



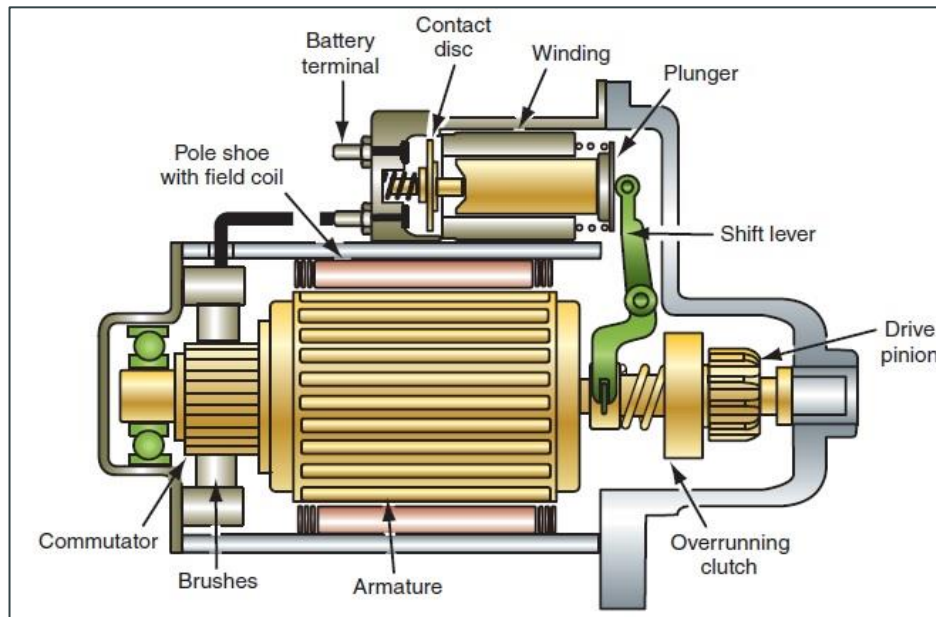
MOLYKOTE® D-6600 **Anti-Friction Coating:** **A new and innovative** **coating for service life dry** **lubrication of engine** **starter plungers**

DuPont Molykote®
April 2020



Application engine starter plungers

- Service life of engine starter plungers can be simulated on a SRV test machine with methodology defined and agreed with a major starter Tier 1 supplier

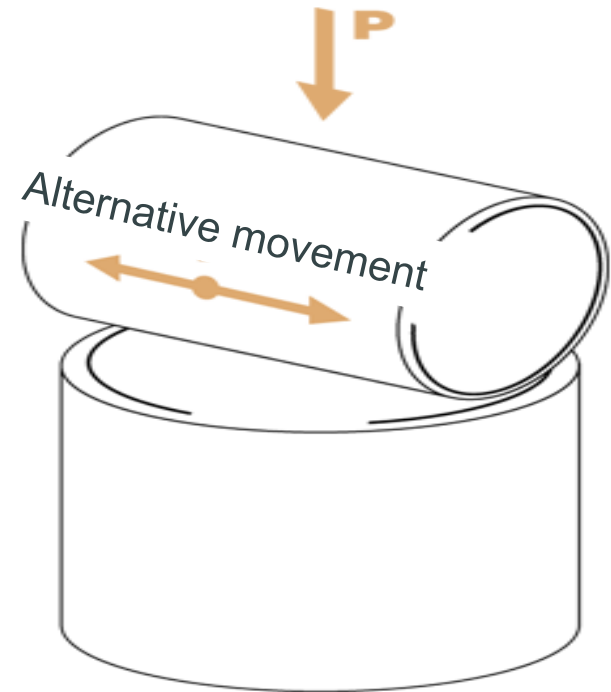


Low-pressure steel/steel material pairing test: Conditions

- Durability test
- Simulation of service life of passenger cars engine starters (linear contact, 100 N/mm²)

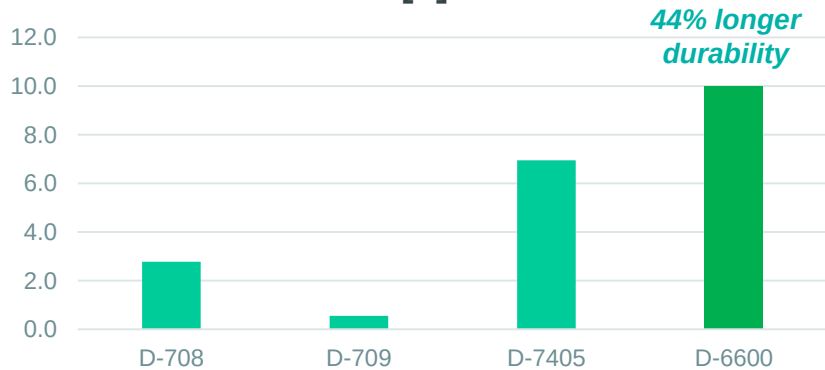
SRV 5 test conditions

Specimen arrangement	Cylinder vs. disc
Movement type	Along cylinder axis
Coated specimen	Disc
Cylinder material (name = Zylinder-Rolle)	100Cr6
Disc material (art # 291.150.00, Rz=0.45/0.65)	100Cr6
Cylinder radius	7.5 mm
Cylinder length	22 mm
A) load corresponding to 100 N/mm ²	45 N
SRV stroke	4 mm
SRV cycle stroke	8 mm
Frequency	40 Hz
Speed	0.32 m/s
Test length (corresponding to total sliding path)	10.4 h

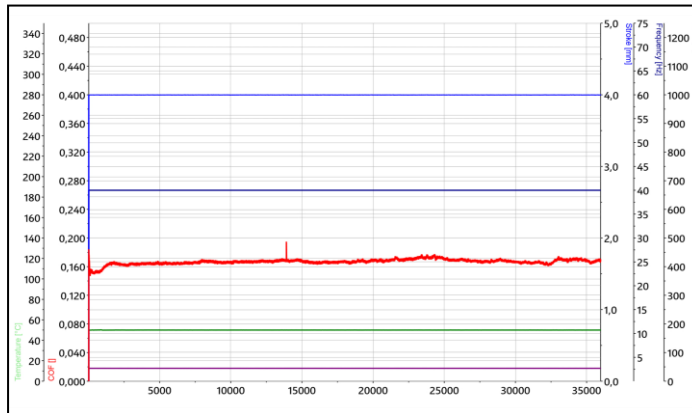
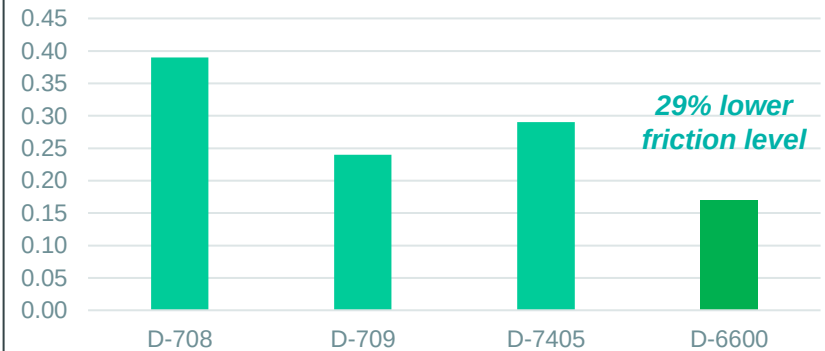


Low-pressure steel/steel material pairing test: Results

SRV durability test - time to seizure [h]



SRV durability test - dynamic coefficient of friction

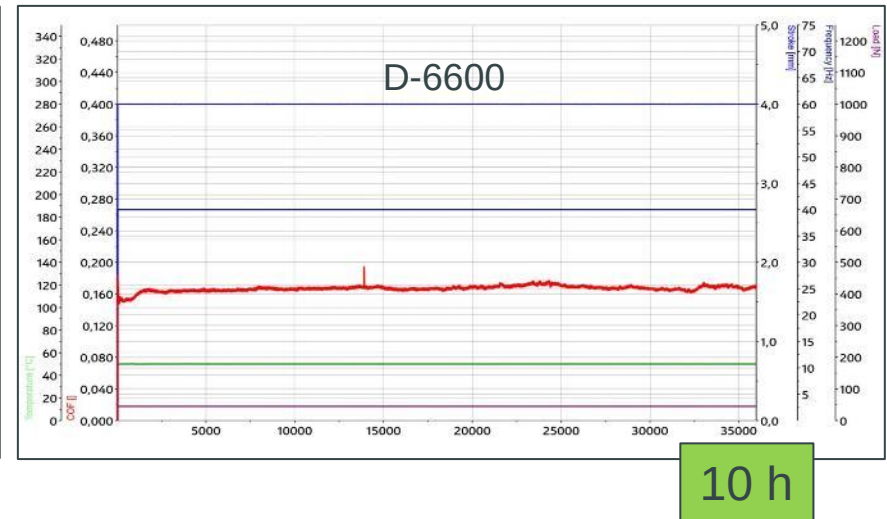
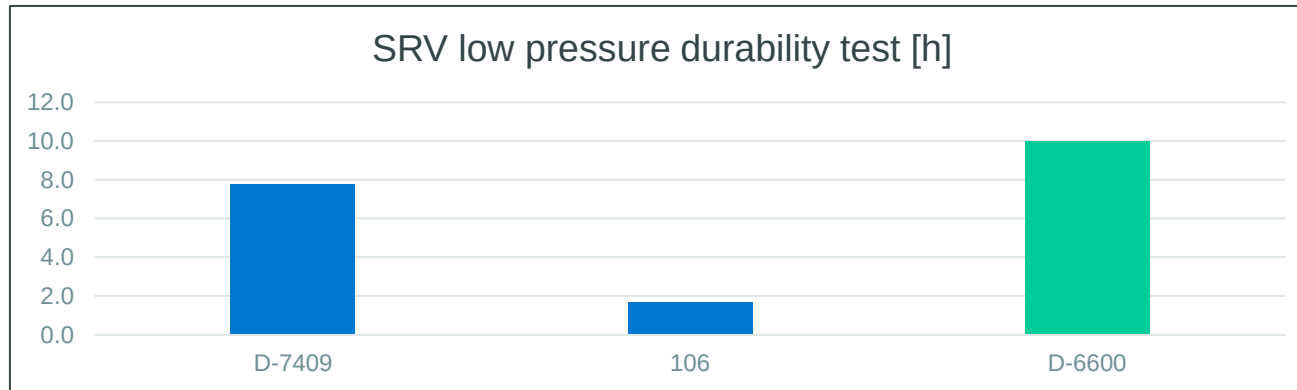


MOLYKOTE® D-6600 AFC
Wear scar after test



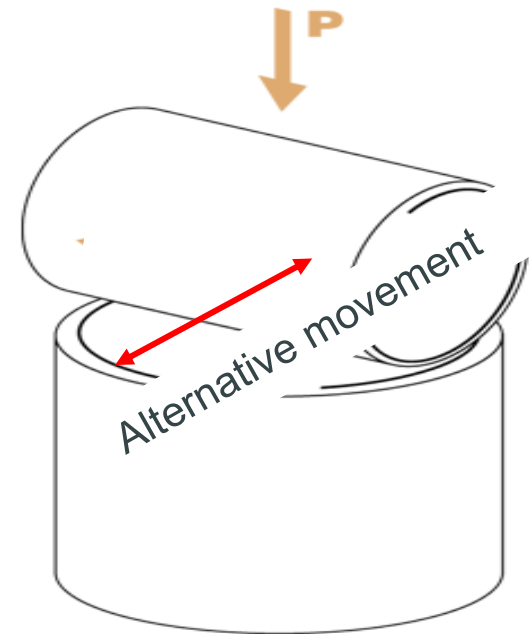
Low-pressure: comparison PTFE vs MoS₂ based AFCs

- SRV, linear contact, 100 N/mm², blasting



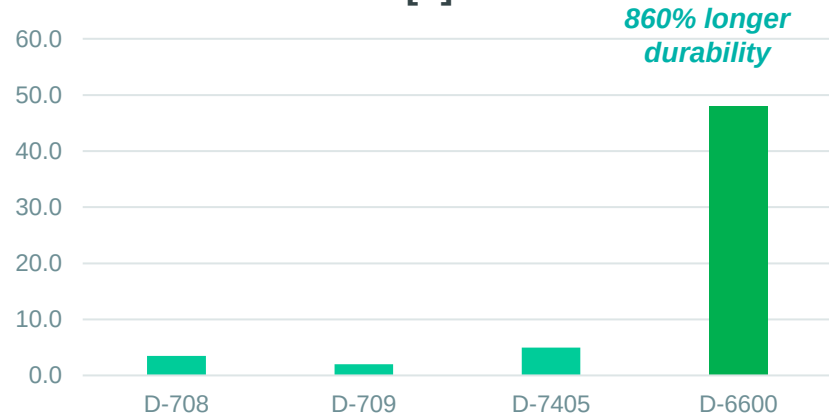
Medium-pressure steel/steel material pairing test: Conditions

- Durability test
- Simulation of an automotive application (linear contact, 250 N/mm²)
- Cylinder (diameter: 11 mm; length: 15 mm)
- Disc (100Cr6)
- Parameters:
 - Stroke: 3 mm
 - Frequency: 25 Hz
 - Load: 130 N
 - Contact pressure (theoretical): 250 MPa
 - Room temperature conditions
 - Dry lubrication (only AFC)
 - AFC applied on disc
 - SRV III DC test machine
 - Pretreatment: Mn-phosphating

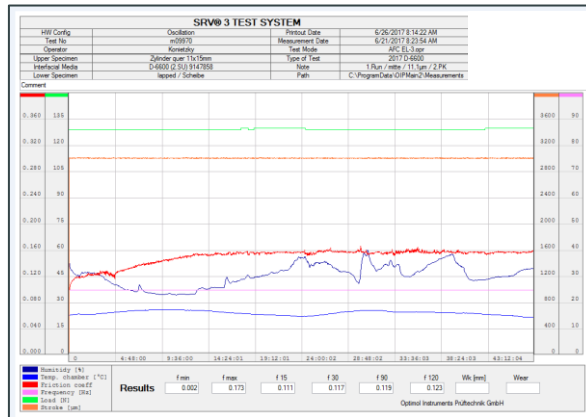
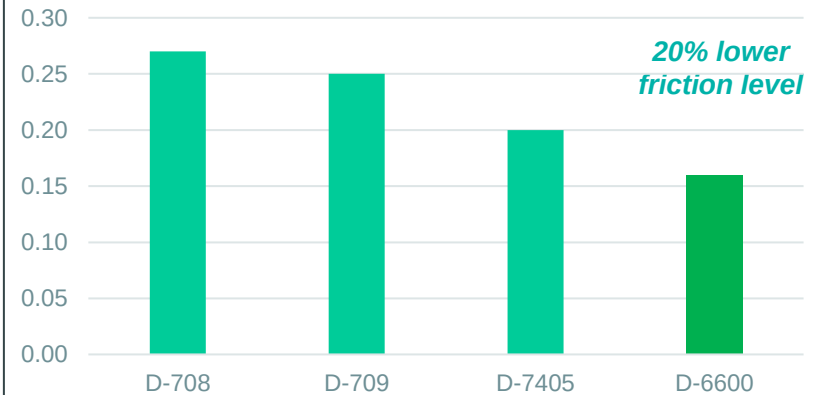


Medium-pressure steel/steel material pairing test: Results

SRV durability test - time to seizure
[h]



SRV durability test - dynamic
coefficient of friction



Thank You



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