

Engine Modification List



Engine Type: ARRIEL 2B1

Serie-Nr.: 46202 (HB-ZMB)

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ASB,MSB,SB,SL	MOD-Nr.	Due-date or Interval	Modification / Inspection description	Assessment	P = performed / A = assessed	
					by date	by name
MSB A292 73 2144	TU 144 C	-	Engine Electronic Control Unit (EECU) with Software V5.02.	NOAP - TU 144C already performed	A	08.08.2012 Ch. Meier, CH.145.0227
MSB 292 73 2193	TU 193	-	Engine Fuel & Control – Hydro-Mechanical Additional Check and Delta Press Valve	NOAP by Model (2E und 2N engines only)	A	23.10.2015 K. Wyrsh CH.145.0227
MSB 292 73 2812 R4	-	-	Hydromechanical Metering Unit (HMU) - Visual inspection of adjusted HMU drive-link splines.	Superseded by Version G	P	02.12.2011 TUAG, CH.145.0187
MSB 292 73 2812 G	-	After every HMU or M01 removal	Hydromechanical Metering Unit (HMU) - Visual inspection of adjusted HMU drive-link splines. (perform each time the HMU and M01 have logged 500hrs together)	APPL - initial performed	P	13.07.2013 R. Tonezzer, CH.145.0227
MSB 292 72 2817 B	-	-	Return to service for civil operation of an ARRIEL 2	NOAP - already civil	A	09.12.2016 A. Wallimann, CH.145.0213
MSB 292 73 2818 D	-	every 1500 hours or 1000 C2 cycles (First limit reached)	HMU - Constant Delta Pressure Valve (HMU replacement) (PRE TU 157 HMU only)	APPL	A	
MSB A292 73 2830	-	-	Check of the Low Pressure Fuel Pump Impeller Drive	NOAP - Post TU 147	A	20.08.2009 U. Laternser, CH.145.0227
MSB A292 72 2833 D	-	-	Restricted use of Free Turbine Blades	NOAP by S/N	A	19.03.2010 A. Stephani, CH.145.0227
MSB A292 73 2836 A	-	-	Hydro-mechanical Metering Unit (HMU). Inspection and reconditioning of the LP impeller / HP shaft link.	APPL	P	02.12.2011 TUAG, CH.145.0187
MSB A292 73 2841 A	-	-	Hydro-Mechanical Metering Unit (HMU) – Inspections / Replacement	NOAP for Arriel 2B1	A	07.07.2011 A. Stephani, CH.145.0227
MSB A292 72 2842 B	-	-	M04 - Restricted use limit of Free Turbine (FT) blades. (ARRIEL 2B/2B1... with FT blades P/N 229281A010)	NOAP by S/N	A	28.04.2016 A. Wallimann, CH.145.0213
MSB A292 73 2847 D	-	-	Hydro-Mechanical Unit (HMU) – Insp. / Repl. of HP and LP pump rotating components (Arriel 2D PRE TU177)	NOAP by engine model (for Arriel 2D-engine only)	A	27.06.2016 A. Wallimann, CH.145.0213
MSB A292 73 2851 B	-	-	Hydro-Mechanical Unit (HMU) – Insp. / Repl. of HP and LP pump rotating components (Arriel 2D POST TU177)	NOAP by engine model (for Arriel 2D-engine only)	A	27.10.2015 K. Wyrsh CH.145.0227
MSB A292 72 2849 C	-	during each qualifying shop visit	M01 - 41/23 tooth bevel gear assembly of the accessory gearbox. Apply TI referencing Vibration Check. (Arriel 2Bx)	APPL - initial performed	P	08.04.2014 TUAG, CH.145.0187
MSB 292 73 2852 B	-	-	Replacement of FADEC D Electronic Engine Control Unit (pre TU 185 FADEC D EECUs with S/N < 1736)	NOAP by engine model (for Arriel 2D-engine only)	A	27.06.2015 A. Wallimann, CH.145.0213
MSB 292 72 2860	-	-	Torque conformation box resistance (Arriel 2Cx & 2Sx)	NOAP by engine model	A	23.07.2015 A. Wallimann, CH.145.0213
MSB 292 72 2861 C	-	-	M01- front cover. Detect wear on the 41- or 42-tooth gear front bearing housing. (M01 with pre TU194 mach. case)	NOAP by "Casted" casing cover	A	14.03.2016 A. Wallimann, CH.145.0213
MSB 292 72 2861 D	-	-			A	06.10.2016 A. Wallimann, CH.145.0213
MSB 292 73 3158 A	TU 158	-	Adjusted pump and metering valve assembly. Modification of the metering valve needle return spring. (Arriel 2B)	NOAP by engine model (for Arriel 2B-engine only)	A	18.04.2016 A. Wallimann, CH.145.0213

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MSB A292 72 3166 B MSB A292 72 3166 C	TU 166	-	Module M03 - HP Blade Dampers.	APPL	P A	02.12.2011 09.12.2016	TUAG, CH.145.0187 A. Wallimann, CH.145.0213
SB 292 72 2075 RB	TU 75A	-	Module M01- Deeper Insertion of pins in phonic wheel	Replaced by 292 72 2122	A	02.12.2012	A. Wallimann, CH.145.0227
SB 292 72 2090 B	TU 90	-	Module M01 (accessory gearbox). Thickening of the 41- tooth bevel gear web. (2B - 2B1 - 2B1A - 2S1 -2S2)	NOAP - TU 90 allready performed	A	22.01.2016	A. Wallimann, CH.145.0213
SB 292 75 2094 A	TU 94	-	Integration of an anti-contamination device at the bleed valve inlet.	APPL - Open	A		
SB 292 73 2105 B	TU 105	-	Adjusted Hydro-mechanical Metering Unit (HMU). To ensure proper installation of constant delta P device diaphragm.	NOAP - TU 105 allready performed	A	22.12.2010	H. Aufdermauer, CH.145.0227
SB 292 73 2111 C	TU 111 C	-	Engine Electronic Control Unit (EECU). Modification of the Control System Software (CSS)	NOAP- TU 111C allready performed	A	22.06.2011	M. Thielke, CH.145.0227
SB 292 83 2130	TU 130	-	Free wheel assy specific to ARRIEL 2B-2B1 engines. Application of modification TU 130.	NOAP- TU 130 allready performed	A	22.06.2011	M. Thielke, CH.145.0227
SB 292 73 2132	-	-	axial stop of the intermediate gear.	NOAP by Model	A	23.09.2009	A. Bissig, CH.145.0227
SB 292 73 2133 D	TU 133	as soon as fuel pump leaks	Adjusted Hydro-mechanical Metering Unit (HMU). Sealing of the fuel pump shaft.	APPL - TEAP - CPOS	A		
SB 292 72 2142 B	TU 142 A	-	Module M05 - Intermediate gear with blank attached by bonding and screws. (Arriel 2B, 2B1, 2B1A, 2C, 2C1)	NOAP - TU 142A allready performed	A	23.12.2015	A. Wallimann, CH.145.0213
SB 292 72 2145	TU 145 A	-	Module M05 - Intermediate pinion without ring	NOAP - TU 145A allready performed	A	30.10.2010	A. Stephani, CH.145.0227
SB 292 73 2149	-	-	Adjusted Hydro-mechanical Metering Unit (HMU)	NOAP by Model	A	23.09.2009	A. Bissig, CH.145.0227
SB 292 73 2155	TU 155	-	Start Electro-Valve, Application of Modification TU 155	NOAP - Post TU 151 & 155	A	25.02.2010	A. Stephani, CH.145.0227
SB 292 72 2156	TU 156	-	Module M05 (reduction gearbox). Redesign of the rear axial stop of the intermediate gear	APPL - open	A		
SB 292 73 2157 C	TU 157	when applying for CAT.POL.H.305	Adjusted HMU - Modification of the fuel HP pump pressure relief valve. Application of modification TU 157.	APPL - open	A		
SB 292 73 2160 B	TU 160	-	Adjusted HMU - Modification of the Fuel Pump Pinions	APPL - open	A	23.06.2010	
SB 292 72 2164	TU 164	-	Module M03 - HP Blade Lock	APPL - TERJ - CNEG	A	25.05.2009	U. Laternser, CH.145.0227
SB 292 72 2166 C	TU 166	-	Module M03 - HP Blade Damper	superseded by MSB A292 72 3166	A	23.08.2010	A. Stephani, CH.145.0227
SB 292 73 2169	TU 169	-	Replacement of the FADEC B DECU (THALES) with an EMC 101 DECU (GOODRICH)	APPL - Restricted to the manufacturer's discretion	A		
SB 292 72 2168	TU 168	-	Cancellation of IN-LHC as an alternative torquemeter sensor	APPL	P	01.09.2010	U. Laternser, CH.145.0227

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SB 292 72 2170	TU 170	-	Module M03 (gas generator). Replacement of the preformed packings of the rear bearing oil ducts.	APPL - open	A	
SB 292 73 2172 B	TU 172	-	Adjusted Hydro-mechanical Metering Unit (HMU). Modification of the fuel pump flange	APPL - Open	A	
SB 292 77 2173 A	TU 173	-	Improved performance for downloading (by Ethernet link) data stored in the Engine Data Recorder (EDR)	NOAP by Model	A	29.08.2012 Ch. Meier, CH.145.0227
SB 292 73 2178 A	TU 178	-	Improvement of the drive link between the LP pump impeller and the HMU fuel pump. (ARRIEL 2B - 2B1 - 2B1A - 2B1B)	APPL - Application upon receipt of the parts from TM	A	
SB 292 71 2180 B	TU 180	next base inspection	Modification of drain collector. Application of modification TU 180.	APPL - Open	A	
SB 292 72 2181 B	TU 181	-	M03. Candel with swivel unions: replace rear bearing candel, flange unions and breathing pipe. (all Arriel 2)	APPL - Open	A	
SB 292 71 2182 A	TU 182	-	Module M01. Replacement of the magnetic seal. Application of modification TU 182.	APPL - Open	A	
SB 292 71 2184 A	TU 184	-	Improvement of the HMU drive splines. (ARRIEL 2B - 2B1 - 2B1A - 2B1B)	APPL - Application upon receipt of the parts from TM	A	
SB 292 72 2188 A	TU 188	-	Replacement of the torque conformation box (ARRIEL 2Sx)	NOAP by Model	A	23.07.2015 A. Wallimann, CH.145.0213
SB 292 72 2192 A	TU 192	-	Replacement of the torque conformation box. (ARRIEL 2 B - B1 - B1A - C - C1 - C2 - S1 - S2)	APPL - Open	A	
SB 292 72 2194 A	TU 194	-	M01. Replacement of the accessory gearbox cover. (Arriel 2 with "machined" M01 cover P/N 0292120650)	NOAP by "Casted" casing cover	A	06.10.2016 A. Wallimann, CH.145.0213
SB 292 73 2195 A	TU 195	-	Modification to the pressurizing valve seal of the adjusted valve assembly. (all Arriel 2), includes TU 126	APPL - Open	A	
SB 292 72 2198 A	TU 198	-	Improvement of the assembly of the rear bearing oil scavenge and supply pipes. (all Arriel 2)	APPL - Open	A	
SB 292 72 2807 C	-	-	Module M03 - Procedures for cleaning labyrinth lips or replacing the injection manifold. (MTI Ref. X 292 M1 308 2)	APPL - open	A	
SB 292 72 2815 B	-	-	Visual inspection (or Spectrometric Oil Analysis follow-up) to check for coupling sleeve wear between M04 and M05.	INCORP in EMM	A	29.10.2015 A. Wallimann, CH.145.0213
SB 292 73 2823 B	-	every 100h	Check of Start Electro-Valve Sealing & P3 Pipe Inspection	APPL - initial performed	P	05.08.2011 A. Bissig, CH.145.0227
SB 292 73 2832	-	-	Hydromechanical Metering Unit (HMU). Inspection of jet bonding on LP pump ejector assembly.	APPL	P	02.12.2011 TUAG, CH.145.0187
SB 292 71 2853 B	-	-	Creation of a configuration applicable to ARRIEL 2series turboshaft engines during overhaul.	APPL - Restricted to the manufacturer's discretion	A	09.12.2016 INFO only
SB 292 72 2857 A	-	-	Fuel injection manifold chemical cleaning. Method 2: Injection with a special tool. (TI No. 292 72 2857)	APPL - Open	A	

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SB 292 72 2862 C	-	-	Accessory gearbox front cover - Detection of wear on the 41- or 42-tooth gear front bearing housing.	Deleted - refer to SB 292 72 2861	A	06.04.2016	A. Wallimann, CH.145.0213
SL 2718/09/AR2B/43	-	-	Low Fuel Pressure Switch	NOAP by P/N	A	15.06.2009	U. Latenser, CH.145.0227
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