
PVD Coatings
for automotive
KOLZER SRL

Overview

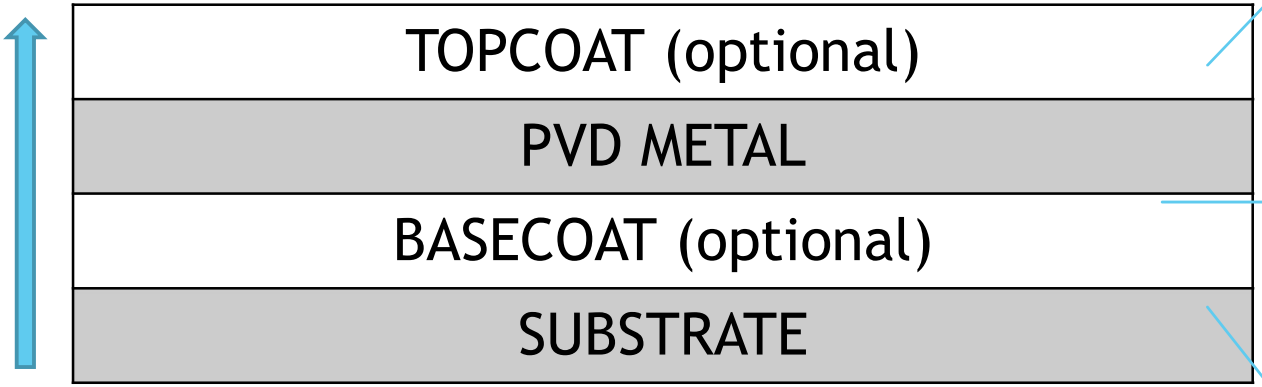
KOLZER PVD:

- The excellence of metallic finishes
- The process
- Advantages of technology
- Automotive applications
- Case history
- Passed tests

KOLZER PVD: the excellence of metallic finishes

- environmental: clean process at room temperature,without water, totally free of chemical emissions
- aesthetic: brilliant metallic finish, vast array of colors and polish variations
- functional: durable, high hardness, abrasion and corrosion resistant
- productivity: extremely economical and short machinecycles, high repeatability, diminished imperfections

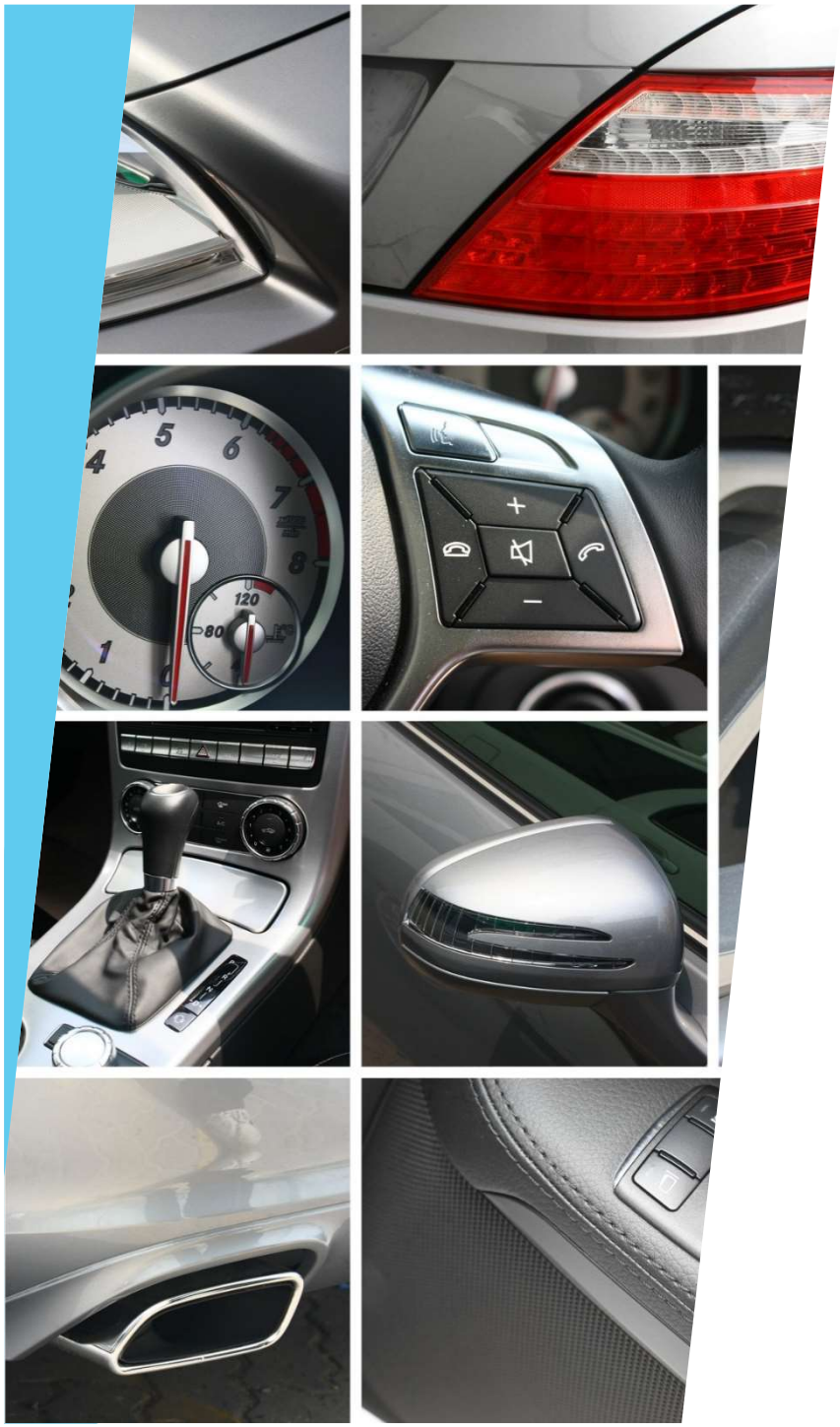
KOLZER PVD: the Process



Provides protection of the metal layer and performance properties

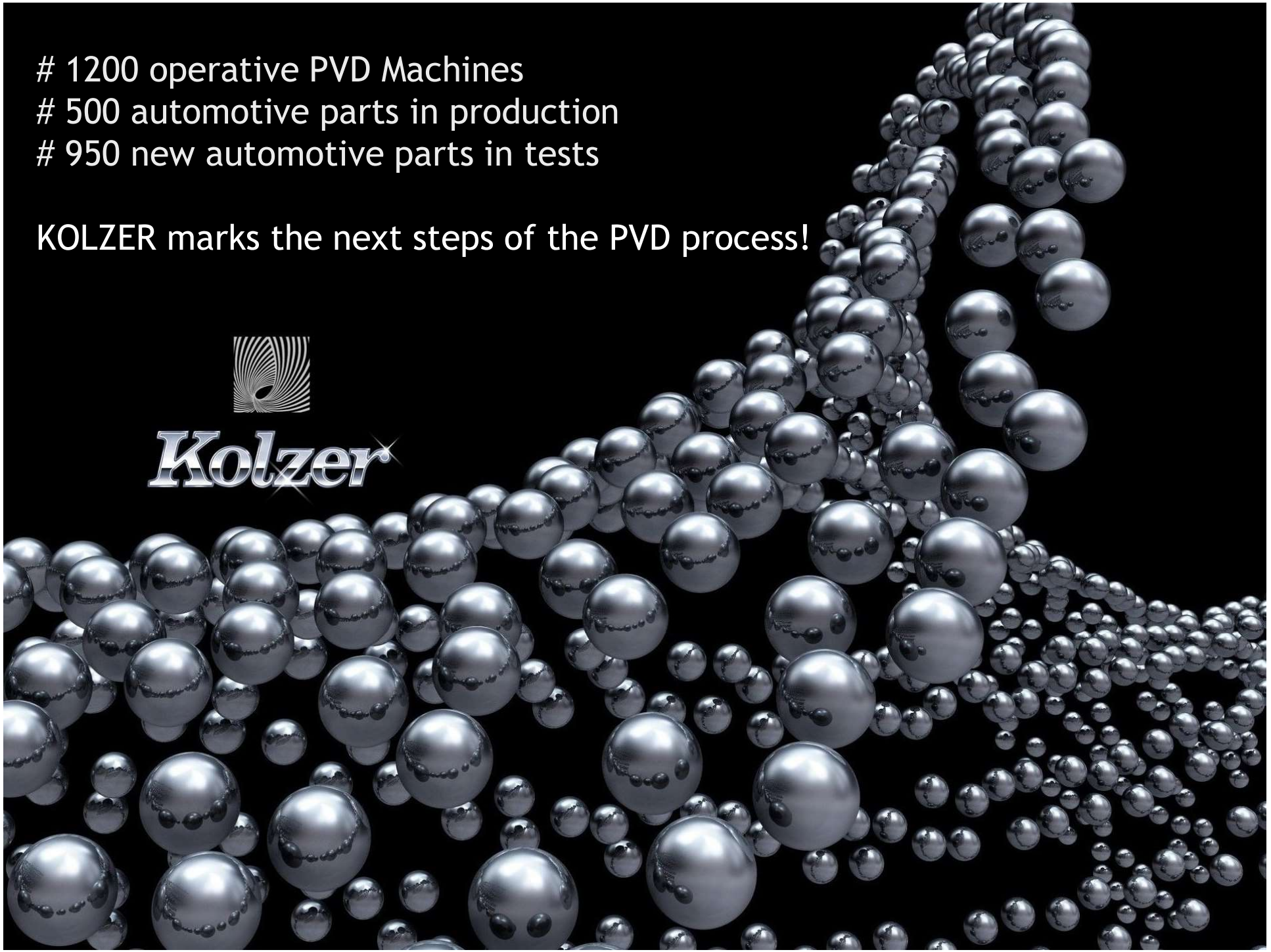
Any metals or alloys: Stainless Steel, Chrome, Titanium, Copper, Brass, Silver…

Seals substrate, provides smooth surface and adhesion properties



KOLZER PVD: automotive Applications

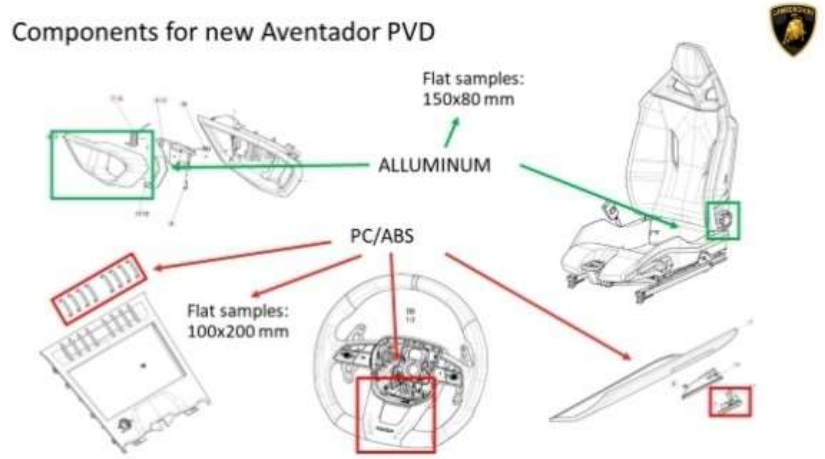
- Interior and Exterior
- On Plastic Materials (ABS, PC, ABS/PC, PP, Nylon, etc.)
- On Metals (alluminium, iron, zamak, etc.)
- Car Body for Autonomous driving (for radar transparency)

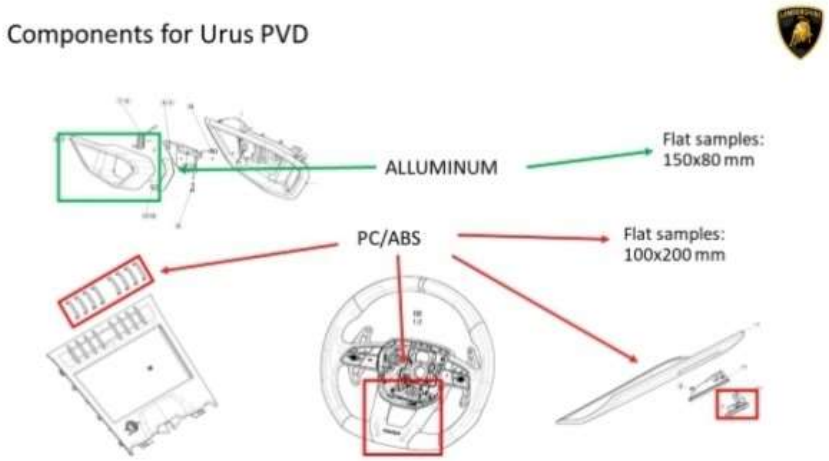

1200 operative PVD Machines
500 automotive parts in production
950 new automotive parts in tests
KOLZER marks the next steps of the PVD process!
Kolzer

KOLZER PVD:
the running Projects

… and many others!

Example of components





Example of components

Example of components

KOLZER PVD Case History


MOTO GUZZI

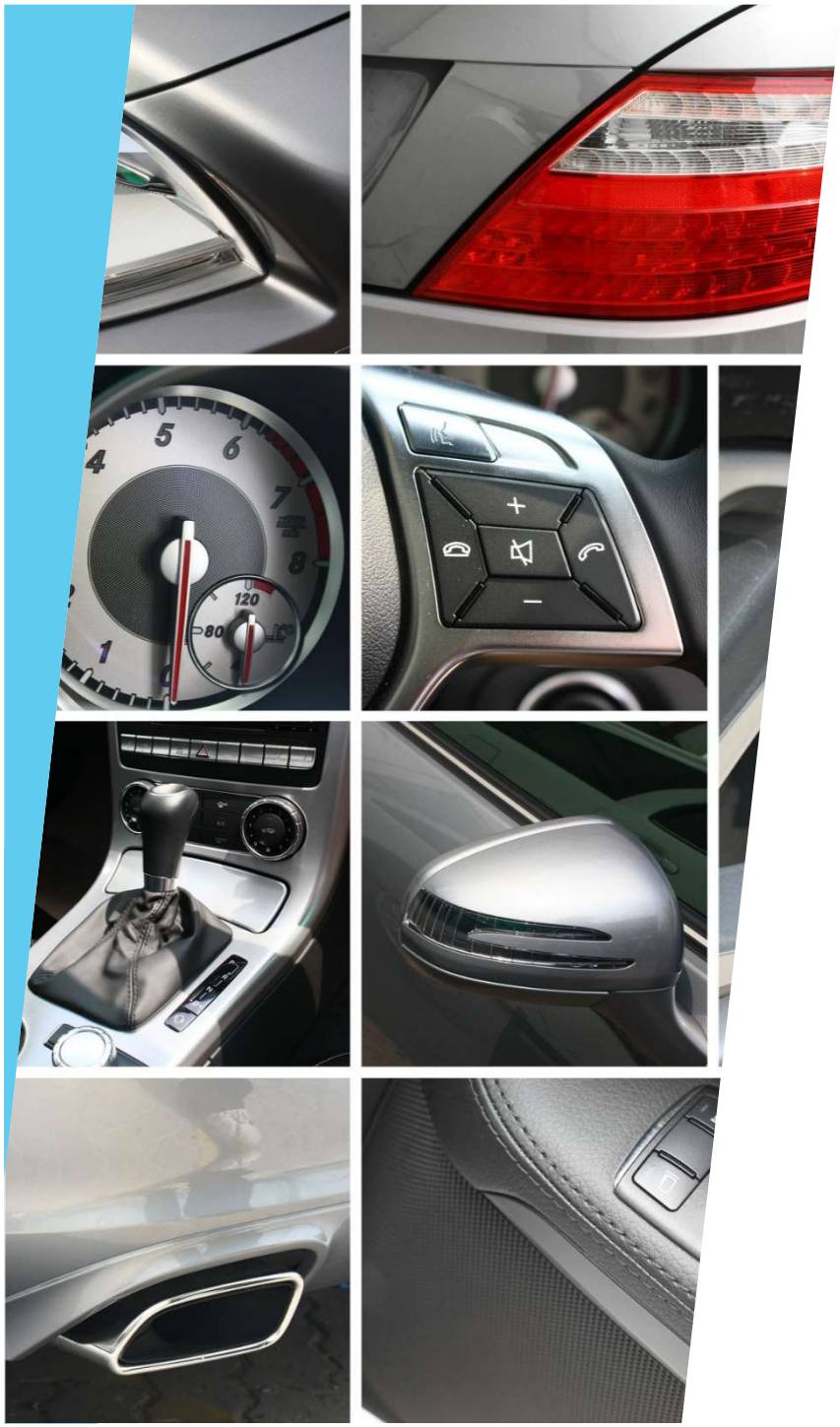

AUTO

KOLZER PVD: Advantages of technology

- Environmentally Friendly
- Uniform deposition
- Low temperature
- Repeatable
- Adjustable thickness (full or semi-transparent)
- Multilayers
- No Hexavalent Chrome
- Elimination of Chemical Disposal
- Reduced Steps In Process
- Reduced Cycle Time
- Smaller Footprint
- Minimizes need to outsource

Some tests passed by KOLZER PVD

Test according to the standard VW TL 226	n.	Requirement
Appearence	1	VW 50190
Cross-cut ISO 2409	2.1	G<= 1
Cross-cut St. Andrew	2.2	no detachment
Scratch Erichsen type 318	3	tear-off not permissible
Dimension stability 240 h at 90°	4.1	No visible change + table 2.1 / 2.2
Enviromental PV 1200 8 cycles	4.2	No visible change + table 2.1 / 2.2
ISO 6270-2 (Humidity)	5.1	No visible change + table 2.1 / 2.2
Lightfastness PV 1303 6 cycles	5.2	Gray scale >=4
Hydrolisis aging 72 h at 90°	5.3	No visible change + table 2.1 / 2.2
Sunlight simulation DIN 75220	5.4	No visible change + table 2.1 / 2.2
Corrosion properties	5.5	DIN EN ISO9227
100 strokes, dry	6.1.1	Gray scale >=4
100 strokes, wet	6.1.2	Gray scale >=4
2000 strokes, dry	6.1.3	Gray scale >=4
10 strokes aqueous with 0,5 volume percent tenside	6.1.4	Gray scale >=4
10 strokes with glass cleaner	6.1.5	Gray scale >=4
10 strokes with cleaner's naphtha	6.1.6	Gray scale >=4
10 strokes with methylated spirit	6.1.7	Gray scale >=4
10 strokes with synthetic sweat A	6.1.8	Gray scale >=4
10 strokes with synthetic sweat B	6.1.9	Gray scale >=4
Droplet test 0,5 percent tenside	6.2.1	No visible change
Droplet test cleaning solution	6.2.2	No visible change
Droplet test cleaner's naphta	6.2.3	No visible change
Droplet test methylated spirit	6.2.4	No visible change
Droplet synthetic sweat A	6.2.5	No visible change
Droplet synthetic sweat B	6.2.6	No visible change
PV 3964	6.3	No visible change
Scrub resistance high-gloss	7	No visible change



Critical to Success Factors

- Moisture Resistance
- Temperature Shock Resistance
- Chemical Resistance
- Corrosion Resistance
- Impact Resistance
- Scratch and Abrasion Resistance
- Weathering Resistance

Conclusions

KOLZER PVD is:

- safer and more environmentally friendly than chrome plating.
- more process friendly, requiring less steps than chrome plating.
- able to meet the OEMs toughest requirements.
- suitable for designers to have more flexibility and more choices when designing products.

Our PVD Machine: Vertical range MK®

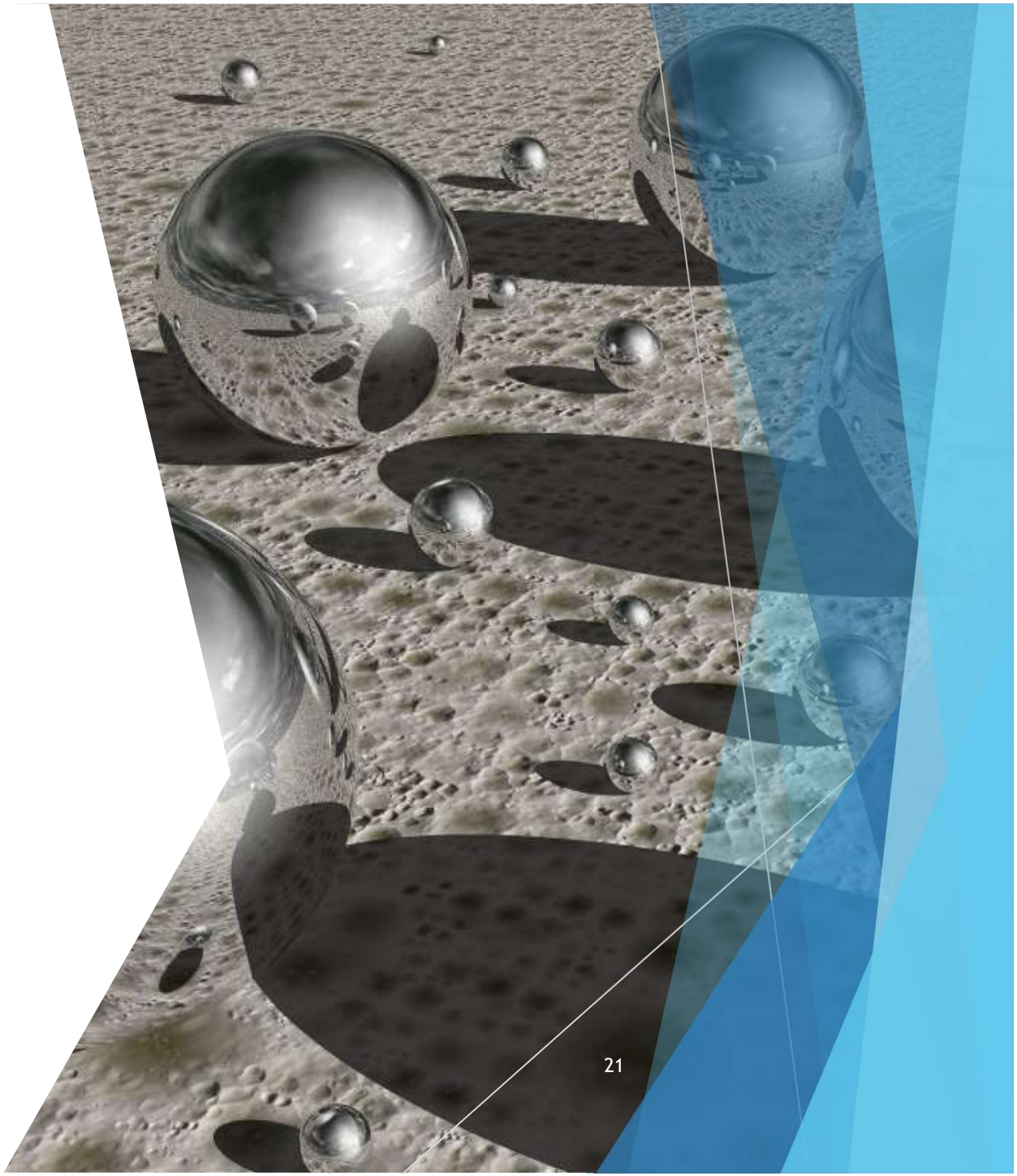
- MK63” diameter 1600 mm

2 door vertical configuration for a quicker working cycle

Our PVD Machines: Horizontal range DGK®

- DGK36” diameter 1000 mm
- DGK48” diameter 1200 mm
- DGK63” diameter 1600 mm

THANK YOU



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