

# UNIPOWER A7 SERIES GAS/OIL REPLACEMENT PARTS LIST

First Construction October 1978.  
Installation Manual 8449-72 (formerly UA7)

## GENERAL BURNER PARTS

### **BURNER CHASSIS**

- 7301-90 Box Assembly with Flange, Nozzle and Gas Manifold
- 7354-51 Nozzle
- 7373-00 Mounting Flange
- 7375-00 Drawer Assembly -- without Oil Nozzle

### **BLOWER HOUSING**

- 7327-80 Air Shutter
- 3152-01 Quadrant -- for Air Shutter adjustment
- 7349-10 Air Shutter Shaft
- 3247-11 Blower Inlet Wire Guard
- 7348-00 Blower Inlet Ring
- 7348-02 Blower Inlet Ring -- Remote Pump only
- 3197-05 Motor Mounting Plate
- 7100-90 Oil Pump Mounting Bridge

### **BLOWER MOTORS 1-Phase, 56C Frame (3450 RPM, 5/8" Shaft) OPEN DRIPPROOF**

- 8437-26 A73 -- 1 1/2 HP, 115/230/1/60
- 8437-24 A75 - 77 -- 2 HP, 115/230/1/60

### **BLOWER MOTORS 3-Phase, 56C Frame (3450 RPM, 5/8" Shaft) OPEN DRIPPROOF**

- 8440-09 A73 -- 1 1/2 HP, 208/230/460/3/60
  - 8440-03 A75 - 77 -- 2 HP, 208/230/460/3/60
- TEFC (Totally Enclosed, Fan Cooled)**
- 8440-22 A73 -- 1 1/2 HP, 208/230/460/3/60
  - 8440-23 A75 - 77 -- 2 HP, 208/230/460/3/60

**NOTE:** Effective production date code 486 (January 20, 1986), the pilot pressure tap was moved from the "B" cock assembly to the pilot assembly. To accomplish this change, the early ell orifice was modified to a tee orifice to incorporate a pressure tap. Each replacement orifice kit contains enough fittings to adapt to all early pilots.

Effective production date code 4586 (first week of November, 1986), the drill size on the tee orifice was reduced for NATURAL gas. This change resulted when field experience indicated that a smaller orifice improved flame signal response. Replacement assemblies will be supplied with new orifice size.

### **BLOWER WHEELS**

- 7349-00 A73 -- 7" Diameter x 4" Wide
- 3628-50 A75 - 77 -- 7 5/8" Diameter x 3 1/2" Wide

### **GAS PILOT AND OIL IGNITION COMPONENTS -- See Note Below**

- 7336-80 Oil Spark Rod and Insulator Assembly -- 2 required
- 7105-50 Gas Spark Rod and Insulator Assembly
- 8451-06 Oil Spark Rod Insulator Sleeve -- 2 required
- 3175-40 Gas Spark Rod Gland Nut
- 8559-01 Oil Spark Rod Wire, Terminal and Snap Connector Assembly, 12" long -- 2 required
- 8529-05 Gas Spark Rod Wire and Terminal Assembly, without Snap Connector -- 42" long
- 8484-06 Gas Spark Rod Wire without Terminals -- sold per foot
- 8408-63 Snap Connector -- straight with Spring Terminal -- connects to oil ignition transformer
- 8408-07 Spark Connector -- right angle with Spring Terminal -- connects to gas spark rod
- 7151-50 Flame Detector Mounting Tube
- 7150-92 Pilot Assembly with NATURAL Gas Orifice -- order Air Orifice separately
- 7150-93 Pilot Assembly with PROPANE Gas Orifice -- order Air Orifice separately
- 7161-52 Gas Orifice Tee Kit -- NATURAL -- #45 Drill (.082) -- See Note at left
- 7161-53 Gas Orifice Tee Kit -- PROPANE -- #50 Drill (.070) -- See Note at left
- 7162-01 Air Orifice Ell -- 9/32" Drill
- 8402-40 1/8" NPT Pilot Safety Shut-Off Valve -- 120/1/60
- 8400-10 1/4 NPT Gas Pressure Regulator -- 1/2 PSI maximum inlet pressure
- 8416-32 3/8 NPT Gas Pressure Regulator -- 10 PSI maximum inlet pressure
- 8447-11 Gas Ignition Transformer -- 120/1/60; 6,000 volt secondary
- 8447-02 Oil Ignition Transformer -- 120/1/60; 12,000 volt secondary

**MIDCO International Inc.**

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## **SAFETY AND OPERATING CONTROLS—120/1/60**

### **FLAME SAFEGUARD**

#### **WIRING BASE**

- 8428-08 Q520 for R4140
- 8428-49 60-1386-2 for 70D10, 20 & 30

#### **CHASSIS —order plug-in components separately**

- 8428-55 R4140M 42-second purge -- See Note 5
- 8428-56 R4140M 90-second purge -- See Note 5
- 8428-57 R4140G High Fire Purge
- 8428-58 R4140L High Fire Purge
- 8428-78 70D10 High Fire Purge
- 8428-77 70D20 High Fire Purge
- 8428-76 70D30

#### **PLUG-IN AMPLIFIER**

- 8428-60 R7249A for R4140
- 8428-82 72DUV1 for 70D series

#### **PLUG-IN PURGE TIMER—See Note 5**

- 8428-79 71D80 for 70D30 30-seconds
- 8428-80 71D90 for 70D30 90-seconds
- 8428-88 71D70 for 70D10 & 20 High Fire Purge

#### **FLAME DETECTORS**

- 8428-05 C7027A UV Scanner -- Honeywell
- 8428-68 UV-1A-3 UV Scanner -- Fireye

#### **INCINERATOR CONTROLS—See Note 8**

- 8414-22 Q7230A 4-20 mA Control Module for use with M9484
- 8425-18 Thermal Switch (Therm-O-Disc, 6OT-13-203125)

### **OTHER CONTROLS**

- 8423-28 Gas-Off-Oil Fuel Selector Switch -- "Cutler Hammer" -- See Note 1
- 8423-31 Gas-Off-Oil Fuel Selector Switch -- Arrow-Hart -- See Note 1
- 8423-03 On-Off Toggle Switch (CH 7500K14)
- 8425-19 Blower Air Switch (Chgo. Safety Prod. #SMP; Tridelta #FP4039)
- 7160-95 High-Low Gas Pressure Switch -- See Note 2
- 8425-03 Low Gas Pressure Switch (MH C645A; Fireye PSML) -- See Note 3
- 8425-04 High Gas Pressure Switch (MH C645B; Fireye PSMH) -- See Note 3
- 8425-31 Low Oil Pressure Switch (Mercoid DAF-31-3-9, DAF7031-153-9)
- 8406-39 R4222B SPDT Switching Relay
- 8406-38 R4222D DPDT Switching Relay
- 8415-31 Three Phase Contactor -- order Adaptor Kit and Thermal Overload Relays separately (SQ-D 8502-PD2.10E) -- See Note 7
- 8415-44 Adaptor Kit to join Three Phase Contactor PD2.10E to TD Series Overload Relays (SQ-D Class 9999 Type T2C) -- See Note 7
- 8415-xx Thermal Overload Relays for Three Phase Contactor -- specify motor HP and voltage (SQ-D TD Series) -- See Note 7

#### **OIL FUEL HANDLING COMPONENTS**

- 7339-00 Oil Pump; 40 GPH -- See Note 6
- 8450-56 Pump Coupling with Flexible Insert
- 8451-34 Coupling Flexible Insert only
- 8450-34 1/8" Safety Valve; UL listed -- Webster
- 8450-93 1/8" Safety Valve; UL and FM approved -- ASCO
- 8451-37 3/8" Bypass Valve -- Normally Open
- 8451-05 Oil Pressure Regulator
- 8451-04 Oil Pressure Gauge -- 600 PSI
- 8401-11 Gauge Shut-Off Valve -- 1/4"

## MAIN GAS TRAIN COMPONENTS

### **MOTORIZED VALVES**

#### **V5055A Body Without "Proof of Closure" Switch**

8418-33 1 1/4"  
8418-34 1 1/2"  
8418-35 2"  
8418-36 2 1/2"  
8418-37 3"  
8418-98 4"

#### **V5055C Body With "Proof of Closure" Switch**

8418-91 1 1/4"  
8418-92 1 1/2"  
8418-93 2"  
8418-94 2 1/2"  
8418-95 3"  
8418-96 4"

#### **Valve Actuators Without "Proof of Closure" Switch**

8418-31 V4055A On-Off  
8418-79 V4062A Low-High-Low-Off

#### **Valve Actuators With "Proof of Closure" Switch**

8418-88 V4055D On-Off  
8418-97 V4062D Low-High-Low-Off

### **SOLENOID VALVES**

#### **Safety Valves -- Normally Closed**

8402-06 1 1/4"  
8402-07 1 1/2"  
8402-18 2"  
8402-19 2 1/2"  
8402-20 3"

#### **Vent Valves -- Normally Open**

8402-30 3/4"  
8402-31 1"  
8402-32 1 1/4"  
8402-34 2"

### **PRESSURE REGULATORS -- MAXITROL RV SERIES**

8416-33 1" RV61  
8416-02 1 1/4" RV61  
8416-05 1 1/2" RV81  
8416-08 2" RV91  
8416-11 2 1/2" RV111  
8416-12 3" RV111  
8416-16 4" RV131

## FIRING RATE CONTROLS

### **BF VALVES (Butterfly Valves)**

2933-51 1 1/4" 2933-54 2 1/2"  
2933-52 1 1/2" 2933-55 3"  
2933-53 2" 2933-56 4"

### **MBF VALVES (Motorized Butterfly Valves)**

(Contains Modutrol Motor Mounting Plate, Overrunning Linkage and Stop Arm)

2010300 1 1/4" 2010600 2 1/2"  
2010400 1 1/2" 2010700 3"  
2010500 2" 2010800 4"

### **MODUTROL MOTORS -- See Note 8**

8414-00 M644C Low-High-Low (2-step)  
8414-21 M9484D Full Modulating (no End Switch)  
8414-20 M9484E Full Modulating with End Switch  
8414-19 M9484 Full Modulating with Two EndSwitches  
8414-24 MH 198162EA 24V Transformer for use with M9484  
8451-38 Modulating Oil Bypass Valve  
8451-03 Hydraulic cylinder -- Oil Side High-Low Shutter Operator

## MISCELLANEOUS REPLACEMENT PARTS FOR FIRING RATE CONTROL

### **MBF Valve -- Motorized Butterfly Valve**

#### **SRBF Valve -- Spring Return Butterfly Valve (Valve Actuator Operated)**

2926-50 Overrunning Spring and Rod Assembly -- 1" through 1 1/2" MBF Valve  
2926-55 Overrunning Spring and Rod Assembly -- 2" through 3" MBF Valve  
2926-70 Overrunning Spring and Rod Assembly -- 4" MBF Valve  
2926-00 MBF Overrunning Spring  
7180-30 SRBF Return Spring  
2919-02 Stop Arm for MBF Valve  
8414-03 Crank Arm -- Mod Motor or Valve Actuator Shaft  
8450-94 Crank Arm -- Air Shutter and MBF Valve Shafts  
7180-20 Connecting Rod -- Air Shutter to MBF Valve or Valve Actuator  
8450-18 Connecting Rod Ball Joint  
7180-50 Overrunning Link and Stud Assembly -- Hydraulic Cylinder to Air Shutter Shaft (order Cylinder Clevis separately)  
8450-69 Hydraulic cylinder Clevis and Pin Assembly  
8432-02 3/8" dia. O-Ring for BF and MBF Valves

## **OIL NOZZLES -- See Note 4**

Nozzle Size -- GPH @ 100 PSI  
Maximum Input -- GPH @ 300 PSI

<b><u>PART NO.</u></b>	<b><u>SIZE</u></b>	<b><u>MAX. INPUT</u></b>	<b><u>PART NO.</u></b>	<b><u>SIZE</u></b>	<b><u>MAX. INPUT</u></b>	<b><u>PART NO.</u></b>	<b><u>SIZE</u></b>	<b><u>MAX. INPUT</u></b>
8451-23	2.00	3.50	8451-30	4.50	7.80	8451-14	7.50	13.00
8451-24	2.25	4.00	8451-31	5.00	8.70	8451-15	8.00	14.00
8451-25	2.50	4.40	8451-32	5.50	9.50	8451-16	9.00	15.60
8451-26	2.75	4.80	8451-11	6.00	10.50	8451-17	10.00	17.40
8451-27	3.00	5.25	8451-12	6.50	11.30	8451-18	11.00	19.10
8451-28	3.50	6.00	8451-13	7.00	12.10	8451-19	12.00	20.00
8451-29	4.00	7.00						

### **NOTES**

1. Two sizes of Gas-Off-Oil fuel selector switches have been used. Select replacement as follows:  
8423-28 Cutler-Hammer requires a 15/32" mounting hole. Used through September 22, 1980 (burner date code 3980).  
8423-31 Arrow-Hart requires a 3/4" mounting hole.
2. The Chicago Safety Products single body High-Low gas pressure switch, Model HLGP, used through June 22, 1981 (date code 2681) has been superseded by an assembly of individual high and low pressure switches mounted on a junction box. For replacement of the single body, High-Low switch, order Kit No. 7160-95, which includes 8449-88 Installation Bulletin.
3. Replacement individual high or low gas pressure switches may be a different make and have a different physical configuration than that previously supplied, but the mounting and wiring will be the same. Request Bulletin 8449-88 for terminal identification.
4. Select nozzle size for maximum firing rate desired. Do not exceed maximum permissible firing rate and corresponding nozzle size and pump pressure shown on the burner nameplate.
5. 30-second minimum pre-ignition purge used with On-Off burners having the blower air shutter locked in a "fixed" firing rate position. Where the air shutter position is automatically controlled, a 90 second minimum purge, or a purge with the air shutter driven to the high fire position, is required.
6. The Sunstrand Pump used 1978 through 1986 was discontinued by vendor. Beginning August 1986 (date code 3386), a Webster pump became standard assembly. The replacement part number shown is a Kit No. which contains an assortment of loose fittings to adapt the existing tubing arrangement to the Webster pump. Oil tubing should not be reformed or replaced.
7. Three phase Arrow-Hart (A-H) Motor Starters and accessories no longer available from MIDCO. Obtain locally or substitute the listed SQ-D equipment. NOTE: The SQ-D equipment is not identical to the A-H equipment. Mounting and wiring modifications will be necessary. If substituting SQ-D for A-H, request wiring diagram 7501-50.
8. Honeywell discontinued manufacturing their M941 series Modulating Motors mid 1992. MIDCO stock ran out late 1992 when MIDCO switched to Honeywell M9484 Series Motors. The newer M9484 Motors are physically shorter and require an Adaptor Bracket to mount to MIDCO MBF valves. The replacement Mod Motors shown in listing include the necessary Adaptor Bracket. The accessory items used on the newer M9484 Motors and the 24V Transformers are NOT interchangeable with the older M941 Motors. If exact replacements are required for the M941 Motor, consult your local Honeywell distributor for available Tradeline replacement. When ordering 4-20 mA Control Module, Honeywell Q7230A, request MIDCO Blue Print 7503-07 which details revised terminal call outs.