

	REGISTRO RECORD	REVISÃO REVISION 0
CODIGO CODE IAS-RG-0223	FICHA DE SERVIÇOS SERVICE SHEET	PÁGINA PAGE 1/13

Componente Component	O.S W.O	Modelo Model	PN	SN
FUEL CONTROL UNIT		DP-F2 Main Fuel Control Unit		

Identificação Identification	
Título Title	Ficha Para Registros de Teste da Unidade de Controle de Combustível Fuel Control Unit Test Sheet

Publicação Publication	Referência Reference	TLN	Data Date
Component Maintenance Manual with Illustrated Parts List	73-20-31	TLN02328	January 11, 2022 Revision 05
		Conjunto Maior Main Part	
		PN	SN

Teste Aplicável aos Part Numbers Test Applicable to Part Numbers			
2524440-7	2524440-8	2524440-9	2524440-10

Teste da Unidade de Controle de Combustível Fuel Control Unit Test				
Item Item	Procedimentos Tolerâncias Procedures Serviceable Limits	Resultado Result	Data Date	Executante Performed By
A	Instale a FCU na bancada de teste usando um adaptador estriado (PN 2550176) e o adaptador de montagem (PN 2550136) ou equivalente. <i>Assemble the Main Fuel Control Unit to the test stand using spline adapter (P/N 2550176), and mounting adapter (P/N 2550136), or equivalent.</i>			
B	Remova o plugue e instale o acessório especial de teste (PN 2561527). Remova o plugue e instale um adaptador padrão nas portas. <i>Remove plug and assemble (PN2561527), special testing fixture. Remove plug and install a standard adapter into ports</i>			
C	Remova o contra pino, porca e espaçador do eixo de aceleração. Instale o Quadrante de Aceleração (PN 2550131) na extremidade do eixo de aceleração e torqueie de 40 – 50 lb.in. <i>Remove cotter pin, nut, and spacer from throttle shaft. Assemble (PN 2550131) throttle quadrant on end of cam shaft and tighten to 40 – 50 lb.in.</i>			
D	Mantenha uma pressão Po de 10-30 psig na conexão de Po, exceto quando houver outra especificação. Mantenha a pressão P2 dentro de ± 10 psi do valor especificado em pressões abaixo de 300 pph e dentro de ± 25 psi em pressões mais altas, usando a válvula reguladora de contrapressão Pn. <i>Maintain a Po pressure of 10 - 30 psig on Po pressure gage, except where otherwise specified. Maintain P2 pressure within ± 10 psi of the value specified at pressures below 300 pph and within ± 25 psi at higher pressures, using Pn back pressure regulator valve.</i>			

	REGISTRO RECORD	REVISÃO REVISION 0
CODIGO CODE IAS-RG-0223	FICHA DE SERVIÇOS SERVICE SHEET	PÁGINA PAGE 2/13

Teste da Unidade de Controle de Combustível <i>Fuel Control Unit Test</i>				
Item <i>Item</i>	Procedimentos Tolerâncias <i>Procedures Serviceable Limits</i>	Resultado <i>Result</i>	Data <i>Date</i>	Executante <i>Performed By</i>
E	Ajuste o parafuso de pressão diferencial P1-P2 para uma pressão de 26 – 42 in.Hg. Ajuste o orifício da sleeve da metering valve até a pressão diferencial P1-P2 e o fluxo de injeção estejam de acordo com os limites especificados. <i>Adjust P1-P2 pressure differential adjustment screw for a pressure of 26 - 42 in.Hg. Adjust metering valve sleeve assembly orifice until P1-P2 pressure differential and nozzle flow are within the limits specified.</i>			
F	Torqueie as porcas de 35-40 lb e 25-35 lb.in respectivamente. Registre todas as pressões diferenciais de P1-P2 e o fluxo de injeção e adicionalmente, a pressão Pc-Px no Ponto de Teste. <i>Torque nuts to 35-40 lb.in and 25-35 lb.in respectively. Record all P1-P2 differential pressures and nozzle flows and additionally, Pc-Px pressure at Test Point.</i>			
G	Ajuste a porca até que o fluxo de injeção leia 13 – 17 pph. <i>Adjust nut until the nozzle flow reads 13 – 17 pph.</i>			
H	Se o fluxo do injetor não estiver de acordo com os limites especificados, troque o fluxo de ar Py. Torqueie o fluxo de ar Py de 9 – 11 lb.in. <i>If the nozzle flow is not within the specified limits, change Py air flow jet. Torque air flow jet to 9 – 11 lb.in.</i>			
I	Após o ajuste de parada de marcha lenta, torqueie a porca de 20 – 25 lb.in. <i>After adjustment of idle speed stop, torque nut to 20 – 25 lb.in.</i>			

	REGISTRO RECORD	REVISÃO REVISION 0
	CODIGO CODE IAS-RG-0223	FICHA DE SERVIÇOS SERVICE SHEET

TESTE AETS 71198 | AETS 71198 TEST

		TEST SPECIFICATION		Number AETS 71198	Rev. B
				Sheet 1 of 5	
Orig By: G. Chan		Chk By: W.H. Foster		Project Leader: W.H. Foster	
Date:		Test Stand No.:		Operator:	
Unit: Automatic Fuel Control		Model: DP-F2		P/N: 2524440	
REL DATE 15 JUN 16	REV. A B	SHT 1	REV 1	STATUS B	SHT 2
		SHT 3	REV 2	STATUS B	SHT 4
		SHT 5	REV 3	STATUS B	SHT 6
		SHT 7	REV 4	STATUS B	SHT 8
		SHT 9	REV 5	STATUS B	SHT 10
		SHT 11	REV 6	STATUS B	SHT 12
		SHT 13	REV 7	STATUS B	SHT 14
		SHT 15	REV 8	STATUS B	SHT 16
		SHT 17	REV 9	STATUS B	SHT 18
		SHT 19	REV 10	STATUS B	SHT 20
		SHT 21	REV 11	STATUS B	SHT 22
		SHT 23	REV 12	STATUS B	SHT 24

A. See FI for location of adjustments and pressure taps.
B. Connect TS-E2 Slave Sensor to control. Mechanical position sensor needle to dial indicator readings as designated on sensor for +105°, +59°, and -50° temp. stations. A fixture conforming to the requirements of AEEI 48418 may be used as an alternative.
C. (1) Install throttle quadrant fixture with a 4.0 lbs. load applied to throttle stop lever to hold lever against max. throttle stop.
 (2) Index throttle quadrant to 90° T.A. Torque throttle quadrant fixture to 40-45 in. lbs.
D. Control rotation CW as viewed from control shaft end.
E. Maintain Po pressure of 10 to 30 PSIG at control by-pass tap.
F. P2 must meet FI limits at all flow sheet points requiring P2 recording.
G. Set test conditions (temp., RPM, supply, & Pc) in the sequence indicated by numbers 1, 2, 3, etc.
 (a) When two numbers are listed, set and then trim test condition in the sequence indicated.
 (b) Approach all speeds, total fuel supplies, and Pc settings from a lower value, except at hysteresis points.
H. All adjustments are to be properly torqued.
 Test points indicated (*) require special attention and are to be checked below following proper torquing.

1.	Metering valve orifice torque	35		40 in. lbs.
2.	By-pass setting torque	25		35 in. lbs.
3.	Min. flow M.V. stop torque	4		20 in. lbs.
4.	Max. flow M.V. stop torque	20		25 in. lbs.
5.	Max. gov. eccentric torque	7		7.5 in. lbs.
6.	Max. throttle stop torque	20		25 in. lbs.
7.	Idle speed stop torque	20		25 in. lbs.
8.	Flow body to drive body	20		25 in. lbs.
9.	Drive body adapter to drive body	25		30 in. lbs. - in 5 in. lbs. increments
10.	Bleeds	9		11 in. lbs.

CURRENT DESIGN ACTIVITY
 CAGE CODE 05848
 HONEYWELL INTERNATIONAL INC
 ENGINE SYSTEMS & ACCESSORIES
 SOUTH BEND IN USA

	REGISTRO <i>RECORD</i>	REVISÃO <i>REVISION</i> 0
CODIGO CODE IAS-RG-0223	FICHA DE SERVIÇOS <i>SERVICE SHEET</i>	PÁGINA <i>PAGE</i> 4/13

			TEST SPECIFICATION				AETS 71198				REV. B		
							SHEET		SHEETS			P1 - P2 "Hg	P ₂ psi
							2	OF	5				
TEST POINT	SPEED RPM	SUPPLY PPH	THRO DEG.	TEMP °F	Pc psia	NOZZLE FLOW, PPH							
						MIN	REC	MAX					
I. Speed for tests points indicated (#), is to be set to ± 2 RPM of specified value. All other points are to be set within ± 20 RPM of specified value. J. Total supply is to be set to ± 20 PPH of the specified value or within limits when shown. K. After by-pass valve adjustment has been completed and the detent cup has been locked in position check specific gravity adjustment at min. MV setting. 1) Rotate the cup 3 clicks cw from original position – nozzle flow must increase at each click. 2) Rotate the cup 3 clicks ccw from original position – nozzle flow must decrease at each click. 3) Return the detent cup to the original position and recheck MV settings. L. Before calibration, check for external air leakage using "Lec-Tec". Slow bubbling is permitted at the joint of drive body and drive body adapter, at the torsion shaft cover and at the bellows and torsion shaft locknuts. No leakage is permitted at any other point. Pc = 100 psia. If leakage is considered excessive measure Px-Py when Pc = 100 psia, RPM = 0 and T/A = Max. Px to be measured at the bellows ratio lever cover. Px-Py ± 1.2" Hg. Max.													

	REGISTRO <i>RECORD</i>	REVISÃO <i>REVISION</i> 0
CODIGO CODE IAS-RG-0223	FICHA DE SERVIÇOS <i>SERVICE SHEET</i>	PÁGINA <i>PAGE</i> 5/13

TEST POINT		SPEED RPM				SUPPLY PPH		THRO DEG.		TEMP °F		Pc psia		TEST SPECIFICATION			AETS 71198		REV. 		
														SHEET			SHEETS			P1 - P2 "Hg	P2 psi
														3	OF	5					
<u>CHECK RELIEF VALVE OPENING</u>																					
(a) Cap outlet port. (b) Increase P1 pressure until fuel supply is within supply limits specified and observe P1-Po differential. (c) If P1-Po differential is out of limits, shim as required. (1) Add shims to increase differential.																					
1.01	1 0	5 200-275	2 Max.	3 +105	4 85.0	Relief valve opening P1-Po 950 1000 psi															
<u>METERING VALVE ORIFICE AND BY-PASS HEAD (P1-P2 "HG) SETTING</u>																					
(a) Test point 2.01 thru 2.03 are interrelated and should be recorded after all three (3) adjustments have been made.																					
2.01*	3 5800	4-6 1350	1 Max.	2 +105	5 40	203		212													
Adjust head and orifice. P1 - P2 = 26-42 in. Hg.																					
2.02*	2900	720	30-32	+105	40	80		84													
Set Min. M.V. stop after removing Py line. P2 75 90 PSIG																					
2.03*	5800	1350	Max.	+105	70	367		373													
Retrim head and re-adjust 2.01 & 2.02 if out of limits																					
Px-Py 1.2" Hg. Max. Pc-Px 1.0" Hg. Max.																					
P2 365 415 psig																					
2.04*	5800	1350	Max.	+105	100	506		520													
Set max. M.V. Stop (Flow must decrease 1 PPH to indicate contact with stop).																					
2.05	5800	1350	Max.	+105	40	-10		+10													
Hysteresis of Pt. 2.01																					

	REGISTRO <i>RECORD</i>	REVISÃO <i>REVISION</i> 0
CODIGO CODE IAS-RG-0223	FICHA DE SERVIÇOS <i>SERVICE SHEET</i>	PÁGINA <i>PAGE</i> 6/13

						TEST SPECIFICATION		AETS 71198			
								SHEET 4 OF 5		SHEETS	
TEST POINT	SPEED RPM	SUPPLY PPH	THRO DEG.	TEMP °F	Pc psia	NOZZLE FLOW, PPH			P1 - P2 "Hg	P2 psi	
						MIN	REC	MAX			
<u>ENRICHMENT SPRING SETTING</u>											
3.01	3-7 5800	4-6 1350	1 Max.	2 -50	5 55	X		X	Record Nozzle Flow		
3.02	5100	1170	Max.	-50	55	-13		-17			
Set speed enrichment -13 -17 PPH less than 3.01 increasing spring tension (CW on Adj. nut) increases difference (decrease and reset speed after adj.).											
4.01	3 4000	4-6 1000	1 Max.	2 -50	5 40	172		183			
						Pc-Px	8.5		11.5 "Hg.		
<u>MAX. GOVERNOR SPRING SETTING</u>											
(a) Adjust eccentric shaft to meet flow limits. (b) If unable to set with eccentric, max. T.A. may be varied within T.A. limits. (c) If unable to set with eccentric or max. T.A., maintain eccentric on scribe line and determine amount of RPM off. (d) Split control and adjust gov. spring as required. (CW adj. of gov. spring delays break-approx. 1 flat on adj. nut per 50 RPM). (e) If gov. slope is not in limits, select Py bleed. P/N 2525107 #58 #66 (Higher number bleed to increase difference in flow).											
5.01#*	5 6350	4-7 1440	1 	2 +59	3-6 85	335		345			
Set Gov. Break T.A. at 89° - 91°											
5.02#	6500	1530	"	+59	85	105		125			
Diff. From Pt. 5.01 (Gov. Slope)											
5.03#		1440	"	+59	85	X		X			
Hysteresis -50 +0 of Pt. 5.01											

	REGISTRO RECORD	REVISÃO REVISION	0
	CODIGO CODE IAS-RG-0223	FICHA DE SERVIÇOS SERVICE SHEET	PÁGINA PAGE

		TEST SPECIFICATION				AETS 71198				
						SHEET 5	SHEETS OF 5	REV. B		
TEST POINT	SPEED RPM	SUPPLY PPH	THRO DEG.	TEMP °F	Pc psia	NOZZLE FLOW, PPH			P1 - P2 "Hg	P2 psi
						MIN	REC	MAX		
<u>IDLE SPEED STOP SETTING AND PICK-UP ANGLE</u>										
(a) At test point 6.02 increase T.A. until 4 pph max. fuel flow from 6.01 is observed. (T.A. where flow starts to increase is pick-up angle).										
(b) If throttle cam pick-up angle is out of limits, replace governor spring.										
(1) Use stronger spring (3 stripes) if pick-up angle exceeds 56° diff. From Pt. 5.01.										
(2) Use weaker spring (one stripe) if pick-up angle is less than 52° diff. From Pt. 5.01.										
(3) Adjust spring tension to same load as set on spring removed.										
(4) Re-set governor break at test point 5.01 and re-run test points 5.02 and 5.03.										
(5) Re-set idle stop screw at test point 6.01.										
6.01#*	4 3200	1-7 800	5 30-32	2 +59	3-6 30	104			112	
Set idle stop screw (CW adj. Incr. Flow) Dec. and reset speed after adjustment.										
6.02#	3200	800		+59	30					
Throttle cam pick-up angle 52° 56° of test point 5.01										
<u>LOW END OF ACCEL. CURVE AND THROTTLE MOVEMENT EFFECT</u>										
7.01	3 815	5 200	4 40	2 +59	1 Local	60		X	P2	75 psig minimum
7.02	2100	670	40	+59	25	113			124	
Move T.A. to 30° 5 PPH max. dec.										
(a) After recording nozzle flow at test point 7.02 move throttle to 30° T.A.										
(1) Observe nozzle flow change and record.										
<u>EXTERNAL LEAKAGE CHECK</u>										
A. Cap Po at drive flange by-pass tap.										
B. Remove Po line to control and install Po plug										
C. Cap outlet port.										
D. Set P1 pressure to 1000 PSIG										
E. Observe leakage for 2-3 minutes.										
F. No leakage permitted.										
OK REJ.										

	REGISTRO <i>RECORD</i>	REVISÃO <i>REVISION</i> 0
CODIGO CODE IAS-RG-0223	FICHA DE SERVIÇOS <i>SERVICE SHEET</i>	PÁGINA <i>PAGE</i> 9/13

TEST POINT		SPEED RPM		SUPPLY PPH		THRO DEG.		TEMP °F		Pc psia		TEST SPECIFICATION			AETS 13907		REV. <u>E</u>		
												NOZZLE FLOW, PPH			SHEET 2	SHEETS OF 4		P1 - P2 "Hg	P2 psi
												MIN	REC	MAX					
<u>CHECK RELIEF VALVE OPENING</u>																			
(a) Cap outlet port. (b) Increase P1 pressure until fuel supply is within limits specified and observe P1-Po differential.																			
1.01		1 0	5 200-275	2 Max	3 +105	4 85													
										Relief valve opening	P1-Po	950		1000 psi					
<u>METERING VALVE ORIFICE AND BYPASS HEAD (P1-P2"HG) SETTING</u>																			
2.01		3 5800	4-6 1350	1 Max	2 +105	5 40.0	201			214									
										P1 - P2 = 24 - 43 "HG			P2		PSIG				
2.02		2900	720	30-32	+105	40.0	80			85									
										Remove Py line. P2 = 75 PSIG min.									
2.03		5800	1350	Max	+105	70.0	363			376									
										Px-Py		1.2" HG max.							
										Pc-Px		1.5" HG max.							
										P2 =		PSIG							
2.04		5800	1350	Max	+105	100.0	505			525									
2.05		5800	1350	Max	+105	40.0	-10			+10									
Hysteresis of T.P. 2.01																			
<u>ENRICHMENT SPRING SETTING</u>																			
3.01		3-7 5800	4-6 1350	1 Max	2 -50	5 55	X			X									
Record nozzle flow																			
3.02		5100	1170	Max	-50	55	-9			-21									

	REGISTRO RECORD	REVISÃO REVISION 0
	CODIGO CODE IAS-RG-0223	FICHA DE SERVIÇOS SERVICE SHEET

TEST SPECIFICATION						AETS 13907				
						SHEET 3 OF 4		SHEETS 4		REV. E
TEST POINT	SPEED RPM	SUPPLY PPH	THRO DEG.	TEMP °F	Pc psia	NOZZLE FLOW, PPH			P1 - P2 "Hg	P2 psi
						MIN	REC	MAX		
4.01	3 4000	4-6 1000	1 Max	2 -50	5 40	168		187		
										Pc-Px 8.5 11.5"Hg
<u>MAX. GOVERNOR SPRING SETTING</u>										
5.01	5 6350	4-7 1440	1 Max	2 +59	3-6 85	310		370		
5.02	6500	1530	Max	+59	85	100		130		
Difference from test point 5.01										
5.03		1440	Max	+59	85	X		X		
										Hysteresis -50 0 of test point 5.01
<u>SOLE SPEED STOP SETTING AND PICK-UP ANGLE</u>										
At test point 6.02 increase T.A. until 4 PPH max. fuel flow from 6.01 is observed. (T.A. where flow starts to increase is pick-up angle).										
6.01	4 3200	1-7 800	5 30-32	2 +59	3-6 30	103		113		P2 = 75 psig min.
6.02	3200	800		+59	30					
Throt. Cam pick-up angle 52° 56° of test point 5.01.										
<u>LOW END OF ACCEL. CURVE, AND THROTTLE MOVEMENT EFFECT</u>										
7.01	3 815	5 200	4 40	2 +59	1 Local	60		X		P2 = 75 PSIG min.
7.02	2100	670	40	+59	25	111		126		
Move. T.A. to 30° 5 PPH maximum decrease										
(a) After recording nozzle flow at test point 7.02 move throttle to 30° T.A.										
(b) Observe nozzle flow change and record.										

	REGISTRO <i>RECORD</i>	REVISÃO <i>REVISION</i> 0
	CODIGO CODE IAS-RG-0223	FICHA DE SERVIÇOS <i>SERVICE SHEET</i>

						TEST SPECIFICATION		AETS 13907		
								SHEET 4	SHEETS OF 4	REV. E
TEST POINT	SPEED RPM	SUPPLY PPH	THRO DEG.	TEMP °F	Pc psia	NOZZLE FLOW, PPH			P1 - P2 "Hg	P2 psi
						MIN	REC	MAX		
<u>EXTERNAL LEAKAGE CHECK</u>										
A. Cap Po at drive flange by-pass tap. B. Remove Po line to control and install Po plug. C. Cap outlet port. D. Set P1 pressure to 1000 PSIG. E. Observe leakage for 2-3 minutes. F. No leakage permitted.										
						OK	☐	REJECT		

	REGISTRO <i>RECORD</i>	REVISÃO <i>REVISION</i> 0
CODIGO CODE IAS-RG-0223	FICHA DE SERVIÇOS <i>SERVICE SHEET</i>	PÁGINA <i>PAGE</i> 12/13

	REGISTRO <i>RECORD</i>		REVISÃO <i>REVISION</i> 0
CODIGO CODE IAS-RG-0223	FICHA DE SERVIÇOS <i>SERVICE SHEET</i>		PÁGINA <i>PAGE</i> 13/13
Observações <i>Remarks</i>			
Aprovação <i>Approval</i>	Nome <i>Name</i>	Data <i>Date</i>	Assinatura <i>Signature</i>