46. We convert mass rate to SI units: $R = 540/60 = 9.00$ kg/s. In the absence of the asked-for additional force, the car would decelerate with a magnitude given by Eq. 9-42:

$$R \, v_{\text{rel}} = M \, |a|$$

so that if $a = 0$ is desired then the additional force must have a magnitude equal to $R \, v_{\text{rel}}$ (so as to cancel that effect).

$$F = R \, v_{\text{rel}} = (9.00)(3.20) = 28.8 \text{ N} .$$