



MI-8MSB

MEDIUM CLASS TRANSPORT HELICOPTER



AIRCRAFT TOOLS CONSULTING



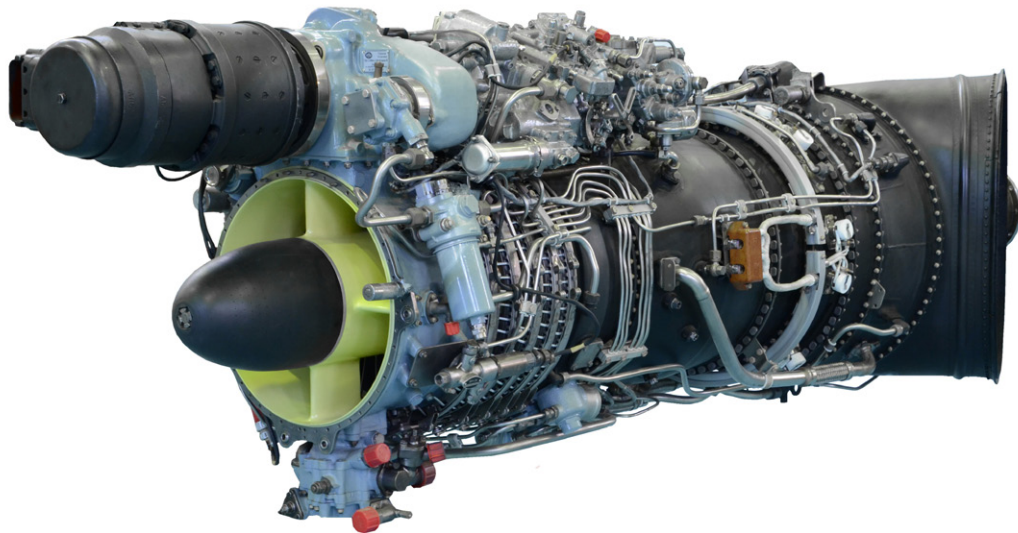
MI-8 HELICOPTER ASSEMBLY LINE FROM OUR PARTNERS





MAIN CHARACTERISTICS OF TV3-117VMA-SBM1V, SERIES 4E, ENGINE

The turboshaft engine with one-shaft gas-generator and free turbine maintains power flat rated to high values of ambient air temperature, deployment and flight altitudes comparing with existing TV2-117 helicopter engines.



2.5-min OEI power rating,

Continuous OEI 1 power rating – 60 minute (Cont 1)

(H=0, $M_{fl}=0$, ISA +20°C):

Power, hp (kW)..... 1,700 (1,251)

Continuous OEI 2 power rating – 60 minute (Cont 2)

Take-off power rating

Continuous take-off power rating (30 min)

(H=0, $M_{fl}=0$, ISA):

Power, hp (kW)..... 1,500 (1,104)

flat rated up to t_{amb} , °C..... +55

Specific fuel consumption, kg/hp-h 0.251

Maximum continuous power rating

(H=0, $M_{fl}=0$, ISA):

Power, hp (kW)..... 1,200 (883)

flat rated to t_{amb} , °C +60

Specific fuel consumption, kg/hp-h 0.266

Cruise power rating

(H=0, $M_{fl}=0$, ISA):

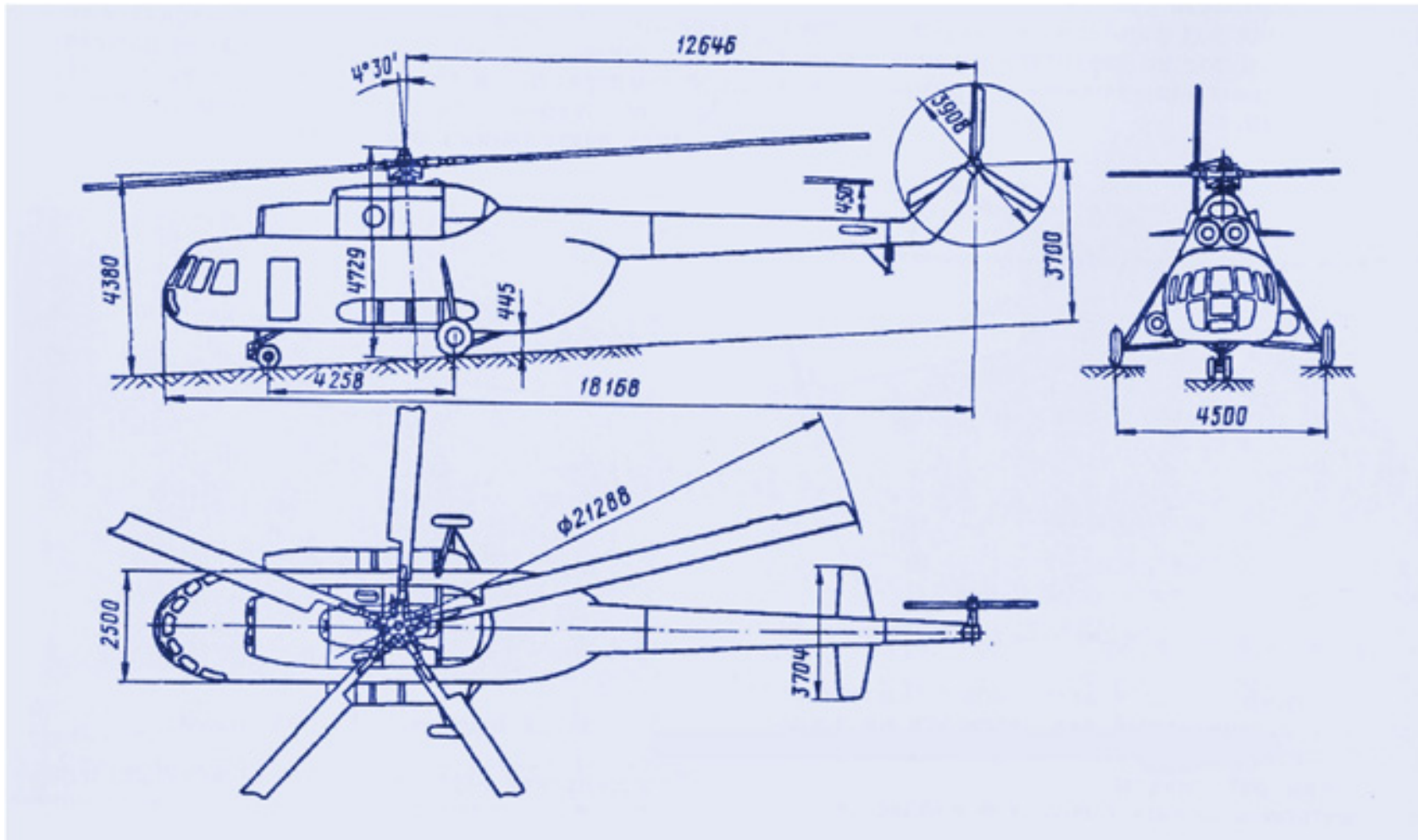
Power, hp (kW)..... 1,000 (736)

flat rated up to t_{amb} , °C..... +60

Specific fuel consumption, kg/hp-h 0.280

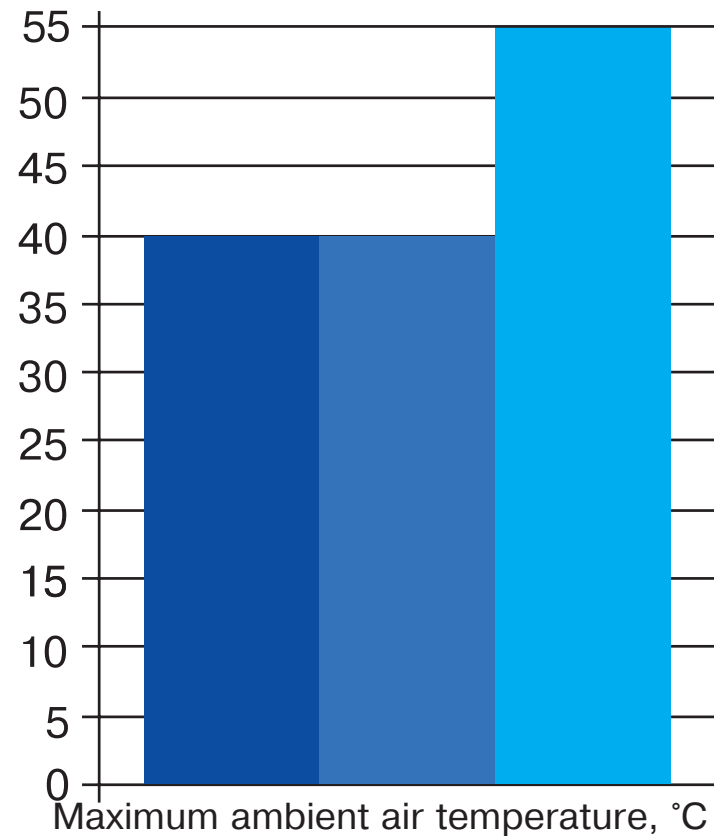
Engine dry weight, kg 295

OUTLINE DRAWING AND PRINCIPAL DIMENSIONS

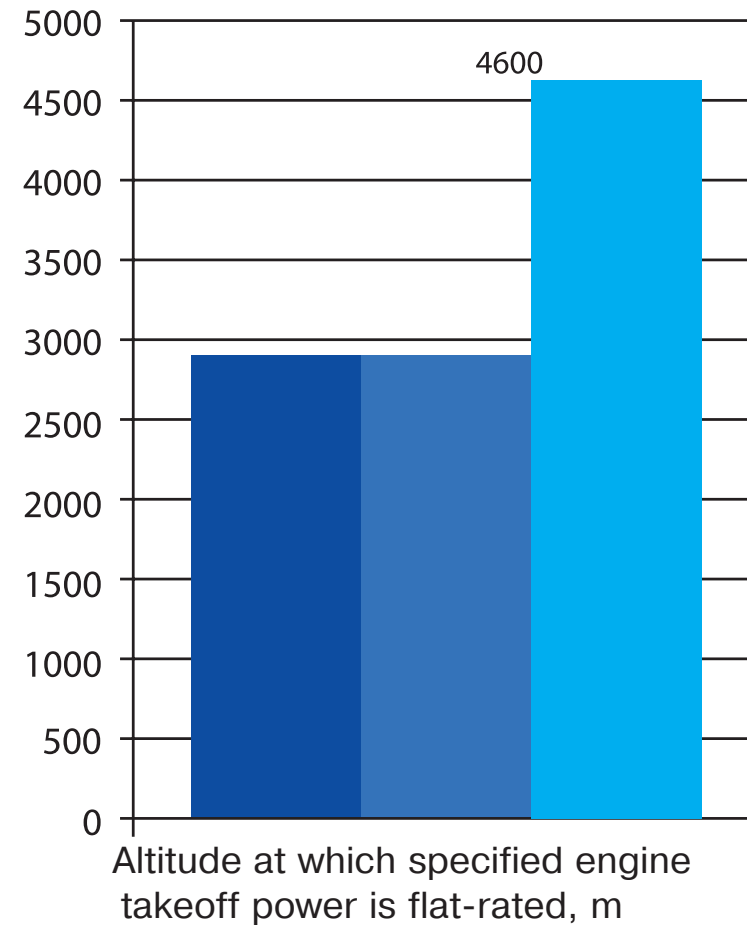


COMPARATIVE CHARACTERISTICS OF ENGINES

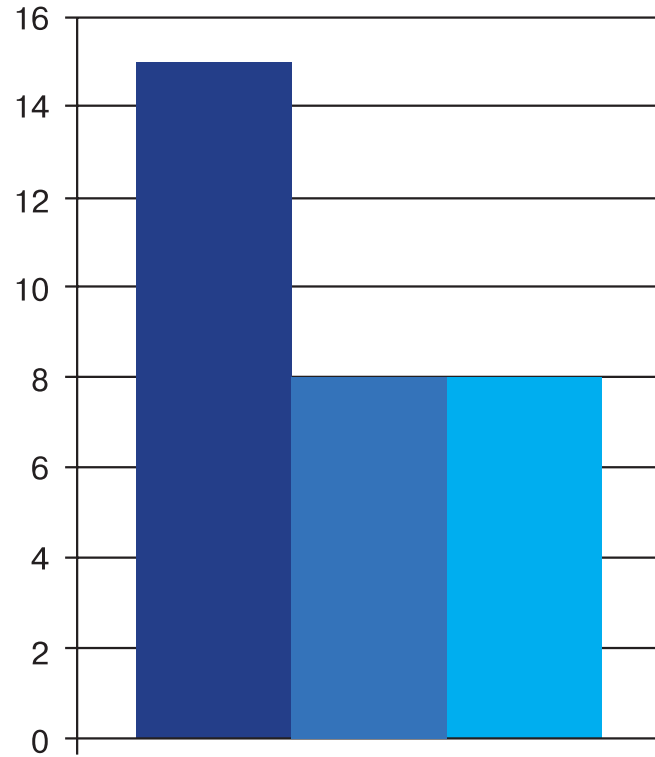
Environmental conditions at which engine takeoff power is flat-rated



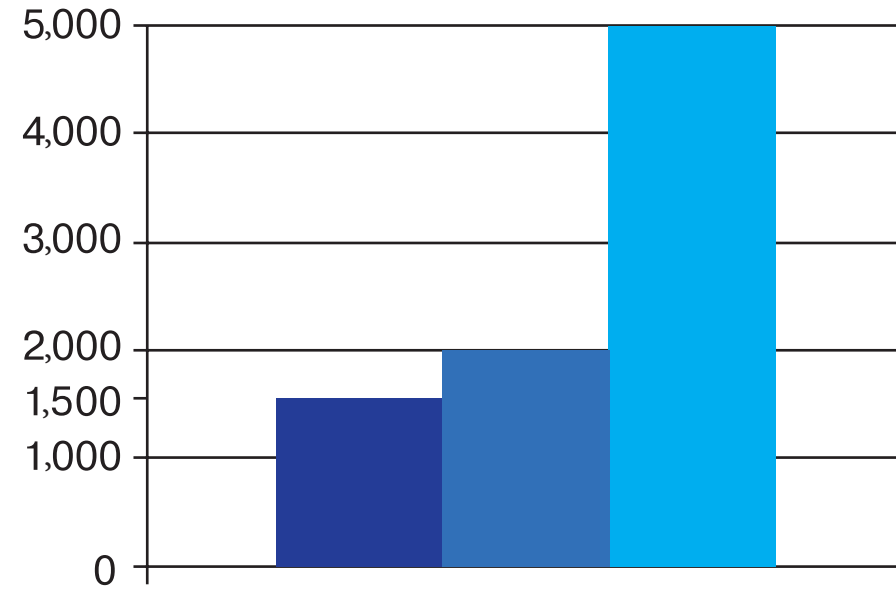
- TV2-117
- TV3-117VM
- TV3-117VMA-SBM1V Series 4E



COMPARATIVE CHARACTERISTICS OF ENGINES



Acceleration time, s



First overhaul period and TBO, hrs

- TV2-117
- TV3-117VM
- TV3-117VMA-SBM1V Series 4E

COMPARISON OF OPERATIONAL PARAMETERS OF HELICOPTERS

	Operational parameters	MI-8T	MI-8MSB
1	Engine type	TV2-117A	TV3-117VMA-SBM1V, series 4E
2	Engine take-off power rating, hp	2 x 1,500	2 x 1,500
3	Engine starting system	electric	electric
4	Service ceiling, m – with take-off weight of 9,000 kg or less	4,500	7,300
5	Hourly fuel consumption with standard take-off weight at 1,000 m (at indicated airspeed of 180 km/h)	580	500
6	Maximum take-off weight, kg	12,000	12,500
7	Standard take-off weight, kg	11,100	11,100
8	Maximum weight of cargo transported in the compartment (due to fuel quantity reduction), kg	4,000	4,000
9	Maximum weight of cargo transported on external load, kg: – hinge-pendulum – rope	2,500 3,000	2,500 3,000
10	Cruise speed at a height up to 1,000 m, km/h: – with standard take-off weight – with maximum take-off weight	220-230 205-215	220 to 250 205 to 215
11	Maximum speed at a height up to 1,000 m, km/h	250	280
12	Practical range with 10,000 kg take-off weight at 3,000 m (with fuel weighing 1,450 kg), km	470	550
13	Practical range with standard take-off weight at 3,000 m with two extra fuel tanks (with fuel weighing 2,500 kg), km	1,060	1,210



Note: With regard to operational flight range the Mi-8MSB helicopter is highly competitive with the Mi-8MT (mi-17) and Mi-8MTV (Mi-17V-1) versions.



AIRCRAFT TOOLS CONSULTING

Altitude attained by the **Mi-8MSB** helicopter powered by the **TV3-117VMA-SBM 1V series 4E** engines



9,150 m

8,848 m

Everest (Chomolungma)
is the highest peak in the world

In August 2013, Mi-8MSB helicopter powered by TV3-117VMA-SBM1V Series 4E new generation engines established a set of world records (per FAI classification) at Kirovskoye airfield, Autonomous Republic of Crimea, city of Feodosiya:

1. Absolute world record in E-1 class (helicopters):

- maximum altitude at level flight – 9,150 m;

2. Records in E-1g subclass of E-1 class (weight from 6,000 kg to 10,000 kg):

- maximum altitude reached without cargo – 9,150 m;
- maximum flight altitude with a payload of 100 kg – 9,150 m;
- maximum flight altitude with a payload of 200 kg – 8,420 m;
- maximum flight altitude with a payload of 1,000 kg – 8,420 m;
- maximum flight altitude with a payload of 2,000 kg – 7,525 m;
- maximum flight cargo lifted to an altitude of 2,000 m – 3,019 kg.

3. Records in E-1h subclass of E-1 class (weight from 10,000 kg to 20,000 kg):

- maximum flight cargo lifted to an altitude of 2,000 m – 5,566 kg;
- maximum flight altitude with a payload of 5,000 kg – 5,440 m.





AIRCRAFT EQUIPMENT COMPLEX

The complex electronic hardware provides an opportunity for making day and night flights under ordinary and difficult meteorological conditions according to the instrument flight rules (IFR) taking into account the effective ICAO requirements.

Resolved issues:



- navigation by ground beacons VOR, DME, NDB;
- landing according to the 1-st category using systems NDB, ILS, VOR, DME and marker beacon.
- non-precision approach according to satellite navigation data GPS;
- making flights under area navigation conditions B-RNAV (RNP-5);
- making flights in vertical separation system with warning indication of deviations from selected altitude;
- preprogramming of flight plan;
- making flights according to search-and-rescue operations;
- making low-altitude day and night flights in unknown unmarked areas, including mountainous areas, under ordinary and difficult meteorological conditions using the information received from HTAWS;
- automatic flight data transmission to AT controller;
- automatic flight data transmission to air traffic participants to take joint measures for prevention of collisions;
- providing external communication in the VHF range with frequency spectrum of 8.33/25 kHz, internal communication between crew members, public address and talks between passengers and crew members;
- providing external communication in the HF range;
- providing monitoring of helicopter position and satellite communication.



COMPLEX COMPOSITION

The Supplementary Type Certificates (STC) were obtained for all equipment of the Mi-8MSB helicopter

GTN650
Multifunctional navigation and communication equipment;

SN3500
Horizontal situation indicator;

KN63
Radio distance measurement equipment with indicator;

ADF3502
Automatic radio compass;

MKR3300
Marker beacon receiver;

RDR2100
Meteo-navigation radar station;

KVG-350
Vertical gyro;

EX600
Multifunctional radar indicator;

GTX33H
ATC transponder;

RN-7
Navigation and tactical graphic processor with function HTAWS;

MDU-268
Multifunctional displays;

AD32
System for air data measurement, indication and warning of deviations from selected altitude;

LUN1241
Gyro horizon;

Almaz-UP
Airborne equipment for voice warning system;

Aerox
Oxygen equipment;

Artex C406-1HM
Emergency radio beacon;

DK140
Hydroacoustic beacon;

CAS67A
Traffic collision avoidance system;

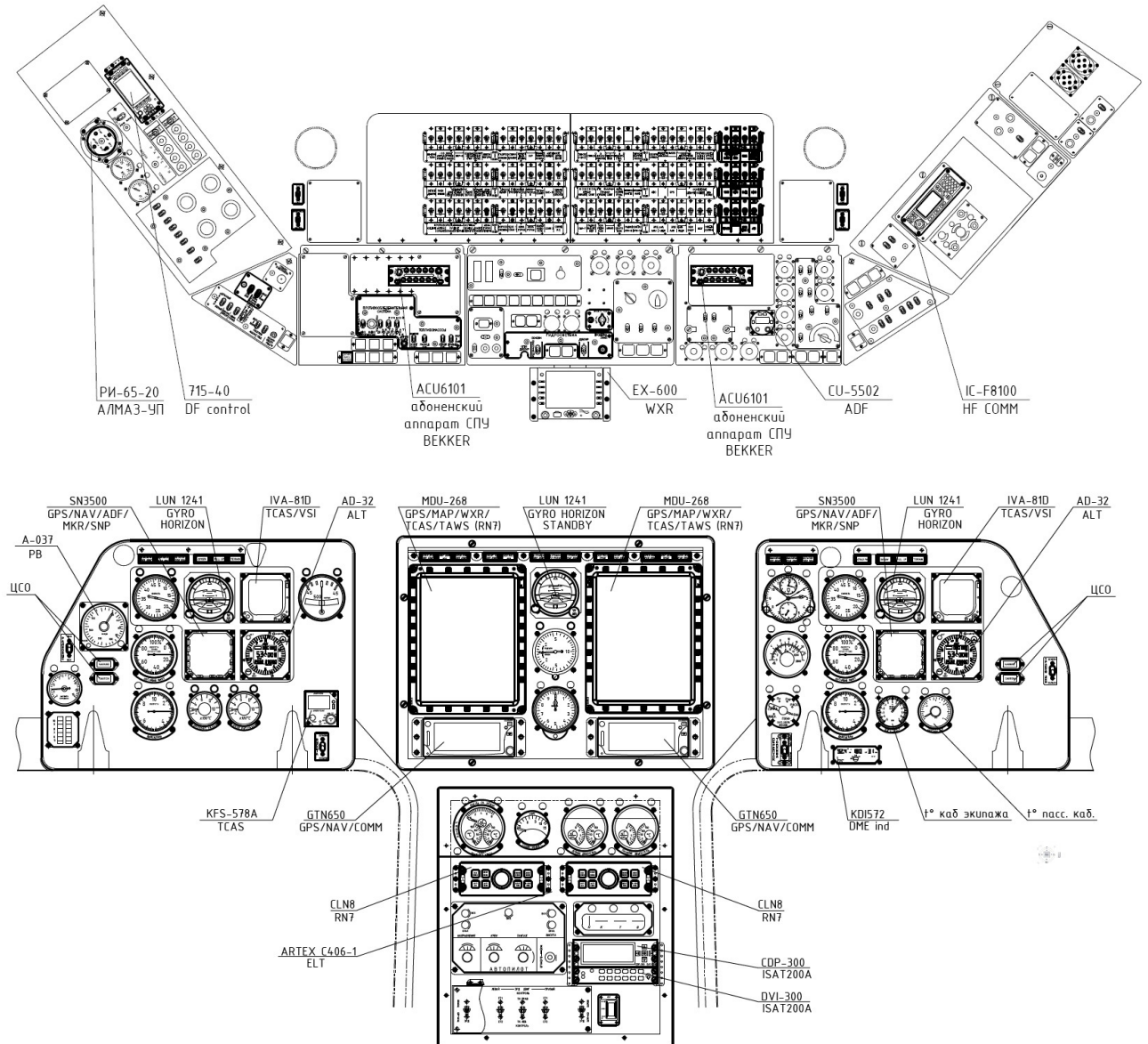
BAS-V
Centralized warning system;

DVCS6100
Digital voice communication system;

ISAT200A
Satellite communication and position monitoring system;

IC-F8100
Communication radio;

DF-935
Radio equipment for orientation.





AIRCRAFT TOOLS CONSULTING

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