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MSS54

after-spray


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1. TRIGGERING CONDITIONS FOR THE RE-SPRAYER

The determination of a post-injection occurs segment-synchronously.

The following conditions must be met in order for a follow-up injection to be triggered:

- Full load or partial load •
max. speed threshold must not be exceeded
($n_{40} < K_{DKBA_NMAX}$)
- min. change in the relative opening cross-section must be given ($aq_rel_delta > KL_DKBA_AQ_REL$)
- no partially fired operation ($IB_SKS_TIEINGRIFF$)

A relative filling change over a segment is calculated from the equivalent characteristic map **KF_RF_N_AQ_REL** over speed and relative opening cross section:

$$rf_delta = KF_RF_N_AQ_REL(n, aq_rel) - KF_RF_N_AQ_REL(n, aq_rel_old)$$

This relative filling change is another threshold that must be exceeded in order for a follow-up injection to be triggered

$$\Rightarrow rf_delta > KL_DKBA_TRIGGER(n)$$

2nd

RE-INJECTION CALCULATION

If all trigger conditions are met, **rf_delta** is converted into a **dkba_ti_roh** :

$$\Rightarrow dkba_ti_roh = rf_delta * rf_ti_const$$

$$rf_ti_const = K_RF_HUBVOLUMEN * K_RF_LUFTDICHTHE * K_HFM_TI_RATE * 60$$

2.1. POST-INJECTION CALCULATION WITH B_DYN_SOFT

Now a distinction is made as to whether the current state is a soft reinsertion.

The post-spray offset to be output is then calculated as follows:


$$dkba_ti = dkba_ti_roh * dkba_tmot * KF_DKBA_SOFT_RF_N(rf_roh, n)$$

dkba_tmot is calculated from **KL_DKBA_TMOT(tmot)** .

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2.2. POST-INJECTION CALCULATION FOR B_DYN_HARD

The post-spray offset to be output is bre a hard re-insertion like
calculated as follows:

$$dkba_ti = dkba_ti_roh * dkba_tmot * KF_DKBA_HARD_RF_N(rf_roh,n)$$

dkba_tmot is calculated from **KL_DKBA_TMOT(tmot)** .

An old value is only overwritten if the new post-injection value is greater. dkba_ti is deleted after the post-injection has been triggered in the output function.

3. VARIABLES AND CONSTANTS

rf_delta	-	relative filling change
dkba_tmot	-	TMOT factor
aq_rel_delta	-	AQ_REL threshold
ti_dkba1	ms	Intermediate sprayer - MCS representation
dkba_ti	ms/segment	intermediate spray to be dispensed
dkba_ti_roh	ms/segment	raw value of the intermediate sprayer
K_DKBA_NMAX	K	speed threshold for after injection
KL_DKBA_TRIGGER	KL=f(n)	load threshold for triggering
KL_DKBA_TMOT	KL=f(tmot)	factor as f(engine temperature)
KL_DKBA_AQ_REL	KL=f(aq_rel)	change in the relative opening cross section
KF_RF_N_AQ_REL	KF=f(n,aq_rel)	relative filling gradient
KF_DKBA_SOFT_RF_N	KF=f(rf,n)	map for soft intermediate injection
KF_DKBA_HARD_RF_N	KF=f(rf,n)	map for hard intermediate injections

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