MODEL 453
**MODEL 461, 463**
MODEL ALL

[i] In order to avoid an unscheduled workshop visit between services, it is necessary to determine the remaining distance of the present brake linings. If the remaining distance determined is less than the next service interval, premature brake show or brake pad replacement should be recommended to the customer. The remaining distance determined is to be understood as being a reference value as the future driving style and operating conditions of the vehicle are not taken into consideration when calculating the remaining distance. The actual remaining distance can therefore be shorter or longer. Per axle, the brake pad with the least lining thickness is to be used for determining likely remaining distance.
There are 2 different methods available to calculate the remaining distance:

● **Method 1:** Calculation without consideration of last brake pad replacement.
● **Method 2:** Calculation with consideration of last brake pad or brake show replacement.When calculating in accordance with method 2 the vehicle-specific service conditions, starting from the last brake shoe or brake pad replacement, are taken into consideration.
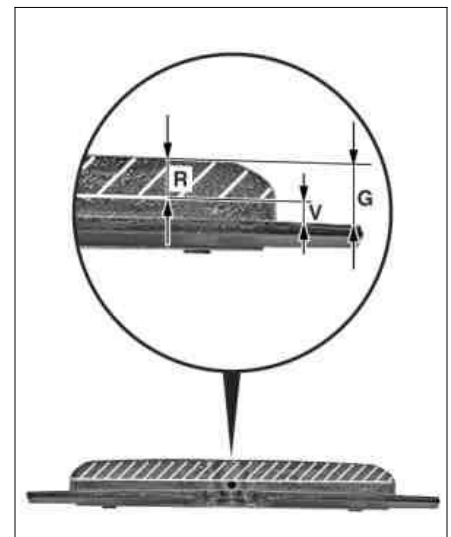
Shown with disk brake
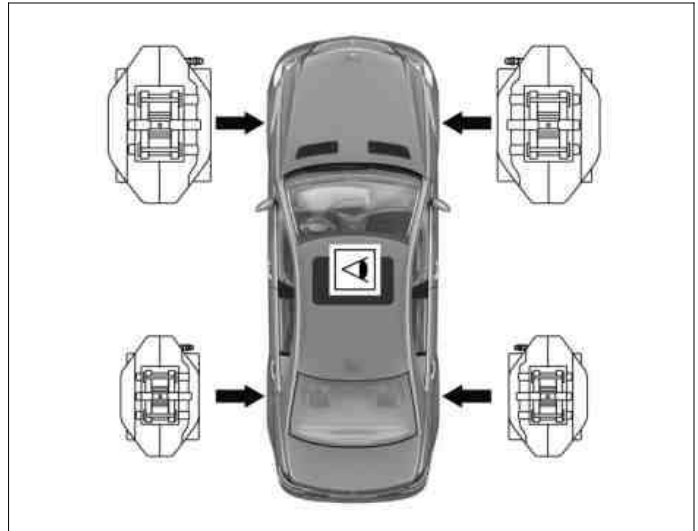
P42.10-2650-11

Shown on brake pad

G Brake lining thickness (without backplate)
R Remaining lining thickness (shaded area)
V Loss in thickness (wear indicator response; without wear indicator, equals wear limit)

P42.10-2649-02

Calculation as per Method 1 (for disk brakes only)
Comment: The values given in parenthesis are for an example calculation only, the actual values have to be determined on the vehicle or taken from the vehicle-specific test value tables!
Given:
● G = brake lining thickness determined at the vehicle (8 mm)
● V = value to be taken from vehicle-specific test value tables, row "Wear indicator response", or from row "Wear limit" if no wear indicator is present (3 mm).
● VF = deterioration factor:
  ● Front axle 4.000 km / 1_mm brake lining
  ● Rear axle 6.000 km / 1_mm brake lining
Wanted: RS = remaining distance
Formula: $RS = (G - V) * VF$
Example, front axle: $RS = (8\_mm - 3\_mm) * 4{,}000 \text{ km} = 20{,}000 \text{ km}$
Example, rear axle: $RS = (8\_mm - 3\_mm) * 6{,}000 \text{ km} = 30{,}000 \text{ km}$

Calculation according to method 2
Comment: The values given in parenthesis are for an example calculation only, the actual values have to be determined on the vehicle or taken from the vehicle-specific test value tables!
Previous work: Determine kilometer reading at the last brake shoe or brake pad replacement (Digital Service Booklet (DSB) - if available for vehicle and in market, vehicle history, etc.).
Given:
● BN = New dimension for brake lining thickness (value to be taken from vehicle-specific test value tables, row "Brake lining, new") (12.5 mm)
● G = Brake lining thickness determined at the vehicle (8 mm)
● KA = Current kilometer reading (95,000 km)
● KB = Kilometer reading at last brake pad or brake shoe replacement (70,000 km)
● V = Value to be taken from vehicle-specific test value tables, row "Wear indicator response", or from row "Wear limit" if no wear indicator is present (3 mm).
Wanted: RS = remaining distance
Formula: $RS = ((KA - KB) / (BN - G)) * (G - V)$
Example: $RS = ((95{,}000 \text{ km} - 70{,}000 \text{ km}) / (12.5 \text{ mm} - 8 \text{ mm})) * (8 \text{ mm} - 3 \text{ mm}) = 27{,}777 \text{ km}$