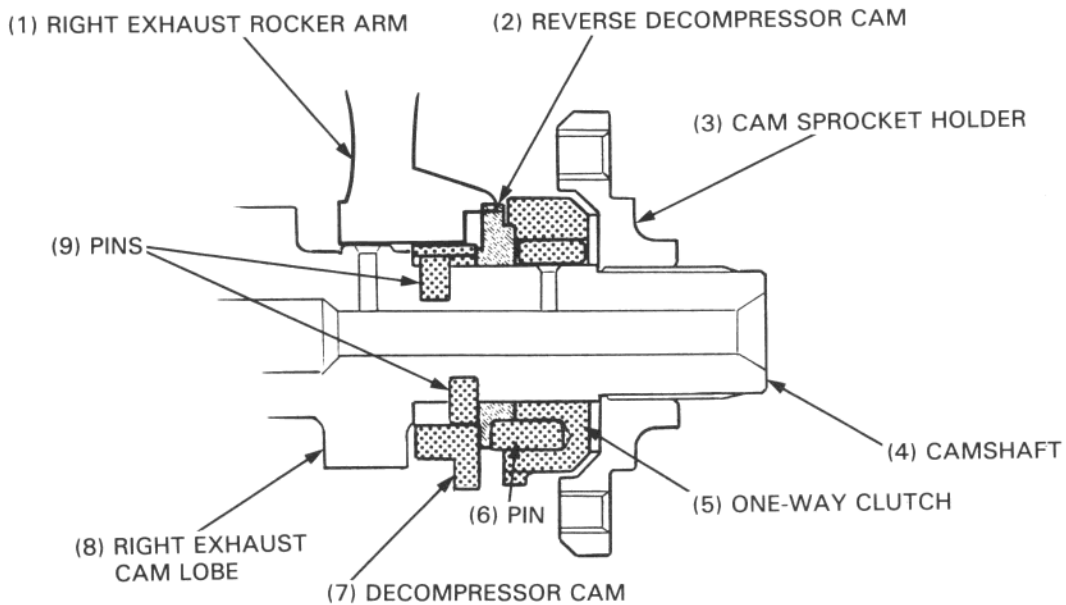## NEW DECOMPRESSOR SYSTEM

Description

The 1988 XR600R uses a new decompressor which eases the required starting force and also reduces starting kickback. This system is used on all 1988 4-stroke singles of 250 cc and larger engines. It is more compact and lighter than previous systems and is maintenance free. On the XR600R, it reduces the required starting force to that of a 250 cc engine.
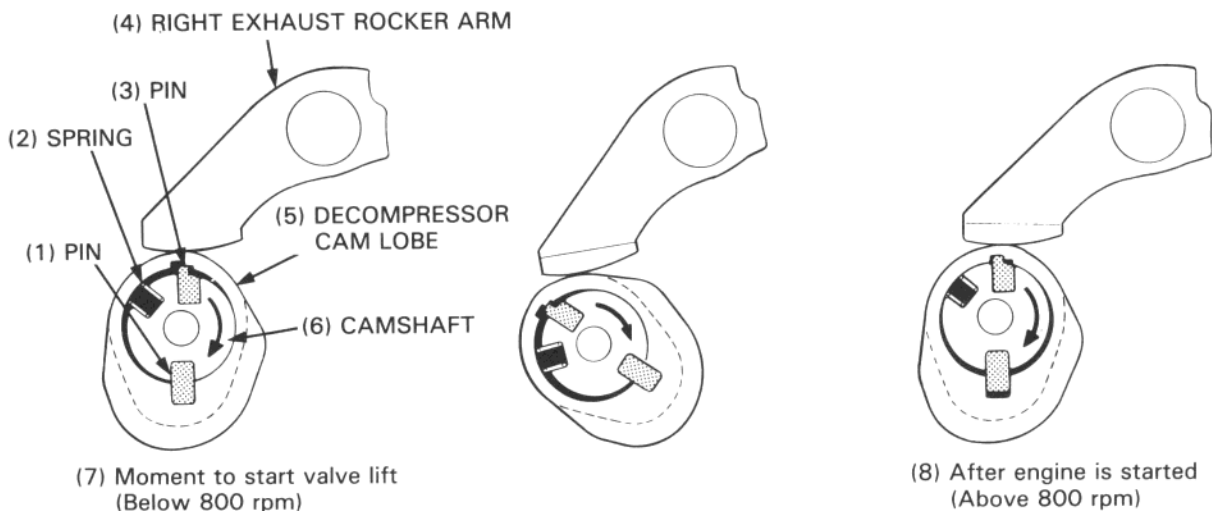
Construction

The system uses two separate decompressor cams: one is for reducing the necessary kickover force (decompressor cam) and the other reduces starting kickback (reverse decompressor cam). Both of these decompressor cams slip onto the drive end of the camshaft. The decompressor cam is loosely keyed onto the camshaft which allows it to shift positions as the engine speed increases (after startup). The reverse decompressor cam rotates on a machined surface on the camshaft but it can only rotate in one direction because of a one-way roller bearing.

(1) RIGHT EXHAUST ROCKER ARM
(2) REVERSE DECOMPRESSOR CAM
(3) CAM SPROCKET HOLDER
(9) PINS
(4) CAMSHAFT
(5) ONE-WAY CLUTCH
(8) RIGHT EXHAUST CAM LOBE
(6) PIN
(7) DECOMPRESSOR CAM

FUNCTION

Decompressor Cam

At TDC (on compression) the right exhaust rocker arm is contacting the normal cam lobe's heel (concentric circle) so that valve is closed, as would be normal. But on this model, the decompressor cam opens the exhaust valve a slight amount to reduce kickstarting force. After the engine starts, centrifugal force moves the position of the decompressor cam and it becomes flush with the normal cam lobe's heel.

(4) RIGHT EXHAUST ROCKER ARM
(3) PIN
(2) SPRING
(1) PIN
(5) DECOMPRESSOR CAM LOBE
(6) CAMSHAFT

(7) Moment to start valve lift (Below 800 rpm)

(8) After engine is started (Above 800 rpm)

Reverse Decompressor Cam

The reverse decompressor cam is stationary during normal engine operation. It doesn't turn when the engine is being started or when it is running. Its one-way roller bearing allows it to free-wheel whenever the engine is turning in the normal direction. But if the engine kickbacks during startup, the reverse direction locks-up the one-way roller bearing which moves the lobe of the reverse decompressor cam into position (it opens the exhaust valve). The reverse decompressor cam automatically returns to its normal position when the engine stops turning from the kickback.

(1) RIGHT EXHAUST ROCKER ARM

(8) RIGHT EXHAUST ROCKER ARM
(Opens the exhaust valve)

(2) CAMSHAFT

(3) ONE-WAY ROLLER BEARING

(7) PIN

(4) ROLLER

(5) SPRING

(6) Normal engine operation

(9) REVERSE DECOMPRESSOR CAM ROBE

(10) Engine kickbacks during startup