

# Hydraulic Ground Power Unit - Mainline Aircraft 3000psi and 5000psi

>HGPU<



## AIRBUS CERTIFIED

Hydraulic Ground Power Unit used for maintenance and testing of mainline aircraft hydraulic systems (ATA Chapter 29).

Designed for all aircraft types with 3000psi or 5000psi hydraulic systems and a flow rate of up to 60USgpm.

- > Single system or dual independent systems (two motors and two pumps)
- > Easy pressure control using the Opsi, 3000psi / 5000psi push buttons as applicable
- > Very suitable hydraulic supply for "Ram Air Test Ground Checks" together with the Airbus certified TEST-FUCHS RAT Tester P/N PGRAT 1; RATMK; RATMK 380.
- > Automatic over temperature shutoff feature at 160°F (70°C)
- > Ramp function for soft pressure build-up
- > Pressure and flow rates are infinitely variable and limitable
- > The customer can choose whatever matches his requirements:
  - A wide range of options and accessories are available
  - In addition, any customer special wishes will be respected

## RANGE OF APPLICATION

The >HGPU< family is designed for aircraft using Phospate-Ester Hydraulic Oil ("Skydrol" or "Hyjet") or Mineral Oil based Hydraulic Oil ("MIL-H-5606", "MIL-H-83282", "MIL-H-87257")

e. g.: Airbus: A300 A310 A320 A330/340 <b>A350</b> <b>A380</b> A400M	Boeing: B737 B747 B757 B767 B777 <b>B787</b>	Embraer: ERJ135/145 E-Jets	Antonov: AN124 AN148
		Bombardier: CRJ Series C-Series	Sukhoi: SuperJet 100

## GENERAL INFORMATION

- > The stainless steel hydraulic reservoir has a capacity of 63USgal (240l)
- > Hydraulic reservoir selection (A/C or >HGPU<) via illuminated buttons on the control panel
- > Easy draining and filling of the aircraft reservoirs is carried out by "Fill" / "Drain" push buttons
- > Two large oil-air coolers fan operated ensure optimum cooling
- > Easy access is provided by the hydraulically operated cover
- > Maximum towing speed is 15mph (25km/h)
- > When parked the control panel is protected (Accessories 04 - "Weatherproof Cover for Control Panel")
- > Dual system without a transfer gear box (to prevent the possibility of hydraulic/lubricating oil contamination)
- > A large fuel tank ( 53USgal (200l)) is fitted to the diesel version enabling 8 hours of continuous operation

## TECHNICAL DATA (ELECTRIC AND DIESEL DRIVEN >HGPU<)

### > Hydraulic Parameters:

High Pressure Circuit - Single System:  
 100 - 3000psi at max. 50 - 60gpm  
 (7 - 207bar at max. 190-227lpm)  
 max. 4000psi (275bar) at  
 reduced flow rate  
**100 - 5000psi at max. 60gpm**  
**(7 - 345bar at max. 227lpm)**  
**max. 5300psi (375bar) at**  
**reduced flow rate**

High Pressure Circuit - Dual System:  
 2 x 100 - 3000psi at max. 2 x 25  
 at 2 x 30gpm  
 (2 x 7 - 207bar at max. 2 x 95  
 at 2 x 114lpm)  
 max. 2 x 4000psi (2 x 275bar) at  
 reduced flow rate

Depending on the type of the equipment, the following  
 hydraulic oils can be used:

Phospate-Ester Hydraulic Oil  
 ("Skydrol" or "Hyjet")  
 or Mineral Oil based Hydraulic Oil  
 ("MIL-H-5606", "MIL-H-83282",  
 "MIL-H-87257")

Filter: 3 micron in filling circuit, 6 micron in  
 each low and high pressure circuit  
 25 micron in return (Option D)

### > Measurement Accuracy:

Supply pressure (analog): 0 - 5800psi (0 - 400bar),  
 cl. 1 (EN 837)

Return pressure (analog): 0 - 145psi (0 - 10bar),  
 cl. 1.6 (EN 837)

Oil temperature indicator: 0 - 100°C

Flow measurement (Options A,B):

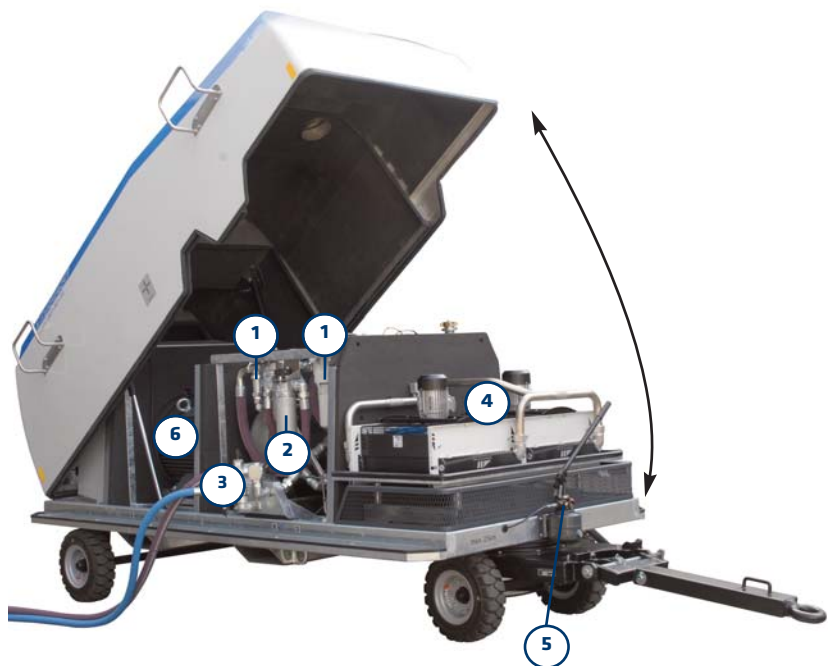
Single circuit	0.08 - 66gpm (0.32 - 250lpm) ±1% of full scale
Dual circuit	0.08 - 42gpm (0.32 - 160lpm) ±1% of full scale

ELECTRIC MOTOR DRIVEN >HGPU< WITH SINGLE SYSTEM

<p><b>&gt; Electrical Parameters (requirements):</b></p> <p>Supply: 3/PE AC 50-60Hz 400V</p> <p>Nominal current: 125 - 150A 63 - 80A 250 - 280A</p> <p>Power: approx. 86 - 104kVA approx. 44 - 59kVA approx. 173kVA</p>	<p><b>&gt; Dimensions and weight:</b></p> <p>Length (towbar folded up): 12.5ft (3800mm) 9.4ft (2850mm) 13.0ft (3950mm)</p> <p>Width: 5.9ft (1800mm) 5.2ft (1600mm) 5.9ft (1800mm)</p> <p>Height: 5.6ft (1700mm) 4.9ft (1500mm) 5.6ft (1700mm)</p> <p>Weight: 5500lb (2500kg) 3530lb (1600kg) 6400lb (2900kg)</p>
<p><b>&gt; Operating conditions:</b></p> <p>Ambient temperature: -25 to +45°C (-13 to +113°F)</p> <p>Noise emission: max. 75dB(A) at 1m distance</p>	

ELECTRIC MOTOR DRIVEN >HGPU< WITH SINGLE SYSTEM  
Cover open

- 1 Filter (6 micron) for each high and low pressure circuit
- 2 Filter (25 micron) in the return line (Option D)
- 3 Filling pump to refill the aircraft reservoir
- 4 Two large oil-air coolers
- 5 A hand pump enables easy and quick opening of the cover
- 6 Drive motor



ELECTRIC MOTOR DRIVEN >HGPU< WITH DUAL SYSTEM

<p><b>&gt; Electrical Parameters (requirements):</b></p> <p>Supply: 3/PE AC 50-60Hz 400V                  Nominal current: 125 - 150A                  63 - 80A                  Power: approx. 86 - 104kVA                  approx. 44 - 59kVA</p>	<p><b>&gt; Dimensions and weight:</b></p> <p>Length (towbar folded up):                  12.5ft (3800mm)                  9.4ft (2850mm)                  Width: 5.9ft (1800mm)                  5.2ft (1600mm)                  Height: 5.6ft (1700mm)                  4.9ft (1500mm)                  Weight: 5500lb (2500kg)                  3530lb (1600kg)</p>
<p><b>&gt; Operating conditions:</b></p> <p>Ambient temperature: -25 to +45°C                  (-13 to +113°F)                  Noise emission: max. 75dB(A) at 1m distance</p>	

ELECTRIC MOTOR DRIVEN >HGPU< WITH DUAL SYSTEM



Figure shows interior view of an >HGPU< with dual system. The two electric pump drive motors for the two independent hydraulic circuits drive the DUAL SYSTEM without interconnection with each other.

## DIESEL ENGINE DRIVEN >HGPU<

<p>&gt; <b>Deutz Diesel Engine:</b></p> <p>four-stroke in-line engine Common Rail</p>	<p>&gt; <b>Dimensions and weight:</b></p> <p>Length (towbar folded up): 15.1ft (4600mm)</p> <p>Width: 5.9ft (1800mm)</p> <p>Height: 6.9ft (2100mm)</p> <p>Weight: 7050lb (3200kg)</p>
<p>&gt; <b>Operating conditions:</b></p> <p>Ambient temperature: -25 to +45°C (-13 to +113°F)</p> <p>Noise emission: approx. 84dB(A) at control panel (at 2200rpm, approx. 50gpm, 3000psi)</p>	

## DIESEL ENGINE DRIVEN >HGPU<

### Cover open

- 1 Ventilation grille prevents heat accumulation inside the >HGPU<
- 2 diesel engine drive
- 3 Large diesel tank for 8hrs continuous operation
- 4 Openings for transport with forklift truck
- 5 Chassis with towbar



## Control Panel

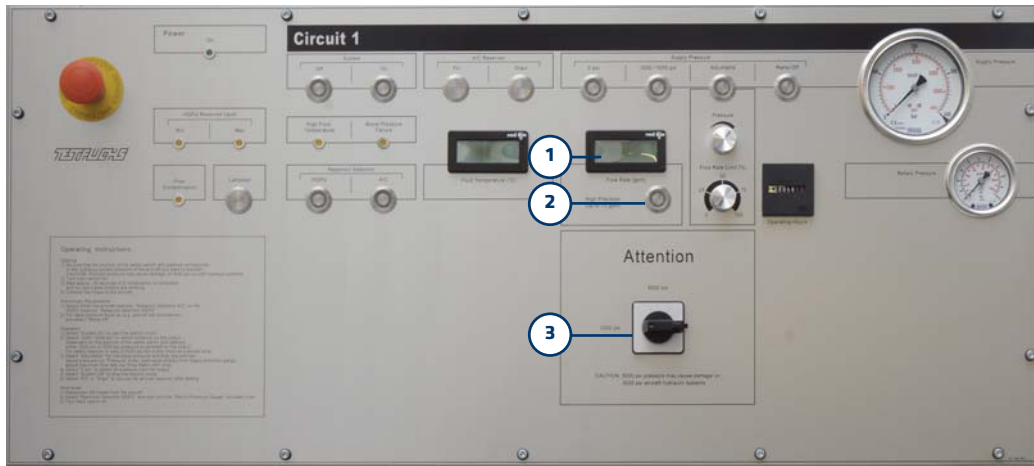
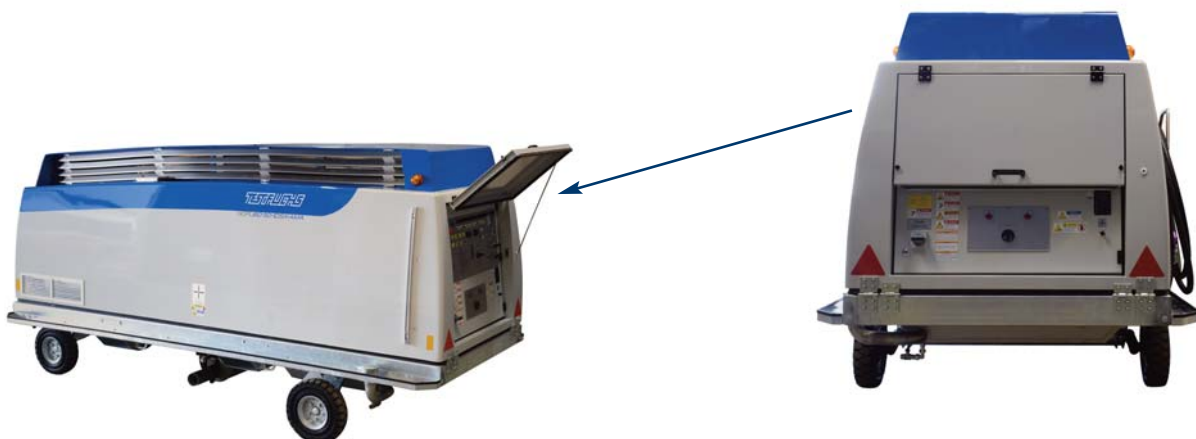


Figure shows the control panel of an electric driven >HGPU< with Single System, 5000psi

- |  |  |  |
|--|--|--|
| <p>1 Digital indicator for flow measurement (Option A)</p> | <p>2 Illuminated button for activating the leakage measurement (Option B) for "ITCAN/TARAN-Test"</p> | <p>3 Selector switch to change between 3000 and 5000psi operations (only fitted to &gt;HGPU60-50-1S&lt;)</p> |
|--|--|--|

## WEATHERPROOF COVER FOR CONTROL PANEL (ACCESSORIES 04) for protection when stored out of doors



The weatherproof cover is easy to close with latch locks



**ELECTRIC MOTOR DRIVEN >HGPU< (3000psi)**  
 Suitable for aircraft with 3000psi System

Type	System	Flow (USgpm)*	Motor (kW)
HGPU50-30-1	Single	50	75
HGPU60-30-1	Single	60	90
HGPU25-30-2	Dual (independent)	2 x 25	2 x 37
HGPU30-30-2	Dual (independent)	2 x 30	2 x 45
HGPU25-30-1	Single	25	37
HGPU30-30-1	Single	30	45
HGPU8-30-2	Dual (independent)	2 x 8	2 x 15
HGPU12-30-2	Dual (independent)	2 x 12	2 x 22

\* the specified values are based on the nominal flow at 50Hz supply, the values are proportionately higher at 60Hz.

**ELECTRIC MOTOR DRIVEN >HGPU< (5000psi)**  
 Suitable for aircraft with either a 3000psi System or a 5000psi System

Type	System	Flow (USgpm)*	Motor (kW)
HGPU60-50-1	Single	60	132

\* the specified values are based on the nominal flow at 50Hz supply, the values are proportionately higher at 60Hz.



DIESEL ENGINE DRIVEN >HGPU< (3000psi)  
 Suitable for aircraft with 3000psi System

Type	System	Flow (USgpm)	Engine (kW)
HGPU50-30-1D	Single	50	114
HGPU60-50-1D	Single	60	173
HGPU25-30-2D	Dual	2x25	173

REAR VIEW OF AN >HGPU< WITH DUAL SYSTEM



1 Short description for simple and easy operation in the required language (Option S)

2 Clear and ergonomic design of control panel with all control and indication elements

## OPTIONS

OPTION	Description
<b>A</b>	Flow measurement with digital indicator: Single system 2 to 66USgpm (10 to 250l/min), ±1% of full scale Dual System (independent) 1.3 to 42gpm (5 to 160l/min), ±1% of full scale
<b>B</b>	Leakage measurement: 0.08 to 5.3USgpm (0.32 to 20l/min), ±1% of full scale
<b>B1</b>	Leakage measurement: 0.11 to 10.6USgpm (0.40 to 40l/min), ±1% of full scale
<b>C</b>	Flushing circuit with loading system
<b>D</b>	Filter (25 micron) in the return line
<b>G</b>	Required hose lengths differing from the standard 33ft (10m) for Single System and 39ft (12m) for Dual System <u>must be specified by customer.</u>
<b>H</b>	Electrical soft start
<b>K</b>	Sampling points
<b>L</b>	Connected Mode for >HGPU< with Dual System. The hose lengths will be 33ft long.
<b>R</b>	Cover color change from standard blue (RAL 5017) / light grey (RAL 7035) <u>The required color combination must be specified by the customer including the RAL standard.</u>
<b>S</b>	Changes to the standard languages German, English, Russian, Spanish for front panel <u>markings must be clearly defined by the customer as an additional requirement.</u>
<b>T</b>	Dual Output Kit for >HGPU< with Single System
<b>U</b>	Spring-loaded chassis
<b>W</b>	Water separation system

## ORDERING INSTRUCTIONS

1) DEFINE THE REQUIRED TYPE OF >HGPU<

2) SELECT THE MOTIVE POWER OF >HGPU<

Diesel drive: Specify the ID Letter "D"

Electric drive: No specification of an ID Letter is required

3) SELECT THE REQUIRED TYPE OF MEDIUM

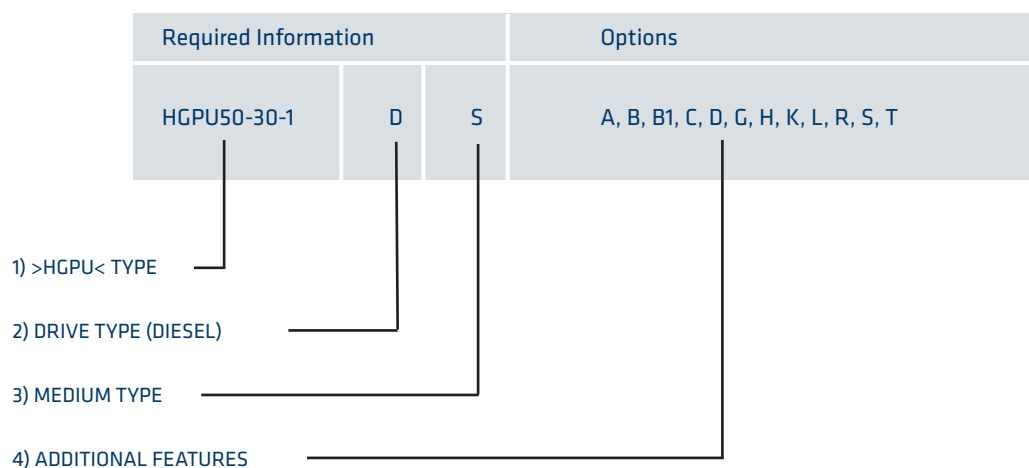
Phosphate-Ester Hydraulic Oil ("Skydrol" or "Hyjet")

Specify the ID Letter "S"

Mineral Oil based Hydraulic Oil ("MIL-H-5606", "MIL-H-83282", "MIL-H-87257")

Specify the ID Letter "M"

4) SELECT ADDITIONAL FEATURES AS REQUIRED



## ACCESSORIES

The hydraulic couplings necessary for connection to the aircraft as well as the required hydraulic medium and the electrical connection plug are not included in the standard scope of delivery.

An extensive offer of hydraulic couplings (Coupling Kits) and other accessories are in the brochure "Hydraulic Ground Power Unit >HGPU< - Accessories".