

# HYDRAULIC TEST STAND WITH COMPUTER MONITORING AND DATA ACQUISITION (APD<sup>2</sup>)

970  
Series

2 Year  
Warranty

*APD<sup>2</sup> Simultaneously Measures Flow, Pressure and  
Temperature with a Straightforward Method of Monitoring  
System Parameters Complete with Data Acquisition*



Model 07-973-05

## **APD<sup>2</sup> Monitoring System with Data Acquisition:**

- Will Save Time and Money
- Insure Compliance with FAA Regulations and OEM Test Requirements
- Provides a Convenient and Easy to Understand Method of Testing and Reporting
- Produces Accurate Records for Stored Data for FAA Audit Compliance and Accountability
- Eliminates Hard to Support Component Testing Procedures
- Easy to Interpret Strip Chart That Displays Pressure, Flow and Temperature Simultaneously



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ap-hydraulics.com

# HYDRAULIC TEST STAND WITH COMPUTER MONITORING AND DATA ACQUISITION (APD<sup>2</sup>)

## 970 Series

**STANDARD FEATURES:**

- Panel Mounted Pump Controls for Ease of Operation and Safety
- Safety Glass Sliding Doors with ¼” Tempered Glass with Heavy Duty Door Rollers and Rails
- Complete Pump Pressure Adjustment (450 – 5000 PSI)
- Complete Pump Flow Adjustment (0 – Full GPM)
  
- **Five Pumps**
  1. Oilgear® Pressure Compensated Pump
  2. High Pressure Hand Pump (10,000 PSI)
  3. Work Sink Drain Pump
  4. Automatic Nano Filtration Pump
  
- **High Pressure Hand Pump**
  1. Digital Pressure Gauge (.25% Accuracy)
  2. Pressure Release Valve
  3. Dedicated Port
  
- **Super Clean Filtration** – Industry Leading Filtration Ensures Quality While Increasing Aircraft Component Life and Decreasing Aircraft Filter Changes
- High Efficiency, Non-Bypass Pressure Filter (3 Micron Absolute)
- Reservoir Kidney Loop Filter (3 Micron Absolute)
- Sink Drain Filter (3 Micron Absolute)
- Exclusive Automatic Nano Filtration System (.25 Micron Absolute)
  
- **4-Way Directional Flow Control Valve**  
Electrically Operated with Port Indicator Lights for Testing Cylinders
  
- **Calibration**
- Calibration parameters are stored in the electronic interface and the software automatically reads the calibration parameters from the device when launched
- Operator can adjust the sensor parameters during calibration for the correct accuracy needed
  
- **Software Parameters**
- Main screen displays strip chart enabling the hydraulic technician to have a more in depth understanding of the operation/test procedure and troubleshooting of the component under test
- Color coding of the parameters are easily read

- **Software Includes**
- Viewing of Graph History
- Displaying and Hiding of Individual Graph Plots
- Adjusting Graph Scale
- Changing Alarm History
- Data Acquisition
  
- **Operational Warning Lights**
- 1. Pressure Filter Condition LED Indicator
- 2. Kidney Loop Pump Filter Condition LED Indicator
- 3. Reservoir Low Level LED Warning Indicator
- 4. High Fluid Temperature LED Warning Indicator
- 5. Nano Filter Condition LED Warning Indicator
  
- **Reservoir Kidney Loop Pump**
- Continuously Filters Fluid
- Continuously Cools Fluid
- Automatic Oil Temperature Control
  
- **Oil Polishing System**
- Extremely Clean Nano Filtration with Automatic Timer and Operation LED Indicator Light
  
- **Additional Features**
- All Welded, 14 Gauge B3 (Brushed Finish) Stainless Steel Cabinet
- Illuminated Work Area Provided By The Over Head Work Sink Lights
- Easy Access Fluid Sample Port to Meet Quality Parameters
- Guaranteed No Leaks
- Safety Drip Pan Completely Covers Bottom
- Work Sink with Perforated Metal Grating
- Heavy Duty All Welded 1/4” Thick Wall Tubing Frame with Fork Lift Brackets
- Easy Maneuvering Ensured By Two Fixed and Two Swivel Castors with Stability Provided By the Heavy Duty Floor Lock
- Work Sink Drain Pump with Filter (4 GPM)
- Durable Laser Engraved, Aluminum Placards
- Panel Mounted Operational Instructions
- Current Pressure Gauge and Flow Meter Certificates of Calibration
  
- **Safety Features**
- High and Low Pressure Indication Alarm
- High and Low Flow Indication Alarm
- High and Low Oil Temperature Indication Alarm
- System By-Pass Relief Valve (7500 PSI)
- Safety Glass Doors to Protect Operator
- Isolated Work Sink – No Hydraulic Controls Located with in Sink Area

**Dimensions:**

Model Series 07-972-\*\*, 07-973-\*\*, 07-974-\*\*:

Length 100 in (254 cm), Width 62 in (157 cm), Height 80 in (203 cm)

Model Series 07-975-\*\*:

Length 120 in (305 cm), Width 80 in (203 cm), Height 80 in (203 cm)

**SPECIFICATIONS:**

| SERIES MODEL | PUMP PRESSURE<br>PSI (bar)     | MOTOR HP (kw)    | PUMP FLOW          |                    | WEIGHT<br>Lbs. (kg) |
|--------------|--------------------------------|------------------|--------------------|--------------------|---------------------|
|              |                                |                  | 50 Hz<br>GPM (lpm) | 60 Hz<br>GPM (lpm) |                     |
| 07-972-**    | 450 - 5000 PSI<br>30 - 340 bar | 50 HP<br>37 kw   | 17 GPM<br>65 lpm   | 20 GPM<br>76 lpm   | 3900 lbs<br>1775 kg |
| 07-973-**    | 450 - 5000 PSI<br>30 - 340 bar | 100 HP<br>75 kw  | 34 GPM<br>126 lpm  | 40 GPM<br>150 lpm  | 4400 lbs<br>1996 kg |
| 07-974-**    | 450 - 5000 PSI<br>30 - 340 bar | 150 HP<br>112 kw | 50 GPM<br>189 lpm  | 60 GPM<br>227 lpm  | 5400 lbs<br>2449 kg |
| 07-975-**    | 450 - 5000 PSI<br>30 - 340 bar | 200 HP<br>150 kw | 66 GPM<br>250 lpm  | 80 GPM<br>302 lpm  | 6100 lbs<br>2767 kg |

\*\*Model by Fluid Type: Mil-H-5606 = 02 Mil-H-83282 = 03 Skydrol = 05



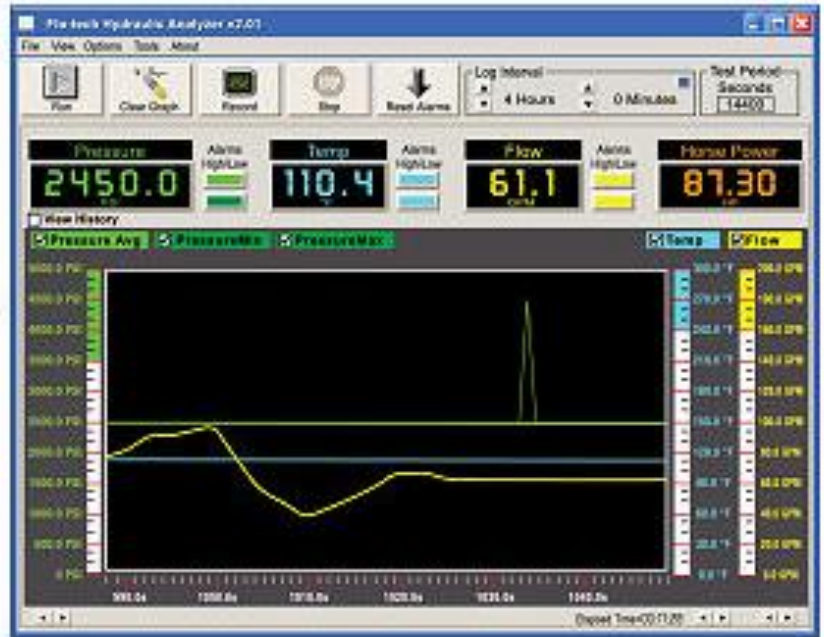
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**970  
Series**

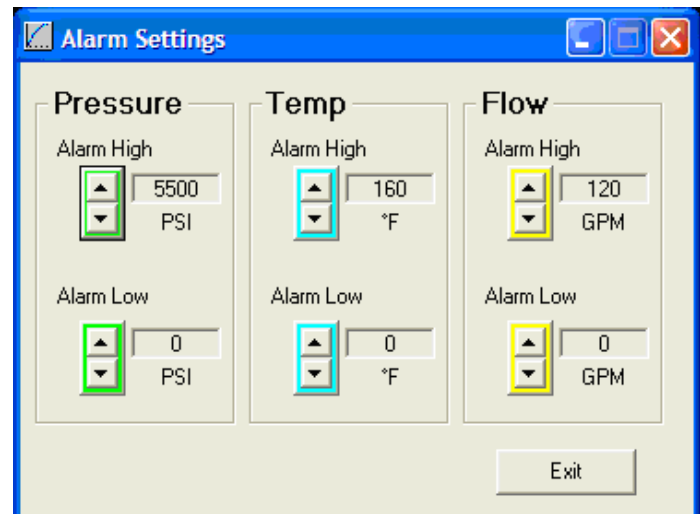
## FEATURES:

- **Software**
- The APD<sup>2</sup> was developed utilizing Flo-Check® USB Hydraulic Analyzer which provides a software for real-time graphical and digital interface for monitoring and/or recording pressure, temperature, and flow rate parameters
- View real-time pressure, temperature, flow rate, and power measurements for instantaneous readings
- Permits the data to be saved for export into Microsoft® Excel spreadsheets
- Logs 12 hours of data
- Records all alarm history
- User friendly software that allows hydraulic technicians to utilize the software with minimal training for a seamless start-up.
- **Hardware**
- APD<sup>2</sup> Is a computer based test control and acquisition module with the latest technology:
- Gateway® SX2803-56 Central Processing Unit (CPU), Windows® 7 Operating System, Microsoft® Excel Software
- 23" LCD Display Monitor with tempered glass protective housing
- Stainless Steel Keyboard Podium
- Industrial strength keyboard featuring stainless steel keys and fascia with the integration of a ultra rugged trackball
- Hardware is housed in a stainless steel protective cabinet

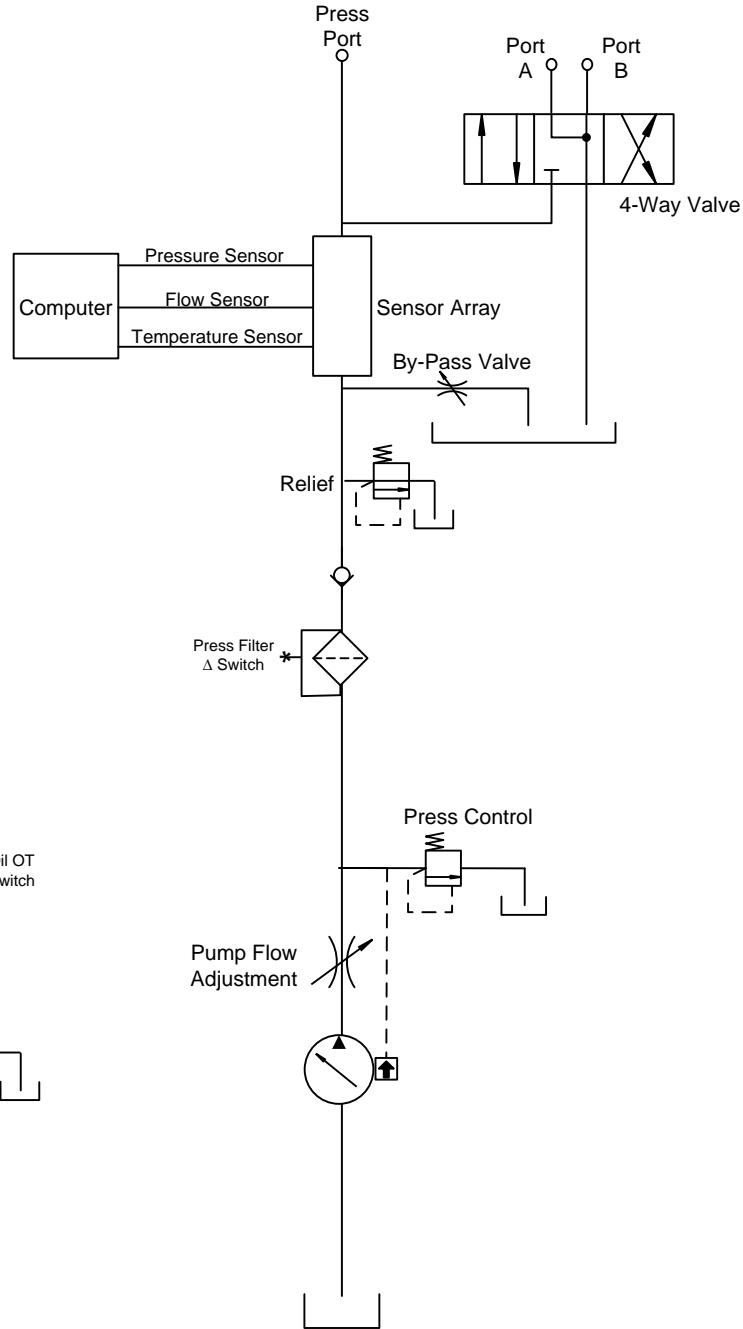
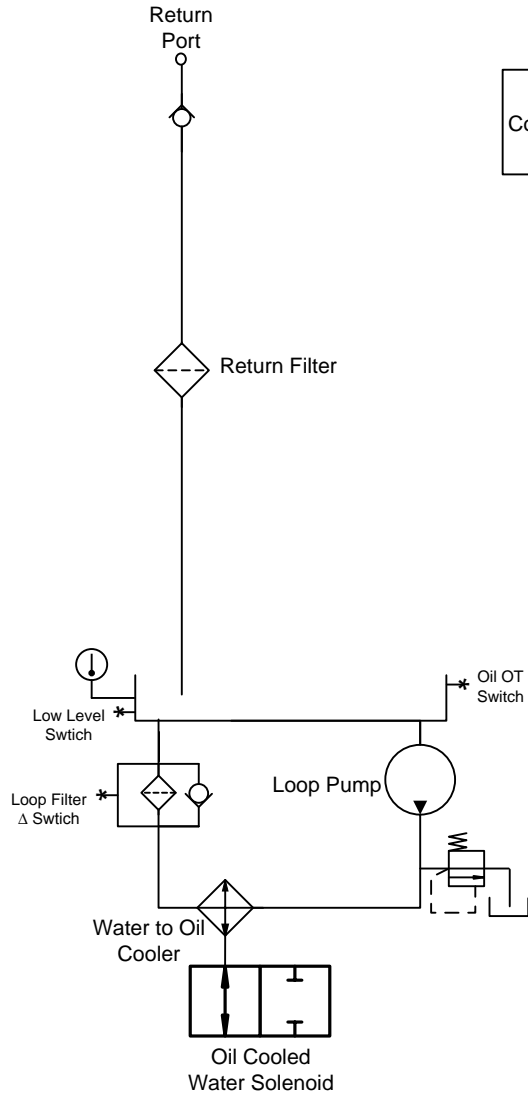


## SPECIFICATIONS:

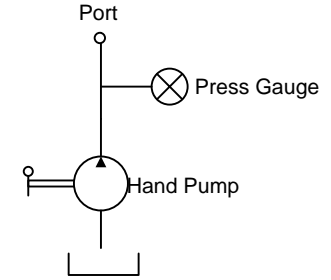
- **Flow**
- Accuracy  $\pm 1\%$  of reading @ 32 cSt
- Repeatability  $\pm 0.2\%$
- **Pressure**
- Accuracy  $< \pm 0.5\%$  BFSL
- Stability  $< \pm 0.25\%$  of full scale
- Response Time 0.2 milliseconds
- **Temperature**
- Calibration Error (25 °C)  $\pm 1$  °C
- Absolute Error (over full range of sensor, 0 to 150 °C)
- Repeatability  $\pm 0.1$  °C



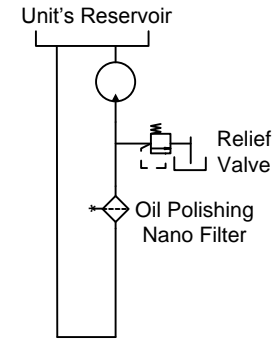
**Loop Pump System**



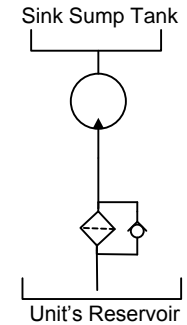
**High Pressure Hand Pump**



**Automatic Oil Polishing Nano Filtration System**



**Automatic Work Sink Drain**

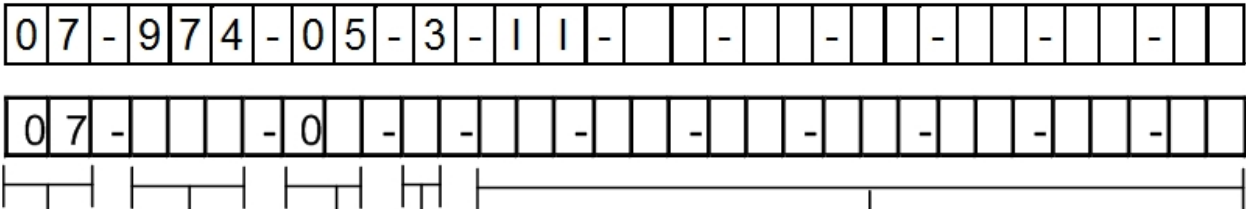


**Series 970 Hydraulic Test Stand Schematic**

# Ordering Instructions

- Step 1: Determine Size of the Hydraulic Test Stand Required, Refer to Aircraft's Component Overhaul Manuals For:
- A. Maximum (GPM) Gallons Per Minute
  - B. Maximum (PSI) Pound Per Square Inch
  - C. Testing Procedures and Operation of Components
- Step 2: Refer to Aircraft's Component Overhaul Manuals for Type of Hydraulic Fluid.
- Step 3: Determine the input voltage the Hydraulic Test Stand will be operated on. When ordering, the most common error is selecting incorrect input voltages 50 Hertz the flow will be reduced by 17%
- Step 4: Call A&P Hydraulics experienced sales staff for any questions for explanation of the complete range of Hydraulic Test Stand Options that we offer.

**EXAMPLE:**  
 Hydraulic Test Stand – 60 GPM @ 5000 PSI – Skydrol Fluid – 460 Volt 60 Hertz 3 Phase  
 Optional: Return Back Pressure Valve



| CHAR | GPM | LPM | PSI  | BAR | HP  | KW  |
|------|-----|-----|------|-----|-----|-----|
| 972  | 20  | 76  | 5000 | 340 | 50  | 37  |
| 973  | 40  | 150 | 5000 | 340 | 100 | 75  |
| 974  | 60  | 227 | 5000 | 340 | 150 | 112 |
| 975  | 80  | 302 | 5000 | 340 | 200 | 150 |

| CHAR | FLUID TYPE    |
|------|---------------|
| 2    | Mil-H-5606    |
| 3    | Mil-H-83282   |
| 5    | Skydrol       |
| 6    | Mil-PRF-87257 |

| CHAR | VOLT/FREQ/PHASE |
|------|-----------------|
| 0    | 208V60Hz/3ph    |
| 1    | 220V60Hz/3ph    |
| 2    | 308V60Hz/3ph    |
| 3    | 460V60Hz/3ph    |
| 4    | 575V60Hz/3ph    |
| 5    | 200V50Hz/3ph    |
| 6    | 220V50Hz/3ph    |
| 7    | 380V50Hz/3ph    |
| 8    | 415V50Hz/3ph    |
| 9    | 440V50Hz/3ph    |

| Isolated Digital Pressure Gauge with Port (.25% Accuracy) |                             |
|---|-----------------------------|
| CHAR  | OPTION DESCRIPTION          |
| AB  | Pressure Gauge (0-25 PSI)   |
| AC  | Pressure Gauge (0-60 PSI)   |
| AD  | Pressure Gauge (0-100 PSI)  |
| AE  | Pressure Gauge (0-500 PSI)  |
| AF  | Pressure Gauge (0-1000 PSI) |
| AG  | Pressure Gauge (0-1500 PSI) |
| AH  | Pressure Gauge (0-3000 PSI) |
| AI  | Pressure Gauge (0-5000 PSI) |

| Isolated Digital Flow Meter with Port (1% Accuracy)* |   |
|--|---|
| CHAR   | OPTION DESCRIPTION                                |
| BC   | Flow Meter (.02-0.2 GPM)                          |
| BD   | Flow Meter (.05-0.5 GPM)                          |
| BE   | Flow Meter (0.1-1.0 GPM)                          |
| BF   | Flow Meter (0.2-2.0 GPM)                          |
| BG   | Flow Meter (1-10 GPM)                             |
| BH   | Flow Meter (1-15 GPM)                             |
| BI   | Flow Meter (2-25 GPM)                             |
| BJ   | Flow Meter (2-50 GPM)                             |
| BK   | Flow Meter (4-80 GPM)                             |
| BM   | High Precision Digital Flow Meter (.25% Accuracy) |

| CHAR | OPTION DESCRIPTION                                  |
|------|---|
| II   | Return Back Pressure Valve                          |
| KK   | Custom Engineering                                  |
| WW   | Second Language Operation Placards & Owner's Manual |
| XX   | CE Compliant  |

