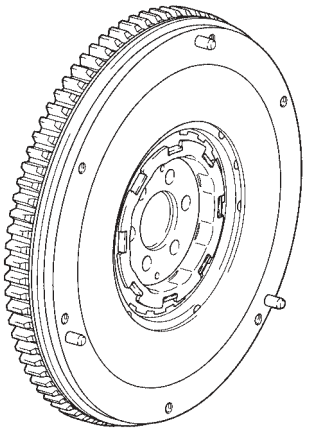
■ FLYWHEEL

1. General

A flywheel damper with a set of 8-spring inline variable hysteresis mechanisms has been adopted in the flywheel for the newly developed J160 manual transmission. The hysteresis mechanism has adopted a two-stage switching system. As a result, the booming sound, as well as the noise and vibration of the drivetrain have been reduced.



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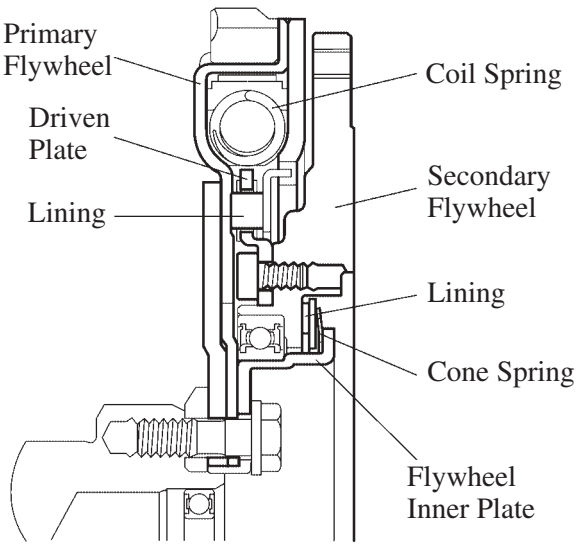
2. Construction

The flywheel is divided into two portions, one for the engine (primary flywheel), and the other for the transmission (secondary flywheel). Between them, 8 lightweight coil springs are laid out inline, with both ends of each coil spring supported by aluminum sheets.
The flywheel damper consists of the small hysteresis portion for small amplitudes, the large hysteresis portion for large amplitudes, the primary flywheel that directly receives the torque, the coil springs, and the driven plate that is secured to the secondary plate by bolts.
The small hysteresis portion consists of the flywheel inner plate that is secured to the crankshaft by bolts and the lining that is installed on the secondary flywheel by cone spring.
The large hysteresis portion consists of the lining that is placed inline with the driven plate.



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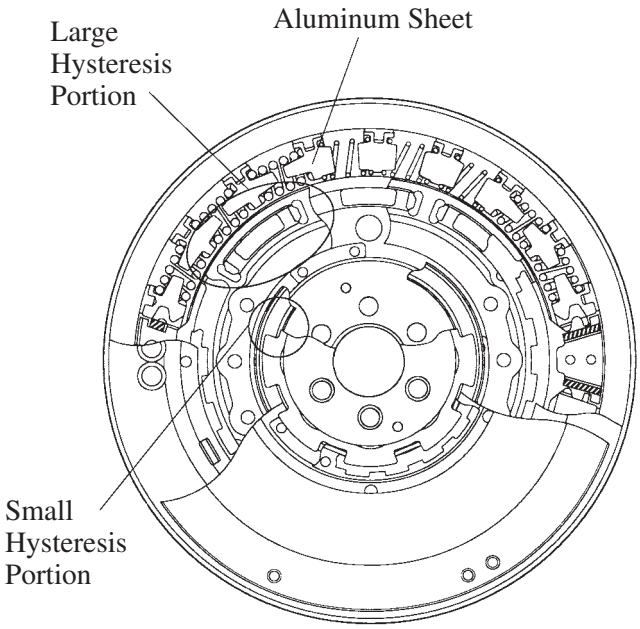

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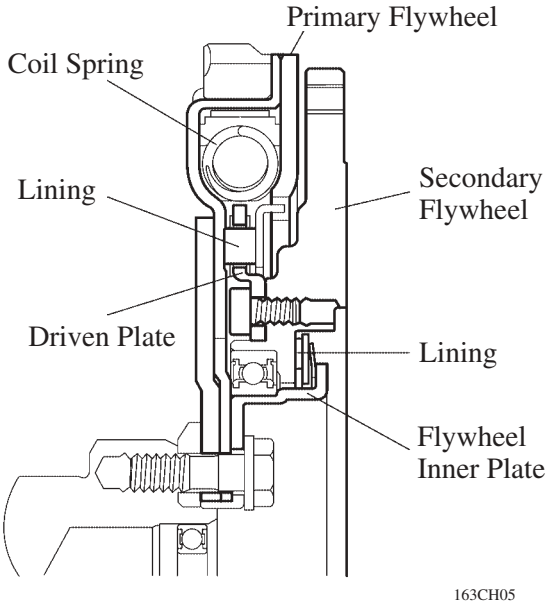
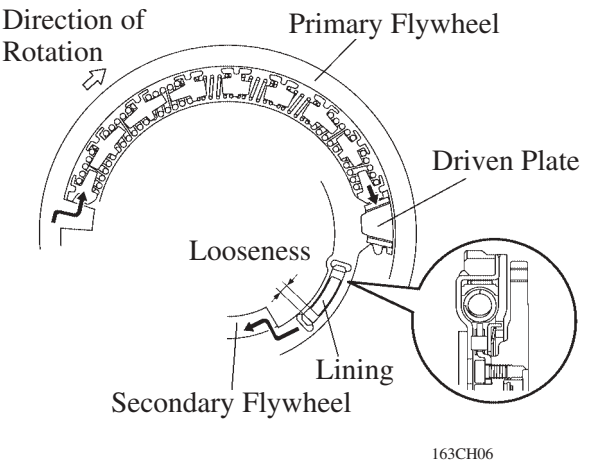
3. Operation

The engine's driving force is initially transmitted to the primary flywheel and the flywheel inner plate. The driving force that is transmitted to the primary flywheel is then transmitted from the coil springs via the driven plate to the secondary flywheel. Small amplitudes occur during idle, constant speed driving, and gradual acceleration and deceleration. In the small hysteresis portion, the small amplitude of the driving force that is transmitted to the primary flywheel is reduced and is transmitted to the secondary flywheel. At this time, in the large hysteresis portion, the lining that is placed inline with the driven plate cannot act due to looseness. Large amplitudes occur when the engine is started and stopped. At this time, in the large hysteresis portion, the driven plate comes in contact with the lining, and a friction force is generated between the primary and secondary flywheels in order to reduce the large amplitudes.





▶ Driving Force Transfer Route ◀