. Using the full size template printed below, trace the outline of the deflector plate on a piece of thin aluminum or sheet-metal.
2. Fold the deflector rivet flange at 90° along the dotted line and trim the ends to fit into the splash pan.
3. Use "Pop" rivets to attach the deflector and run a fillet of silicone sealant along the deflector / splash pan joint.

CAUTION: When drilling rivet holes, do not drill into air box.

4. Drill a water drain hole in the right rear corner, behind the deflector.

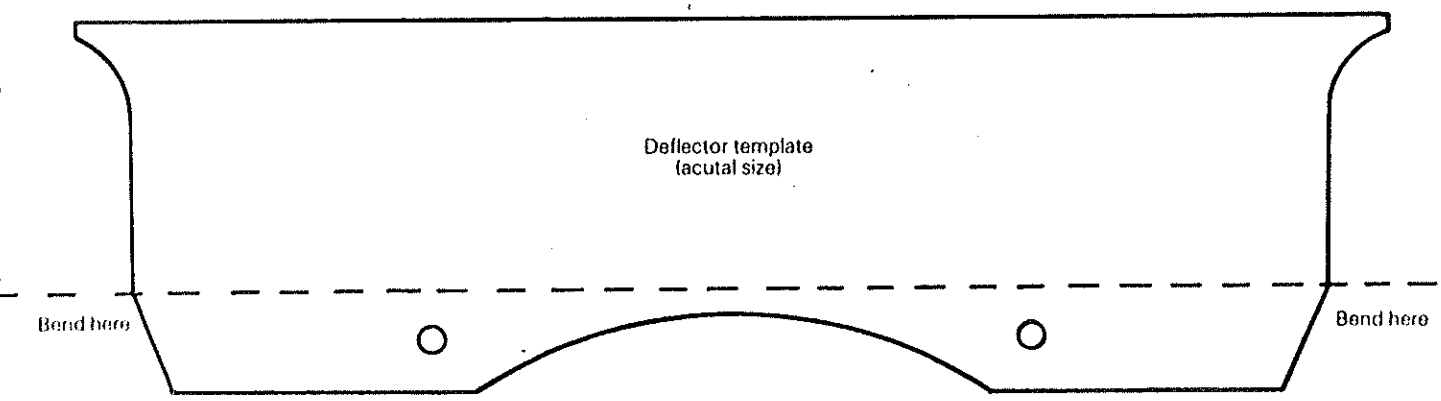


NOTE: A threaded valve stem from an old inner tube makes a neat drain spigot.

5. Slip an 8-10" piece of plastic tubing onto the drain spigot and tape it to the frame tube.

Despite the remarkable effect of this deflector, we strongly recommend frequent, diligent air filter servicing plus the application of grease or "LPS 3" on the splash pan and on the bottom of the seat pan (see Competition Bulletins 5 and 6).

TECHNICAL INFORMATION CENTER



WARNING: This information relates to the preparation and use of Can-Am motorcycle in competitive events and has been utilized safely and effectively by Bombardier Limited's professional racing team. However, Bombardier Limited disclaims liability for all damages and / or injuries resulting from the improprer use of the contents. We strongly recommend that these modifications be carried out and / or verified by a highly skilled professional racing mechanic. It is understood that such modifications may render use of the vehicle illegal in other than sanctioned racing events under existing federal, provincial and state regulations.

BOMBARDIER can-am motorcycles

Competition Bulletin

no. 75-10
(revised)

Date: JUNE 29th, 1976

Serial nos: ALL

Subject: SQUISH AREA MEASUREMENT / COMPRESSION RATIO

Models: MX-2 — 125-175-250 cc.

When fine tuning the squish area, special care must be taken to prevent excessive compression increase which would lead to detonation and possibly piston failure.

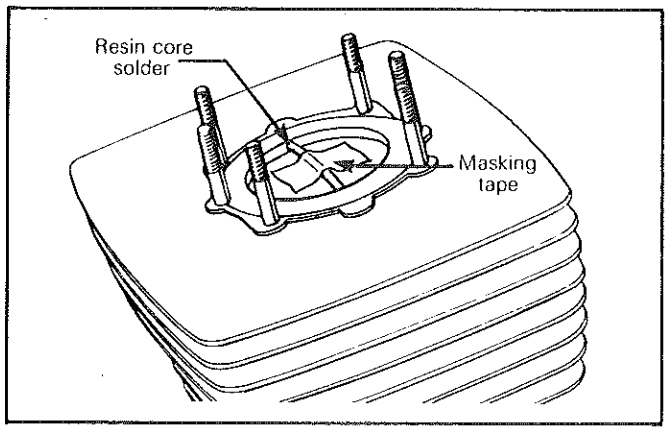
Any time the squish area measurement is decreased, the compression ratio must be checked and readjusted as necessary. This verification must also be applied when replacing the piston, cylinder or cylinder head.

SQUISH AREA MEASUREMENT

1. In a criss-cross sequence, gradually remove the cylinder head nuts, then remove the head. Note the head shim / s used, (if any).
2. Bring the piston to ¼" B.T.D.C. and place a length of resin core solder (maximum of ⅛" diameter) across the piston, making sure it is positioned parallel to the wrist pin to obtain an equal reading on each side of the cylinder.

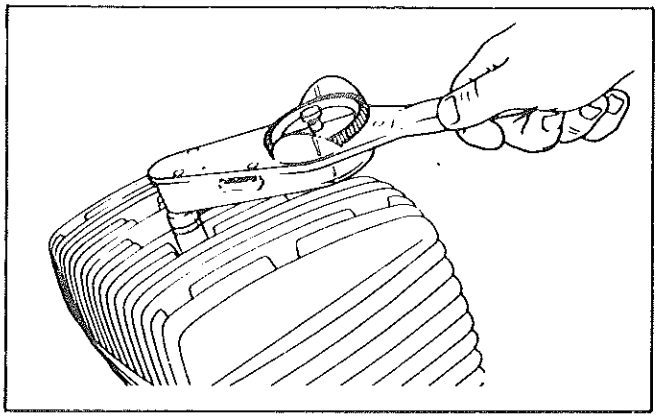
▼ CAUTION: Do not use acid core solder, the acid can damage the piston and cylinder wall.

○ NOTE: To hold the resin core solder in place, clean the piston surface and use masking tape.

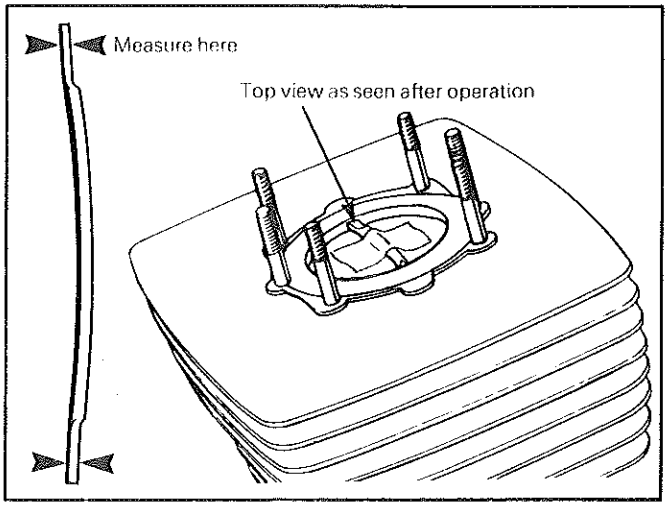


3. Install the cylinder head and using a criss-cross sequence, gradually torque the cylinder head nuts to the correct specifications:

125 / 175 cc	1.6 kg / m (12 ft / lb)
250 cc	1.9 kg / m (14 ft / lb)



4. Using the magneto side crankshaft nut, rotate the crankshaft in order for the piston to pass the T.D.C. point.
5. Remove the head, remove the resin core solder and measure both ends.



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6. Using this measurement, calculate the head shim / s required to provide a squish area of:

MX-2 125 cc: .9 mm +.13 mm – 0
(.035" +.005 – 0)

175 cc: 1 mm +.13 mm – 0
(.040" +.005 – 0)

250 cc: 1.27 mm +.13 mm – 0
(.050" +.005 – 0)

NOTE: The head shim is not a head gasket and does not need replacement unless damaged.

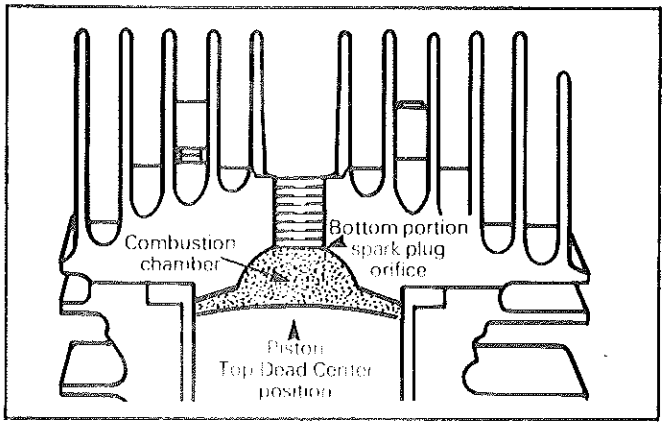
7. Fit the necessary shim / s (if required) and, using a criss-cross sequence, gradually torque the head nuts to the correct torque.

CAUTION: It is imperative to check the compression ratio after the squish has been corrected.

COMPRESSION RATIO

To check the compression ratio, bring the piston to the top dead center position and pour a given amount (see chart) of oil (30 grade) into the combustion chamber through the spark plug orifice.

The compression ratio will be correct, when the specific given amount of oil fills the combustion chamber up to the bottom portion of the spark plug orifice.



MODEL	REQUIRED VOLUME OF OIL (30 grade)	= COMPRESSION RATIO
MX-2 125 cc	8.85 ml ± 0.3 ml	14.5-15.5 to 1
MX-2 175 cc	13.4 ml ± 0.6 ml	13.5-14.5 to 1
MX-2 250 cc	19.8 ml +0.9 ml –0.8 ml	13-14 to 1

If the compression ratio is proven to be too low or too high, consult the possibility chart to guide you in a remedy procedure.

CAUTION: To carry out some of the following procedures, it is necessary that special equipment be available. If you do not possess such equipment, have the cylinder head modified in a workshop equipped with proper tooling.

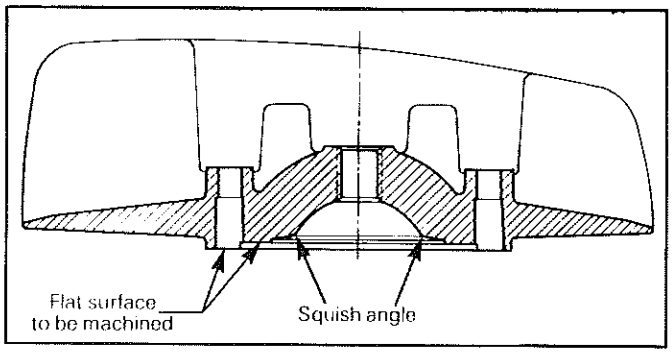
POSSIBILITY CHART

SQUISH TOO SMALL	
Compression ratio OK	Machine the squish angle to correct squish, then machine the flat surface of the cylinder head to correct the compression and re-verify the squish.
Compression ratio too high	Add shim / s.
SQUISH TOO LARGE	
Compression ratio OK	Machine flat surface of cylinder head to correct the squish and then machine the radius of the combustion chamber to correct the compression ratio.
Compression ratio too low	Remove the shim / s (if any) or machine flat surface of cylinder head to correct squish and verify compression ratio.
Compression ratio too high	Remove the shim / s (if any) to correct squish or machine flat surface of the cylinder head to correct squish and then machine the radius of the combustion chamber to correct the compression ratio.

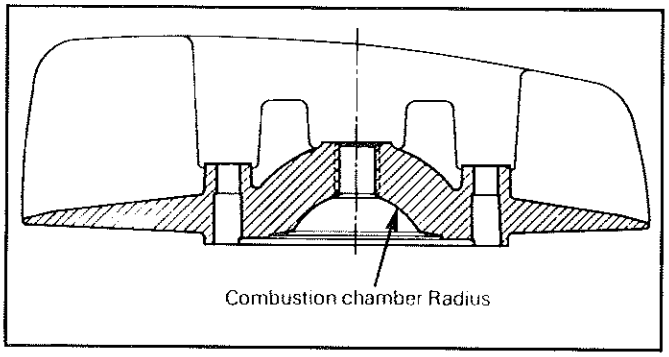
SQUISH OK	
Compression ratio too low	Remove the shim / s (if any) to correct the compression or machine the flat surface of the cylinder head to correct the compression and then machine the squish angle to re-correct the squish and re-verify the compression ratio.
Compression ratio too high	Machine the radius of the combustion chamber to correct the compression ratio.
COMPRESSION RATIO OK	
Squish too small	Machine the squish angle to correct squish then machine the flat surface of the cylinder head to correct the compression and re-verify the squish.
Squish too large	Remove the shim/s (if any) or machine the flat surface of cylinder head to correct the squish then machine the radius of the combustion chamber to correct the compression ratio.
COMPRESSION RATIO TOO HIGH	
Squish too small	Add shim / s and verify the compression ratio.
Squish OK	Machine the radius of the combustion chamber to correct the compression.
Squish too large	Remove shim / s (if any) or machine the flat surface of the cylinder head to correct squish and then machine the radius of the combustion chamber to correct the compression.
COMPRESSION RATIO TOO LOW	
Squish too small	Remove the shim / s (if any) to correct the compression or machine the flat surface of the cylinder head to correct the compression ratio and then machine the squish angle to correct the squish, re-verify the compression ratio.
Squish too large	Remove the shim / s (if any) or machine the flat surface of the cylinder head to correct the squish and verify compression ratio.
Squish OK	Machine the flat surface of the cylinder head to correct the compression and then machine the squish angle to re-correct the squish.

CAUTION: It is very difficult to pre-determine the amount of material to remove from the cylinder head anytime the squish and / or compression ratio needs to be modified, so, when machining is required, we recommend very light cuts and verify the results between each cut.

SQUISH ANGLE		
MX-2	125 cc	9° 30'
MX-2	175 cc	9°
MX-2	250 cc	16°



COMBUSTION CHAMBER RADIUS		
MX-2	125 cc	21 mm (0.826")
MX-2	175 cc	23.40 mm (.921")
MX-2	250 cc	27 mm (1.063")



CAUTION: Squish area and compression ratio are interrelated, do not modify one without checking the other.