LEADING PARTICULARS

NAME	AVON Mk.10901,11501,12101,12201 ENGINE CHANGE UNITS
TYPE OF ENGINE ARRANGEMENT	STRAIGHT FLOW TURBO-JET TWELVE-STAGE AXIAL FLOW COMPRESSOR, DRIVEN BY TWO-STAGE AXIAL FLOW TURBINE
NOMINAL THRUST	Mk.10901 7400 lb Mk.11501 7975 lb Mk.12101 7575 lb Mk.12201 7575 lb STATIC SEA-LEVEL CONDITIONS
DIRECTION OF ROTATION	ANTI-CLOCKWISE, VIEWED FROM THE TURBINE END

HANDLING DATA

Maximum diameter (largest e.c.u.)	43 in (approx.)
Overall length (longest e.c.u.)	139 in approx. (less jet pipe)
Weight of e.c.u. (heaviest e.c.u.)	2597 lb (approx.)
Centre of gravity	Approx. 26 in forward of centre line of rear mounting trunnions

COMPRESSOR

Type	Twelve-stage axial flow, incorporating automatic bleeds and progressively variable intake guide vanes
Compression ratio	6.5:1 approx. at take-off rev/min at sea-level I.C.A.O. conditions
Airflow	121 lb/sec approx. at sea-leavel I.C.A.O. conditions

COMBUSTION SYSTEM

Type	Interconnected straight flow
Number of chambers	Eight
Numbering	Anti-clockwise, viewed from the turbine end, No.1 and 8 at the top

TURBINE

Type	Two-stage axial flow

JET PIPES

Type	Non-reheat, fixed nozzle, with four thermocouples on B.A.33792 and eight thermocouples on J.P.106 and J.P.123
Length	150 in approx. (including propelling nozzle)
Jet pipe No.	Associated e.c.u. Mk.
B.A.33792 (English Electric)	10901
J.P.106	11501
J.P.123	12101 and 12201

FUEL SYSTEM

ROYAL NAVY

UK INTERSERVICE DESIGNATION	NATO CODE	USA INTERSERVICE DESIGNATION	UK REF. NO.	SPECIFICATION
APPROVED FUELS				
AVTUR/50	F.35	-	34A/9431771	D.Eng. R.D.2494
AVTAG	F.45	-	34A/9100448	D.Eng. R.D.2486
AVCAT/48	F.44	JP-5	0722/2202148	D.Eng. R.D.2498
EMERGENCY SUBSTITUTE FUELS				
AVTUR	F.34	JP-1	34A/2201036	D.Eng. R.D.2453
AVTAG	F.40	JP-4	34A/2201037	D.Eng. R.D.2454
- (See NOTE)	F.42	-	-	AIR 3404A
FSII				
AL.31	S.748	-	34B/221038	D.Eng. R.D.2451

NOTE: Fuel Specification AIR 3404A is a French Navy fuel, similar to D.Eng. R.D.2498, which includes FSII and may be used as an emergency substitute fuel.

ROYAL AIR FORCE

UK INTERSERVICE DESIGNATION	NATO CODE	USA INTERSERVICE DESIGNATION	UK REF. NO.	SPECIFICATION
APPROVED FUELS (containing FSII. Refer to NOTE 1)				
AVTUR	F.34	JP-1	34A/2201036	D.Eng. R.D.2453
AVTAG	F.40	JP-4	34A/2201037	D.Eng. R.D.2454
EMERGENCY SUBSTITUTE FUELS (as agreed between NATO countries but which, for RAF use, need FSII added. Refer to NOTE 2 and 3)				
AVTUR	F.35	-	34A/9431771	D.Eng. R.D.2494
AVCAT/48	F.44	JP-5	0722/2202148	D.Eng. R.D.2498
AVTAG	F.45	-	34A/9100448	D.Eng. R.D.2486
-	F.42	-	-	AIR 3404A
FSII				
AL.31	S.748	-	34B/221038	D.Eng. R.D.2451

NOTE: 1. Fuel Specification D.Eng. R.D.2453 and D.Eng. R.D.2454 include fuel system icing inhibitor (FSII) to specification D.Eng. R.D.2451 Issue 2 or later issue, and to the approved limiations.

2. Fuel Specification D.Eng. R.D.2494, D.Eng. R.D.2498 and D.Eng. R.D.2486 may be used as emergency substitute fuels but if these fuels are used FSII must be added in concentrations between 0.10% to 0.15% by volume.

3. Fuel Specification AIR 3404A is a French Navy fuel, similar to D.Eng. R.D.2498, which includes FSII and may be used as an emergency substitute fuel.

CAUTION: IF NONE OF THE FUELS AND ADDITIVES LISTED ARE AVAILABLE, HIGHER AUTHORITY MUST BE SOUGHT BEFORE USING NON-TREATED FUELS.

AM
Mth

Fuel pump	Dual type, multi-plunger, variable stroke
Fuel control unit	Combined b.p.c. h.p. cock, throttle valve, pressurizing valve and l.p. filter
Burner	Twin orifice, emitting co-axial atomized sprays
Acceleration control unit	Altitude sensitive unit, controlling fuel flow increase during engine acceleration
Fuel pressure warning light switch	Indicates low fuel pressure to engine inlet
Fuel de-icing switch (Mk.12201 only)	Senses pressure drop across l.p. filter and initiates injection of de-icing fluid from aircraft system into filter inlet

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APPROXIMATE FUEL CONSUMPTION

Static sea-level conditions and a fuel sp. gr. of 0.8 (AVTUR)

E.C.U. Mk.	Fuel consumption gal./hr.		
	Idling	Max. cont.	Take-off
10901	127	682	851
11501	137	781	957
12101	126	772	928
12201	126	772	928

OIL SYSTEM

Type	Self-contained, wet sump with continuous circulation by one feed and two return pumps
Circulation	Sump-feed pump - oil cooler - pressure filter - bearings and gear - return pumps and gravity drain-sump

MT
Mth

UK INTERSERVICE DESIGNATION	NATO CODE	USA INTERSERVICE DESIGNATION	UK REF. NO.	SPECIFICATION
OILS				
OX-38	O-149	-	34B/2201941 (45 gal. drum)	D. Eng. R.D.2487
OX-38	O-149	-	34B/9100591 (1 gal. can)	D. Eng. R.D.2487
OX-38 (reclaimed oil)	-	-	-	D. Eng. R.D.2493

Sump capacity	16 pints
Complete system capacity	19 pints
Consumption	1 pint per hour max.
Pressure	See Operating Limitations

COOLING AIR SYSTEM

Type	Pressure air from compressor to main bearings and turbine
Low pressure	Tapped from third stage to bearings and nozzle box manifold
Intermediate pressure	Tapped from eleventh stage to low pressure turbine
High pressure	Tapped from twelfth stage to high pressure turbine
Nozzle box manifold cooling air outlet temperature	Up to 275 C

STARTING SYSTEM

Type	Turbo-starting with centrifugal disengaging mechanism and high-energy ignition under automatic time control
Starter	Triple-breech, cartridge, turbo-starter
Safety device	Pressure relief valve in each breech
Cartridge	Cordite, 720 grammes, type No.10, Mk.1
High-energy igniters	Surface discharge sparking plugs directly igniting primary fuel spray at burners in No.3 and 6 combustion chambers

ANTI-ICING SYSTEM

Type	Hot air from compressor twelfth stage through hot air valve to air intake, guide vanes and starter fairing
Hot air valve	Operated by electrical actuator through rack and pinion gear

FIRE EXTINGUISHING SYSTEM

Spray rings	Dual, interconnected, with alternative connections to suit aircraft installation

GUN FIRING SYSTEM (Mk.12101 and 12201 only)

Fuel dip unit	Solenoid-operated unit which reduces fuel flow when guns are fired
Air dip unit	Solenoid-operated unit which bleeds air from compressor when guns are fired

MAX. J.P.T. CONTROL (mk.11501,12101 and 12201 only)

Top temperature control unit	Solenoid-operated unit which automatically adjust the throttle to prevent max. j.p.t. from being exceeded

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