

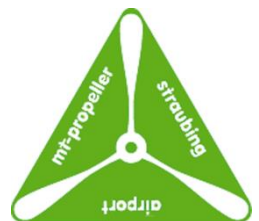


ATA-61-08-96

(E-3896)

POWER PACK P-8HO-2-()

TECHNICAL MANUAL



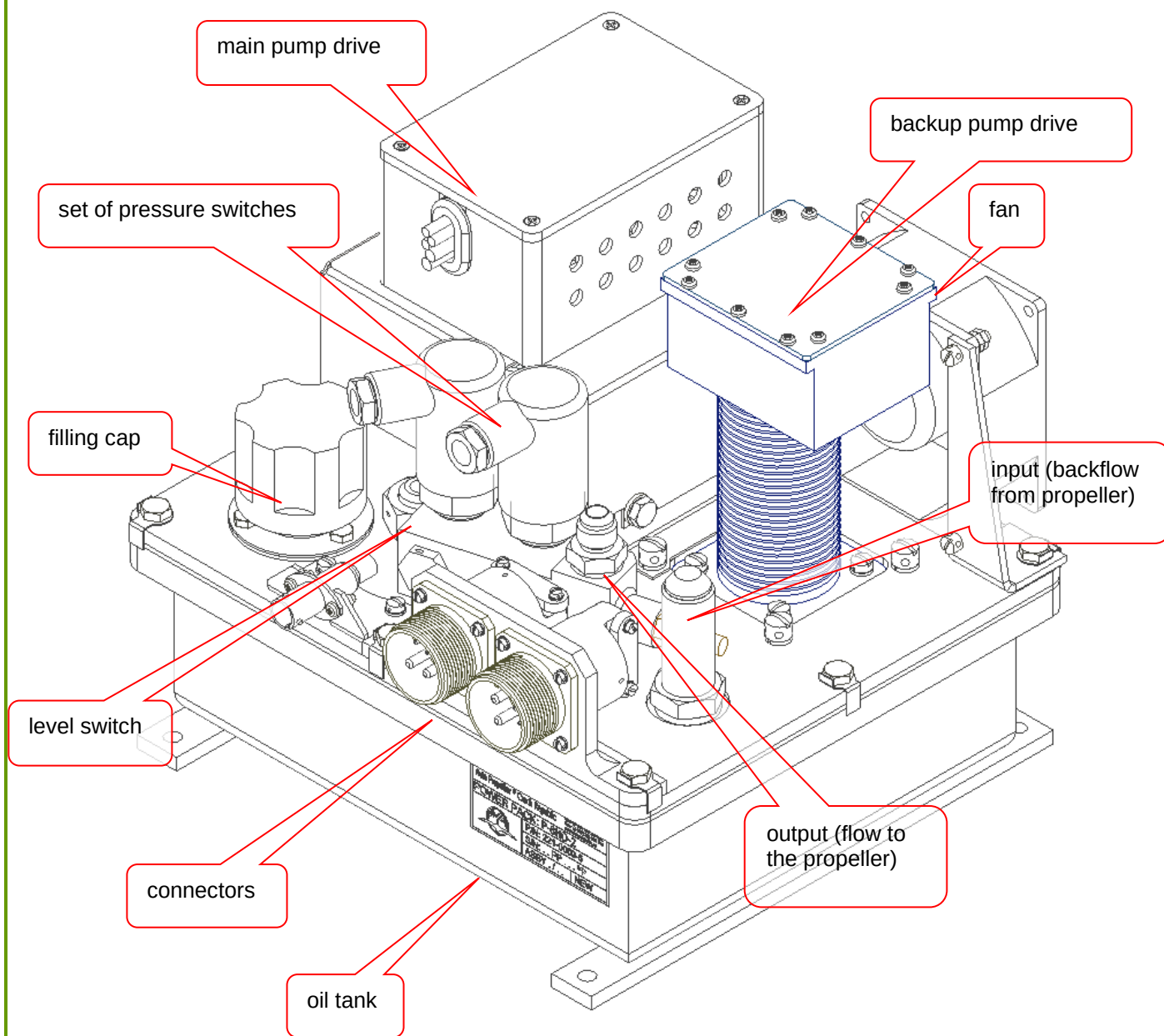
EASA DE.21G.0008
EASA.21J.020

Original Issue: October 22, 2021

The technical content of this document is approved under authority of DOA No. EASA.21J.020



POWER PACK P-8HO-2



GENERAL DESCRIPTION

The Power Pack is a hydraulic pressurized oil source for the use with variable pitch propeller. It consists of a hydraulic tank, two electric gear pumps with relief valves, one-way valves, pressure switches, oil level and temperature sensor, connectors as electric interface, input and output fitting as hydraulic interface.

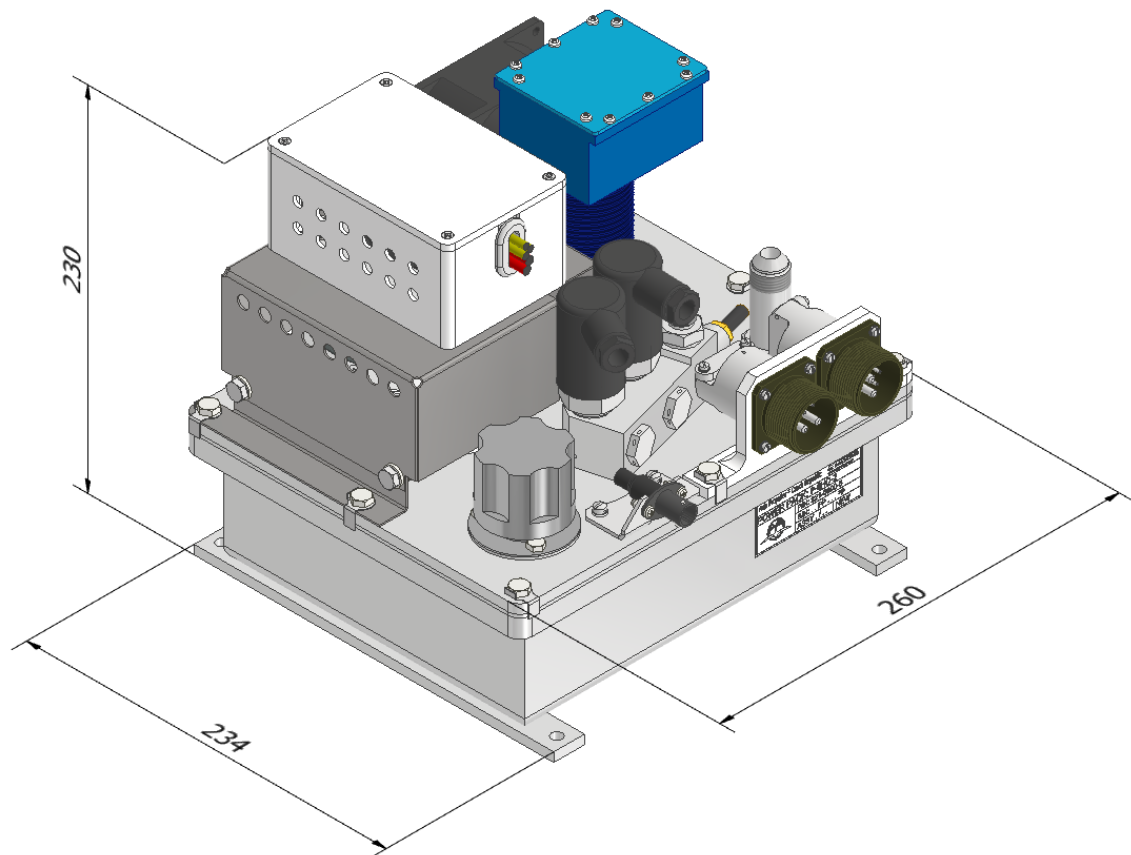
The gear pumps are driven by 24/28 V DC motors.

One motor is used as a main pump, the other as a backup pump.

The power pack functionality is monitored by two pressure switches, which signal oil pressure at the output line of activated drive.



DIMENSIONS



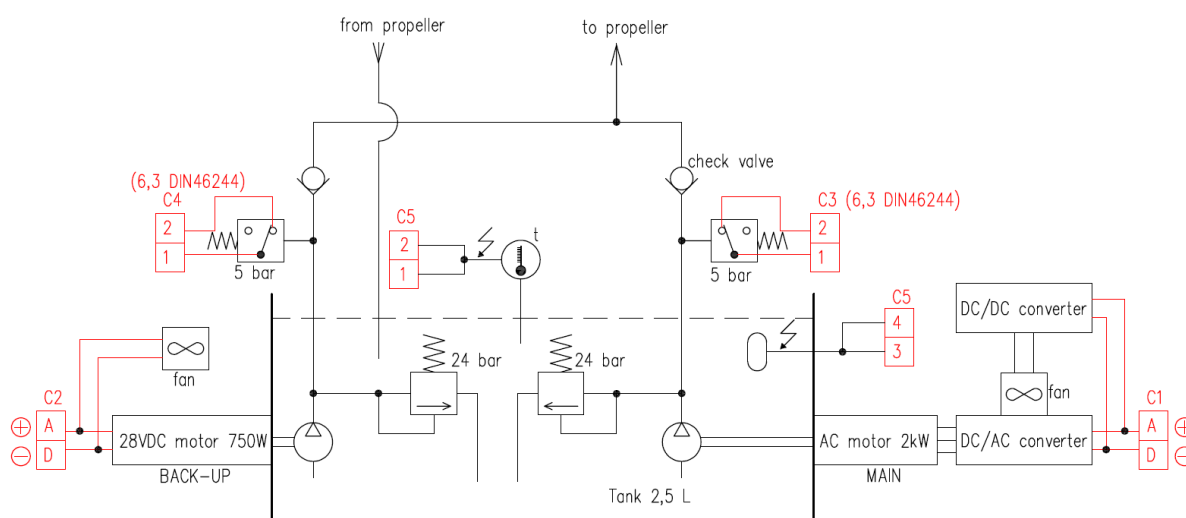
All dimensions are in mm.



TECHNICAL SPECIFICATION

Nominal voltage	24/28 VDC
Maximum current	27 A per motor
Maximum tank volume	2,8 l
Maximum pressure	20 bar + 5
Pressure setting levels:	pump ON: 5 bar
Minimum pump capacity at 15 bar	MAIN : 5 l/min BACKUP : 3,5 l/min
Weight	8,99 kg
Hydraulic interface:	input (drain from beta) 3/4" – 16 UNF output 9/16" – 18 UNF

HYDRAULIC / ELECTRIC DIAGRAM



HYDRAULIC / ELECTRIC DIAGRAM - PIN LAYOUT

September 16th, 2021

PIN LAYOUT

CONNECTOR C1 – MAIN PRIMARY HYDRAULIC PUMP

Type: Amphenol MS3450W20-8P

Pin	Description
A	+ 24 VDC (35 A)
B	-
C	-
D	- 24 VDC (35 A)
E	-
F	-

**CONNECTOR C2 – BACKUP HYDRAULIC PUMP**

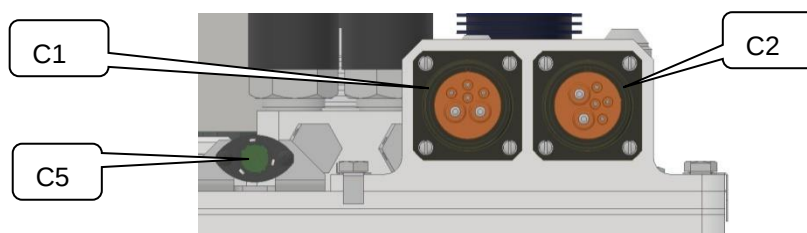
Type: Amphenol MS3450W20-8PW

Pin	Description
A	+ 24 VDC (35 A)
B	-
C	-
D	- 24 VDC (35 A)
E	-
F	-

CONNECTOR C5 – SENSORS

Type: 8STA0-0835PN

Pin	Description
1	Oil temperature sensor (Pt 100)
2	Oil temperature sensor (Pt 100)
3	Oil level switch (close = low oil level)
4	Oil level switch (close = low oil level)
5	-
6	-

**RECOMMENDED FITTING PARTS**

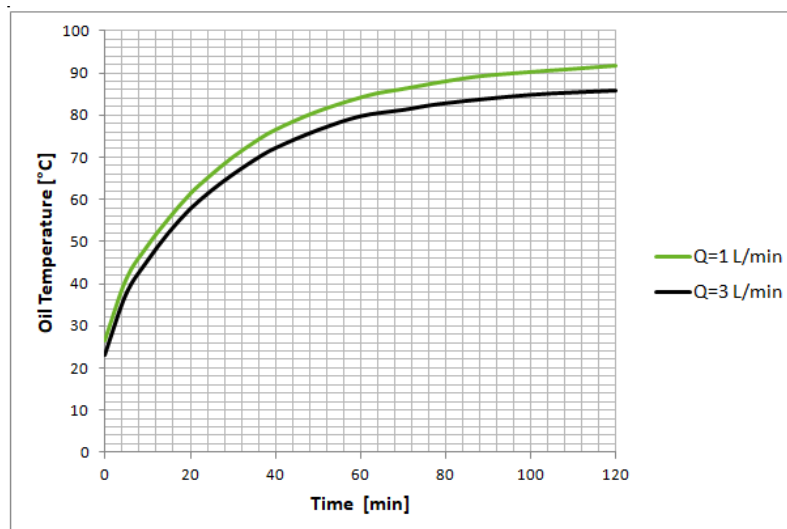
Main pump (C1): MS3456W20-8S + M85049/52-1-20W

Backup pump (C2): MS3456W20-8SW + M85049/52-1-20W

Sensors (C5): SJTG06RT-08-35S + BS1SRM08999XW



HEAT UP CURVES



Boundary condition for the test:

- 24 VDC
- Oil volume: 2 liters
- Output pressure: 22-23 bar (relief valve set point: 20 +3 bar)

FUNCTION

The Power Pack provides pressurized oil for hydraulic variable pitch propellers. Oil is pressurized by gear pump, which is also equipped with a relief valve.

This valve keeps oil pressure at pump output. When the pump drive is energized by command from its electronic control unit (not a part of the Power Pack), the pump provides pressurized oil directly to output. Operation of the pump is notified by pressure switch at pump output. This switch is located at pump output, downstream one-way valve.

The one-way valve protects oil to flow from currently operational pump output to the other and through this to the tank.

There are two basic hydraulic circuits – MAIN and BACKUP in the Power Pack.

These circuits are hydraulically and electrically separated.

The backup circuit has lower power to reduce current consumption in case of emergency and thus to minimize load of electric network. The backup drive is equipped with additional cooling fan. The fan must have sufficient amount of cooling air available. Power pack compartment has to be ventilated.

Pressurized oil from pump flows to output line.

A cycle counter and operation hours counter provide information about usage of the main pump - optional.

The level switch indicates minimum oil level in the tank. The minimum oil volume in the tank is 1,25 l ± 0,25 l (0,33 gal ± 0,066 gal).

The oil temperature sensor provides oil temperature at power pack output.



SELF TEST

- Pressure switches are OFF, oil level switch is open, oil temperature at presumptive value.
- Switch ON Back-up pump: 5 bar pressure switch goes ON.
- Then switch OFF the Back-up pump.
- Within about 5 seconds 5 bar pressure switch goes OFF.
- Switch ON Main pump: 5 bar pressure switch goes ON.
- switch OFF the Main pump.
- Within about 5 seconds 5 bar pressure switch goes OFF

RESULT: pumps and pressure switches are OK.