

# AHEAD IN THE RACE!

## MATERIAL INNOVATION DRIVEN BY PERFORMANCE

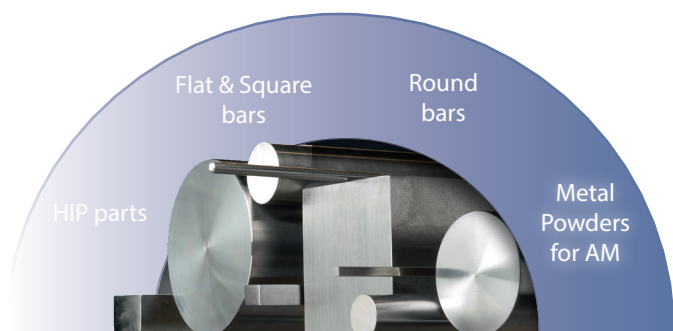
Aubert & Duval offers the widest range of high performance materials to meet the most extreme and exacting requirements for every demanding motorsport, including Formula 1, WRC, INDYCar and MotoGP.

Thanks to its long experience in aerospace applications, Aubert & Duval can supply innovative, reliable solutions for highly demanding parts in critical powertrain and engine applications.



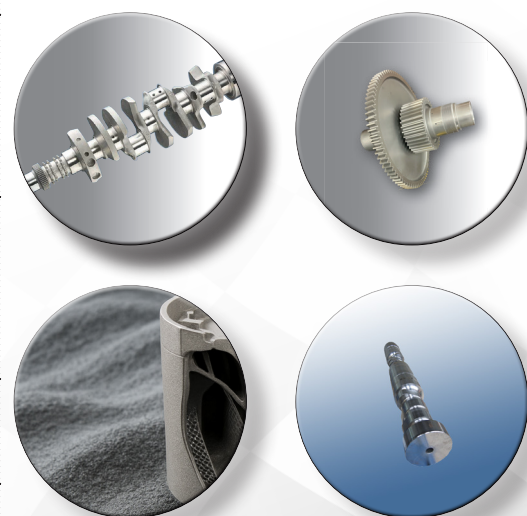
### Customer benefits

- + High performance alloys: Strength, corrosion and excellent fatigue resistance
- + New generations of nitriding steels with reduced cycle times to lower manufacturing costs while enhancing performance
- + Customized alloy grades
- + Stock availability for fast delivery
- + A global supplier
- + Dedicated teams for Technical support & R&D










In collaboration with the main racing teams, Aubert & Duval constantly develops steels & alloys with advanced mechanical properties to meet tomorrow's challenges:

PARTS	CHALLENGES	A&D BEST-IN-CLASS MATERIALS
CRANKSHAFTS	Fatigue	AD65N™ and GKP® deep nitrided
	Stiffness	NC310YW carburized
	Wear	ML340
DRIVE SHAFTS	High yield strength	NC310YW carburized
TRANSMISSION SHAFTS	Fatigue, toughness	ML340
TORSION BARS	Corrosion (if requested)	MLX®19
HOT PARTS	Yield strength at high temperature High-temperature fatigue resistance Creep resistance	AD730® ABD®-1000AM® MPN
FASTENERS BOLTS	High Strength, Fatigue, Corrosion	MLX®17, MLX®19



# MOTORSPORT

## A dedicated and complete offering

		Designations				Possible melting route		Main applications						
AD GRADES	AFNOR	WL	AISI - BS - UNS - JIS - OTHERS	AMS	AIR MELT	SPECIAL MELT** Y, YW		CAMSHAFTS	CRANKSHAFTS	GEARS	DRIVE SHAFTS	CONRODS	FASTENERS	OTHERS
ENGINEERING STEELS														
Nitriding steels														
 AD65N™ <b>NEW!</b>	30CrMoV13-15					◆	◆	■	■	■				
 GKH™	33CrMoV12-9	~ 1.7765	K24340	6481	◆	◆		■	■	■				
 GKP®	32CrMoV5	1.8545	K23280	6496 / 6497 / 6498	◆	◆		■	■	■				
Carburizing steels														
819AW	35NiCrMo16					◆				■	■	■		
 FADH	14NiCrMo13-4	1.6657	S157		◆	◆	■			■		■		
 FDG	20NiCrMo13	1.6660*	K41910	6492 / 6493	◆	◆	■			■		■		
FND®	15NiMoSiCr10		K51570	6495		◆	■			■				
 NC310YW	40NiSiCrMoV10		K54015	6499		◆				■	■	■		
Through hardening steels														
819B	36NiCrMo16	1.6773*			◆					■			■	
FDMA	30NiCrMo16				◆					■			■	
NC40SW	40NiSiCrMo7		K44220 - 300M - S155	6417 / 6419		◆					■	■		
 ML340	X23NiCoCr-MoAl13-6-3					◆		■	■	■	■			
MARVAL18	X2NiCoMo18-8-5	1.6359	K92890 - Maraging 250	6212		◆								Tappets
MY19	X2NiCoMo18-9-5	1.6354	K93120 - Maraging 300	6514		◆								Axles - Torsion bars
MY24	X2NiCoMo18-12-5		K93540 - Maraging 350	6515		◆								Axles - Torsion bars
RA50YW	80MoCrV42-16	1.3551	T11350 - M50	6491		◆	■							Bearings
STAINLESS STEELS														
Martensitic														
X15TN®	X40CrMoVN16-2	1.4123*	S42025	5925		◆								Wear parts
Austenitic														
XN26TW	X6NiCrTi-MoVB25-15-2	1.4944	S66286 - A286 - HR51 - HR650	5731 / 5732		◆						■		Connecting components
Maraging steels														
MARVALX12H	X1CrNiMoAlTi12-10-2	1.4596*	S10120	5935		◆						■		Connecting components
MLX®17	X1CrNiMoAlTi12-11-2	1.4612	S11100	5937		◆						■		Connecting components
MLX®19	X1CrNiMoAlTi12-12-2	~1.4596	S11902	5955		◆						■		Connecting components
X15U5W®	X5CrNiCu15-5	1.4545	S15500 - 15-5PH	5659		◆						■		Connecting components
MARVAL13X	X3CrNiMoAl13-8-2	1.4534	S13800 - 13-8Mo	5629		◆						■		Connecting components


### SUPERALLOYS

Contact us to learn more about our offer of forged or rolled bars in Nickel or Cobalt-based superalloys.

### NICKEL-BASED SUPERALLOY POWDERS FOR ADDITIVE MANUFACTURING or HIP PARTS

ABD®-900AM®	<ul style="list-style-type: none"> <li>For high temperatures up to 900°C/1652°F</li> <li>Good strength and creep properties</li> <li>Good oxidation and corrosion resistance</li> </ul>
ABD®-1000AM®	<ul style="list-style-type: none"> <li>For high temperatures up to 1000°C/1832°F</li> <li>Good strength and creep properties</li> <li>Good oxidation and corrosion resistance</li> </ul>
AD730®	<ul style="list-style-type: none"> <li>For temperatures up to 750°C/1382°F</li> <li>High strength, creep and fatigue properties</li> </ul>
Ni625	<ul style="list-style-type: none"> <li>Excellent mechanical properties at high temperatures up to 980°C/1796°F</li> <li>Excellent corrosion resistance</li> <li>Good low temperature toughness</li> </ul>
Ni718	<ul style="list-style-type: none"> <li>Excellent mechanical properties up to temperatures around 650°C/1202°F</li> <li>Good resistance to high temperature oxidation</li> </ul>
MPN <b>NEW!</b>	<ul style="list-style-type: none"> <li>Powder metallurgy + HIP (Hot Isostatic Pressing) material</li> <li>Good resistance to high temperature oxidation</li> <li>High yield strength and creep resistance &gt; 800 °C/1472 °F and isotropic properties</li> <li>Excellent oxidation resistance at temperatures exceeding 1000°C/1832°F</li> <li>Possible to have semi-finish shape close to the final part</li> </ul>

\*Corresponds to an AFNOR numerical designation  
 \*\*SPECIAL MELT: Air melt or VIM + ESR or VAR  
 VIM: Vacuum Induction Melting  
 ESR: Electro-Slag Remelting  
 VAR: Vacuum Arc Remelting

 Available in stock **NEW!**

