

Title (en)
DECELERATION CYLINDER CUT-OFF IN A HYBRID VEHICLE

Title (de)
BREMSZYLINDERABSCHALTUNG IN EINEM HYBRIDFAHRZEUG

Title (fr)
COUPURE DE CYLINDRES DE DÉCÉLÉRATION DANS UN VÉHICULE HYBRIDE

Publication
EP 3619410 A4 20201014 (EN)

Application
EP 18795112 A 20180412

Priority
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Abstract (en)
[origin: WO2018204049A1] Methods and arrangements for transitioning an engine between a deceleration cylinder cutoff (DCCO) state and an operational state are described. In one aspect, transitions from DCCO begin with reactivating cylinders to pump air to reduce the pressure in the intake manifold prior to firing any cylinders. In another aspect, transitions from DCCO, involve the use of an air pumping skip fire operational mode. After the manifold pressure has been reduced, the engine may transition to either a cylinder deactivation skip fire operational mode or other appropriate operational mode. In yet another aspect a method of transitioning into DCCO using a skip fire approach is described. In this aspect, the fraction of the working cycles that are fired is gradually reduced to a threshold firing fraction. All of the working chambers are then deactivated after reaching the threshold firing fraction.

IPC 8 full level
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Citation (search report)
• [X] US 2008078593 A1 20080403 - ORTMANN WALT [US], et al
• [A] US 2016121875 A1 20160505 - AIKAWA HIDEFUMI [JP]
• [A] WO 2016153837 A1 20160929 - TULA TECHNOLOGY INC [US]
• See references of WO 2018204049A1

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DE 202018006864 U1 20231206; DE 202018006865 U1 20231219; DE 202018006866 U1 20231219; DE 202018006867 U1 20231223;
DE 202018006868 U1 20231223; EP 3619410 A1 20200311; EP 3619410 A4 20201014; EP 3690218 A1 20200805; EP 3690218 B1 20240626;
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