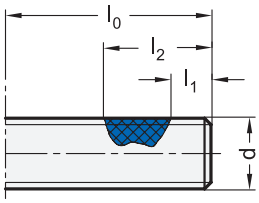
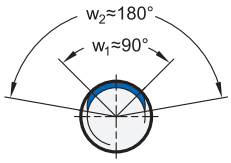
10.10 Thread Lockings (PFB, PRB, MVK, GPC)

PFB | PRB Thread locking with jamming action Polyamide patch coating / Polyamide complete coating

PFB

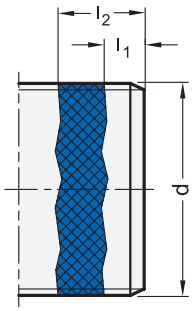


l_0 ≈ Threaded length
l_1 ≈ 2 to 3 x Thread pitch
l_2 ≈ 1.5 x d



w_1: Coating core zone
w_2: Coating including edge zone

PRB



Polyamide patch coating PFB

d	l_1 ≈	l_2 ≈	Values acc. to DIN 267 Part 28		Values for spring plungers GN 611 / GN 615.3
			$M_{max.}$ in Nm 1st Screw in	**$M_{min.}$** in Nm 1st Screw out	**M ≈** in Nm 1st Screw in / Screw out
M 3	1 ... 1.5	4.5	0.43	0.1	0.3
M 4	1.5 ... 2	6	0.9	0.12	0.5
M 5	1.5 ... 2.5	7.5	1.6	0.18	0.6
M 6	2 ... 3	9	3	0.35	1.2
M 8	2.5 ... 4	12	6	0.85	2
M 10	3 ... 4.5	15	10.5	1.5	3.5
M 12	3.5 ... 5	18	15.5	2.3	5
M 16	4 ... 6	24	32	4	7
M 20	5 ... 7.5	30	60	5.4	10
M 24	9 ... 9	36	85	6.9	12

Polyamide complete coating PRB

d	l_1 ≈	l_2 ≈	**$M_{max.}$** in Nm 1st Screw in	**$M_{min.}$** in Nm 1st Screw out
M 12 x 1.5	2.5	5.5	15.5	2.3
M 16 x 1.5	2.5	5.5	32	4
M 20 x 1.5	2.5	7.5	54	7.5
M 24 x 1.5	2.5	7.5	80	11.5
M 27 x 1.5	2.5	7.5	94	13.5
M 30 x 1.5	2.5	7.5	108	16
M 33 x 1.5	2.5	7.5	122	18

The torque values are based on a test of a thread without preload with a nut thread 6H at room temperature. For PFB and thread lenghts $l_0 < l_2$, l_2 is reduced in such a way that one to two thread turns are not coated at the end of the thread.

Description

The polyamide patch coating PFB is a process whereby an elastic plastic material (Polyamide) is applied to a part of thread which creates a jamming action during the tightening of a nut. The coating can be produced either as a patch or complete coating. The axial play between the bolts and nut thread is taken up by the polyamide thus ensuring maximum surface pressure between the opposite uncoated thread flanks. This process counteracts the loosening and unscrewing on their own. There is no cure time required, the thread contact is instantaneous resilient. The typical spray edge zone of the polyamide deposit prevents shear blasting.

Features

– High thread locking action, shakeproof. Excellent convenient for adjusting bolts.
– The locking system is a captive component of the standard part, which eliminates the fitting of additional belay.
– Temperature resistant from – 60 °C up to 120 °C
– Approval for food areas
– High chemical stability
– Use is also possible, for instance, in oil-contaminated threaded holes
– Multi use is possible whereby the jamming effect after the 5th removal is around 50 % of its original strength.