

HELICOPTERS

H160

Technical Description
2022



AIRBUS

GENERAL

- a crashworthy airframe comprising:
 - Front fuselage (cockpit and nose avionics bay)
 - Intermediate fuselage including:
 - ◆ Cabin
 - ◆ Luggage compartment with 2 lockable doors (LH and RH side)
 - Rear fuselage: tail boom with Canted Fenestron® and horizontal stabilizer
 - Cowlings and fairings
- Built-in footsteps and handles to access to upper deck for maintenance
- A tricycle type and electrically controlled retractable landing gear
- External color:
 - The fuselage is painted following as per standard color chart with black invariants, unless modified by option.
- Jacking, hoisting, and mooring points
- 6 mooring rings delivered in a dedicated bag.

COCKPIT / CABIN

- 2 removable pilot and co-pilot crashworthy high back-rest black covered seats, adjustable in height, forward & aft each fitted with a 5 points harness
- 1 windshield including sunshade in the upper area
- 2 lateral windows
- 2 nose windows
- 2 lockable hinged pilot and co-pilot doors providing each one:
 - Jettisonable window for emergency egress
 - 1 bad weather window
 - 1 lower window
- 2 external cockpit footsteps
- 1 First aid kit
- 2 Tablet holders in cockpit
- Dual flight controls
- Windshield washer
- 2 windshield wipers
- 2 headset hooks on overhead panel
- 2 handles in cockpit (one on each side on upper frame of the canopy)
- Storage box on center console, on instrument panel and removable storage box on the floor (on pilot side only)
- 2 enlarged cabin sliding doors^(*)
- 2 external cabin fixed footsteps^(*)
- Cabin floor adaptation for transport configuration^(*)
- Standard comfort cabin upholstery panel with sound-proofing^(*)
- 4 jettisonable simple glazed^(*) windows located in cabin
- 2 portable fire-extinguisher one in cockpit and one in cabin
- Handles in cabin (two on each side of each cabin door)
- Dual zone air conditioning system with control in cockpit
- Standard key
- Capability to access to the cargo compartment through the cabin

INSTRUMENTS & CONTROLS

INSTRUMENT PANEL

- 4 reconfigurable smart 6 x 8 inch displays providing the following functions:
 - Flight Navigation Display (FND) pages, including:
 - ◆ Primary Flight Display (PFD)
 - ◆ Navigation Display (ND)
 - ◆ Parameter tuning
 - ◆ Automatic Flight Control System (AFCS)
 - ◆ Fuel data
 - ◆ First Limit Indicator (FLI)
 - ◆ Rotor speed and free turbine rotation speed
 - ◆ Crew selectable area (clock, etc...)
 - ◆ Alarms and advisories
 - Vehicle Monitoring Display (VMD) pages, including:
 - ◆ Main page: engine and vehicle status
 - ◆ Fuel page
 - ◆ Electrical system page
 - ◆ Hydraulic / landing gear page
 - ◆ Transmission page
 - ◆ Enhanced usage monitoring page
 - External video sources (when optional equipment is fitted)
- 1 common control panel:
 - Landing gear maneuver and position indicators
 - Windshield wiper and washer controls
 - Parking brake and nose wheel control panel
 - Capabilities for optional controls
- Stand-by instruments
 - stand-by compass
 - Integrated Electronic Stand-by Instrument (IESI)
- 1 storage box
- Digital Audio Communication System (DACS) basic pack for pilot and copilot, two headsets holders in cockpit.
- Passenger address NAT 251
- VHF/AM Collins VHF 4000 n°1
- VHF/AM Collins VHF 4000 n°2
- VOR/ILS/MKR Collins NAV4500 n°1
- VOR/ILS/MKR Collins NAV4500 n°2
- DME – Collins DME 4000
- Multifunction transponder ADSB-Out /TCAS II coupled with AFCS
- Weather/Search Radar
- DMAP – Digital MAP (HELIONIX SUITE)
- HTAWS – Helicopter Terrain Awareness Warning System (HELIONIX SUITE)
- SVS – Synthetic Vision System (HELIONIX SUITE)

INTERSEAT CONSOLE

- 1 Automatic Pilot Control Panel (APCP)
- 1 Environment Control System (ECS): separate cockpit / cabin ventilation & heating and air conditioning, cockpit demisting
- 1 lighting Control Panel
- 1 ELT Remote Control Panel
- 1 Radar Control Panel
- 2 Advanced Flight Management and Control Display Units
- 2 DACS Audio Control Panels

OVERHEAD PANEL

- Electrical function and emergency cut-off controls
- Fire detection / extinguishing controls
- Engine controls
- Engine auxiliary controls (training and chip burning)
- Hydraulics control
- Pre-flight test and lamp test control
- Rotor brake control grip
- Capabilities for optional controls

MISC.

- 3 Attitude and Heading Reference Systems (AHRS)
- 2 Three Axis Magnetic Sensor Units (MSU) connected to AHRS
- 3 heated pitot heads
- 2 Air Data Units (ADU)
- 2 Temperature Probe Unit (TPU)
- Wireless data device with SD card

STANDARD AVIONICS PACKAGE BASED ON HELIONIX SUITE

- Cockpit video camera with embedded recorder
- Tail fin video camera
- CVFDR – Solid State Cockpit and Flight Data Recorder
- Flight Data Continuous Recorder (FDCR) for HFDM (Helicopter Flight Data Monitoring) (HELIONIX SUITE)
- 2 duplex Aircraft Management Computer (AMC), (HELIONIX SUITE)
- Usage Monitoring System (HELIONIX SUITE)
- Light HMS – Health Monitoring System
- Emergency Locator Transmitter (ELT) with embedded GPS
- Radio altimeter AHV1600
- Dual Flight Management System installation with LPV approach function, search patterns and auto hover mode (2 x FMS CMA9000 + 2 GPS CMA 5024).

^(*) Depending on the contents of the Favorite configuration, these installations can be replaced by dedicated installation through an "instead of" procedure

POWER PLANT

- 2 Safran Helicopter Engines ARRANO turboshaft engines with Full Authority Digital Engine Control (FADEC) dual channel system which provides the following main functions:
 - Automatic starting sequence
 - Automatic OEI detection
 - OEI training mode
 - Engine automatic limitations
- 1 fire detection system per engine, including in each compartment, 2 redundant pneumatic fire detectors.
- 1 engine / cargo fire extinguishing system (2 bottles connected to both engine, cargo fire extinguisher using 1 engine bottle)
- Engine air-intake with external protection grid
- Single side engine flushing ports (without cowlings removal)
- 1 crashworthy fuel system including:
 - 4 tanks with a total usable capacity of 1,400 liters (370 US gal), split into 2 feeder tanks (one per engine) and 2 auxiliary tanks.
 - 2 canister immersed brushless pumps (one per feeder tank)
 - 4 transfer jet pumps (two per feeder tank)
 - 2 starting ejector (one per engine)
 - 4 fuel probes (one in each tank)
 - 2 fuel low level sensors (one in each feeder tank)
 - 2 fuel temperature sensors (one in each feeder tank)
 - 2 electrical shut-off valves (one per engine)
 - single port for gravity and pressure refuelling

TRANSMISSION SYSTEM

- 1 main gearbox with low oil level switch, oil pressure and temperature sensors, access ports for endoscope and oil sampling, 4 chip detectors, and oil cooling system.
- 2 free wheels integrated to the main gearbox
- 1 dual lubrication system with 1 main pump and 1 emergency pump.
- 2 engine / main gearbox coupling devices (shaft and torque tube)
- 1 rotor brake system
- 1 tail rotor drive shaft
- 1 splash lubricated tail gearbox with 1 temperature sensor, and 1 chip detector.

ROTORS AND FLIGHT CONTROLS

- 1 main rotor with:
 - 5 Blue Edge concept blades
 - 1 SPHERIFLEX® rotor head
 - 1 rotor mast fitted with rotor Top and Nr sensors
 - 5 inter-blade elastomeric dampers
 - Upper coning stop
- 1 Fenestron® type tail rotor with 10 composite material blades built into the vertical fin.
- 1 Flight Control System (FCS) fitted with 3 dual-chamber / dual body main servo-units (on cyclic and collective pitch channels) and 1 dual-chamber / dual body rear servo-unit (on tail rotor pitch control channel).
- 1 "fail passive" Dual Duplex Digital Automatic Flight Control System (4-axis type) including upper and safety modes (in particular Auto Hover and recovery modes).

ELECTRICAL INSTALLATION

- 1 DC power generation system:
 - 2 starters / generators (300 A, 28 V DC)
 - 2 electrical master boxes
 - 2 nickel-cadmium batteries 15 Ah including thermal switch and temperature probe
 - 1 DC emergency electrical generator
 - 1 external receptacle with 28 VDC power connector and 1 maintenance external ICS jack
 - 1 breaker panels in the nose
 - 2 breaker panels in cockpit
 - 1 emergency breaker panel in cockpit
- Power distribution system:
 - 2 primary bus bars
 - 2 essential bus bars
- 4 high load contactors (150 A)
- 2 USB (5V/2A) power supply plug on the instrument panel
- Cabin power supplies at rear console (1*USB II - 1*28Vdc/20A)
- Lighting system:
 - 1 red/white tail fin anti-collision /strobe light
 - 3 position lights (red, green, white)
 - 2 exterior emergency lights
 - Instrument panel, interseat console and overhead panel, adjustable lightings
 - 2 flashlights
 - 1 dome light and 2 reading lights in the cockpit
 - Cabin lights (including emergency lighting)
 - 1 luggage compartment light
 - 1 retractable and swivelling front Central landing light - dual mode LED type (*IR lamp is energized when NVIS installation is fitted*)
- Radio on ground based on batteries (autonomous electrical power supply on ground)

HYDRAULIC GENERATION

- 2 independent hydraulic systems, feeding the main rotor and tail rotor actuators, including level probes and sight gauges in oil tanks for pre-flight check
- 1 electro hydraulic-pump (on LH side) for ground assistance (without engines running)
- Self-sealing hydraulic ports on each side for ground hydraulic power bench connection.

AIRBORNE KIT (*)

- Pitot probes blanking cap
- Emergency pitot blanking cap
- Static pressure port blank
- ECS air intake covers kit
- Engine air-intake blank
- Exhaust ejector cover
- Chimney air inlet blanking cap
- OAT probe protection
- Rotor brake control locking pin
- LG wheel-locking safety pin
- Wiper ball pin
- Fuel tank water drain tool
- MRB tie down device
- Emergency exit rearm tool
- Storage bag
- Telescopic pole

(*) Weight not included in any Favorite empty weight

AIRBUS

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