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 0psi, 3000psi and 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.
- Ramp function for soft pressure build-up
- Pressure and flow rates are infinitely variable and limitable
- The costumer can choose whatever matches his requirements:
  - A wide range of options and accessories is available
  - In addition, any costumer 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")

**Table: Range of Application**

<table>
<thead>
<tr>
<th>e. g.: Airbus:</th>
<th>Boeing:</th>
<th>Embraer:</th>
<th>Antonov:</th>
<th>Antonov:</th>
</tr>
</thead>
<tbody>
<tr>
<td>A300</td>
<td>B737</td>
<td>ERJ135/145 E-Jets</td>
<td>AN124</td>
<td>AN148</td>
</tr>
<tr>
<td>A310</td>
<td>B747</td>
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<tr>
<td>A320</td>
<td>B757</td>
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<tr>
<td>A330/340</td>
<td>B767</td>
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<tr>
<td>A350</td>
<td>B777</td>
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<tr>
<td>A380</td>
<td>B757</td>
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<tr>
<td>A400M</td>
<td></td>
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</tbody>
</table>

**BOEING:**
B737  B747  B757  B767  B777  B757

**EMBRAER:**
ERJ135/145 E-Jets

**ANTONOV:**
AN124  AN148

**BOMBARDIER:**
CRJ Series  C-Series

**SUHKHOI:**
SuperJet 100

GENERAL INFORMATION

> The stainless steel hydraulic reservoir has a capacity of 63USgal (240l)

> Open/closed circuit operation is selected electrically

> Easy draining and filling of the aircraft reservoirs is carried out by "Fill" / "Drain" push buttons (Option M)

> 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 operating 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:
- Phosphate-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

> Electrical Parameters (requirements):

Supply: 3/PE AC 50-60Hz 400V
Nominal current: 125 - 150A
       63 - 80A
       250 - 280A
Power: approx. 86 - 104kVA
       approx. 44 - 59kVA
       approx. 173kVA

> Operating conditions:

Operating temperature: -25 to +45°C
(-13 to +113°F)
Noise emission: max. 75dB(A) at 1m distance

> Dimensions and weight:

Length (towbar folded up):
12.5ft (3800mm)
9.4ft (2850mm)
13.0ft (3950mm)

Width:
5.9ft (1800mm)
5.2ft (1600mm)
5.9ft (1800mm)

Height:
5.6ft (1700mm)
4.9ft (1500mm)
5.6ft (1700mm)

Weight:
5500lb (2500kg)
3530lb (1600kg)
6400lb (2900kg)

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**

### Electrical Parameters (requirements):

- **Supply:** 3/PE AC 50-60Hz 400V
- **Nominal current:**
  - 125 - 150A
  - 63 - 80A
- **Power:**
  - approx. 86 - 104kVA
  - approx. 44 - 59kVA

### Operating conditions:

- **Operating temperature:** -25 to +45°C (-13 to +113°F)
- **Noise emission:** max. 75dB(A) at 1m distance

### Dimensions and weight:

- **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)

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**ELECTRIC MOTOR DRIVEN >HGPU< WITH DUAL SYSTEM**

Cover open

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<

<table>
<thead>
<tr>
<th><strong>Deutz Diesel Engine:</strong></th>
<th><strong>Dimensions and weight:</strong></th>
</tr>
</thead>
</table>
| Six cylinder, four-stroke in-line engine  
Common Rail, 128kW | Length (towbar folded up):  
14.6ft (4450mm) |

<table>
<thead>
<tr>
<th><strong>Operating conditions:</strong></th>
<th></th>
</tr>
</thead>
</table>
| Operating temperature: -25 to +45°C  
(-13 to +113°F) | Width: 5.9ft (1800mm) |
| Noise emission: approx. 84dB(A) at control panel  
(at 2200rpm, approx. 50gpm, 3000psi) | Height: 5.6ft (1700mm) |
| Weight: 6400lb (2900kg) |  |

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**DIESEL ENGINE DRIVEN >HGPU< Cover open**

1. Ventilation grille prevents heat accumulation inside the HGPU
2. Six cylinder diesel engine drive 128kW
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

1. Digital indicator for flow measurement (Option A)
2. Illuminated button for activating the leakage measurement (Option B) for "ITCAN/TARAN-Test"
3. Selector switch to change between 3000 and 5000psi operations (only fitted to >HGPU60-50-15<)

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

<table>
<thead>
<tr>
<th>Type</th>
<th>System</th>
<th>Flow (USgpm)*</th>
<th>Motor (kW)</th>
</tr>
</thead>
<tbody>
<tr>
<td>HGPU50-30-1</td>
<td>Single</td>
<td>50</td>
<td>75</td>
</tr>
<tr>
<td>HGPU60-30-1</td>
<td>Single</td>
<td>60</td>
<td>90</td>
</tr>
<tr>
<td>HGPU25-30-2</td>
<td>Dual (independent)</td>
<td>2 x 25</td>
<td>2 x 37</td>
</tr>
<tr>
<td>HGPU30-30-2</td>
<td>Dual (independent)</td>
<td>2 x 30</td>
<td>2 x 45</td>
</tr>
<tr>
<td>HGPU25-30-1</td>
<td>Single</td>
<td>25</td>
<td>37</td>
</tr>
<tr>
<td>HGPU30-30-1</td>
<td>Single</td>
<td>30</td>
<td>45</td>
</tr>
<tr>
<td>HGPU8-30-2</td>
<td>Dual (independent)</td>
<td>2 x 8</td>
<td>2 x 15</td>
</tr>
<tr>
<td>HGPU12-30-2</td>
<td>Dual (independent)</td>
<td>2 x 12</td>
<td>2 x 22</td>
</tr>
</tbody>
</table>

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

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

<table>
<thead>
<tr>
<th>Type</th>
<th>System</th>
<th>Flow (USgpm)*</th>
<th>Motor (kW)</th>
</tr>
</thead>
<tbody>
<tr>
<td>HGPU60-50-1</td>
<td>Single</td>
<td>60</td>
<td>132</td>
</tr>
</tbody>
</table>

* 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

<table>
<thead>
<tr>
<th>Type</th>
<th>System</th>
<th>Flow (USgpm)</th>
<th>Engine (kW)</th>
</tr>
</thead>
<tbody>
<tr>
<td>HGPU50-30-1D</td>
<td>Single</td>
<td>50</td>
<td>128</td>
</tr>
</tbody>
</table>

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
<table>
<thead>
<tr>
<th>OPTION</th>
<th>Description</th>
</tr>
</thead>
</table>
| A      | 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      | Leakage measurement: 0.08 to 5.3USgpm (0.32 to 20l/min), ±1% of full scale |
| B1     | Leakage measurement: 0.11 to 10.6USgpm (0.40 to 40l/min), ±1% of full scale |
| C      | Flushing circuit with loading system |
| D      | Filter (25 micron) in the return line |
| G      | Required hose lengths differing from the standard 33ft (10m) for Single System and 39ft (12m) for Dual System **must be specified by costumer.** |
| H      | Electrical soft start |
| K      | Sampling points |
| L      | Connected Mode for >HGPU< with Dual System. The hose lengths will be 33ft long. |
| R      | Cover color change from standard blue (RAL 5007) / white (RAL 9003)  
The required color combination must be specified by the costumer including the RAL standard. |
| S      | Changes to the standard languages German, English, Russian, Spanish for front panel **markings must be clearly defined by the costumer as an additional requirement.** |
| T      | Dual Output Kit for >HGPU< with Single System |
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".

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
   Phospate Ester Hydraulic Media ("Skydrol" or "Hyjet")
      Specify the ID Letter "S"
      Specify the ID Letter "M"

4) SELECT ADDITIONAL FEATURES AS REQUIRED

<table>
<thead>
<tr>
<th>Required Information</th>
<th>Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>HGPU50-30-1</td>
<td>D</td>
</tr>
</tbody>
</table>

1) >HGPU< TYPE
2) DRIVE TYPE (DIESEL)
3) MEDIUM TYPE
4) ADDITIONAL FEATURES

Technical data are subject to change!