Third-party Approval Bodies	
Customer Approvals	
Active Processes	
Outsourced Processes	
Not Applicable	N/A

August 2019
PRODUCTION PROCESSES

		BLUE ENGINEERING	SRS	SPI	MASSUCCO INDUSTRIE	COMUTENSILI	LMB	MEPIT	SMF	TTN	LICAT	ROSFER	AERONDI	OUTSOURCED
QUALITY SYSTEM	NADCAP													N/A
	AS/EN 9100													N/A
	ISO 9001													N/A
	AGUSTA WESTLAND													N/A
	AVIO AERO													N/A
	GE AVIATION													N/A
	LEONARDO													N/A
	PRATT & WHITNEY													N/A
	ROLLS-ROYCE plc													N/A
	GE ALSTOM													N/A
	HITACHI RAIL													N/A
	UTAS ITALY													N/A
	ANSALDO ENERGIA													N/A
MANUFACTURING ENGINEERING	MANUFACTURING PROCESS SHEET													
	INSPECTION PROCESS SHEET													
	CNC PROGRAMMING													
	CMM PROGRAMMING													
	ASSEMBLY PROCESS SHEET													
	TOOL PATH SIMULATION													
	PART PROGRAM PRODUCTION VALIDATION													
	PART PROGRAM CMM VALIDATION													
	CAE SIMULATION													
COLD FORMING	SHEARING													
	MANUFACTURING FIXTURE TOOLS AND DEVICE													
	BENDING													
	DIE DESIGN													
	DIE MANUFACTURING (HWD)													
SPECIAL PROCESSES	HOT FORGING													
	HOT ROLLING													
	NITAL ETCHING													
	SANDBLASTING													
	WETBLASTING													
	GAS NITRIDING													

	ION NITRIDING													
	PHOSPHATING													
	SPOT WELDING													
	OVEN BRAZING													
	TOOLING DESIGN													
	TOOLING MANUFACTURING (HWD)													
EDM	DIE-SINK													
	WIRE													
	TOOLING DESIGN													
	TOOLING MANUFACTURING (HWD)													
WELDING	TOOLING DESIGN													
	TIG													
	MIG													
	MICRO SPOT WELDING													
	INERTIA WELDING													
	TOOLING MANUFACTURING (HWD)													
MACHINING	ROUGH MACHINING													
	FINISH MACHINING													
	MILLING													
	4-AXIS BORING													
	5-AXIS BORING													
	BROACHES PRODUCTION AND PERIODIC CONTROL													
	BROACHES DESIGN													
	DRILLING													
	DEEP DRILLING													
	STATOR-ROTOR BLADES DRILLING													
	STRAIGHT-TOOTH CUTTING													
	CUTTING TOOTH AFTER COPPER PLATING													
	VERTICAL MILLING													
	AUTOMATIC DEBURRING													
	MANUAL DEBURRING													
	TUMBLING DEBURRING													
	AUTOMATIC CHAMFERING													
	4-AXIS WORKING CENTER OPERATIONS													
	5-AXIS WORKING CENTER OPERATIONS													
	MACHINE AIRFOIL													
	TOOLING DESIGN													
	SMALL ROTORS BALANCING													
	TOOLING MANUFACTURING (HWD)													
	MARKING													
GRINDING	JIG GRINDING													
	HIGH-SPEED GRINDING													
	OUTER SPUR GEARS													
	INNER SPUR GEARS/SPLINES													
	INNER/OUTER DIAMETER GRINDING													
	FLAT GRINDING													
	HONING													
	PLANETARY GRINDING													
	TOOLING DESIGN													
	STOCK REMOVAL													

August 2019
PRODUCTION PROCESSES

		BLUE ENGINEERING	SRS	SPI	MASSUCCO INDUSTRIE	COMUTENSILI	LMB	MEPIT	SMF	TTN	LICAT	ROSFER	AERONDI	OUTSOURCED
LASER	BLADE AND VANE ECM					■								
	TOOLING DESIGN					■						■		
	TOOLING MANUFACTURING (HWD)											■		
HEAT TREATMENTS	CARBURIZING				■					■				
	LOW-PRESSURE CARBURIZING									■				
	SOLUBILIZATION								■	■				
	AGEING/PRECIPITATION HARDENING								■	■				
	NORMALIZING				■				■	■				
	QUENCHING AND TEMPERING								■	■				
	ANNEALING				■				■	■				
	STRESS RELIEVING								■	■				
	CRYOGENIC TREATMENT				■					■				
	VACUUM BRAZING								■					
	BRAZING TOOLING DESIGN							■	■					
	BRAZING TOOLING MANUFACTURING (HWD)							■	■					
	QUENCHING AND STRESS RELIEVE				■				■	■				
	INDUCTION HARDENING									■				
	PRESS QUENCHING TOOLING DESIGN			■				■				■		
	PRESS QUENCHING MANUFACTURING FIXTURE (HWD)							■				■		
PAINTING	SPRAY PAINT - ELECTROSTATIC PAINT													■
	TOOLING DESIGN	■		■				■						
	TOOLING MANUFACTURING (HWD)							■						
INSPECTION	AUTOMATIC CLEANING													■
	NITAL ETCHING				■						■			
	DIMENSIONAL /GEOMETRY CMM							■	■		■	■		
	DIMENSIONAL /GEOMETRY CHECKS											■		
	TOOLING AND SPECIAL GAUGES DESIGN			■				■	■			■		
	TOOLING AND SPECIAL GAUGES PRODUCTION							■	■			■		
	SURFACE ROUGHNESS							■	■		■			
	TECHNICAL VALIDATION AND Cp/Cpk INDICATORS							■	■					
	FIRST ARTICLE INSPECTION (AS 9102 FORM)							■	■		■			
	FPI: FLUORESCENT PENETRANT INSPECTION								■		■		■	■

August 2019
PRODUCTION PROCESSES

		BLUE ENGINEERING	SRS	SPI	MASSUCCO INDUSTRIE	COMUTENSILI	LMB	MEPIT	SMF	TTN	LICAT	ROSFER	AERONDI	OUTSOURCED
INSPECTION	EDDY CURRENT													
	ULTRASONIC CONTROL													
	RADIOGRAPHIC													
	TAPPING TEST													
	VISUAL INSPECTION													
	RESIDUAL MAGNETISM													
	DIMENSIONAL BENCH INSPECTION													
	CONTACT PATTERN INSPECTION													
FUNCTIONAL TESTS	AIR FLOW													
	PRESSURE/LEAKS													
	OIL PRESSURE													
	WASH AND FLOW CORE PASSAGES + LIGHT BOROSCOPE													
	MILLIPORE													
	FLOW RATE													
	HRC HARDNESS													
	HV HARDNESS													
	HB HARDNESS													
	TEST BENCH DESIGN													
	TEST BENCH MANUFACTURING (HWD)													
	TEST EQUIPMENT DESIGN													
	TEST EQUIPMENT MANUFACTURING (HWD)													
COMPOSITES	AUTOMATIC SURFACES CUT													
	CARBON FIBRE LAMINATION IN CLEAN ROOM													
	AUTOCLAVE POLYMERIZATION													
	THERMOPOLYMERIZATION													
	BONDING													