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Overview of the *ProTecS*® Brake Pad Range.
For Knorr-Bremse Air Disc Brakes.

The ProTecS® brake pad holder spring system, as developed by Knorr-Bremse, can be installed as a direct replacement for the former kits as described in the following table of applications.

Typical applications for these brake pads:

	Vehicle Type, Manufacturer and Models		Disc Brake Type	Wheel size	OE Part No. Comparison	Knorr-Bremse recommended Brake Pad Kit with ProTecS®		Former Kit
					*Vehicle Manufact. Part No.	Knorr-Bremse IAM Part No.	*Pad Material	Knorr-Bremse IAM Part No.
TRUCK	**DAF**		SB / SN7	22,5″	1797053 1878030	**K047865K50**	Textar T7400	K031890K50
	Mercedes-Benz	Actros MPII, MPIII, Axor, Travego	SB / SN7	22,5″	A0064201020 A0044206020	**K046771K50**	Jurid 539-39	II180220062
			SB / SN7	22,5″	A0044202220 A0064201120	**K046772K50**	Ferodo 4550/X3	K001104
		Actros MPIII SOP from Oct '10, MPIV from Oct '11 - front axle	SM7 [1)]	22,5″	A0064201420	**K035471K50**	MB 7111-0	-
		Actros MPIII SOP from Oct '10, MPIV from Oct '11 - rear axle	SL7 [1)]	22,5″	A0064201520	**K035472K50**	MB 7211-0	-
	IVECO		SB / SN7	22,5″	2996378	**K046772K50**	Ferodo 4550/X3	K001104
	MAN	TGA, TGS, TGX	SB / SN7	22,5″	81.50820-6030	**K046771K50**	Jurid 539-39	II180220062
BUS	**Mercedes-Benz**	Citaro, Cito	SB / SN7	22,5″	A0044214310	**K047865K50**	Textar T7400	K031890K50
	EvoBus	City Bus 80 km/h	SB / SN7	22,5″	A0044214310	**K047865K50**	Textar T7400	K031890K50
		Coach	SB / SN7	22,5″	A0064201020	**K046771K50**	Jurid 539-39	II180220062
	MAN	City Bus 80 km/h	SB / SN7	22,5″	81.50820-6061	**K059965K50**	Ferodo 4567	K004198
	NEOPLAN	Coach	SB / SN7	22,5″	ZF - Axles	**K046771K50**	Jurid 539-39	II180220062
		City Bus 80 km/h	SB / SN7	22,5″	ZF - Axles	**K047865K50**	Textar T7400	K031890K50
	Solaris		SB / SN7	22,5″	0870215084	**K047865K50**	Textar T7400	K031890K50
AXLES	**gigant**		SB / SN7	22,5″	-	**K046772K50**	Ferodo 4550/X3	K001104
	Lecinena		SB / SN7	22,5″	-	**K046771K50**	Jurid 539-39	II180220062
	Mercedes-Benz TrailerAxleSystems		SB / SN7	22,5″	A0044206020	**K046771K50**	Jurid 539-39	II180220062
			SK7	22,5″	A0044207020	**K066608K50**	Jurid 539-39	K004169K50
	SAF		SB / SN6	19,5″	03.057.0078.00	**K078206K50**	Jurid 539-39	II376580062
			SB / SN7	22,5″	03.057.0077.00	**K046771K50**	Jurid 539-39	II180220062
			SK7	22,5″	03.057.0085.00	**K066608K50**	Jurid 539-39	K004169K50
	SCHMITZ		SB / SN6	19,5″	1182958	**K078206K50**	Jurid 539-39	II376580062
			SB / SN7	22,5″	1182462	**K046771K50**	Jurid 539-39	II180220062
			SK7	22,5″	1161563	**K066608K50**	Jurid 539-39	K004169K50
	SMB		SB / SN7	22,5″	M910045-02	**K046772K50**	Ferodo 4550/X3	K001104

Please also refer to the service manuals for Knorr-Bremse air disc brakes and specifications of the vehicle manufacturers.

***Notice:** The cross references to the "vehicle manufacturer part numbers" above should only be used as a reference for the identification of the relevant IAM part numbers. The composition of the friction material used in the brake pads complies with the ECO class I and II requirements and fulfils the standards of the EU End-of-Life Vehicle Directive.

[1)] Please note that the SL and SM pads are not compatible with each other nor with other brake pad models.

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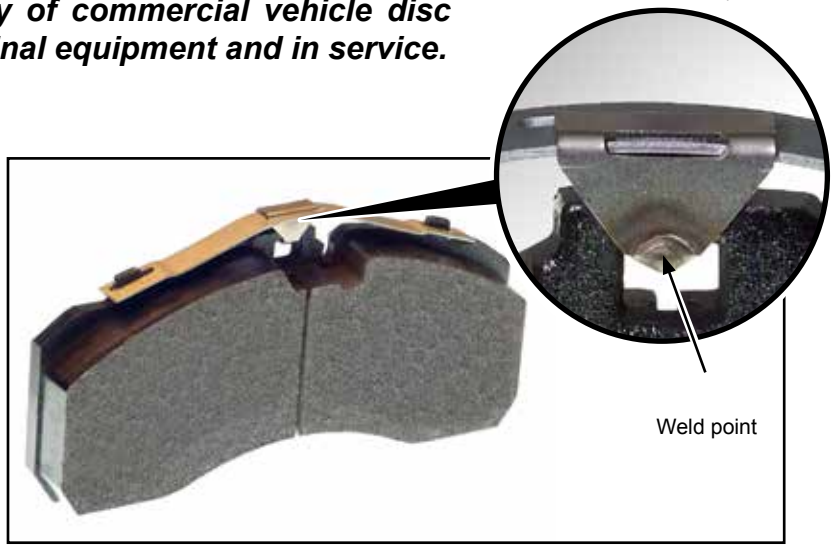
Increase of the functional safety of commercial vehicle disc brakes through ProTecS® in original equipment and in service.



The ProTecS® pad holder spring system has been developed by Knorr-Bremse to provide continuous improvement and has been introduced on the latest generation disc brakes in the spring of 2011. ProTecS® is distinguishable by the fact that the back plate and the holder spring are connected via a bracket wrapped around the two with the ends of the bracket welded together. This new design is compatible with older disc brakes of the type SB7/SN7 so these can profit from this technical enhancement in service. The well proven holder spring that has been used until now on all models of Knorr-Bremse disc brakes will gradually be replaced by the ProTecS® system.

ProTecS® – The Advantages at a Glance

The direct connection between the back plate and the holder spring assures accurate use of the spring's elasticity hence assuring the optimal alignment of the brake pads. The construction of the spring increases the life expectancy of the brake pads, especially on rough roads. In addition the welded bracket acts as a slider resulting in protection of the holder spring and the pad retainer from excessive wear and tear. Also the pad slides back more easily from the disc contact hence reducing the risk of any brake pad wear when the brake is released.
An additional improvement connected to the introduction of the ProTecS® system is the cast back plate on which the friction material is mounted. Because of the reduced weight of the plate it reduces the inertia of the brake pad resulting in a reduction in noise development. Also there is a reduction in the deformation of the brake pad in contact with the brake carrier.

Improved Safety During Service.

The fusion of holder spring and back plate pad also increases the safety in service. The use of the ProTecS® system prevents the risks associated with the re-use of old springs.

Conclusion:
ProTecS® plays a big role in increasing the operational reliability and safety of commercial vehicle disc brakes – both as original equipment and as replacement parts.

Revision Details		
Rev. 004	January 2013	Pg.1 - Table updated and extended , pg.2 - new graphics
Rev. 005	May 2013	Pg.1 - Table updated - SK7 added to Daimler Powersystems and SAF, Schmitz SK7 number changed.
Rev. 006	January 2014	Pg.1 - Table updated and reformatted - EvoBus and NEOPLAN vehicle variants added, Iveco SB6 deleted

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