

DIVISION WISE NODAL OFFICERS - ITEMS FOR INDIGENISATION

Sr. No.	Name / Address of Unit	Nodal officer Contact details:
1	Aircraft Upgrade Research and Design Center (AURDC) Hindustan Aeronautics Limited Ojhar Township (PO) Tal- Niphad Dist- Nasik (Maharashtra) - 422207	Name: Mr. Ajit Bhandakkar Designation: CM (D-Indg) Address: AURDC, Hindustan Aeronautics Limited, Ojhar Township (PO), Tal- Niphad, Dist- Nasik (Maharashtra), Pin: 422207 Phone: 02550 271061/ Mobile No: 9422247576 Fax: 02550 271965 Email: design_di.nsk@hal-india.com
2	Aircraft Research and Design Center (ARDC) Hindustan Aeronautics Limited Design Complex PB No: 1787 Vibhuthipura Post Bangalore - 560037	Name: Mrs Nanmozhi T Designation: CM (EL&AV) Address: ARDC, HAL Ramesh Nagar, Marathalli P.O., Bangalore- 560037 Phone: 080-22324298 Mob: 9902287827 Email : indg.ardc@hal-india.com
3	Avionics Division Hindustan Aeronautics Limited PO HAL Hyderabad - 500042 Telangana	Name: Mr. V. Sundararajan Designation: Chief Manager (I & L) Address: Avionics Division, Hindustan Aeronautics Limited, Balanagar, Hyderabad Phone: 040-23872007, 040-23878281 Extn: 4640 Email: seethalakshmi.a@hal-india.com
4	Transport Aircraft Division (TAD) Hindustan Aeronautics Limited P.O. 225 Chakeri Kanpur-208008	Name: Mr. Dinesh Khare Designation: CM (Indigenisation) Address: Hindustan Aeronautics Limited Transport Aircraft Division, P.O. Chakeri, Kanpur-208008, U.P. India Phone: 0512-2451749-58, Extn-4718 Mobile: +91 9415704983 Fax: 0512-2450085 Email: dinesh.khare@hal-india.com
5	Overhaul Division Hindustan Aeronautics Limited PB No: 1786 Bangalore - 560017	Name: Mr. Shivashankar Designation: DGM (DLE) Address: Overhaul Division, HAL, PB No. 1786, Vimanapura., Bangalore- 560017 Phone: 080-22321468 Mob: 9482259063 Email: offdle.ohl@hal-india.com
6	Sukhoi Engine Division Hindustan Aeronautics Limited Sunabeda Koraput Odisha - 763002	Name: Mr. N.C.Satpathy Designation: AGM (Design) Address: HAL-Koraput, Odisha. Phone: 06853-222133 / Mobile No: 9438901029 Fax: 91-06853-220004 Email: nabin.satpathy@hal-india.com
7	Aerospace Systems and Equipment Research & Design Center (ASERDC) Hindustan Aeronautics Limited PO HAL PB No 215 Lucknow - 226016 Uttar Pradesh	Name: Mr. S K Srivastava Designation: AGM (TS) Address: Accessories Division, Lucknow Phone: 0522-2355624 Mob: 9415525982 Fax: 0522-2349335 Email: s.srivastava@hal-india.com
8	Helicopter Division Hindustan Aeronautics Limited Vimanapura Post Post Bag No.:1790 Bangalore-560017	Name: Mr. T S Babu Designation: CM (DLE) Address: DLE Department, Helicopter Division Phone: 9481442630 Fax: 080-22314717 Email: dle.hcop@hal-india.com

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Sr. No.	Name / Address of Unit	Nodal officer Contact details:
9	Aerospace Systems and Equipment Research & Design Center (ASERDC) Korwa Hindustan Aeronautics Limited PO HAL Amethi UP - 227412	Name: Mr. Suneel Kumar Srivastava Designation: AGM (Design) Address: ASERDC Korwa Hindustan Aeronautics Limited PO HAL, Amethi, UP - 227412 Phone : 05368-256144 Fax:. 05368 - 256148 / 256142 Email: suneel.kumar@hal-india.com
10	Barrackpore Division Hindustan Aeronautics Limited Helicopter Complex 09 Topkhana Road Post Barrackpore - 700120 Dist 24 Parganas (North) West Bengal	Name: Mr. Raju Ghosh Designation: Manager(DLE) Address: 9,Topkhanna Road, Barrackpore,24 Pgs(N), Kolkata-700120. Phone: 033-25402089 Fax: 033-25922379 Email: raju.ghosh@hal-india.com
11	Engine Division Hindustan Aeronautics Limited Sunabeda Koraput Odisha - 763002	Name: Mr. N.C.Satpathy Designation: AGM(Design) Address: HAL-Koraput, Odisha. Phone: 06853-222133 / Mobile No: 9438901029 Fax: 91-06853-220004 Email: nabin.satpathy@hal-india.com
12	Engine Division Hindustan Aeronautics Limited Bangalore Complex PB No 9310 CV Raman Nagar Post Bangalore - 560093	Name: Mr. S Madhavan Designation: CM (DLE & IND) Address: Engine Division, HAL (B.C) C V Raman Nagar P.O., Bangalore- 560093 Phone: 080-22326310 E-mail: madhavan.s@hal-india.com
13	Aero Engines Research & Design Center (AERDC) Hindustan Aeronautics Limited Bangalore Complex PB No 9310 CV Raman Nagar Post Bangalore - 560093	Name: Mr. V. Reddy Designation: CM(D-ENS) Address: AERDC, Hindustan Aeronautics Limited, Bangalore Complex,PB No 9310,CV Raman Nagar Post Bangalore - 560093 Phone: 080-22326395 Email: indig-aerdc@hal-india.com
14	Aircraft Division Hindustan Aeronautics Limited Bangalore Complex PB NO.1788 Bangalore - 560 017	Name: Mr. KK SUBUDHI Designation: DGM (DLE) Address: Hindustan Aeronautics Ltd, Aircraft Division, Bangalore Complex, PB NO.1788, Bangalore - 560 017 Phone No: 080 - 22322329/22321303 Mobile No.: 9901618430 Fax No: 080 - 22315188 Email: subudhi.kk@hal-india.com

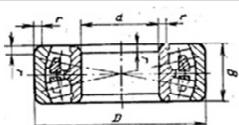
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Sr. No	Nomenclature of item	Part No./ Brief Specification/Major Assembly/ Description	Photo/ Drawing	Approx. Annual requirement
1	Aggregates	BANO-7M-K Navigation lighting system Onboard navigational lights		10
2	Aggregates	BANO-7M-ZL Navigation lighting system Onboard navigational lights		10
3	Aggregates	P-109M1 Air-conditioning system Double channel temperature Sensor		10
4	Aggregates	DSI Flight Data Recording System Induction speed sensor		5
5	Aggregates	DVI Flight Data Recording System Induction altitude sensor		5
6	Aggregates	RDIA-830-480-0 Air-conditioning system Induction pressure relay		5
7	Aggregates	RDII-0.16-0.075-3 Air conditioning system Induction pressure relay		5
8	Aggregates	RDII-0.6-0.44-3 Air-conditioning system Induction pressure relay		10
9	Aggregates	PVD-30 Pitot- Static system Pitot Static Tube		10
10	Aggregates	SEP-72MD Power Supply System of Launcher Unit Power supply system		20
11	Spares	PK-74-4 Electrical system (SAU Panel system 11.7723.I.860.000) Illuminated Push Button		10
12	Spares	PK-74-5 Electrical system (SAU Panel system 11.7723.I.860.000) Illuminated Push Button		10
13	Spares	PK-74-6 Electrical system (SAU Panel system11.7723.I.860.000) Illuminated Push Button		10
14	Spares	PK-74-7 Electrical system (SAU Panel system11.7723.I.860.000) Illuminated Push Button		10
15	Spares	D711 Used in Centrifugal Detector UA53A-4 & UA53A-6 Micro switch		45
16	Spares	PM-100 Electrical system PM Fuse		15

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Sr. No	Nomenclature of item	Part No./ Brief Specification/Major Assembly/ Description	Photo/ Drawing	Approx. Annual requirement
17	Spares	PM-125 Electrical system PM Fuse		15
18	Spares	PM-150 Electrical system PM Fuse		15
19	Spares	SO45-SB3-11 Heat Resistant Pressure Switch MST-15 Contact Plate		30
20	Spares	SO45-SB2-10 Heat Resistant Pressure Switch MST-15 Contact Plate		30
21	Spares	S134-SB9-21 Pressure Switch SPT-0.35 Contact Plate		30
22	Spares	S134-SB9-27 Heat & Vibration Resistant Pressure Switch MSTV-0.8 Contact Plate		30
23	Spares	S134-SB7-19 Pressure Switch SPT-0.1 Contact Plate		30
24	Spares	NUSHS-25YU1T-ETU100/5 Suspension unit of rudder Swivel/ Hinged Bearing		10
25	Spares	SHN8YUT-ETU100/5 Mechanism of opening flap door of brake parachute container Swivel/ Hinged Bearing		20
26	Spares	SHS12YU2UT-ETU-100/5 Landing Gear System Nose landing gear door Swivel/ Hinged Bearing		10
27	Spares	SHS12YUT-ETU100/5 Used in Damper 11.0446.3.960.000 Swivel/ Hinged Bearing		20
28	Spares	SHS8YU2UT-YETU100/5 Landing Gear System Nose landing gear door Swivel/ Hinged Bearing		20
29	Spares	1SHN8YU ETY 100/5 Landing Gear System Swivel/ Hinged Bearing		20
30	Spares	525-23 ETY100/6 Engine Used in Tachometer indicator ITE-2TB2 Ball Bearing		40

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Sr. No	Nomenclature of item	Part No./ Brief Specification/Major Assembly/ Description	Photo/ Drawing	Approx. Annual requirement
31	Spares	6-80202S1-GOST.7242-81 Used in Nose Landing Gear Ball Bearing		10
32	Spares	75.108.502E2T2C15 Landing Gear System Used in Motor MT-500S Ball Bearing		20
33	Spares	75.180.504.E1TC15 Landing Gear System Used in Motor MT-500S Ball Bearing		20
34	Spares	980065-YUU ETU100/5 Landing Gear System Used in Nose landing gear Ball Bearing		10
35	Spares	SHN40YUT ETY 100/5 Landing Gear System, Nose landing gear actuating cylinder Swivel/ Hinged Bearing		10
36	Spares	SHNR6YU TU3901-A Landing Gear System, Used in Nose Landing Gear Swivel/ Hinged Bearing		10
37	Spares	SHNR6YUT ETU100/5 Landing Gear System, Used in Nose landing gear Swivel/ Hinged Bearing		10
38	Spares	SHSN6YUT BK TU 3901-A Landing Gear System, Used in Nose landing gear Swivel/ Hinged Bearing		10
39	Spares	3608-YETU 100/3 Use in 11.1250.I.020.901/ 902 Bearing		10
40	Spares	5-23U2T-ETU 100/3 Used in 11.6501.I.900.907 Bearing		100
41	Spares	980079YUUS21-ETU 100/5 Used in 11.5100.I.000.000 Bearing		40
42	Spares	SHN15YUT-YETU 100/5 Used in 11.1230.I.320.901/ 902, 11.3612.2.065.901/ 902 Bearing		40
43	Spares	6TS.151A-4 Used in Control Unit AU46-05 Electro Hydraulic Valve		30

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Sr. No	Nomenclature of item	Part No./ Brief Specification/Major Assembly/ Description	Photo/ Drawing	Approx. Annual requirement
44	Spares	6TS-210-03 Used in Control Unit AU46-05 Electro Hydraulic Amplifier OF Control Unit		30
45	Spares	8D2.966.660 Fuel System Filter element		30
46	Spares	10-16-OST1.10287-78 Used in SHACKLE, 11.3610.I.030.901 Steel backed Teflon Bush	 <small>Bush, OST1 10287 Series</small>	150
47	Spares	6-10-OST1-10287-78 Used in 11.2010.2.110.901/ 902 Steel backed Teflon Bush	 <small>Bush, OST1 10287 Series</small>	400
48	Spares	12-10-OST1-10287-78 Used in 11.4800.I.820.901/ 902 Steel backed Teflon Bush	 <small>Bush, OST1 10287 Series</small>	60
49	Spares	12-16-OST1-10287-78 Used in Front Main U/C door, 11.4800.I.800.901/ 902 Steel backed Teflon Bush	 <small>Bush, OST1 10287 Series</small>	30
50	Spares	14-14-OST1-10287-78 Used in SHACKLE, 11.3500.I.105.000 Steel backed Teflon Bush	 <small>Bush, OST1 10287 Series</small>	400
51	Spares	35-38-OST1 10287-78 Used in 11.4111.I.000.901 Steel backed Teflon Bush	 <small>Bush, OST1 10287 Series</small>	30
52	Spares	85-30 OST1.10287-78 Used in 11.1250.I.035.000 Steel backed Teflon Bush	 <small>Bush, OST1 10287 Series</small>	15
53	Spares	8-8-OST1-10289-78 Used Locks, 11.4804.3.810.901/902 of Landing Gear System Steel backed Teflon Bush		120
54	Spares	6-8-OST1-10289-78 Used Locks, 11.4804.3.810.901/902 of Landing Gear System Steel backed Teflon Bush		120
55	Spares	6-4-OST1-10289-78 Used Locks, 11.4804.3.810.901/902 of Landing Gear System Steel backed Teflon Bush		240
56	Spares	H8X-423-01 Used in Main Landing Gear Jack 11.4102.7.100.901/ 902 PMF Protective washers of Main landing Gear Jack		90
57	Spares	18-6-0.12-1 GOST 22388-77 Used in 11.0740.0.210.903 Bellow		5
58	Spares	18-6-0.22-1 GOST 22388-77 Used in 11.0740.0.210.901 Bellow		5

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Sr. No	Nomenclature of item	Part No./ Brief Specification/Major Assembly/ Description	Photo/ Drawing	Approx. Annual requirement
59	Spares	3369.002 Safety Valve, 3369-39 of Air-conditioning system Membrane		15
60	Spares	3369.002-01 Safety Valve, 3369-39 of Air-conditioning system Membrane		15
61	Spares	772432 Starting Valve, 772400 of fuel system Spring		30
62	Spares	772432-1 Starting Valve, 772400 of fuel system Spring		30
63	Spares	APNM-2 Controller,UV-30MKI.7202-0 of Counter Measure Dispensing System Shock Absorber		15
64	Spares	APN-3 Rectifier, VU-6B of Electrical Power System Shock Absorber		15
65	Spares	AU46-012Electro-Hydraulic Control Unit, Au46-05 of Air Intake SystemSealing of Control Unit		90
66	Spares	AU46-012-1Electro-Hydraulic Control Unit, Au46-05 of Air Intake SystemSealing of Control Unit		30
67	Spares	AU46-040Electro-Hydraulic Control Unit, Au46-05 of Air Intake SystemHydro Lock		30
68	Spares	KSH-75-2 Used in 11.7801.I.810.000, 11.7801.I.840.000 Oxygen Hose		30
69	Spares	KSH-75-3 Used in 11.7801.I.810.000, 11.7801.I.840.000 Oxygen Hose		15
70	Spares	KSH-75-4 Used in 11.7801.I.810.000, 11.7801.I.840.000 Oxygen Hose		30
71	Spares	KSH-85 Used in 11.7801.I.810.000, 11.7801.I.840.000 Oxygen Hose		15
72	Spares	KSH-85-1 Used in 11.7801.I.810.000, 11.7801.I.840.000 Oxygen Hose		15
73	Raw material	RKP14-7-650 Used for manufacturing hose assembly 30.7800.0310.903/ 905 Hose		30

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Sr. No	Nomenclature of item	Part No./ Brief Specification/Major Assembly/ Description	Photo/ Drawing	Approx. Annual requirement
74	Raw material	RKP12-0.6-650 Used for manufacturing hose assembly 11.7520.I.170.000 Hose		30
75	Raw material	Rubber Profile (IRP 1285) Engine Nasel Rubber profile(Pink)		100 mtr
76	Raw material	FKS-2 Rubber sheets Thickness - 3.2 mm Used as sealing gasket in high temperature zone like Engine. Parts made from THIS rubber sheet should not cause corrosion in case of direct contact with aluminum alloys and steel zinc plated Rubber sheets		20 Kg
77	Raw material	FKS-2 Rubber sheets Thickness - 2.5 mm Used as sealing gasket in high temperature zone like Engine. Parts made from THIS rubber sheet should not cause corrosion in case of direct contact with aluminum alloys and steel zinc plated Rubber sheets		20 Kg
78	Raw material	Rubber compound 4327 Used for manufacturing of rubber components e.g. diaphragm, vibration insulators (shock-absorbers), thin-webbed and sealing parts (ring, sealing cups, valves etc)		20 Kg
79	Raw material	PPU-EO-100 Used in fuel tanks Polyurethane Foam		4500 Kg
80	Raw material	T-10 / Glass Cloth Used for manufacturing of structural parts of fin, radio electric equipment, panels of navigation system, distribution devices of electric equipment, in hot line before the turbo cooler and for parts of air conditioning system		100 mtr
81	Raw material	T-13 / Glass Cloth Used for manufacturing of structural parts of fin, radio electric equipment, panels of navigation system, distribution devices of electric equipment, in hot line before the turbo cooler and for parts of air conditioning system		100 mtr
82	Raw material	LLT-112 / Dacron/ Lavson tape Used as a structural material. It is used for gluing the canopy glass on the cockpit frame		100 mtr
83	Raw material	LLT-100 / Dacron/ Lavson tape Used as a structural material. It is used for gluing the canopy glass on the cockpit frame		100 mtr
84	Raw material	Acrylic glass sheet AO-120A (12 X 1800 X 1600 mm) Used for manufacturing canopy glass bubble and windshield		10
85	Raw material	Acrylic glass sheet AO-120A (9 X 1900 X 2200) Used for manufacturing canopy glass bubble and windshield		10

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Sr. No	Nomenclature of item	Part No./ Brief Specification/Major Assembly/ Description	Photo/ Drawing	Approx. Annual requirement
86	Raw material	PVC PIPE- RADPLAST-T2 3/1.5 MM RADPLAST (Heat shrink) tubes are meant for insulation, hermetic sealing and strengthening of soldered joints, joints of contact terminals, cable end fittings and plug connectors and working temperatures for these parts is 60 °C to +135 °C.		100 mtr
87	Raw material	PIPE RADPLAST-T2 4/2 MM RADPLAST (Heat shrink) tubes are meant for insulation, hermetic sealing and strengthening of soldered joints, joints of contact terminals, cable end fittings and plug connectors and working temperatures for these parts is 60 °C to +135 °C. PIPE		100 mtr
88	Raw material	PIPE RADPLAST-T2 6/3 RADPLAST (Heat shrink) tubes are meant for insulation, hermetic sealing and strengthening of soldered joints, joints of contact terminals, cable end fittings and plug connectors and working temperatures for these parts is 60 °C to +135 °C. PIPE		100 mtr
89	Raw material	ELECTRICAL INSULATING TEFLON TUBES/ F-4D HIGHEST GRADE, WHITE 5X1 GOST 22056-76 Used as electro insulating tube		5 mtr
90	Raw material	PTFE sheets (Thickness: 0.4 - 5 mm) Fluoroplast-4 is a product of polymerization of tetrafluoethylene. Used for fabrication of sealing ring, packing gasket for electro insulating, anti-frictional parts. of various aggregates		50 Kg
91	Raw material	PTFE sheets (Thickness: 6 -20 mm) Fluoroplast-4 is a product of polymerization of tetrafluoethylene. Used for fabrication of sealing ring, packing gasket for electro insulating, anti-frictional parts. of various aggregates		50 Kg
92	Raw material	PTFE sheets (Thickness: 21 - 40 mm) Fluoroplast-4 is a product of polymerization of tetrafluoethylene. Used for fabrication of sealing ring, packing gasket for electro insulating, anti-frictional parts. of various aggregates		50 Kg
93	Raw material	PTFE rods (Dia. 10 - 25 mm) Fluoroplast-4 is a product of polymerization of tetrafluoethylene. Used for fabrication of sealing ring, packing gasket for electro insulating, anti-frictional parts. of various aggregates.		100 Kg
94	Raw material	PTFE rods (Dia. 26 -50 mm) Fluoroplast-4 is a product of polymerization of tetrafluoethylene. Used for fabrication of sealing ring, packing gasket for electro insulating, anti-frictional parts. of various aggregatesPTFE rods.		100 Kg
95	Raw material	PTFE rods (Dia. 51 -100 mm) Fluoroplast-4 is a product of polymerization of tetrafluoethylene. Used for fabrication of sealing ring, packing gasket for electro insulating, anti-frictional parts. of various aggregates		100 Kg
96	Consumables	Sealing Compound U-2-28 Airframe		100 Kg

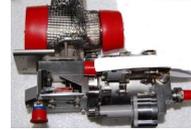
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Sr. No	Nomenclature of item	Part No./ Brief Specification/Major Assembly/ Description	Photo/ Drawing	Approx. Annual requirement
97	Consumables	Sealing Compound VGO-1 Airframe		50 Kg
98	Raw material	Round Bar Titanium Round Bar VT-16 Airframe Structural Components		1000 Kg
99	Raw material	Carbon Steel Rod C-25 Airframe Structural Components Round Bar		500 Kg
100	Raw material	Carbon Steel Rod C-45 Airframe Structural Components Round Bar		500 Kg

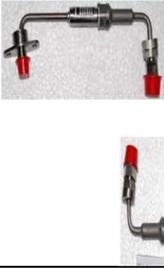
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Sl.No	Name of system/LRU	Part no./ Brief specifications/ Description	Photo	Approx Annual Requirement (from year 2020)
1	Gyro Reference Unit (GRU)	This provides the information of Roll,Pitch,Magnetic Heading, Rate (Pitch, Roll & Yaw), Acceleration (X, Y & Z).		20
2	Multi Function Display Unit[MFD]	It is a 5" x 5"color video display and control terminal in the avionics system.Input Voltage 28V. Resolution: 600 x 600 color quad pixels		60
3	V/UHF Blade Antenna	It is a passive blade antenna and operates in V/UHF frequency band. V/UHF radio is connected to this antenna through RF cable.		40
4	V/UHF Radio(ACR 500LA)	This equipment provides secure communication in VHF/UHF band, with users of similar or compatible equipment which may be either on ground or airborne.		40
5	Enhanced VDR Unit	Unified Video cum Digital Recorder(UVDR) is an airborne Digital multi-channel Recorder, which simultaneously acquires & records Digital Data from different sources to analyse the performance of A/C sub-systems.		20
6	Removable Mass Memory Device (RMMD)	It is a flash memory - based storage device in which the flight & mission data are stored.		20
7	Remote Cartridge Unit Holder (RCUH)	It is a holder of a miniature size solid state Digital Data Cartridge (RMMD)		20
8	High speed Blade Antenna (IFF Antenna)	This is an antenna used in Identification of friend, foe system.		40
9	24 Port Gigabit Ethernet Switch	This provides communication between Radar,Video Recorder and mission computer at a rate of 1 Gigabit.		20
10	RAM (Altimeter) Antenna	This antenna is used to measure the altitude above the terrain.		40
11	TACAN Antenna	This is an antenna used in line of sight system (TACAN) which provides slant range of the aircraft from the ground station using transmitter/transponder technique.		40
12	VOR – ILS Antenna:(A)	This is an antenna for radio based guidance system, which provides guidance in poor visibility conditions during approach to runway		20
13	VOR – ILS Antenna: (B)	This is an antenna for radio based guidance system, which provides guidance in poor visibility conditions during approach to runway		20
14	VOR Diplexer	This system provides guidance in poor visibility conditions during approach to runway		20
15	VOR-ILS Marker Antenna	This Antenna is part of VOR-ILS Marker used for runway approach.		20
16	Control Unit PressureReducing & Shut Of	This is a remotely mounted unit which controls the Shut-off and Pressure regulation functions of Pressure Regulating And Shut-Off Valve (PRSOV). The Shut-off head of PRSOV is controlled by the solenoid. Pressure control in PRSOV is obtained by controlling servo pressure to the Pressure Control Head of PRSOV in conjunction with a remotely mounted Datum Control Unit.		20
17	Hot Air Leak Sensing Element	This element consists of a eutectic salt whose impedance increases rapidly above a pre-determined temperature		140

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Sl.No	Name of system/LRU	Part no./ Brief specifications/ Description	Photo	Approx Annual Requirement (from year 2020)
18	Hot Air Leak Detection Control Unit	This unit is used to cut-off the bleed air in case of hot air leak in the system.		20
19	Valve Pressure Reducing & Shut-Off	It is a double headed, inline valve. The Shut-off head is controlled by a remotely mounted solenoid (Part of Datum Control Unit), which supplies upstream pressure to the rear of the Shut-off head. Pressure control is obtained by the rear mounted Pressure Control Head in conjunction with a remotely mounted Datum Control Unit.		20
20	Pressure Reducer-Cabin Seal	This unit is used to regulate the cabin seal pressure to a pre-determined value. It also has a Over pressure relief function in case of failure of the pressure regulating function.		40
21	Temperature Sensor - Cabin and Avionics	This unit is used to sense the temperature at the cabin inlet, Cabin outlet and Avionics inlet. It gives an appropriate voltage as output signal which is read by ECS Controller in order to control the ECS.		80
22	Temperature Sensor - PHE Outlet	This unit is used to sense the temperature at the Outlet of the Primary Heat Exchanger and give an appropriate voltage as output signal which is read by ECS Controller in order to control the ECS.		40
23	Pneumatic Temperature Sensor	This is a duct mounted, thermally operated sensor with a bi-metallic sensing element. This sensor takes the servo air supply from the duct, modulates it to the required value using the sensing element.		20
24	Primary Heat exchanger By-Pass Valve	This valve is used to regulate the flow by-passing the Primary Heat Exchanger to achieve a controlled mixed temperature at the outlet of Primary Heat Exchanger		20
25	Ejector Shut-Off Valve	This is a nominal 50mm inlet and 40 mm outlet diameter, Solenoid operated, pneumatically actuated butterfly valve with limit switches to monitor fully open and closed positions of the valve. This opens when the solenoid is energized. Also, it has an Over pressure relay which shall fully open when the upstream pressure reaches 9.5 bars absolute.		40
26	High Pressure Water Separator	This unit is used to extract water from incoming charge air. It is a high pressure water separator of fixed angle, swirl type with a wet air inlet, dry air outlet and a water drain connection.		20
27	Ground Power Receptacle (GPR)	The ground electrical power supply receptacle (aircraft plug) provides a 115/200V, 3 Phase, 400Hz AC Supply and 28V DC when servicing the aircraft or starting the engine.		20
28	Undercarriage Selector Lever	This is a selection switch in cockpit which controls normal Landing Gear extension and retraction operation. It is a lever operated snap action six pole double through switch with multi poles to enable necessary relay logic for retraction and extension operation of the under carriage. This will have indicators and override features integrated in it.		20
29	Control cable - Under carriage Emergency	Pull cable with handle, accessories & casing for manual operation of undercarriage emergency controls		20
30	Control cable - Park Brake Control	Pull cable with handle, accessories & casing for manual operation of park brake selector lever.		20
31	Emergency Undercarriage Selector Valve	2 position, 6 way manually operated valve. It will be operated in case of emergency, for extension of landing gear		20
32	Pressure Gauge	Bourdon tube based gauge to display pressure		60
33	Pressure Switch(P1&P3) Ty1	Converts pressure input to electrical signal at a set value of pressure & it is used for health monitoring of hydraulic system		60
34	Pressure Switch (P2) Ty2	Converts pressure input to electrical signal at a set value of pressure & it is used for health monitoring of hydraulic system		20
35	Pressure Switch(FCS) Ty3	Converts pressure input to electrical signal at a set value of pressure & it is used for health monitoring of hydraulic system		120
36	Slide & Swivel Joint	Joint capable of both sliding & swiveling in different length & shapes		40
37	Slide & Swivel Joint	Joint capable of both sliding & swiveling in different length & shapes		20
38	Slide & Swivel Joint	Joint capable of both sliding & swiveling in different length & shapes		40
39	Slide & Swivel Joint	Joint capable of both sliding & swiveling in different length & shapes		20
40	Slide & Swivel Joint	Joint capable of both sliding & swiveling in different length & shapes		40

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Sl.No	Name of system/LRU	Part no./ Brief specifications/ Description	Photo	Approx Annual Requirement (from year 2020)
41	Slide & Swivel Joint	Joint capable of both sliding & swiveling in different length & shapes		20
42	Slide & Swivel Joint	Joint capable of both sliding & swiveling in different length & shapes		40
43	Slide & Swivel Joint	Joint capable of both sliding & swiveling in different length & shapes		40
44	Slide & Swivel Joint	Joint capable of both sliding & swiveling in different length & shapes		20
45	Slide & Swivel Joint	Joint capable of both sliding & swiveling in different length & shapes		40
46	Slide & Swivel Joint	Joint capable of both sliding & swiveling in different length & shapes		20
47	Pressure Switch(EMDP) Ty4	Converts pressure input to electrical signal at a set value of pressure & it is used for health monitoring of hydraulic system		20
48	Pressure Switch (Park) - Ty5	Converts pressure input to electrical signal at a set value of pressure & it is used for health monitoring of hydraulic system		20
49	Antiskid Manifold	Brake manifold receives signal from antiskid brake controller and controls corresponding hydraulic fluid flow to the corresponding brakes. The anti-skid brake manifold contains 4 pressure control servo valves, 2 shuttle valves and 2 solenoid selector valves. The manifold should be symmetric about its axis. Each half is supplied by different hydraulic systems.		20
50	Brake Feel Input Potentiometer	This Brake feel module input potentiometer converts the Brake pedal tip deflection into electrical signal. The potentiometer will be excited by +5 V DC(max) regulated power supply from an electronic unit and the position output of 0-5 V DC will be fed to the digital conditioning hardware of Electronic unit.		80
51	Free castor valve (Solenoid Cock)	The Free caster valve makes the steering system to revert to the free caster mode, so the aircraft can be steered by differential braking of main wheels. It's a tow-port two-way single solenoid operated valve, the valve normally opens in either direction and both the ports will be closed when the solenoid is energised.		40
52	Main Wheel Tyre	Left side and Right side main landing gear are fitted with a High Pressure 26 x 8.00 -14 Tube less Cross Ply tyre. The operating temperature of tyre is -55 to 200 °C.		40
53	Nose Wheel Tyre	Nose Landing gear is fitted with two High Pressure 360 x 135 -6 tubeless cross Ply tyre. The operating temperature of the tyre is -55 to 200 °C		40
54	Nose Wheel Steering Feedback Potentiometer	The NWS feedback potentiometer is Rotary potentiometer, senses the position of the nose wheel during steering and transmits the data to the electronic controller for closed loop control.		20
55	Nose Wheel Steering Input Potentiometer	The Nose Wheel Steering Input potentiometer converts the Rudder pedal deflection into electrical signal. the pot will be excited by +10 V DC(max) regulated power supply from an electronic unit and the position output of 0-10 V DC will be fed to the digital conditioning hardware of Electronic unit.		40
56	Nose Wheel Steering Manifold	Nose wheel steering manifold is an electro hydraulic servo control (EHSV) manifold which receives the electrical signals from the digital controller and it supplies the hydraulic fluid to the LH/RH side of the NLG steering actuator as demanded by the pilot. The NWS manifold contains Electro hydraulic control valve (EHSV), By pass valve, Electro selector valve, Anti cavitation valve and pressure relief valve.		20
57	Air No-Fuel Float Valve	When installed within the aircraft fuselage tank will allow outward/inward venting of the tank during refue/defuel operation and inward venting at all steady- state flight condition. The valve will also prevent overfilling/spillage and fuel from entering the pressurisation and vent system during inverted flights.		120
58	Cap,3" dia ,fuel, composite,lightning safe	<ul style="list-style-type: none"> Installed in the top surface of Fuel tanks It is used to access for gravity refueling of the fuel tanks. It is leak proof and fool proof locking adapter. Standard dia of filler cap: 3 inch (75mm), Temperature range -53 Deg C to + 93Deg C. Made of light weight material with lightning protection. Max operating pressure inside the tank is 50 Psig 		100
59	DC Starting Pump	Supplies fuel in adequate quantity and at required pressure for Jet fuel starter <ul style="list-style-type: none"> Installation : Flange mounted, installed inside the fuel tank, submerged in inverted flight compartment Nominal operating voltage: 28V DC Installation : Flange mounted, installed inside the fuel tank, submerged in inverted flight compartment Nominal operating voltage: 28V DC 		20
60	Differential Pressure Switch	<ul style="list-style-type: none"> Provides indication to the controller when differential pressure exceeds a pre-set value Operates on 28V DC 		40

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Sl.No	Name of system/LRU	Part no./ Brief specifications/ Description	Photo	Approx Annual Requirement (from year 2020)
61	Double Ended Fuel Booster Pump	<ul style="list-style-type: none"> Dual inlet, centrifugal pump, driven by a single electric motor Supplies fuel at required inlet conditions (flow rate & pressure) to meet the maximum engine demand (7 kg/sec). Installation : Vertically mounted inside the fuel tank, submerged in inverted flight compartment. Nominal operating voltage: 115 V AC, 3 phase, 400 Hz. 		20
62	Float Valve	<ul style="list-style-type: none"> Used in the refueling / fuel transfer system Fuel transfer is initiated when fuel level drops below the float valve level and stops when float valves are fully immersed. 		100
63	Fuel Drain Valve	<ul style="list-style-type: none"> Spring loaded valve, used to drain fuel from fuel tanks Valve should flush with the tank contour Installation : bottom most point of CFC fuel tanks 		240
64	Fuel Emergency Pump	<ul style="list-style-type: none"> Helical impeller / vane type pump driven by gear type hydraulic motor operating at 280 bar pressure. Operates when main booster pump fails, based on the input from the selector valve. Installation : Flange mounted inside the fuel tank, submerged in inverted flight compartment with hydraulic motor and its connections. Nominal operating voltage: 115 V AC, 3 phase, 400 Hz 		20
65	Fuel Shut Off Cock	This is a motorized, bi-directional ball valve with straight through hole designed for unobstructed flow to the engine. The rapid shut off is accomplished by a light weight 27 VDC permanent magnet motor. The gear box coupled to cam drives this cam over an angular travel of 90± 5. This valve is having a provision for thermal relief on the up stream side only to relieve high pressure fuel due to high temperature when the valve is shut off.		40
66	Motorized Shut Off Valve(Low pr shut off cock)	<p>It is motorized valve to shut-off / ON fuel supply to the engine by the pilot selection.</p> <ul style="list-style-type: none"> Bi-directional ball valve for unobstructed flow to the engine Light weight 16/28 V DC permanent magnet motor with construction of gear box cam drives. Valve has thermal relief on the upstream of the flow. Normal operating pr : 350 kPa, Operating time = 3 sec, Max flow rate 7.5 to 8.5 Kg/sec. 		20
67	Power Take-off shaft	During Engine starting , PTO shaft trasmits power from AMAGB (Aircraft Mounted Accessory Gear Box) to Engine gear box and during normal operation , it transmits power from engine gear box to AMAGB.		20
68	Pressure Reducing Valve	<ul style="list-style-type: none"> Spring loaded plunger valve Used in fuel tank pressurization / vent system for reducing the pressure of high pressure air tapped from ECS to suit fuel tank pressurization requirements 		20
69	Pressure Reducing Valve	<ul style="list-style-type: none"> Spring loaded plunger valve Used in fuel tank pressurization / vent system for reducing the pressure of high pressure air tapped from ECS to suit fuel tank pressurization requirements 		20
70	Refuelling Valve	<ul style="list-style-type: none"> Used for pressure refueling of fuel tanks Operation (Open / close) based on the signals from controller Differential pressure operated valve, controlled by solenoid valve 		80
71	Stop Air Valve	<p>Valve is used to prevent:</p> <ul style="list-style-type: none"> Ingress of air into the fuel transfer line from fuel tanks, once the transfer is completed by actuation of float operated valve. Transfer of both fuel and air during inverted / negative "g" flight conditions. Fuel flow from transfer pipe to the tank in case the line pressure in pipe line is higher than tank pressure. 		60
72	Straitener, Flow	<ul style="list-style-type: none"> Installed in the Engine fuel feed system It is used to measure the mass of the fuel flow to the engine. It is turbine (impeller) fuel flow meter , impeller speed is converted into electrical frequency which is function of volumetric flow rate. Temperature range -53 Deg C to + 93Deg C. Max fuel temp : 120 Deg C (short duration) 		20
73	Surge Relief Valve - F1A Tank	Spring loaded valve, installed on F1A fuel tank. Relieves excess fuel pressure when tank pressure exceeds the pre-set value. Valve closes automatically when tank pressure falls below the pre-set value		20
74	Relief Valve(Surge relief valve F1/2 tank)	Spring loaded valve, installed on F1/2 fuel tank. Relieves excess fuel pressure when tank pressure exceeds the pre-set value. Valve closes automatically when tank pressure falls below the pre-set value		40
75	Surge Relief Valve - LH &RH Wing Tanks	Spring loaded valve, installed on LH & RH wing fuel tank. Relieves excess fuel pressure when tank pressure exceeds the pre-set value. Valve closes automatically when tank pressure falls below the pre-set value		40

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Sl.No	Name of system/LRU	Part no./ Brief specifications/ Description	Photo	Approx Annual Requirement (from year 2020)
76	Transfer cum Refuelling Valve	<ul style="list-style-type: none"> Used in the refueling / fuel transfer system Installed in collector tank and controlled by the float valves connected via the servo tube. Shall act as a NRV to prevent back flow of fuel from collector tank to transferring tanks. 		100
77	Transmitter	Installed in Engine feed line indicates the rate at which the fuel is fed to the engine. Refer description of straitener.		20
78	Seal Rubber Special shaped section-Engine Inlet	It is used for sealing between Engine inlet face and Aircraft air intake duct.		20
79	Anti collision(Strobe) light	Anti-collision lighting system is to provide identification and position marking of the aircraft by flashing. This need to provide adequate illumination so that the aircraft can be seen in ample time by other aircraft, under normal contact operating conditions to avoid collision.		40
80	Power supply Unit (or) Energy Box(Part of anticollision system)	The energy box provides energy for flashing the anti-collision light		20
81	Wander light	It is a cockpit internal light used as an emergency source of light for illuminating maps, charts and other work areas. The light operates in two modes (red light or white light) which is NVG compatible and light output can be changed from red to white and white to red easily.This light is equipped with a self contained intensity control whereby the light output can be uniformly varied from full brightness to OFF position over the range of control.		20

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Sl. No.	Nomenclature of Item	Part No. / Brief Specification / Description	Photo	Approx. Annual Requirement
1	Combined unit PCB BK-02	DM2.257.100-02/ Board for amplification of fire sensors output potted with transparent glue.		400
2	Connector	SR-75-280FV/ connectors for making connecting cables of SO-EMS in aircraft		100
3	Connector	SR-75-109F/ connectors for making connecting cables of SO-EMS in aircraft		100
4	Main processing Board-1 and 2 Make: Aitech	<p>P/No: 4C108L-R7100-28/ The Main Processor Board(MPB) performs the following functions:</p> <ol style="list-style-type: none"> Configures MC2 as Bus Controller and manage data transmission on MIL-1553B bus Mission and weapon data computation Communicates with MDPU over Ethernet link to manage Crystal Maze, LITENING, CMDS, HMDS, ACMI training function and Laser guided bomb functions. Gateway between MIL - 1553B bus and Ethernet link to MDPU. Handling of Input/ output module, Video switching module and graphics module Health monitoring 		24
5	Graphics PMC-1, , Make: Aitech	<p>P/No: CS4M597-R1C-02/ The Graphics PMC performs the following functions:</p> <ol style="list-style-type: none"> Accept video inputs from different store stations and process them. Generate and overlay graphic patterns and symbols on selected input videos Video switching to corresponding output line Video resizing based on the output format specification 		24

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Sl. No.	Nomenclature of Item	Part No. / Brief Specification / Description	Photo	Approx. Annual Requirement
6	416-01380-000 SMOOTHING COIL 50μH/8A	55101157/ It is a smoothing coil-50 micro H/8A (416-01380-000)		70
7	416-01381-000 SMOOTHING COIL 600μH/0.8A	55101160/ It is a smoothing coil and drawing is available. (416-01381-000)		140
8	416-01382-000 SMOOTHING COIL 100UH/6A	55101161/ It is a smoothing coil and drawing is available. (416-01382-000)		70
9	416-01386-000 COIL FOR TRANSFORMER (WINDING TRANSFORMER)	55101162/ Transformer (416-01386-000)		70
10	416-01396-000 TRANSFORMER 5V/5000HZ	55101159/ It is a transformer. And operating ac signal is 5 V and 5 KHz. (416-01396-000)		70
11	420-01233-000 TRANSFORMER COMMAND VMOS	55101158/ Transformer (420-01233-000)		70
12	416-10759-000 GALVANIC ISOLATING TRANSFORMER	55101163/ It is an electro-element transformer and drawing is available. (416-10759-000)		140

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Sl. No.	Nomenclature of Item	Part No. / Brief Specification / Description	Photo	Approx. Annual Requirement
13	416-10859-000 INDUCTOR(REACTOR)	55101164/ It is an inductor and drawing is available (416-10859-000)		150
14	195-97016-780 REACTANCE COIL	55101165/ It is a Smoothing coil and drawing is available (195-97016-780)		210
15	195-97016-A20 TRANSFORMER 400HZ	55101166/ It is a transformer and drawing is available. (195-97016-A20)		140
16	420-01735-000 TRANSFORMER MB146 8 REF. 26V 400HZ	55101167/ It is a transformer. (420-01735-000)		70
17	261523410-0101 MODULE ALIMENTATION APALIM	55101130/ It is a power supply module., inputs is +28V DC and gives out put DC voltages +15V1 -15V, +5V, -5V,+3V. (261523410-0101)		70

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Sl. No.	Nomenclature of Item	Part No. / Brief Specification / Description	Photo	Approx. Annual Requirement
18	191874169 BONDING LUG (WIRE BONDING 1.4MM2 DIA.3,5-4,17 L.63)	86700103/ It is an earth strip/grounding cord,connected to Helicopter body and it is required to discharge the static charges on unit. (191874169)		70
19	ES-1J2-511-025 CONDUCTIVE SEAL 388X2,68/1,02MM	ES-1J2-511-025/ It is a conductive gasket. Manufacturer is COMPELMA and data sheet is available. (ES-1J2-511-025)		140
20	420-11589-000-20 BONDING SEAL	55101151/ It is a conductive gasket. Manufacturer is COMPELMA and data sheet is available. (420-11589-000-20)		140
21	420-11434-000-20 BONDING SEAL	55101150/ It is a conductive gasket. Manufacturer is COMPELMA and data sheet is available. (420-11434-000-20)		70
22	ES-1J2-511-1 CONDUCTIVE SEAL 331X2,68/1,02MM	55101139/ It is a conductive gasket. (ES-1J2-511-1)		70

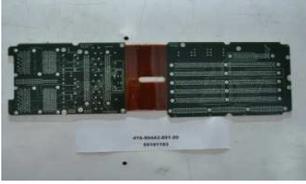
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Sl. No.	Nomenclature of Item	Part No. / Brief Specification / Description	Photo	Approx. Annual Requirement
23	ES-1J2-511-3 CONDUCTIVE SEAL 242X2,68/1,02MM	55101138/ It is a conductive gasket. (ES-1J2-511-3)	 <p style="text-align: center;">ES-1J2-511-3 55101138</p>	70
24	416-01729-000 EQUIPPED FRONT FACE	55101132/ It is a front panel of Pilot control Unit and consists push buttons , lamps , two PCBs , LED display, window glass and Flaps (416-01729-000)	 <p style="text-align: center;">416-01729-000 55101132</p>	50
25	416-90372-002-20 Bare PCB PCU ALIM	55101173/ It is a multilayer PCB (6-layers) and made with raw material : Polyimide glass. (416-90372-002-20) IPC-6012 CLASS-3A	 <p style="text-align: center;">416-90372-002-20 55101173</p>	50
26	416-90374-001-20 Bare PCB PCU FOND	55101174/ It is a Rigid-Flex-Rigid multi layer PCB(6-layer) and made with Polyimide Glass.. (416-90374-001-20) IPC -6013 CLASS-3, TYPE -4	 <p style="text-align: center;">416-90374-001-20 55101174</p>	50
27	416-90373-001-20 Bare PCB PCU MIC	55101175/ It is a multi layer PCB (8-layer) and made with Polyimide Glass. (416-90373-001-20) IPC-6012 CLASS-3A	 <p style="text-align: center;">416-90373-001-20 55101175</p>	50

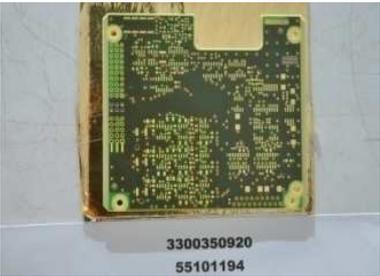
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Sl. No.	Nomenclature of Item	Part No. / Brief Specification / Description	Photo	Approx. Annual Requirement
28	416-90437-000-20 Bare PCB SERPAN Board	55101176/ It is a Multilayer PCB(8-layers) and made with Epoxy glass 52 EP 6C CU. (416-90437-000-20) IPC-6012 CLASS-3A		70
29	3300419577 (416-90438-000) Bare PCB TREPANS Board	55101177/ It is a Multilayer PCB(8-layers) and made with Epoxy glass 52 EP 6C CU (3300419577 - (416-90438-000)) IPC-6012 CLASS-3A		70
30	3300050704 Bare PCB CITAR2	55101178/ It is a two layer PCB and made with Epoxy FR4 8/10 IPC-6012 CLASS-3A (3300050704)		140
31	416-90468-000-20 Bare PCB ADAPT -NS	55101179/ It is a single layer PCB and made with Epoxy glass 52 EP 6C CU IPC-6012 CLASS-3A. (416-90468-000-20)		140
32	416-90429-001-20 Bare PCB ARIPANS Board	55101180/ It is a Multilayer PCB(10-layers) and made with Epoxy glass 52 EP 6C CU IPC-6012 CLASS-3A. (416-90429-001-20)		70

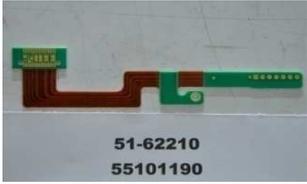
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Sl. No.	Nomenclature of Item	Part No. / Brief Specification / Description	Photo	Approx. Annual Requirement
33	416-90436-001-20 Bare PCB GETAPAN Board	55101181/ It is a multi layer PCB (10-layer) and made with Polyimide Glass. IPC-6012 CLASS-3A. (416-90436-001-20)		70
34	416-90316-000-20 Bare PCB CIFOU Board	55101182/ It is a multi layer PCB (4-layer) and made with Polyimide Glass. IPC-6012 CLASS-3A. (416-90316-000-20)		70
35	416-90443-001-20 Bare PCB CIF-AFCC Board	55101183/ It is a Rigid-Flex-Rigid Multi layer(16-layer) PCB . Flex part made with : Polyimide -(Kapton) 54 PI CU Rigid Part : Polyimide Glass IPC -6013 CLASS-3,TYPE -4 (416-90443-001-20)		70
36	416-90399-002-20 Bare PCB PROPAN2 Board	55101184/ It is a multi layer PCB (10-layer) and made with Polyimide Glass. IPC-6012 CLASS-3A. (416-90399-002-20)		140
37	416-90435-000-20 Bare PCB ALIPANH Board	55101185/ It is a Multilayer PCB(8-layers) and made with Epoxy glass 52 EP 6C CU IPC-6012 CLASS-3A. (416-90435-000-20)		70

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Sl. No.	Nomenclature of Item	Part No. / Brief Specification / Description	Photo	Approx. Annual Requirement
38	416-90442-000-20 Bare PCB ALI5V5KHz Board	55101186/ It is a two layer PCB and made with Epoxy glass 52 EP 6C CU IPC-6012 CLASS-3A. (416-90442-000-20)		70
39	3300350855 Bare PCB APNUM# Board	55101193/ It is a multi layer PCB(8-layers) and made with Epoxy FR4 HTG170 IPC-6012 CLASS-3A. (3300350855)		70
40	3300350920 Bare PCB APMAG3 Board	55101194/ It is a multi layer PCB(6-layers) and made with Epoxy FR4 HTG170 IPC-6012 CLASS-3A. (3300350920)		70
41	420-90553-000-20 Bare PCB APPROT3 Board	55101187/ It is a two layer PCB and made with Epoxy glass 52 EP 6C CU IPC-6012 CLASS-3A. (420-90553-000-20)		70
42	420-90554-000-20 Bare PCB APFOND Board	55101188/ It is a two layer PCB and made with Epoxy glass 52 EP 6C CU IPC-6012 CLASS-3A. (420-90554-000-20)		70

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Sl. No.	Nomenclature of Item	Part No. / Brief Specification / Description	Photo	Approx. Annual Requirement
43	420-90552-002-20 Bare PCB APES3 Board	55101189/ It is a multi layer PCB (6-layer) and made with Polymide Glass. IPC-6012 CLASS-3A. (420-90552-002-20)		70
44	51-62210 LP Flex Laser Bare PCB	55101190/ It is a multi layer Flex PCB(4-Layers) IPC -6013 CLASS-3,TYPE -4. (51-62210)		70
45	51-21210 LP APGYR Bare PCB	55101192/ It is a multi layer PCB(8-layer) IPC-6012 CLASS-3A. (51-21210)		70
46	51-22210 LP ADC Bare PCB	55101191/ It is a multi layer PCB(8-layer) IPC -6013 CLASS-3,TYPE -4. (51-22210)		70
47	420-90558-000 FLEX PRINTED CIRCUIT BOARD	55101156/ It is a two layer PCB. (420-90558-000)		70

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Sl. No.	Nomenclature of Item	Part No. / Brief Specification / Description	Photo	Approx. Annual Requirement
48	420-90555-000 FLEXIBLE CIRCUIT(PCB)	55101155/ It is a two layer PCB. (420-90555-000)		140
49	131-23291-004 PRINTED CIRCUIT	55101195/ Single layer PCB. (131-23291-004)		10
50	Tx Power Supply	391498/ The Tx Power Supply module generates the DC Voltages: +5V, + 15V and -15V required inside the Transmitter Unit. It produces this DC Voltages starting from 220V-50Hz coming from Power Transformer Strip The Tx Power Supply module also contains a BITE logic, which generates the +5V/±15V Power Good signal toward the external Channel Control Panel.		12
51	Scan Motor	623732/ It is 3 phase asynchronus motor ,power consumption 4.0KW,Rpm 1430,50Hz input 400V in Delta connection,8.8A 630V in Star connection ,4.85A		12
52	Main Reducer	623632/ Input power :4.0KW Gear Ratio: N1/N2=23452,N3/N2=2 Input Shaft speed : 1402-1465 RPM		7
53	Floating Deck Low Voltage	391930/ Floating deck low Voltage module generates 1.Heater Voltage: -6.3V with respect to TWT Cathode. It supplies the heat power for cathode thermionic electrons emission. 2..Grid OFF Voltage (Bias): roughly -320V with respect to TWT Cathode potential. 3. Grid ON Voltage: hardware programmable from 150V to 220V with respect to TWT Cathode potential.		7

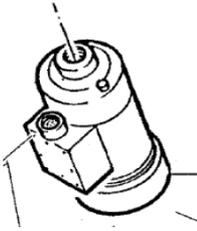
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Sl. No.	Nomenclature of Item	Part No. / Brief Specification / Description	Photo	Approx. Annual Requirement
54	TWT Alarm Board	306012/ 1.TWT alarm assy allows to enable the main amplifier only during transmission time to avoid thermal and dissipation problems on the component. For the same reason, a thermal switch can disable the amplifier in case of over temperature alarm; 2. All the signals detected by the detector assy are processed by comparators, each of them having a tuning resistor to set the alarm threshold. These resistors are chosen during the testing of the unit.		12
55	Inverter Module	355112-001/ It consists of two assemblies one is Inverter and second one is RFI filter 1.Inverter: Type:FRN4,OG11S-4EN Input: 3phase, 380-480vAC,50/60Hz,14.9A output: 3Phase,380-480VAC,0.1to 400Hz,4.0KW,9.0A. 2.RFI filter:Type: FT2000-5.5-T input :3 phase,3*440V,50/60Hz,12A		12
56	Display Controller	392001/ It is CPU having following charactriProcessor: Pentium IV Clock: 3.2GHz RAM: 512MB Graphic Board: MATROX-32MB RAM video, resolution 1024 x 768 (min) Hard Disk: 20GB Network Board: dual channel Ethernet 100 Mb/sec Operating System: Windows 2000		12
57	Power supply -2	626651-020/ 1.Input :220VAC,47/63Hz,5A max ,power factor >0.7 2.Out put : 0-120VDC ,I out (Peak) 10ADC,Pout (peak):1200W,Pout (Nominal):480W		12
58	X Band Driver Amplifier	688434-002/ 1. Amplifier works on 8.9Ghz to 9.5Ghz frequency,it accept a TTL pulse mode command 2. Input power supply +/-15V DC 3. Input power range: -4dBm to +2dBm 4.Out put power between +32dBm to +34dBm 5.VSWR shall not exceed 1.5:1		12

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Sr. No.	Nomenclature of the item	Part No. / Brief Specification/Description	Photo / Drawing	Approx Annual Requirement
1	CHECK VALVE	3761B000 / The check-valves are fitted in the LH/RH bleed air line just before the point where the air flows combine. The check-valves are insert type, double flap stainless steel check valves. The valves are biased to the closed position by a torsion spring and are also provided with over-center stops. The valves are fitted in the bleed air lines to prevent reverse flow if one engine is shut down.		20
2	COOLING UNIT	1431D000 / The cold air unit is of the conventional 'turbo-fan' type comprising an inward flow radial turbine driving an axial flow fan.		10
3	Shut Off VALVE	7588B000 The shut-off valves are fitted directly downstream of the bleed air elbows on each engine. The valves are pneumatically actuated in-line shut-off valves controlled by a solenoid valve.		20
4	VOLTAGE REGULATOR	GCSG503-4A / Voltage regulators are part of DC generation system in the aircraft and controls two 28V DC, 300A Starter/generators working simultaneously. Incorporates control and protection circuits to ensure that the required output voltage is maintained within +/- 0.5 V throughout the normal speed/load range of the generators. Protection is provided against overvoltage, over-excitation and reverse or differential current		20
5	DC VOLTMETER,32V	2126-125-00-00 / One inch dial voltmeter used to display 28 V DC system voltage in the aircraft. Range 0-32V. Mounted on overhead panel		10
6	AC VOLTMETER,115V	2126-215-00-00 / One inch dial voltmeter used to display 115 VAC system voltage in the aircraft. Mounted on overhead panel.		20
7	AMMETER,500A	2126-321-00-00 / One inch dial ammeter used to display 28V DC system load in the aircraft. Mounted on overhead panel.		20
8	DIMMER	3228-10MODE1 / Controls light intensity of cockpit and instruments light during day and night. The annunciators and warning lamps can be dimmed by the DIM switch (DAY/NIGHT).		10
9	FUEL BOOSTER PUMP	IC12-32 / Booster pump provide motive flow for the jet pump to transfer the fuel from one tank to another and also provide the fuel for engine.		40
10	PILOT VALVE	242885-2 / The left and right fuel control pilot valves are installed in the top of the appropriate inner wing tank. They control their associated refueling valves. Each fuel control pilot valve consists of a float operated valve which opens or closes the fuel control line. The movements of the float are damped by a spring. A drain port in the bottom of the valve container is opened and closed by a solenoid valve		20

TAD, KANPUR

Sr. No.	Nomenclature of the item	Part No. / Brief Specification/Description	Photo / Drawing	Approx Annual Requirement
11	PILOT OPERATED CHECK VALVE	9467 / Do-228 Pilot operated check valve provides a bypass of the landing gear selector valve in case of its jamming in landing gear up position. Provides additional return line in case of emergency operation of landing gear extension. Operated by pneumatic pilot pressure.		6
12	JET PUMP	SP5260 / The motive fuel flow for all four jet pumps is taken from a common pipe which is fed by the booster pumps. The venturi effect created in the jet pumps by this flow causes fuel to be pumped continuously from each tank via the transfer pipes into the feeder tank		40
13	JET PUMP	SP5250 / The motive fuel flow for all four jet pumps is taken from a common pipe which is fed by the booster pumps. The venturi effect created in the jet pumps by this flow causes fuel to be pumped continuously from each tank via the transfer pipes into the feeder tank		60
14	FUEL QUANT.TRANS.	VT087-2 / Fuel quantity Transmitter are of the dual concentric tube capacitive and changes in direct relationship with change in fuel level		40
15	FUEL QUANT.TRANS.	VT087-1 / Fuel quantity Transmitter are of the dual concentric tube capacitive and changes in direct relationship with change in fuel level		40
16	FUEL QUANTITY TRANS.TANK	VT089-1 / Fuel quantity Transmitter are of the dual concentric tube capacitive and changes in direct relationship with change in fuel level		20
17	FUEL QUANTITY TRANS.TANK	VT089-2 / Fuel quantity Transmitter are of the dual concentric tube capacitive and changes in direct relationship with change in fuel level		20
18	WIPER MOTOR	XW21160-2 / The wiper motor is the part of wiper system and provides the drive for the wipers. The motor is series wound and consists of a suppressor, thermal overload protection and a parking switch.		10
19	WIPER ARM	XW20500-2-1693-1 / The wiper arms are made of stainless steel and are secured to the converter /gearboxes of wiper system. A spring located in the wiper arm presses the wiper blade against the windshield. The contact pressure of the wiper blade can be adjusted by a screw on the arm pivot. The arm position is adjustable on the converter / gearbox shaft.		20

TAD, KANPUR

Sr. No.	Nomenclature of the item	Part No. / Brief Specification/Description	Photo / Drawing	Approx Annual Requirement
20	CONVERTER	XW21121-344-70 / Coverter is a worm drive gearbox with a reduction ratio of 155:1. It is used in wiper system. It converts rotational motion from the wiper motor into an oscillating angular motion.		20
21	VALVE ONEWAY RESTRICTOR	B2014-10 / This is Restrictor / check valve fitted in the extension line to the nose gear actuator. The restrictor/ check valves control the extension and retraction time of the Main and Nose Landing Gears.		10
22	GEAR BLOW DOWN UNIT	40005100-1 / Emergency Gear Blow Down system system is used to lower the landing gears by nitrogen pressure in case of hydraulic system failure. The main component of this system is the gear blow down unit. This consists of a nitrogen bottle, blow down valve, charging valve, pressure relief valve and pressure gage. The blow down valve is cable operated from an EMERG LDG handle in the cockpit. A safety clip over the handle guards against inadvertent operation.		10
23	BRAKE ACCUMULATOR	6-5121-0000-4 / The brake accumulator supplies hydraulic pressure to parking brake system. It gets charged up again when the power pack is operating. This accumulator consists mainly of a cylinder and a piston. The piston separates precharged gas on one side from hydraulic oil on the other side. The hydraulic side is connected to a pressure line of the hydraulic system.		10
24	LOCKING, LANDING GEAR (UPLOCK)	S4-4500151 / The Landing Gear - Up Lock is used to lock and unlock the Main and Nose landing Gears in retracted position. It is a Hydro-mechanical unit. Locking is provided mechanically through insertion of hook whereas unlocking is provided by hydraulic pressure in normal condition or by gas pressure in emergency condition. The mechanism also provides the electrical indication of unlock position through micro switch.		30
25	NLG ACTUATOR	S4-3300264 / The Nose Landing Gear (NLG) Actuator is double-acting hydraulic cylinder. This actuator retracts to lower the NLG and extends to raise the NLG. This actuator locks internally in the retracted position to keep the NLG in extended position without pressure. The fully retracted position of actuator is signaled electrically. Actuator is normally operated by hydraulic pressure and on 'EMERGENCY' arising out of hydraulic failure; it is retracted by pneumatic (nitrogen) pressure.		10
26	NWS ACTUATOR	572B0000-02 / The steering actuator is an electrically controlled hydraulic actuator mounted on the nose landing gear leg and connected to the nose wheel steering pivot mechanism by a bellcrank and rod. A servo valve, controlled by the servo channel of the steering control unit, controls hydraulic fluid flow to the actuator cylinder.		10
27	MLG ACTUATOR-LH	S4-3300690 / These Main Landing Gear Actuators are double-acting hydraulic cylinders. These actuators extend to lower the MLG and retract to raise the MLG. These actuators lock internally in the extended position to keep the MLG in extended position without pressure. The fully extended position of actuators is signaled electrically. Actuators are normally operated by hydraulic pressure and on 'EMERGENCY' arising out of hydraulic failure, actuators are extended by pneumatic (nitrogen) pressure. The actuators are fitted with shuttle valve to facilitate the emergency operation. The LH and RH actuators differ only in the orientation of the shuttle valve.		10

TAD, KANPUR

Sr. No.	Nomenclature of the item	Part No. / Brief Specification/Description	Photo / Drawing	Approx Annual Requirement
28	MLG ACTUATOR-RH	S4-3300680 / These Main Landing Gear Actuators are double-acting hydraulic cylinders. These actuators extend to lower the MLG and retract to raise the MLG. These actuators lock internally in the extended position to keep the MLG in extended position without pressure. The fully extended position of actuators is signaled electrically. Actuators are normally operated by hydraulic pressure and on 'EMERGENCY' arising out of hydraulic failure, actuators are extended by pneumatic (nitrogen) pressure. The actuators are fitted with shuttle valve to facilitate the emergency operation. The LH and RH actuators differ only in the orientation of the shuttle valve.		10
29	SWITCH	4212C000 / It is a rotary switch mounted in control panel of environmental system. This switch is used to set the cabin temperature from cold to hot.		10
30	IMPACT SWITCH	3LO-453/3 / The impact switch interrupts power to the flight data recorder (depending on forward "g" forces to prevent tape/data erasing.		10
31	FLUX VALVE	071-1052-00 / The flux valve senses the direction of the earth's magnetic field and supplies the information in a 3-wire synchro format to the slaved directional gyro. They consist of magnetic laminations which are wire wound in a toroidal fashion. The toroid is excited with 26 V,400Hz supplied from the slaved directional gyro.		10
32	TEMPERATURE SENSOR	4232C000 / The sensors are twin thermistor bead types with the two beads mounted at the end of a metal probe and encapsulated in epoxy resin. Two temperature sensors are fitted for regulating the cabin temperature.		10
33	CONTROL UNIT	VT246-8 / Part of fuel indication system. Outputs from fuel quantity transmitters are supplied to the control unit where the signals are processed into a form suitable for the fuel quantity indicators		20
34	NOSE WHEEL STREERING CONTROL UNIT	323D8000-01 / Part of nose wheel steering system. It consists of a servo channel, monitor channel and control logic circuitry to control steering.		10

TAD, KANPUR

Sr. No.	Nomenclature of the item	Part No. / Brief Specification/Description	Photo / Drawing	Approx Annual Requirement
35	U/C SELECTOR LEVER	717201-1 / Installed on front panel used to select landing gear position UP & DOWN. Provides visual warning during transition of landing gear from one position to another		10
36	ALTITUDE ENCODER (Blind Coder)	305154-00 / This altitude encoder provides Baro altitude information in electrical signal (gillham code)		10
37	Pressure Gauge	DK513-2 / This pressure gauge is bourdon type gauge used to indicate the pressure of brake accumulator. Pressure Range : 0 to 300 bar. Working Medium: Nitrogen		10

Overhaul Division, Bangalore

Sr. No	Name of system/LRU	Part No./ Brief Specification / Description	Photo	Approx. Annual Requirement
1	Armament Main Unit (AMU)	700-1-16900 / Armament Main Unit (AMU) is part of Weapon Control System (WCS) on fighter aircraft. It has timing circuits for internal power supply . The unit controls for the release of weapon stores from the aircraft.		5
2	Flexible Fuel Tanks with cover plate.	1623-1-208 & 1623-2-208/ Flexible Fuel Tank is a rubberized tank installed in the Fuselage. Tanks are held in position with the assistance of a Stud Ring on either sides and at the ends fitted with Doors.		8
3	Screw & Nut Assembly	1-5213-410,1-5214-410,1-5215-410,1-5216-410,2-5213-410,2-5214-410,2-5215-410,2-5216-410,3-5214-410,4-5214-410 (Different Sizes) , Screw & Nut Assembly is a sub-assembly of Leading Cylinder to operate control surfaces . It consists of a multi start threaded Rod which assemble with Planetary rollers nut. One side eye end is fastened.		25
4	Potentiometer	H301B / The Potentiometer consists of a Shaft that controls contact wiper, that slides on a resistive winding which is mounted in a housed bearing. The shaft and contact assembly can rotate freely through 360 degrees.		20
5	Motors for Fuel Valve Actuators	HTE1833 / This motor is used for Operating Fuel Valve with 90 degree angular movement.		100
6	Arrestor Hook Assembly	121S-45-483-000 / Arrestor Hooks for retardation of the aircraft during landing on the decks.		1
7	Fuel Flow Indicator	57 DG / It gives the rate of fuel supply to two engines independently. The indicator contains two separate movements, one for each engine.		8
8	Combined Speed Indicator	M2289 / Combined speed indicator comprises of Air speed Indicator and Mach indicating unit housed in a single case. The air speed section of the instrument is conventional capsule driven which indicates as pointer moves over the dial. Mach number is presented on a two digit counter visible through two cutouts on upper half of the dial.		2
9	Control and Protection Unit	4332Y01 / This unit controls the automatic switching of the generator excitation and the main line contactor when the parameters of the three phase are within limits. If a fault condition arises the generator becomes de-excited and the bus bar dis-connected.		3

Overhaul Division, Bangalore

Sr. No	Name of system/LRU	Part No./ Brief Specification / Description	Photo	Approx. Annual Requirement
10	Fuel Flow Amplifier	373F200-114 / The amplifier is the central element of a fuel consumption indicating system for a two engined aircraft. This amplifier provide the data on the instateneous fuel flow to two engines and total quantity of the fuel consumed by two engines.		4
11	Motor for Gun Purging Actuator	CZ54249 / It operates the Gun door, the actuator is a linear actuator powered by a DC motor and controlled with in preset limit by internal micro switches. Actuator is fully sealed and incorporates mechanical stops restraining the plunger in the event of limit switch failure.		2
12	Ajax Assembly	152D100 / The AJAX electro mechanical assembly is mounted in parellel on the tail plane control to give the pilot an artificial feel proportion to the airspeed and altitude . It behaves as a spring the stiffness of which varies as the aircraft speed and height information varies. its operation is automatic and does not relay on pilot.		2
13	Weapon control panel	700-1-17150 / It is a part of weapon control system which provides pilot operated controls ., bus-bar indicators and the pilot store information display. It has nine switches and five stores.		3
14	Monitor control panel	700-1-17250 / The weapon monitor panel is used only on two seat aircraft, it dublicates the stores information display given by the control unit and provides monitoring of certain selection made by the pilot. Two test switches are fitted one for checking the serviceability of the indicators and the other for checking the presence of the bus bar supplies.		1
15	Electro Pump	EP9520-10 / Electro pump provides the aircraft hydraulic services in the event of failure of the Main hydraulic pump. It comprises a self regulating plunger type hydraulic pump with variable flow rate, a compound self cooling electric motor.		3
16	Lighting Control Unit	23171 / The control unit in conjunction with power supply unit provides a variable AC supply for the aircraft cockpit fluorescent lighting. This contains three microswitches, two connector blocks, three power control rheostats (two twin ganged and one single) and an externally mounted connector.		2

Sukhoi Engine Division - Koraput

Sr.No.	Nomenclature of item	Partno./Brief specifications/Description	Photo/Drawing	Approx Annual Requirement
1	Absolute pressure sensor	<p>Part no. PAD-1.6 Brief specifications: Secondary source voltage: $6\pm 0,3$ V Sine wave current Frequency Hz: 2000 ± 1 Current consumption, A: 0,025 Temperature range, ° C: -40 to +120° C continuous +215° C for 6 minute Pressure range, kgf / cm2, absolute: 0,2 to 1,6 Deviation, %, measured at pressure points, no more 0.2 kgf / cm2, absolute: ± 18 0.56 kgf / cm2, absolute: ± 6 1.6 kgf / cm2, absolute: ± 2.5 Overload pressure, kPa : 343 Insulation resistance, MOhm, not more: 20 Weight, kg: 0.35 Description: It is an absolute air pressure sensor which detects the air pressure of ambient air inlet to the engine compressor. Output electrical signal of the pressure sensor is connected to the complex engine controller (KRD-99b).</p>		68
2	Sine and cosine angle measurement transducer	<p>Part no. DBSKT-250-1T-01 Brief specifications: Input voltage single phase power supply sinusoidal form : 6 ± 0.6 V Frequency of supply voltage: 2000 ± 100 Hz Current consumption: 1... 5 A Output voltage : 0...7 V Working temperature: -60 to +220°C Description: It forms a part of the position monitoring system of the jet nozzle tilting unit. The function of it is to monitor the position of the jet nozzle tilting unit and also control it. Sensor which has two independent channels. Each sensor channel has two output windings. The value of alternating voltage at the output of one of the windings is proportional to SinA and the other is CosA, where A is angle of rotation of the sensor shaft.</p>		150
3	Ionization Flame Detector(L)	<p>Part no. DPI-1500-5ML Brief specifications: Input voltage: 120 V single phase AC Output voltage: 5V for 400 micro amps Description: DPI-1500-5MPL is installed on the left flange and it senses the presence of flames in the afterburner area. Flame conducts electric current because when fuel is burnt a dissociation components of fuel takes place and leaves free within the flame boundary, a concentration of ions carrying electrical charges. Since electric current is a flow of charged particles through a substance, a flame which is made up of a concentration of charged particles conduct an electric current. Current of very small value $50\mu A$ to $100\mu A$ will be generated.</p>		75
4	Ionization Flame Detector(R)	<p>Part no. DPI-1500-5MR Brief specifications: Input voltage: 120 V single phase AC Output voltage: 5V for 400 micro amps Description: DPI-1500-5MPL is installed on the left flange and it senses the presence of flames in the afterburner area. Flame conducts electric current because when fuel is burnt a dissociation components of fuel takes place and leaves free within the flame boundary, a concentration of ions carrying electrical charges. Since electric current is a flow of charged particles through a substance, a flame which is made up of a concentration of charged particles conduct an electric current. Current of very small value $50\mu A$ to $100\mu A$ will be generated.</p>		75

Sukhoi Engine Division - Koraput

Sr.No.	Nomenclature of item	Partno./Brief specifications/Description	Photo/Drawing	Approx Annual Requirement
5	Spark plug	<p>Part no. CP-87PA Brief specifications: Semiconductor type spark plug Spark frequency : 2-13 spark /sec Input current : (2.5±1)A Input voltage: 1400 V max. Description: Ignition of fuel air mixture occurs during starting of the engine with the help of external heat source. The typical heat source is electrical spark plug. The plug is connected to high voltage generated by an ignition coil. As current flows from the coil, a voltage develops between the central and side electrodes. Initially no current can flow because the fuel and air in the gap is an insulator, but as the voltage rises further it begins to change the structure of the gases between electrodes. Once the voltage exceeds the dielectric strength of the gases, the gases become ionized. The ionized gas becomes a conductor and allows current to flow across the gap.</p>		150
6	Temperature Sensor	<p>Part no. P-109 Brief specifications: Measuring Temperature Range, °C : -60 to +300 °C Sensing Element: Platinum wire Number of channels: 2 Thermal Inertia, sec: 3 Resistance of element at 0°C, Ohm: 100 Permissible error, °C : ± (0.35 + 5 x 10⁻³ t) Weight, Kg: 0.12 Description: Two-channel P-109M1 temperature sensor is installed in the oil/fuel system pipe and transmits the electrical signal that is proportional to measured temperature.</p>		150

ASERDC, LUCKNOW

Sl. No.	Nomenclature of item	Part No. / Brief specification / Description	Photo/Drawing	Approx Annual Requirement
1	FLUROPLASTIC HOSE	8D0.447.048-20-70 Hose is made of Teflon tube braided with Steel wire. Pressure Range: 280 to 700 Kg/cm2. Temperature Range: -60 to +200 deg.C		2
2	FLUROPLASTIC HOSE	8D0.447.048-12-50 Hose is made of Teflon tube braided with Steel wire. Pressure Range: 280 to 700 Kg/cm2. Temperature Range: -60 to +200 deg.C		2
3	FLUROPLASTIC HOSE	8D0.447.058-14-30 Hose is made of Teflon tube braided with Steel wire. Pressure Range: 100 to 250 Kg/cm2. Temperature Range: -60 to +200 deg.C		2
4	FLUROPLASTIC HOSE	8D0.447.069-8-35 Hose is made of Teflon tube braided with Steel wire. Pressure Range: 280 to 700 Kg/cm2. Temperature Range: -60 to +200 deg.C		2
5	FLUROPLASTIC HOSE	8D0.447.069-8-37 Hose is made of Teflon tube braided with Steel wire. Pressure Range: 280 to 700 Kg/cm2. Temperature Range: -60 to +200 deg.C		2
6	FLUROPLASTIC HOSE	8D0.447.069-8-45 Hose is made of Teflon tube braided with Steel wire. Pressure Range: 280 to 700 Kg/cm2. Temperature Range: -60 to +200 deg.C		2
7	FLUROPLASTIC HOSE	8D0.447.078-28-80 Hose is made of Teflon tube braided with Steel wire. Pressure Range: 63 to 157.5 Kg/cm2. Temperature Range: -60 to +200 deg.C		2
8	FLUROPLASTIC HOSE	8D0.447.078-28-55 Hose is made of Teflon tube braided with Steel wire. Pressure Range: 63 to 157.5 Kg/cm2. Temperature Range: -60 to +200 deg.C		2
9	Filter	8D2.966.022-7 Required for maintaining cleanliness of the oil in the aircraft for smoother and efficient functioning of Hydraulic System. Filtration fineness (micron): Nominal: 16, Absolute: 25 Operating pressure (kgf/cm2): 30±5 Temp. of working medium (°C): -60 to +125 Working medium: Oil, AMG-10, GOST 6794-75		10
10	Charge Amplifier (Pre-Amplifier)	TYPE2663-W-002 The engine mount in the A/c is incorporated with a piezo-electric type transducer for measuring vibration levels. Charge Amplifier amplifies this vibration signal which is monitored by engine monitoring electronic unit. This must be capable of an Input upto 100g's of high frequency signal without saturating and impacting the ability to handle low frequency signal. Output voltage (max) 0 to 5Vp-p. Size: 170Cu.cm volume. Weight<175gms.		7

ASERDC, LUCKNOW

Sl. No.	Nomenclature of item	Part No. / Brief specification / Description	Photo/Drawing	Approx Annual Requirement
11	Ground Power Receptacle (GPR)	F7857 A The ground electrical power supply receptacle (aircraft plug) provides a 115/200V, 3 Phase , 400Hz AC Supply and 28Vdc when servicing the aircraft or starting the engine .		7

Helicopter Division, Bangalore

Sr. No.	Nomenclature of item	Part Number/Brief Specifications/Description	Photo	Approx Annual requirement
1	WANDER LIGHT	2LA 002 865-50/ Wander lights are used for map reading and acts as a backup for instrument lighting. ELECTRICAL INTERFACE: Supply Voltage: 28 V DC Power consumption: 5 W OPERATING TEMPERATURE: -45 0C to 71 0C DIMENSIONS: 95 mm (L) x 40 mm (DIA) x 100 mm (H) WEIGHT: 0.30 kg TECHNICAL REQUIREMENTS: Built in intensity control Flood/spot light selection Override switch for full intensity Suitable filter for NVG compatible operation.		60
2	HF SYSTEM	064-01073-0102/ HF communication system provides air to ground and air to air long range and short range communication system. Frequency: 2-30MHz Channel spacing: 100Hz Pre-set channels: Minimum 99 user programmable channels Operational modes: USB (voice & data, reduced carrier), LSB (voice & data), AM, CW Range: At least 750 Km at rated power output with typical tube type antenna TRANSMITTER CHARACTERISTICS: Transmitter power output: 150 watts PEP Sidetone output: 100mW/600ohms Mic. Input level/Impedance: 0 to 1 V across 150 ohms RECEIVER CHARACTERISTICS: Audio output: 100mW across 600 ohms Squelch: Variable squelch control to be available for Pilot to set squelch setting		30
3	ICE DETECTION SYSTEM	D 60345/The ice detection system detects ice formation and gives a cockpit indication to the crew by illuminating a caption on the SYS page of IADS in the cockpit. Description The ice detection system consists of 1. Electronic Unit: The Electronic Unit performs all the system control and computing activities in addition to the input/output signal conditioning. 2. Measuring Head: The Measuring Head is the system's sensing element. 3. Isolation Valve & Bleed Air Filter: The Isolation Valve and Bleed air Filter protects the Measuring Head from dirt contamination.		30
4	MGB OIL COOLER FAN	100-110051/E1320-AE1-811/ It provides cooling air to MGB oil cooler. POWER SUPPLY: Fan is mechanically driven by Auxiliary Gear Box at 15,119rpm Max available power supply for the fan: 8KW FUNCTIONAL REQUIREMENTS: (i) Volume flow rate at sea level and air entry temperature of 750C: 1,000 litres/sec (ii) Required pressure rise (static) at sea level 750C air temperature: 600 mm H2O (iii) Nominal speed of the fan and direction of rotation: 15,119rpm CW(looking at the fan input shaft) (iv) Speed range: 95-104% of nominal speed (during operation) (v) Acceptable noise level: 89 dB (Max) in 1m distance OPERATING TEMPERATURE: -45 0C to 100 0C DIMENSIONS: Fan cross section including casing should not exceed 254mm DIA		30
5	MGB OIL COOLER	12536-60805-000/ The air cooled oil cooler dissipates main gear box heat by exchanging heat between gear box oil and fan air. OPERATION: Oil flow configuration is two-pass cross-contra and cooling air flow is single pass. There is one common cooling air stream and two identical separate oil streams. Oil temperature control/pressure relief valves are fitted in housings cast integrally with the inlet/outlet tanks. Outlet Temp/ Pressure Valve OPEN/CLOSE condition ≤50-C Valve OPEN through action of thermal element ≥60-C and pressure drop 241 to 310 KPa or below Valve CLOSED through action of thermal element ≥60-C and pressure drop 241 to 310 KPa or Above Valve OPEN through pressure relief valve. The matrix is of aluminium alloy to BS L61 secondary surface construction. Oil valve housing are of aluminium alloy to BS L99 and the air inlet and out let ducts are fabricated from aluminium alloy		30
6	PITOT STATIC PROBE	856PT1/ To provide pitot and static pressure input to ADU. ELECTRICAL INTERFACE: Power supply for the heater: 28V DC conform to MIL-STD-704D Power consumption: 400watts/probe (Max) Insulation resistance between the heater and the case: >10 MΩ 500V DC OPERATIONAL PARAMETERS: Pressure altitude: -500m to 7000m Maximum air speed: 400KMPH Maximum vertical speed: ± 25 m/sec Maximum anticipated angle in all directions: 30 degree WEIGHT: 600g (Max) RELIABILITY REQUIREMENTS: Static pressure repeatability: ± 0.002 qc Pitot pressure repeatability: ± 0.005 qc		60
7	ELECTRIC RESCUE HOIST	HS 20200 502 06/ Rescue hoist is an electrically operated system capable of lowering and raising personnel from helicopter during hovering. Rescue hoist is operated by control pendant or by cyclic grip prom of pilot/ co-pilot. Maximum load capacity of rescue hoist is 250kg. Weight of the unit : 37kg Maximum operating load : 250kg Usable cable length : 40m		30

Helicopter Division, Bangalore

Sr. No.	Nomenclature of item	Part Number/Brief Specifications/Description	Photo	Approx Annual requirement
8	SLIP RING	<p>108500/ A slip ring is an electromechanical device that allows the transmission of electrical signals from rotating mast to indication system. It is also called a rotary electrical joint, collector or electric swivel. A slip ring can be used in any electromechanical system that requires unrestrained, intermittent or continuous rotation while transmitting power and / or data. It can improve mechanical performance, simplify system operation and eliminate damage-prone wires dangling from movable joints. Strain gages are attached to the mast to determine stress (mast moment) during operation. Signals as well as excitation are coupled through slip rings to conditioner-amplifiers to continuously determine mast moment and indicated at mast moment indicator. These signals along with others are used to determine if the maximum limit of the mast moment (25kNm for ALH) is reached and if so, to signal a reduction of engine power.</p>		30
9	VENTILATOR FAN	<p>75 MA1 591/To provide cooling to Hydraulic system ELECTRICAL INTERFACE: Supply Voltage: 115/200 V, 3-PHASE, 400 Hz Start current: 6A maximum- High speed condition 2.8A maximum- Low speed condition Run current: 1.5A maximum- High speed condition 0.7A maximum- Low speed condition NOMINAL SPEED: 21,000 rpm- High speed condition 11,500 rpm- Low speed condition OPERATING TEMPERATURE: -45 0C to 55 0C TECHNICAL REQUIREMENTS: High speed condition: 0.078 m3/s volume flow at 1400 Pa Low speed condition: 0.039 m3/s Volume flow at 350 Pa WEIGHT: 1.7 kg (Max.)</p>		60

ASERDC, KORWA

Sr. No.	Nomenclature of Item	Partno./Brief specifications/Description	Photo	Approx. Annual requirement
1	Glass Defector	Part No. :AP8.634.093 The item is used with Opto Locator System (OLS) for Su-30MKI A/c		15 nos.
2	Input / Output Controller Card	Part No. :KMIV.467444.011-02 The items is main processor card with inbuilt Russian software. The items is used with Coupling & Data Conversion Block (BSPI-6-03) system of Su-30MKI A/c		5 nos.
3	Central Processor Module	Part No. :KMIV.467444.013 The items is main processor card with inbuilt Russian software. The items is used with System Panel (PS-5) system of Su-30MKI A/c		5 nos.
4	COMVU	Part No. :3892/78658 The items is used with Display Head (DH) of Combined Map & Electronic Display (COMED) system for DARIN-I Jaguar A/c. The items is used for combining the two images generated from different source.		3 nos.
5	CRT	Part No. :3892/78650 The item is used for image generation and used with Display Head (DH) of Combined Map & Electronic Display (COMED) system for DARIN-I Jaguar A/c		5 nos.
6	CRT	Part No. :SUM3920-1 The item is used for image generation and used with Head Up Display Electronic Unit (HUD-EU) of Head Up Display & Weapon aiming Computer (HUDWAC) system for DARIN-I Jaguar A/c		5 nos.
7	Carbon Brush	Part No. :9639-15 The item is used with Accident Data Recorder (ADR) of FDR system for DARIN-I Jaguar A/c. Which is a tape based system i.e. records data on a magnetic Tape.		12 nos.
8	Magnetic Tape	Part No. :790215-1157 The item is used with Accident Data Recorder (ADR) of FDR system for DARIN-I Jaguar A/c. Which is a tape based system i.e. records data on a magnetic Tape.		10,000 meter
9	Rate Gyro	Part No. :507RGS/5 The item is used with Laser Head (LH) of Laser Range Marker & Target Seeker (LRMTS) System for DARIN-I Jaguar A/c		15 nos.
10	LAM Module	Part No. :E24034AA The item is used with Multi Function Display (MFD) system for Su-30 A/c & DARINII/III Jaguar A/c. The item is light assembly module.		45 nos.
11	Potentiometer	Part No. :40-541-5042-47 The item is used as variable resistor with Display Control Panel (DCP) of Head Up Display & Weapon aiming Computer (HUDWAC) system for DARIN-I Jaguar A/c. The items is used for varying the brightness of the display panel.		7 nos.
12	Electronic Modules of Autostabiliser System	The Autostabiliser System is used with all version of Jaguar A/c. The Autostabiliser System has two major LRUs i.e. Pitch & Yaw Computer & Roll Computer. The LRU consists electronic modules i.e. Power Supply Module , Divider Module, Output Module, Roll Computing Module.		8 nos.

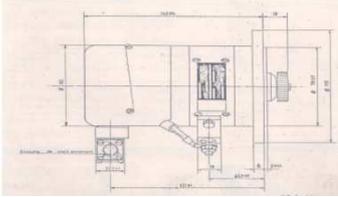
Barackpore Division, Barackpore

Sr No.	Nomenclature of the item	Part No./Brief specifications/description	Photo/Drawing	Approx annual requirement
1	MATCHED ASSY (Hydraulic servo unit)	(Part No:132369) Matched Assy consist of Detail parts are 1. Jack Body 2. Piston 3. Spool. 4.Piston rod and 5. End Plate. Match Assy is a part of servo system, A Servo is a system by which the output movement is slaved to the input movement, i.e., to the pilot's action		25
2	ARMATURE (Fuel Booster Pump)	(Part No:374-515) Armature is part of electrical type Fuel Booster Pump. Voltage requirement 27V DC & current requirement 3.5A.		14
3	REPARATION KIT (Gear Pump)	(Part No: 58880/58077) Reparation kit consists of two pinions & centre plate. It used in Gear Pump& Pump speed is 2500 rpm, flow is 6litre/min & pressure 28 bars.		10
4	CARRIER WHEEL BRAKE	(Part No:GA29328) The Brake carrier is made of aluminum alloy (AU5GT). Inside a brake carrier, lies a bore in which spring loaded piston slide.		13
5	PILLAR LAMP (Instrument Panel)	(Part No:35811-1/35-901-12) Pillar lamp is fitted with instrument in main instrument panel. It help pilot to read instrument in less light condition.		35
6	MOTOR (Anti-collision Light)	(Part No:3A1511) It is a high torque variable speed DC motor. Motor draws current 0.3A with 28.5 V. Operating voltage 18 to 32 V.Speed of the motor 10400rpm(28 V)		160
7	BOTTOM COMPLETE (Wheel Brake)	(Part No: GA28517) Bottom complete consist of pin, fitting end assy., fitting end, rod thread, washer, nut and wire. It place inside the wheel brake carrier top of the spring to facilitate piston to return back original position.		10
8	Rotary Seal (Fuel Booster Pump)	(Part No: 372550) Rotary Seal is part of electrical type Fuel Booster Pump. Top of rotary seal armature is mounted.		60
9	VALVE	(Part No: A14692) Valve used in Hydraulic Control Unit, Nose Landing Gear & Rear shock strut for charging inert gas. Inert gas pressure approx 88 bars		240
10	CABLE ASSY (CHETAK)	(Part No:3160-26-11-590/3130-26-21-590) Used wire 2.4 diameter of stainless steel and length 525 mm with end fittings.		48

Engine Division (B.C)

Sl. No.	Nomenclature of Item	Part No. / Brief Specification / Description	Photo	Approx. Annual Requirement
1	TURBINE WHEEL STAGE 1 CASTING	Pt. No: 86757125 Hydrostatic Casting: NCO-100 PER EMS 55089		20
2	TURBINE WHEEL STAGE 2 CASTING	Pt. No: 868272903 Hydrostatic Casting: NCO-100 PER EMS 55089		20
3	TURBINE WHEEL STAGE 3 CASTING	Pt. No: 86863015 Hydrostatic Casting- MAR-M247 / EMS 56447, CLB		20
4	RADIAL STRAIGHTNER CASTING	Pt. No: 4421260053 Investment casting in -TA6V/ TiV64 Supply & HT Condition- H.I.P 920°C / 1000 bars / 2h / Argon + ANNEALING (*) 840°C / 2h / under vacuum or Argon		20
5	STEELFLOW STAGHTNER	Pt. No: 4243151303 I.D X O.D. X THK : Ø242 X Ø102 X 63.75 MM RAW MATERIAL : Z8CND17-04 STEEL ALLOY		20
6	SEALOL SEALS (6 types of seals)	Material: Carbon USG2980 with a minimum hardness of 60 Shore Scleroscope. A minimum density of 1.86 Grams/CC and a minimum compressive strength of 10000PSI. Zone F3. Carbon to be retained by interference fit and an optional positive retention system configuration to be determined by supplier.		20

AERDC, BANGALORE

Sr. No	Nomenclature of item	Part No./ Brief Specifications/ Descriptions	Photo	Approx. annual requirement
1	STARTER MOTOR	<p>Scope of Work: To be indigenised / Develop the unit and should be Form, Fit & Function (FFF).</p> <p>Type:DC Series motor Nominal Operating voltage :28 Volts Max. current drawn (A): 300 Rated power @ 6000rpm (kW): 1.5 L:150 MM,D:90 MM Cat: Critical/Class I</p>		10

Aircraft Division, Bangalore

Sl. No.	Nomenclature of Item	Part No./ Brief Specifications/ Descriptions	Photo/Drawing (Downloadable)	Approximate Annual Requirement *
1	DIGITAL VIDEO RECORDER (DVR)	Part No.:EM05004262A / The Digital Video Recorder is an airborne digital multi-channel recorder that operates with an easy to handle Digital Data cartridge based on a solid state non-volatile memory technology.		5
2	DATA TRANSFER UNIT (DTU)	Part No.: 10DTU468000000.00 / The Data Transfer Unit (DTU) is the connection between the DTC and the aircraft avionic system through the Mil-Std 1553B databus. The DTU fitted in the rear cockpit right console. DTU is having the slot to insert DTC along with protective cover.		5
3	DATA TRANSFER CARTRIDGE (DTC)	The Data Transfer Cartridge (DTC) is a portable solid state, 32Mb memory unit used to store data.		5