



Reference Manual

Benchmark® Boilers with Edge® [i] Controller

Natural Gas, Propane Gas and Dual Fuel
Modulating & Condensing Boilers

Models 750 through 6000

Other documents for this product include:

- OMM-0144, Installation and Startup Manual
- OMM-0145, Operation-Service Manual
- TAG-0019, Boiler Application Guide
- TAG-0022, Vent-Combustion Air Guide
- TAG-0047, Benchmark Gas Guide
- TAG-0048, Benchmark Power Guide

Applies to serial numbers:

G-21-0075 and above



Disclaimer

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SECTION 1: SAFETY PRECAUTIONS

1.1 Warnings & Cautions

Installers and operating personnel **MUST**, at all times, observe all safety regulations. The following warnings and cautions are general and must be given the same attention as specific precautions included in these instructions. In addition to all the requirements included in this AERCO Instruction Manual, the installation of units **MUST** conform with local building codes, or, in the absence of local codes, ANSI Z223.1 (National Fuel Gas Code Publication No. NFPA-54) for gas-fired boilers and ANSI/NFPA 58 for LP gas-fired boilers. Where applicable, the equipment shall be installed in accordance with the current Installation Code for Gas Burning Appliances and Equipment, CSA B149.1, and applicable Provincial regulations for the class; which should be carefully followed in all cases. Authorities having jurisdiction should be consulted before installations are made.

IMPORTANT!

This Instruction Manual is an integral part of the product and must be maintained in legible condition. It must be given to the user by the installer and kept in a safe place for future reference.

WARNING!

- Do not use matches, candles, flames, or other sources of ignition to check for gas leaks.
- Fluids under pressure may cause injury to personnel or damage to equipment when released. Be sure to shut off all incoming and outgoing water shutoff valves. Carefully decrease all trapped pressures to zero before performing maintenance.
- Before attempting to perform any maintenance on the unit, shut off all gas and electrical inputs to the unit.
- The exhaust vent pipe of the unit operates under a positive pressure and therefore must be completely sealed to prevent leakage of combustion products into living spaces.
- Electrical voltages up to **120 VAC (BMK750 – 2000), 208 or 480 VAC (BMK2500 – BMK3000), 480 VAC (BMK4000 & 5000N), or 208, 480 or 575 VAC (BMK5000 & 6000) and 24 volts AC** may be used in this equipment. On international units, the voltage can be **220V to 240V** single phase. Therefore the cover on the unit's power panel (located behind the unit's front panel) must be installed at all times, except during maintenance and servicing.
- A single-pole switch for single phase units, or three-pole switch for three phase units, must be installed on the electrical supply line external to the unit. The switch must be installed in an easily accessible position to quickly and safely disconnect electrical service. Do not affix switch to unit sheet metal enclosures.

CAUTION!

- Many soaps used for gas pipe leak testing are corrosive to metals. The piping must be rinsed thoroughly with clean water after leak checks have been completed.
- **DO NOT** use this boiler if any part has been under water. Call a qualified service technician to inspect and replace any part that has been under water.

1.2 Emergency Shutdown

If overheating occurs or the gas supply fails to shut off, close the manual gas shutoff valve (Figure 1-1) located external to the unit.

NOTE:

The Installer must identify and indicate the location of the emergency shutdown manual gas valve to operating personnel.



Figure 1-1: Manual Gas Shutoff Valve

In addition, to ensure safety an emergency shutdown procedure that addresses the following points should be designed and implement at the site:

- For automatically operated unattended boilers located in a boiler room, provide a manually operated remote shutdown switch or circuit breaker located just inside or outside each boiler room door. Design the system so activation of the emergency shutdown switch or circuit breaker will immediately shut off the fuel supply to the unit(s).
- For automatically operated unattended boilers in a location other than a boiler room, provide a manually operated remote shutdown switch or circuit breaker marked for easy identification at a location readily accessible in the event of boiler mis-operation.
- Design the system so activation of the emergency shutdown switch or circuit breaker will immediately shut off the fuel.
- For boilers monitored and/or operated from a continuously occupied control room, provide an emergency shutdown switch in the control room that is hard-wired to immediately shut off the fuel upon activation.

1.3 PROLONGED SHUTDOWN

If there is an emergency, turn off the electrical power supply to the AERCO boiler and close the manual gas valve located upstream from the unit. The installer must identify the emergency shut-off device.

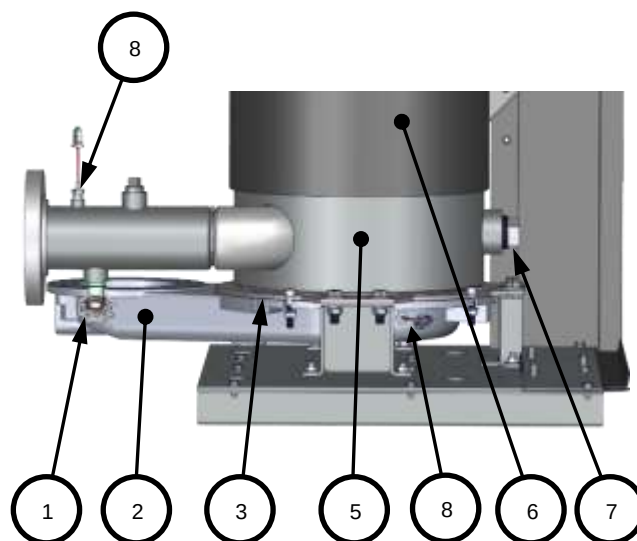
If the unit is being shut down for an extended period of time, such as a year or more, complete the instructions in Section 8.12: *Shutting Boiler Down For Extended Period* in the *Benchmark 750-6000 with Edge [i] Operation-Maintenance Manual (OMM-0145, GF-218)*.

When returning a unit to service after a prolonged shutdown, it is recommended that the instructions in Section 4: *Initial Startup Procedures* and Section 5: *Safety Device Testing* of the *Benchmark 750-6000 with Edge [i] Operation-Maintenance Manual (OMM-0145, GF-218)* be performed to verify that all system-operating parameters are correct.

SECTION 2: BENCHMARK 750 & 1000 PART LIST

Item #	Qty	Part #	Description
EXHAUST MANIFOLD			
1	1	92094	Boiler Drain Valve: 3/4 "
2	1	43086	Exhaust Manifold
3	1	84045	Exhaust Manifold Seal
4	2	9-22	Pipe Plug
HEAT EXCHANGER			
5	1	58179-1	BMK 750 Heat Exchanger
		58179-2	BMK 1000 Heat Exchanger
6	1	80080	Insulation: Shell
7	1	123692	Plug, 1-1/2" NPT
CONTROLS			
8	2	123449	Temperature Sensor
9	1	93700	Solid Hex Plug, 3/4" NPT
10	1	61030	Temperature Sensor
11	1	58132 ①	Thermowell
12	1	69126 ①	Low Water Cutoff

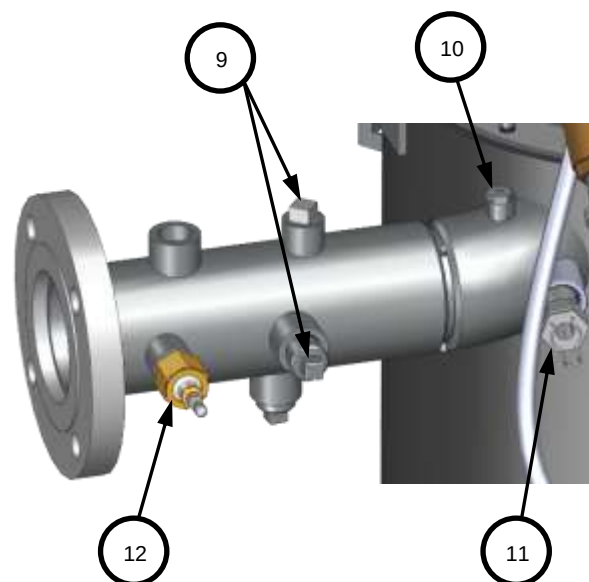
① Replacement Kit and/or Catalog number



LOWER LEFT SIDE VIEW



LOWER RIGHT SIDE VIEW



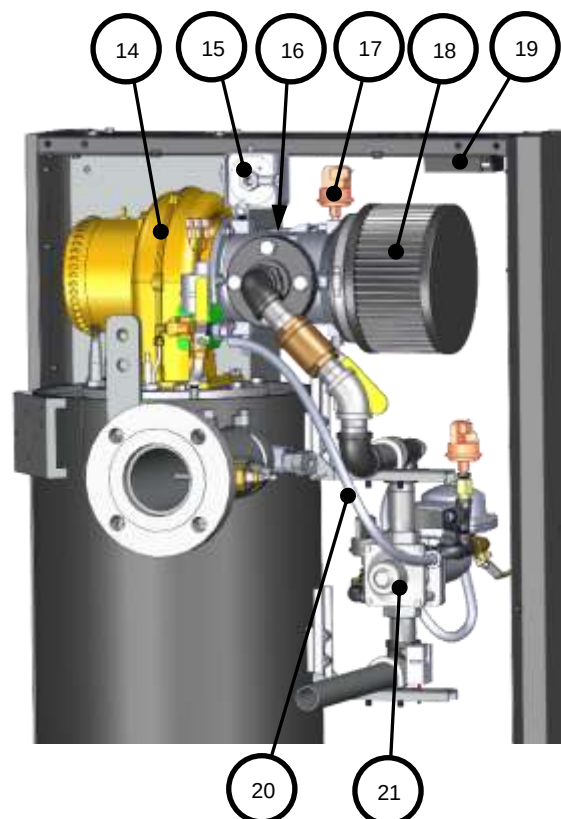
UPPER LEFT-REAR VIEW

AERCO International, Inc. Blauvelt, NY 10913	Benchmark 750 & 1000 with Edge [i] Part List	
	Benchmark 750 – 29502-TAB rev D 11-19/2020 Benchmark 1000 – 29504-TAB rev E 1/15/2021	Sheet 1 of 5

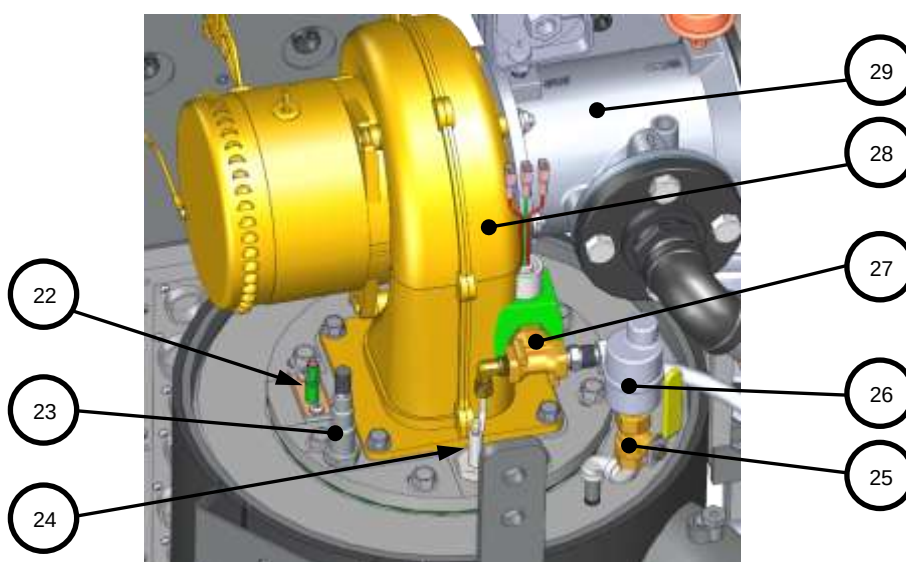
SECTION 2: BENCHMARK 750 & 1000 PART LIST

Item #	Qty	Part #	Description
BURNER-BLOWER (See full diagram below)			
14	1	24276	BMK 1000 Burner-Blower Assy.
		24276-1	BMK 750 Burner-Blower Assy.
		24276-2	BMK 750/1000 Propane Units
		24276-3	BMK 750/1000 Dual Fuel Units
15	1	60011-4	Blower Proof Switch
16	1	81155	Pipe Flange gasket (gas train to A/F Valve)
17	1	61002-5	Blocked Inlet Switch, -4.5" W.C.
18	1	59139	Air Filter, 6" x 4.5" LG
19	1	65085	Ignition Transformer
20	1	97087-20	Flex Gas Tube 20" (50.8 cm)
GAS TRAIN ASSEMBLIES (See full diagrams below)			
21	1	22140-1	BMK 750 & 1000 FM Gas Train
		22140-2	BMK 750 & 1000 DBB Gas Train
		22140-3-1	BMK 750 Propane Gas Train
		22140-3-2	BMK 1000 Propane Gas Train
		22429	BMK 750 & 1000 Duel Fuel Gas Train
CONTROLS			
22	1	24356-1 ❶	Flame Rod
23	1	61026	O ₂ Sensor
24	1	58023 ❶	Ignitor-Injector
25	1	123863	Valve: Ball 1/8" NPT
26	1	59178	Vent: Air 1/8 NPT
27	1	58089 ❶	Staged Ignition Assy.
28	1	58061 ❶	Blower, 8.9" AMETEK
29	1	24367-1 ❶	Air/Fuel Valve Assy., BMK 1000
		24367-2 ❶	Air/Fuel Valve Assy., BMK 750
		24367-3 ❶	Air/Fuel Valve Assy., BMK 750/1000 Propane
		24367-4 ❶	Air/Fuel Valve Assy., BMK 750/1000 Dual Fuel

❶ Replacement Kit and/or Catalog number



REAR VIEW

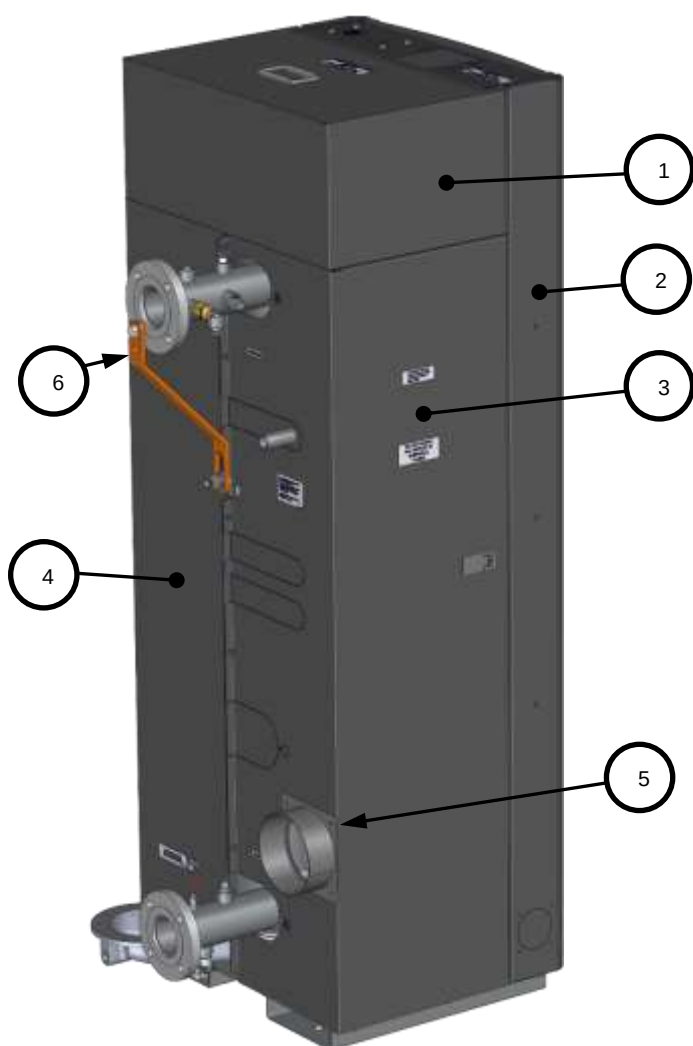


TOP-REAR VIEW

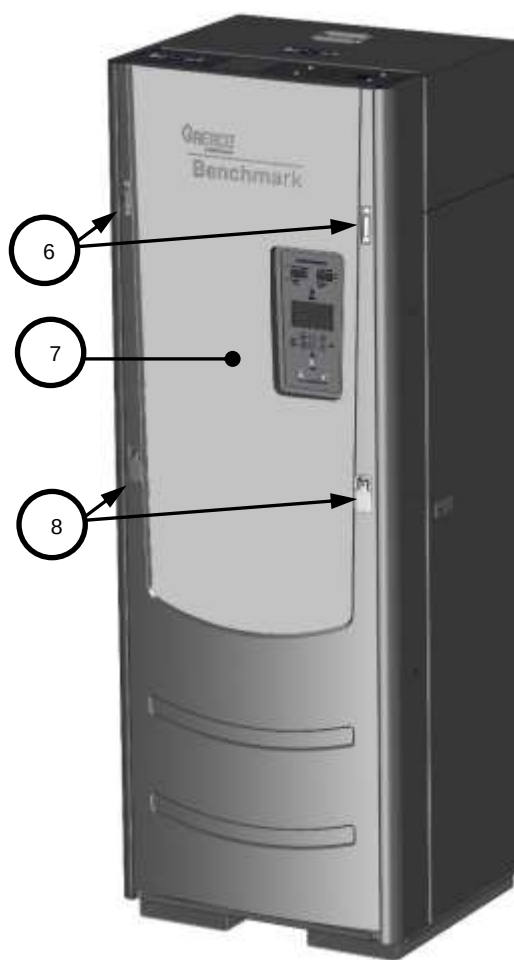
AERCO International, Inc. Blauvelt, NY 10913	Benchmark 750 & 1000 with Edge [i] Part List	
	Benchmark 750 – 29502-TAB rev D	11-19/2020
	Benchmark 1000 – 29504-TAB rev E	1/15/2021
		Sheet 2 of 5

SECTION 2: BENCHMARK 750 & 1000 PART LIST

Enclosure Panels			
Item #	Qty	Part #	Description
1	1	37154	Cover Assembly
2	1	25087	Front Frame Assembly
3	1	37155	Left -Rear Panel
4	1	37156	Right -Rear Panel
5	1	39217	Air Inlet Adapter 6"
6	2	59179	Handle, Concealed Pull
7	1	25085-3	Front Panel Assembly
8	2	59133	Latch, Compression
9	1	59174	Lifting Bar (removed after installation)



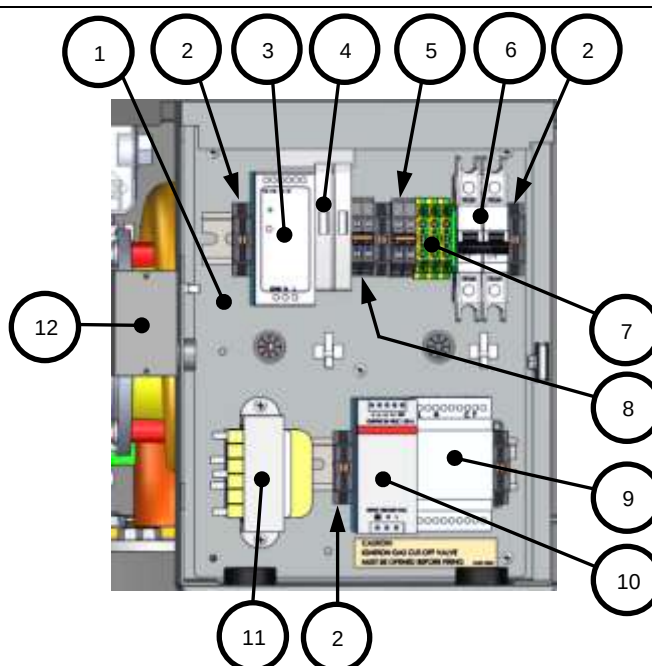
LEFT-REAR VIEW



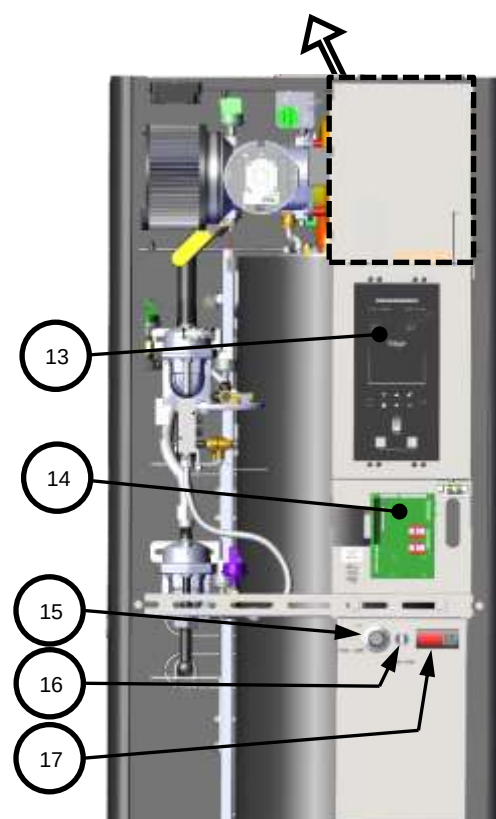
FRONT-RIGHT VIEW

AERCO International, Inc. Blauvelt, NY 10913	Benchmark 750 & 1000 with Edge [i] Part List	
	Benchmark 750 – 29502-TAB rev D 11-19/2020 Benchmark 1000 – 29504-TAB rev E 1/15/2021	Sheet 3 of 5

SECTION 2: BENCHMARK 750 & 1000 PART LIST



Power Panel			
Item #	Qty	Part #	Description
1	1	24477	Power Panel
2	5	69141	DIN Rail End Stop
3	1	65109	12V POWER SUPPLY
4	2	65118	Fuse Terminal: DIN Mounted
5	2	65121	Terminal Block, White
6	1	60037	2 Pole Circuit Breaker, 20A
7	3	65122	Terminal Ground Block: DIN Mounted
8	2	65120	Terminal Block, Black
9	1	65156	Amplifier, Flame Rod Signal
10	1	65162	24V Power Supply (Sequencing Valve)
11	1	65011	Transformer, 115/24V 100VA
12	1	69102-2	Pump Relay
Front View (Front panel removed)			
13	1	69344-3	Edge [i] Control Panel
14	1	69172	I/O Board
15	1	123966	Over Temp Switch
16	1	63342-1	Fuel Selector Switch (DUAL FUEL ONLY)
17	1	64088	Temp Limit Controller



PARTIAL FRONT VIEW
DUAL FUEL UNIT SHOWN
FRONT PANEL REMOVED

AERCO International, Inc. Blauvelt, NY 10913	Benchmark 750 & 1000 with Edge [i] Part List	
	Benchmark 750 – 29502-TAB rev D 11-19/2020 Benchmark 1000 – 29504-TAB rev E 1/15/2021	Sheet 4 of 5

SECTION 2: BENCHMARK 750 & 1000 PART LIST

Benchmark 750/1000 Spare Parts Kit P/N 58037-TAB									
Part Number	Description	58037-1 30 PSI Apollo	58037-2 50 PSI Conbraco	58037-3 75 PSI Apollo	58037-4 100 PSI Watts	58037-5 150 PSI Watts	58037-6 60 PSI Watts	58037-7 125 PSI Watts	58037-8 160 PSI Kunkle
24286	6" Exhaust Kit	1	1	1	1	1	1	1	1
24441	Condensate Trap Assy.	1	1	1	1	1	1	1	1
92006-5	1" Ball Valve	1	1	1	1	1	1	1	1
123675-5	Tridicator	1	1						
123675-6	Tridicator			1	1		1	1	
123675-7	Tridicator					1			1
92014	Pressure Relief Valve		1						
92015-13	Pressure Relief Valve						1		
92015-15	Pressure Relief Valve				1				
92015-16	Pressure Relief Valve							1	
92015-20	Pressure Relief Valve			1					
92015-484	Pressure Relief Valve								1
92015-361	Pressure Relief Valve	1							
123659	Pressure Relief Valve					1			
9-234	3/4" Close Nipple	1		1	1	1	1	1	1

Wiring Harnesses (not shown in figures below)

Part #	Description
63038	HARNESS: BLOWER
63097	HARNESS: SENSOR/COMM
63147	HARNESS: WIRING: GAS TRAIN
63182	HARNESS: SHELL
63083	HARNESS: O2 SENSOR
65104	CABLE: H.V. IGNITION
124327	HARNESS: INTERLOCK

Additional Benchmark 750/1000 Kits Available

Part #	Description
27086-1 ❶	Actuator: SSOV w/o P.O.C. Switch FRU Kit
64048 ❶	SSOV With Pressure Regulator FRU Kit
24367-1 ❶	A/F Valve Assy FRU Kit BMK 1000
24367-2 ❶	A/F Valve Assy FRU Kit BMK 750
58061 ❶	Blower FRU Kit: AMETEK 8.9"
24356-1 ❶	Flame Rod
58023 ❶	Ignitor-Injector

❶ Replacement Kit and/or Catalog number

Other Accessories / Parts (Optional)

Part #	Description
92084-6	Motorized Sequencing Valve

AERCO International, Inc. Blauvelt, NY 10913	Benchmark 750 & 1000 with Edge [i] Part List	
	Benchmark 750 – 29502-TAB rev D 11-19/2020 Benchmark 1000 – 29504-TAB rev E 1/15/2021	Sheet 5 of 5

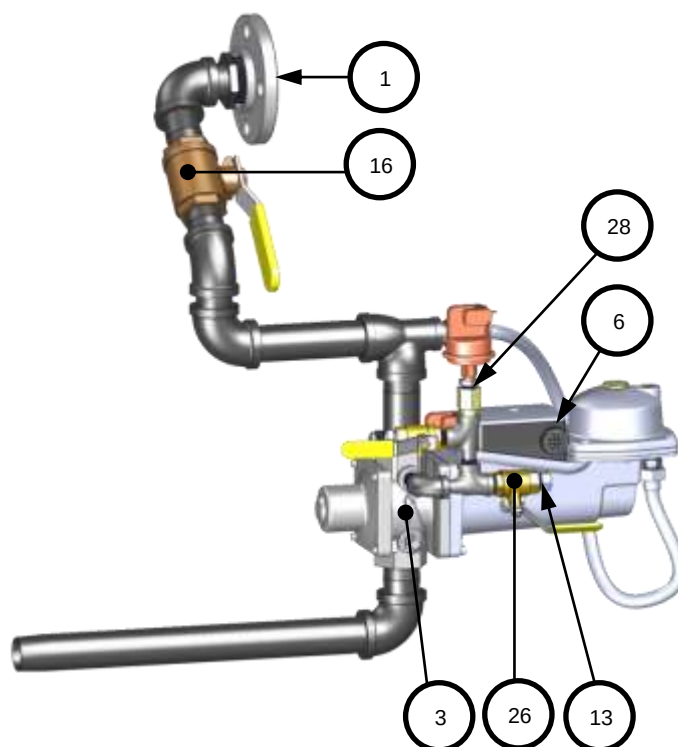
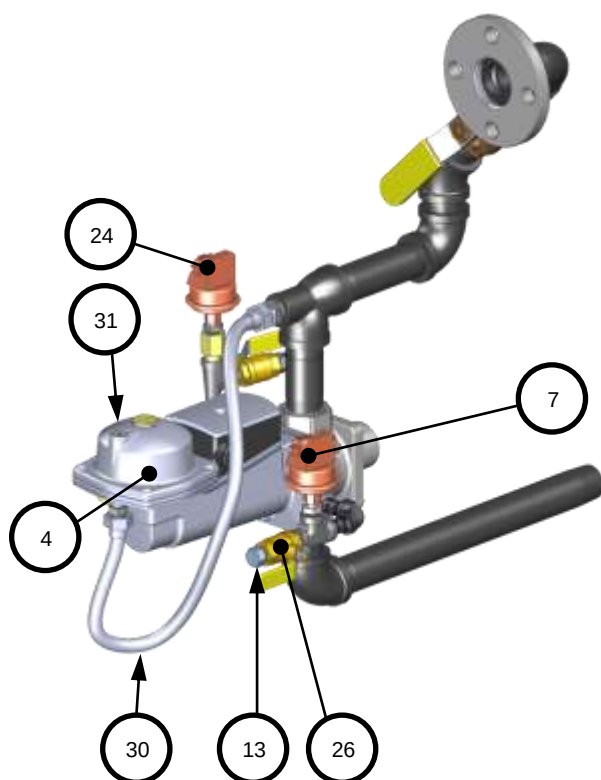
SECTION 2: BENCHMARK 750 & 1000 PART LIST

Benchmark 750/1000 FM Gas Train

P/N 22140-1 rev J – 10/31/2019

Item	Qty	Part #	Description	Item	Qty	Part #	Description
1	1	95026	Flange 1.25" NPT 125#: Threaded	16	1	92006-5	Ball Valve: 1" NPT
3	1	92036	Valve: SSOV 1" NPT	24	1	61002-12	High Gas Pressure Switch 4.7" W.C.
4	1	64048 ①	Actuator: SSOV w/ Regulator	26	2	92077	Ball Valve, 1/4" NPT MXF Brass
6	2	12951-2	Bushing: Control Box	28	1	99017	Snubber: Pressure: 1/4"
7	1	61002-1	Low Pressure Switch: 2.6" W.C. Fall N.O.	30	1	97087-20	Flexible Gas Tube: 20" LG
13	2	9-22	Pipe Plug: 1/4" NPT: Steel	31	1	99015	Damping Orifice: SSOV

① Replacement Kit and/or Catalog number



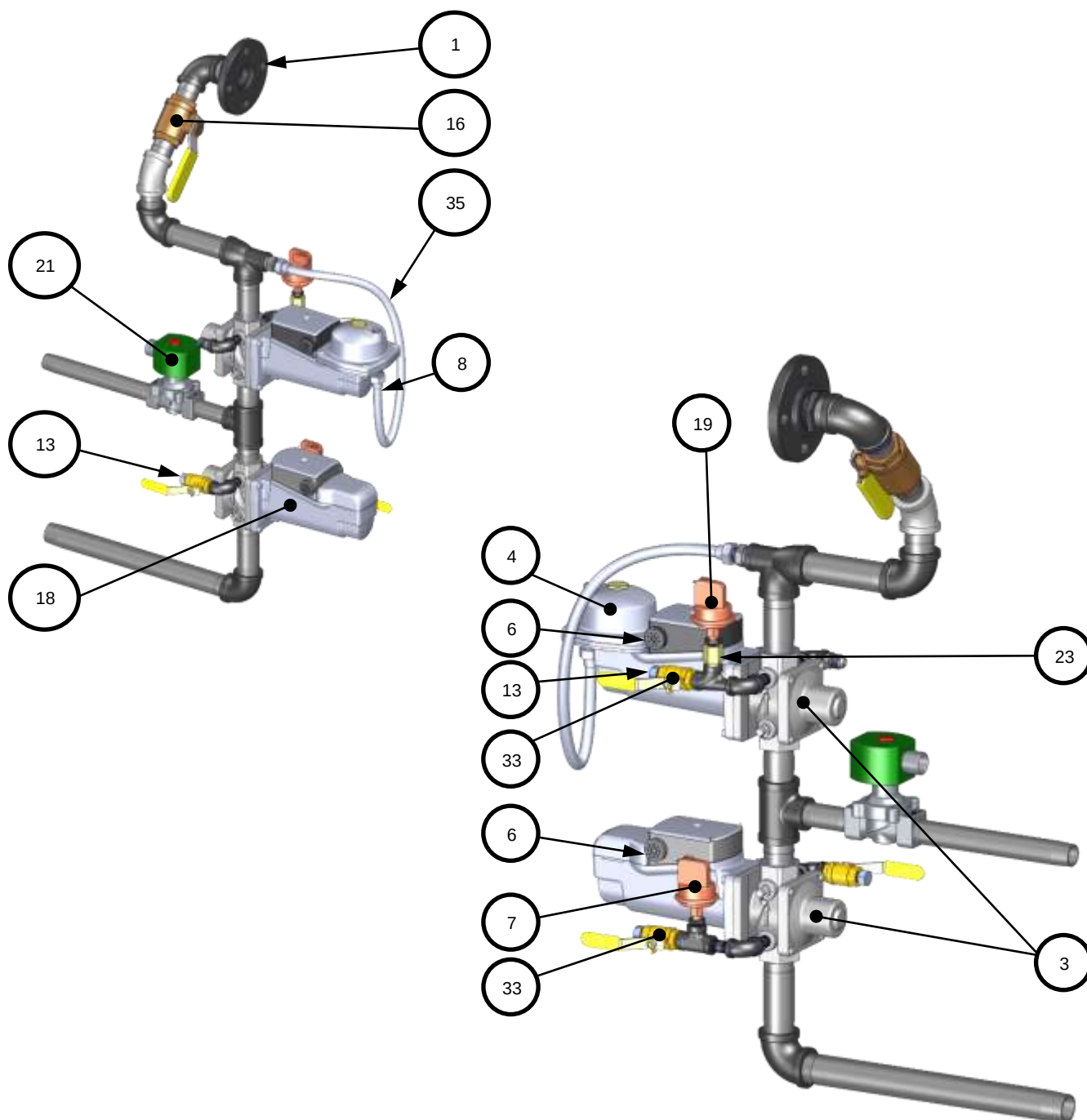
SECTION 2: BENCHMARK 750 & 1000 PART LIST

Benchmark 750/1000 DBB Gas Train

P/N 22140-2 rev J – 7/17/2020

Item	Qty	Part #	Description	Item	Qty	Part #	Description
1	1	95026	Flange 1.25" NPT 125#: Threaded	16	1	92006-5	Ball Valve: 1" NPT
3	2	92036	Valve: SSOV 1" NPT	18	1	27086-1 ❶	Actuator: SSOV w/o P.O.C. Switch
4	1	64048 ❶	Actuator: SSOV w/ Regulator	19	1	61002-12	High Gas Pressure Switch 4.7" W.C.
6	4	12951-2	Bushing: Control Box	21	1	GP-122774 ❶	Vent Valve: 3/4" NPT
7	1	61002-1	Low Pressure Switch: 2.6" W.C. Fall N.O.	23	1	99017	Snubber: Pressure: 1/4"
8	1	99015	Damping Orifice: SSOV	33	3	92077	Ball Valve, 1/4" NPT MXF Brass
13	3	9-22	Pipe Plug: 1/4" NPT: STEEL	35	1	97087-20	Flexible Gas Tube: 20" " (50.8 cm) LG

❶ Replacement Kit and/or Catalog number



SECTION 2: BENCHMARK 750 & 1000 PART LIST

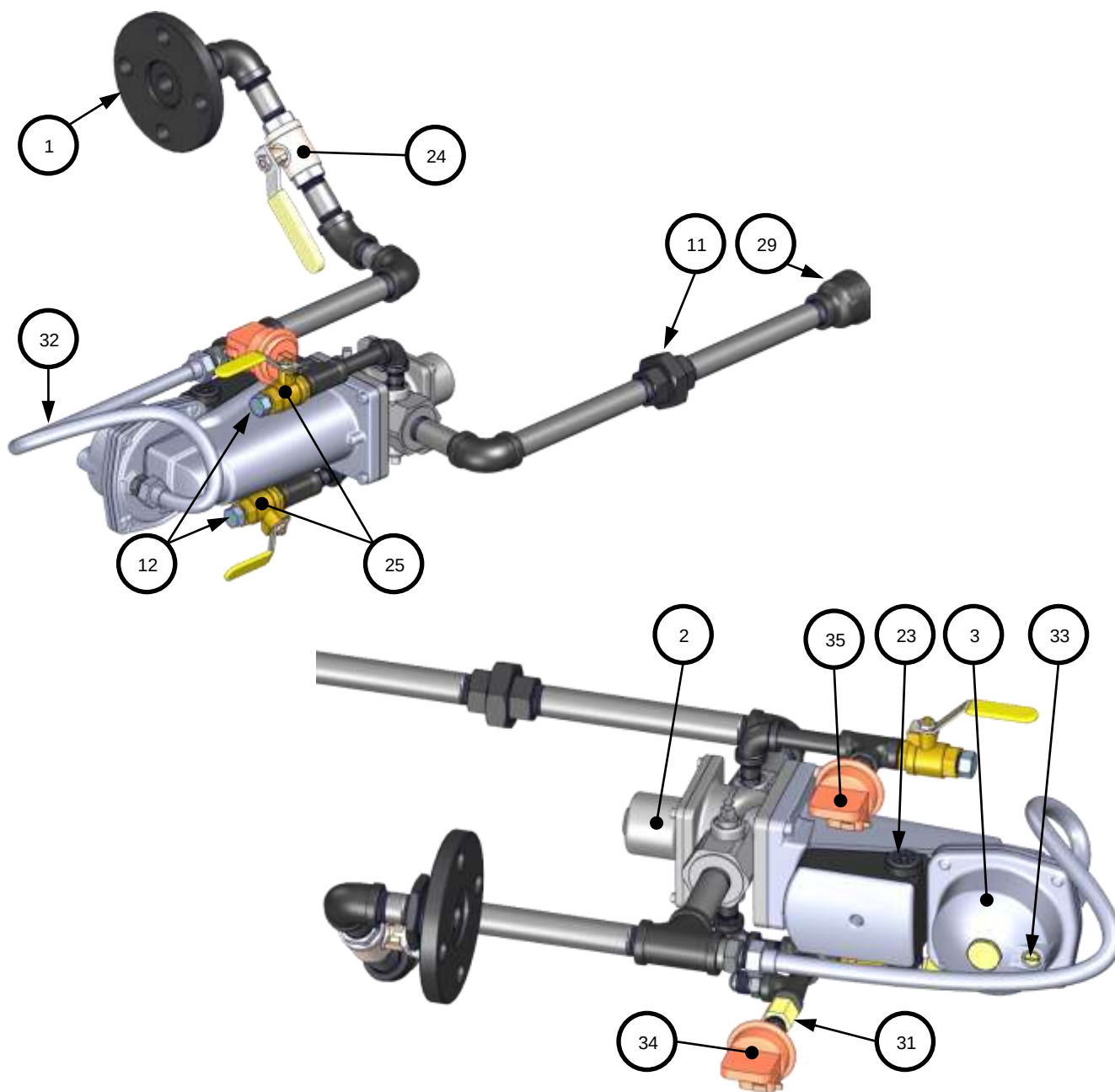
BMK 750/1000 PROPANE Gas Train

P/N 22140-3 rev K – 10/31/2019

Item	Qty	Part #	Description	Item	Qty	Part #	Description
1	1	95026	Flange: 1.25" NPT 125# Threaded	29	1	93474	Reducing Coupling 1 X 1/2"
2	1	92103	Valve: SSOV 1/2" NPT	31	1	99017	Snubber: Pressure: 1/4"
3	1	64048 ❶	Actuator: SSOV w/ Regulator	32	1	97087-20	Flexible Gas Tube, 20"
11	1	93420	Union, 1/2" NPT Female Black Mi	33	1	99015	Damping Orifice: SSOV
12	2	9-22	Pipe Plug: 1/4" NPT: Steel	34	1	61002-12	High Gas Pressure Switch 4.7" W.C. BMK 750
23	2	12951-2	Bushing: Control Box			61002-17	High Gas Pressure Switch 10.5" W.C. BMK 1000
24	1	92006-3	Ball Valve, Full Port 1/2" NPT Brass	35	1	61002-8	Low Gas Pressure Switch 4.4" W.C. BMK 750
25	2	92077	Ball Valve, 1/4" NPT MXF Brass			61002-21	Low Gas Pressure Switch 7.5" W.C. BMK 1000

❶ Replacement Kit and/or Catalog number

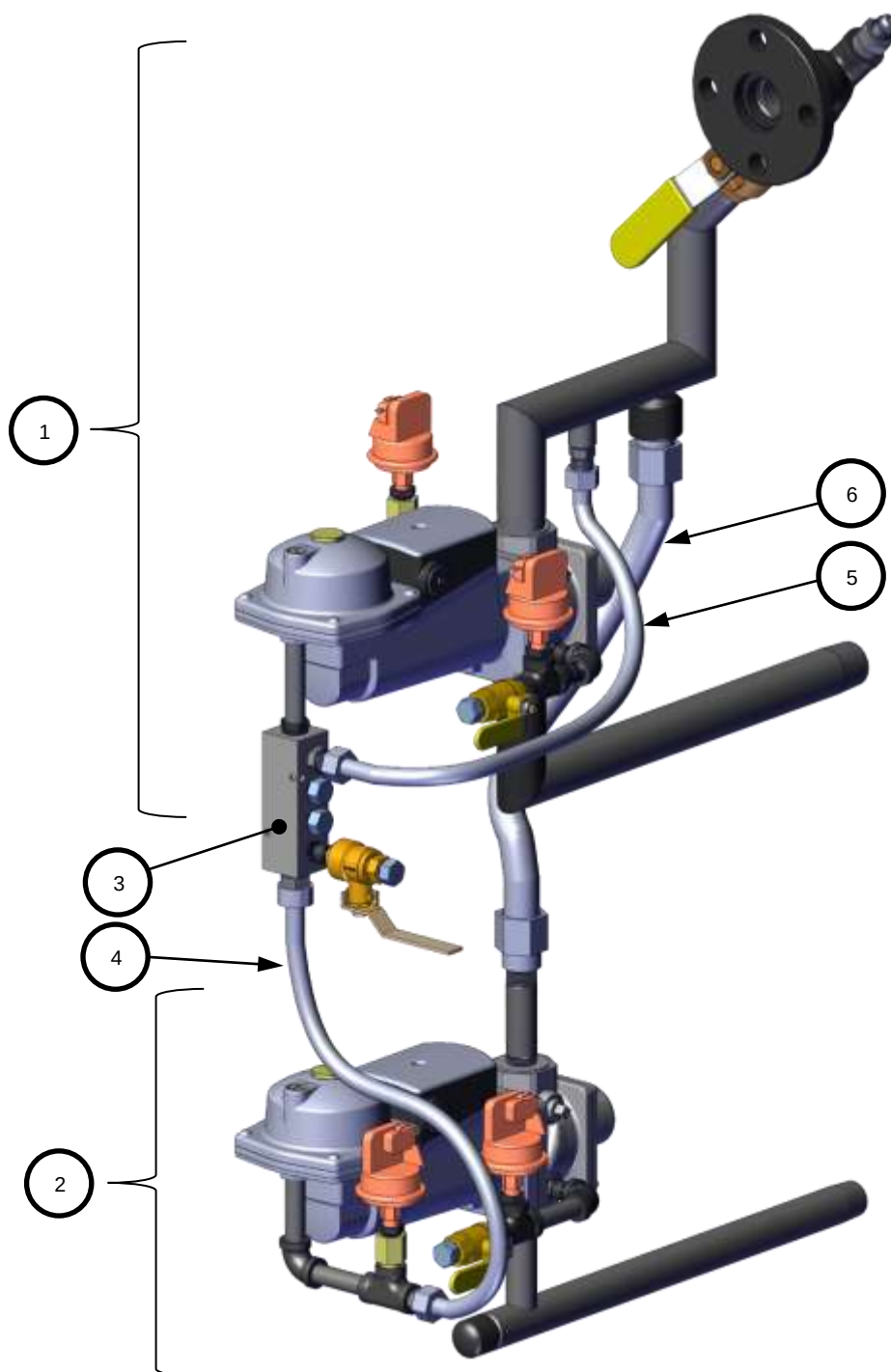
Part #	Description
22140-3-1	BMK 750 Propane Gas Train
22140-3-2	BMK 1000 Propane Gas Train



SECTION 2: BENCHMARK 750 & 1000 PART LIST

BMK 750-1000 DUAL FUEL Gas Train P/N 22429 rev B – 1/11/2021

Item	Qty	Part #	Description	Item	Qty	Part #	Description
1	1	22322-2	BMK 1000 & 750 FM Gas Train NATURAL GAS	4	1	97087-16	Flex Hose, 16",
2	1	22331-2	Gas Train, BMK 750 & 1000 PROPANE	5	1	97087-20	Flex Hose, 20",
3	1	41041-5	Gas Manifold Assy	6	1	97117	Flex Hose, BMK 750/1000 Dual Fuel



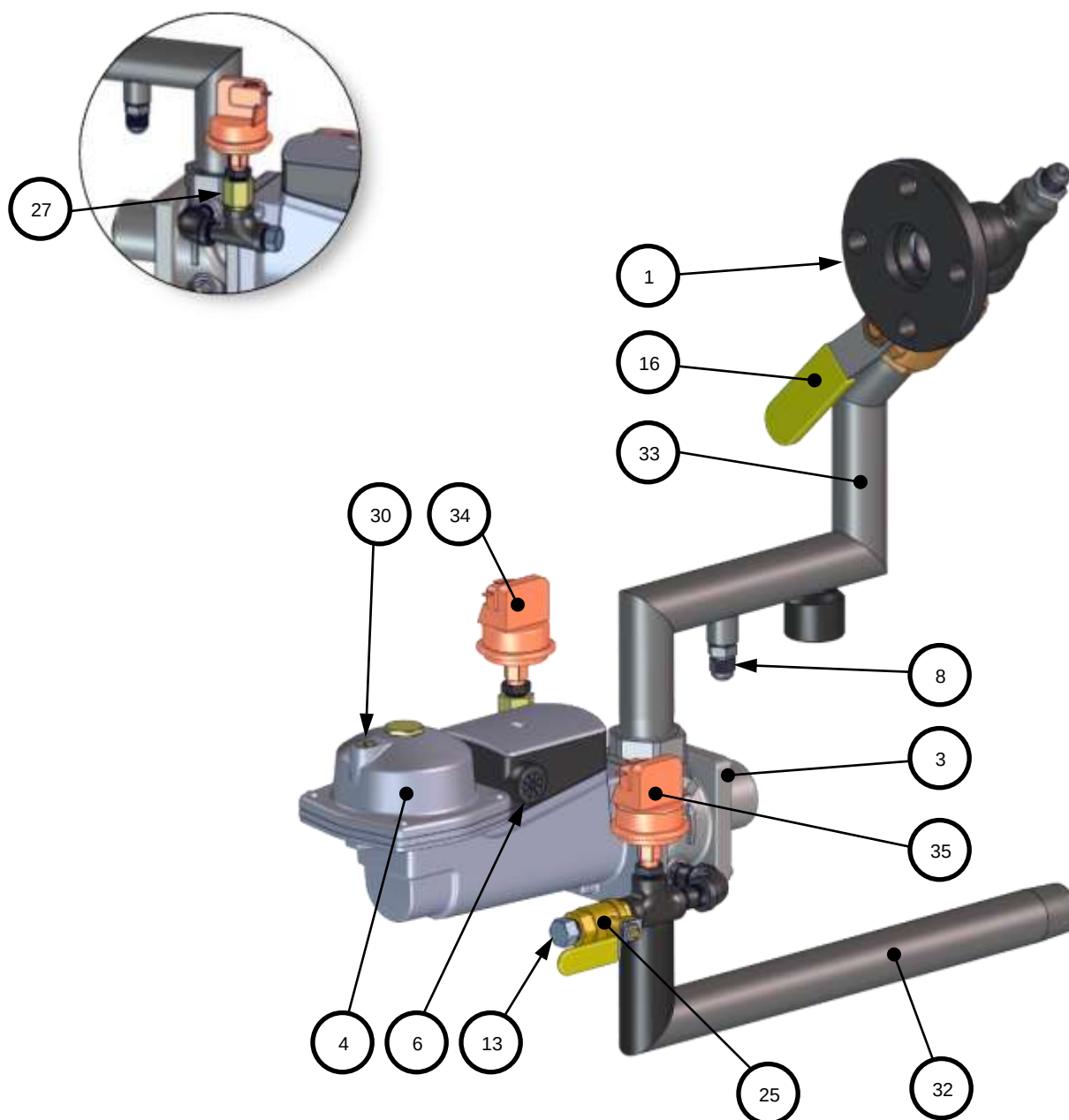
SECTION 2: BENCHMARK 750 & 1000 PART LIST

Benchmark 750-1000 NATURAL GAS Gas Train

P/N 22322-2 rev C – 10/20/2020 – component of DUAL FUEL Gas Train 22429

Item	Qty	Part #	Description	Item	Qty	Part #	Description
1	1	95026	1.25" NPT 125#: Threaded Flange	25		92077	Ball Valve, 1/4" NPT MXF Brass
3	1	92036	Valve: SSOV 1" NPT	27	1	99017	Snubber: Pressure: 1/4"
4	1	64048 ①	Actuator: SSOV w/ Regulator	30	1	99015	Damping Orifice: SSOV
6	2	12951-2	Bushing: Control Box	32	1	22437	FM Inlet Welded Assy.
8	1	59228-1	Male Adapter 3/8OD Flare x 1/4" NPT	33	1	22438	FM Gas Train Connection
9	1	63217-1	Gas Train Harness: (not shown)	34	1	61002-15	High Gas Pressure Switch 7.0" W.C.
13	2	9-22	Pipe Plug: 1/4" NPT: STEEL	35	1	61002-2	Low Pressure Switch: 5.2" W.C.
16	1	92006-5	Ball Valve: 1" NPT				

① Replacement Kit and/or Catalog number

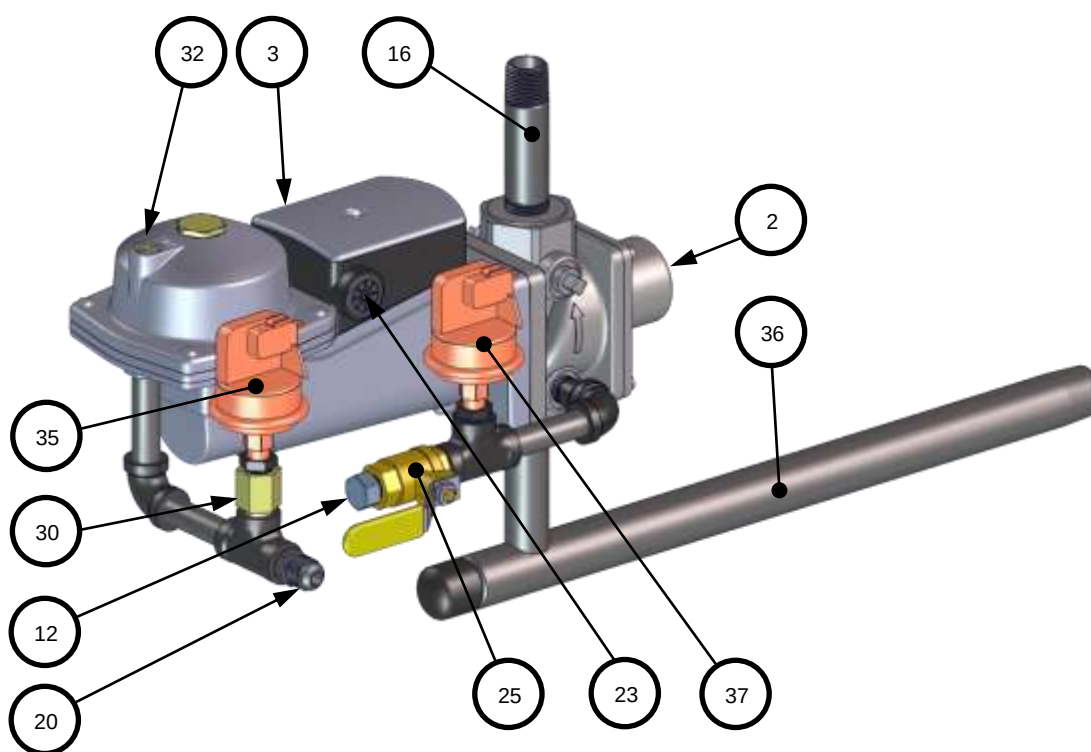


SECTION 2: BENCHMARK 750 & 1000 PART LIST

BMK 750-1000 PROPANE Gas Train

P/N 22331-2 rev C – 1/8/2021 – component of DUAL FUEL Gas Train 22429

Item	Qty	Part #	Description	Item	Qty	Part #	Description
2	1	92103	Valve: SSOV 1/2" NPT	26	1	63217-1	Gas Train Harness: (not shown)
3	1	64048 ①	Actuator: SSOV w/ Regulator	30	1	99017	Snubber: Pressure: 1/4"
12	1	9-22	Pipe Plug: 1/4" NPT	32	1	99015	Damping Orifice: SSOV
16	1	90105	Nipple, 1/2"	35	1	61002-3	High Gas Pressure Switch 2.6" W.C.
20	1	59228-1	Male Adapter 3/8OD Flare x 1/4" NPT	36	1	22436	Propane Inlet
23	2	12951-2	Bushing: Control Box	37	1	61002-2	Low Pressure Switch: 5.2" W.C.
25	1	92077	Ball Valve, 1/4" NPT MXF Brass				



SECTION 2: BENCHMARK 750 & 1000 PART LIST

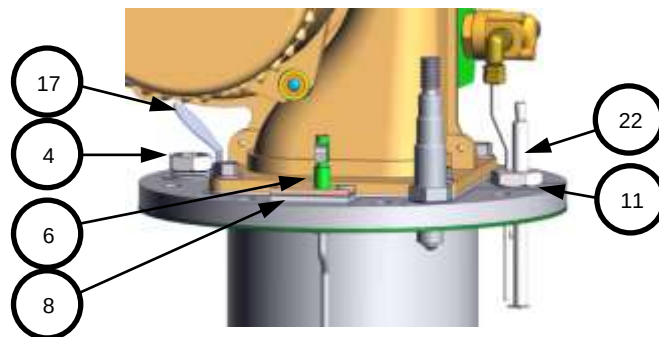
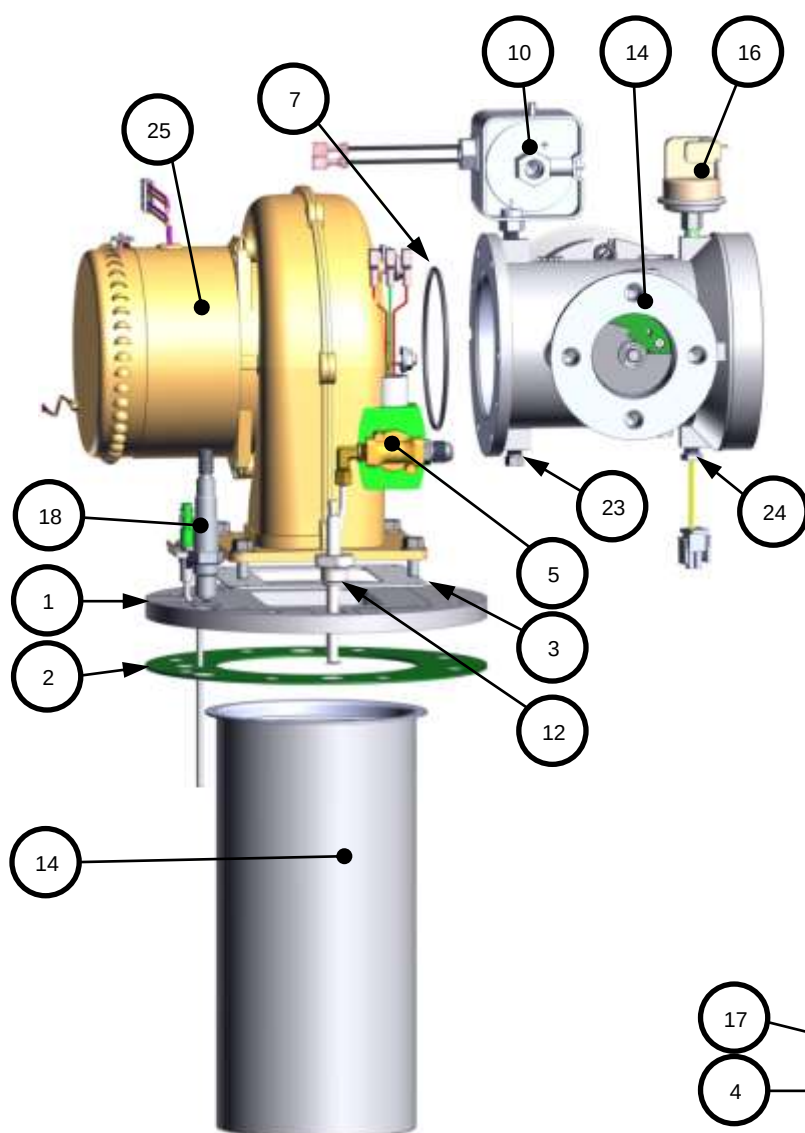
Benchmark 750/1000 Burner, Blower, Air/Fuel Valve Assy. P/N 24276-TAB Rev M – 10/27/2020

Item	Qty	Part #	Description	Item	Qty	Part #	Description
1	1	42140	Plate: Burner	12	1	46026	Burner
2	1	81143	Gasket: Burner	14	1	See Table	A/F Valve Assy
3	1	81064	Gasket: Blower	16	1	61002-5	Blocked Inlet Switch -4.5" W.C.
4	1	59104	Observation Port	17	1	59171	Reflector: Sight Glass
5	1	24277	Staged Ignition Assy	18	1	61026	Oxygen Sensor
6	1	24356-1 ①	Flame Rod	22	1	58023 ①	Ignitor-Injector
7	1	88004	O-Ring #2-244 BUNA-N	23	1	9-21	Plug: Hex HD 1/8 NPT
8	1	81048	Flame Rod Gasket	24	1	123449	Air Inlet Temperature Sensor
10	1	60011-4	Switch Assy: Blower Proof	25	1	58061 ①	Blower FRU Kit: AMETEK 8.9"
11	3	53033	Washer: Clocking				

① Replacement Kit and/or Catalog number

Item 14 – A/F VALVE ASSEMBLY

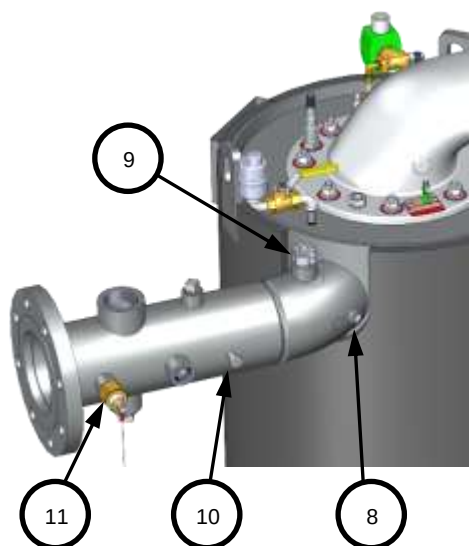
Part #	Description
24367-1 ①	BMK 1000
24367-2 ①	BMK 750
24367-3 ①	BMK 750/1000 PROPANE
24367-4 ①	BMK 750/1000 DUAL FUEL



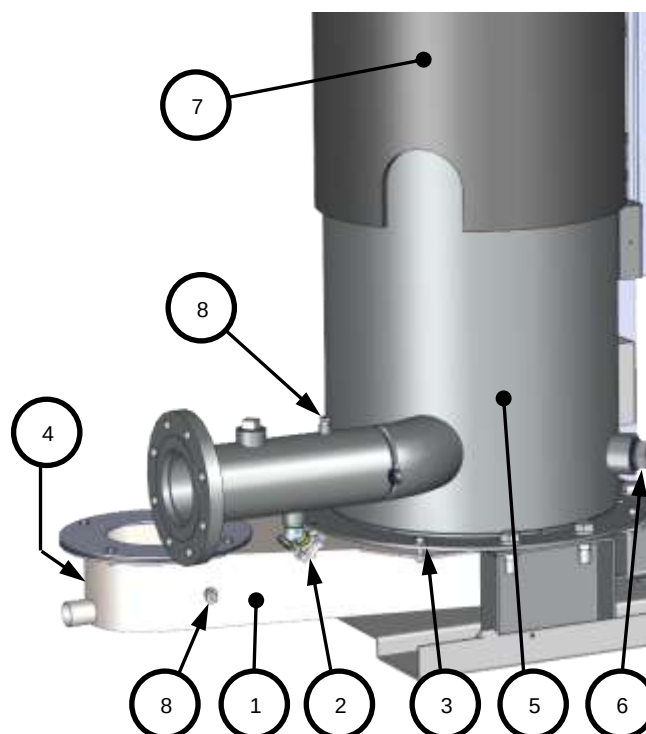
SECTION 3: BENCHMARK 1500 & 2000 PART LIST

Item #	Qty	Part #	Description
EXHAUST MANIFOLD			
1	1	39187	Exhaust Manifold
2	1	92094	Boiler Drain Valve: 3/4 "
3	1	81165	Exhaust Manifold Seal
4	2	9-22	Pipe Plug - Exhaust Manifold
HEAT EXCHANGER			
5	1	58179-3 ❶	BMK 1500 Heat Exchanger
		58179-4 ❶	BMK 2000 Heat Exchanger
6	2	123692	Plug, 1-1/2" NTP
7	1	80089	Shell Insulation
CONTROLS			
8	2	123449	Temperature Sensor
9	1	58132 ❶	Thermowell
10	1	61030	Temperature Sensor
11	1	69126 ❶	Low Water Cutoff

❶ Replacement Kit and/or Catalog number



UPPER LEFT-REAR VIEW



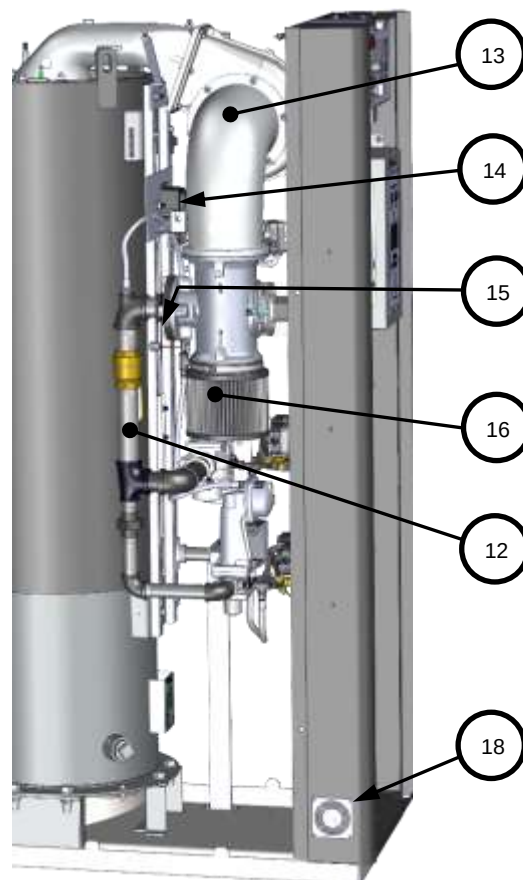
LOWER LEFT-REAR VIEW

AERCO International, Inc. Blauvelt, NY 10913	Benchmark 1500 & 2000 with Edge [i] Part List	
	Benchmark 1500 – 29506-TAB rev D – 8/25/2020 Benchmark 2000 – 29508-TAB rev F – 1/12/2021	Sheet 1 of 5

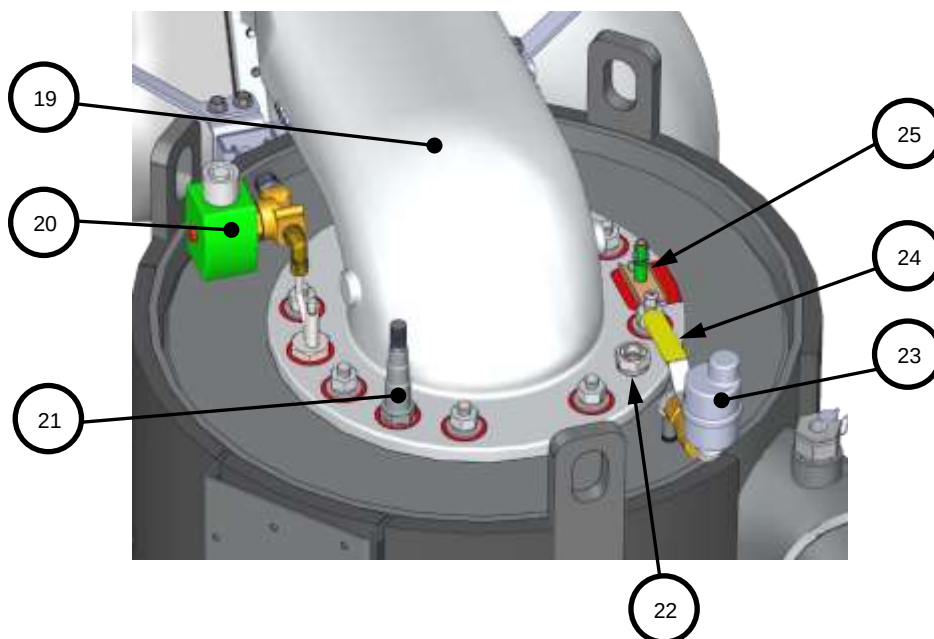
SECTION 3: BENCHMARK 1500 & 2000 PART LIST

GAS TRAIN ASSEMBLIES (See full diagrams below)			
12	1	22188	BMK 1500/2000 FM GAS TRAIN ASSY
		22199	BMK 1500/2000 GAS TRAIN: DBB
		22198	BMK 1500/2000 DUAL FUEL GAS TRAIN: — 22188-1 Natural Gas Gas Train — 22197 Propane Gas Train
			22201
BURNER-BLOWER (See full diagram below)			
13	1	24378	BMK 1500 Burner-Blower Assy.
		24378-1	BMK 2000 Burner-Blower Assy.
		24378-2	BMK 2000 DF Burner-Blower Assy.
14	1	65085	Ignition Transformer
15	1	88003	O-Ring, #2-339 (gas train to A/F Valve)
16	1	59138	Air Filter, 6"
17	1	97087-72	Flex Gas Tube 72" (1.83 m) (Not Shown)
CONTROLS			
18	1	65147	EBM 12V Fan – DUAL FUEL ONLY
19	1	43091	Blower Plenum
20	1	124866	Staged Ignition Assy.
21	1	61026	O ₂ Sensor
22	1	59104	Observation Port
23	1	59178	Air Vent, 1/8" NPT
24	1	123863	Valve: Ball, 1/8" NPT
25	1	24356-1 ①	Flame Rod and Gasket

① Replacement Kit and/or Catalog number



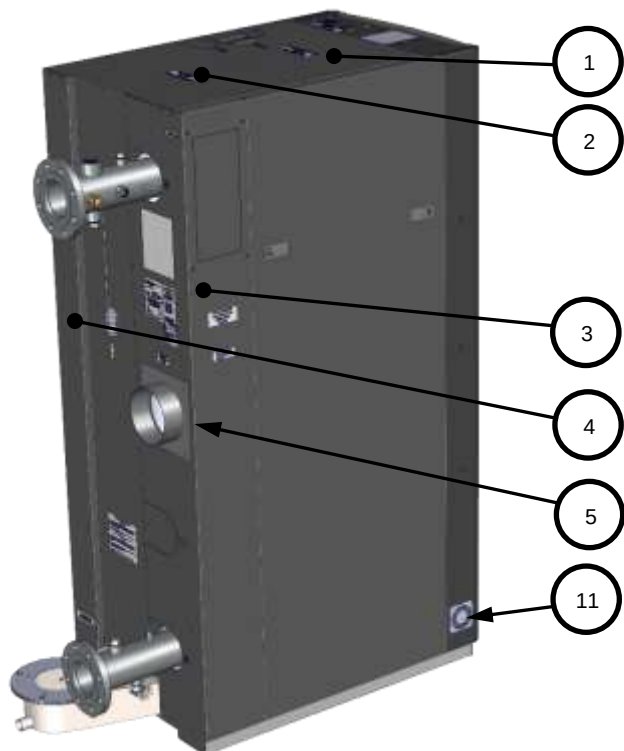
LEFT-SIDE VIEW



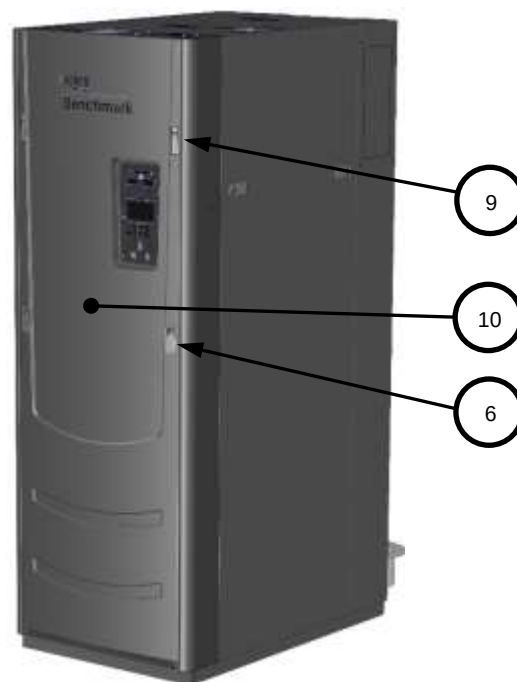
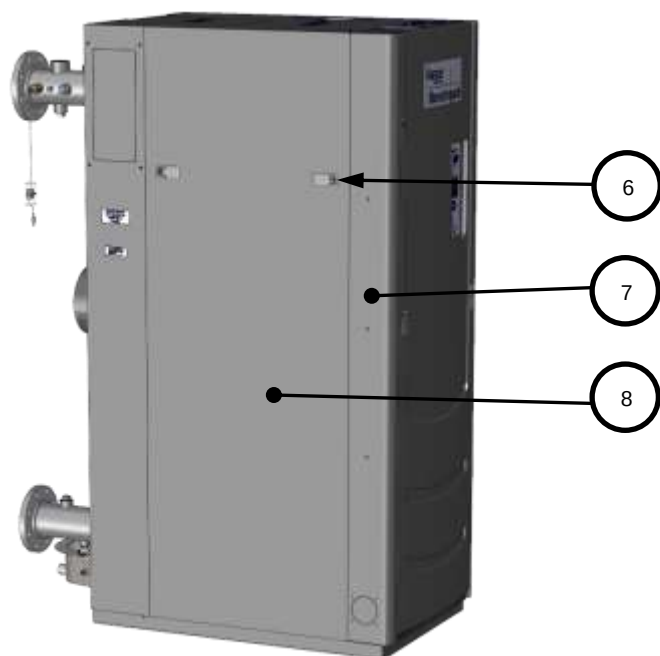
TOP-REAR VIEW

AERCO International, Inc. Blauvelt, NY 10913	Benchmark 1500 & 2000 with Edge [i] Part List	
	Benchmark 1500 – 29506-TAB rev D – 8/25/2020 Benchmark 2000 – 29508-TAB rev F – 1/12/2021	Sheet 2 of 5

SECTION 3: BENCHMARK 1500 & 2000 PART LIST



Enclosure Panels			
Item #	Qty	Part #	Description
1	1	30159	Top Panel: Front
2	1	30160	Top Panel: Back
3	1	37158	Back Panel: Left
4	1	37157	BACK PANEL: RIGHT
5	1	39218	6" Air Inlet Adapter, BMK 1500
		39215	8" Air Inlet Adapter, BMK 2000
6	4	59133	Latch, Compression
7	1	25087	Front Frame Assembly
8	2	30155	Side Panel
9	2	59179	Handel, Concealed Pull
10	1	25085-3	Front Panel Assembly
11	1	65147	EBM 12VDC Axial Vent Fan DUAL FUEL ONLY



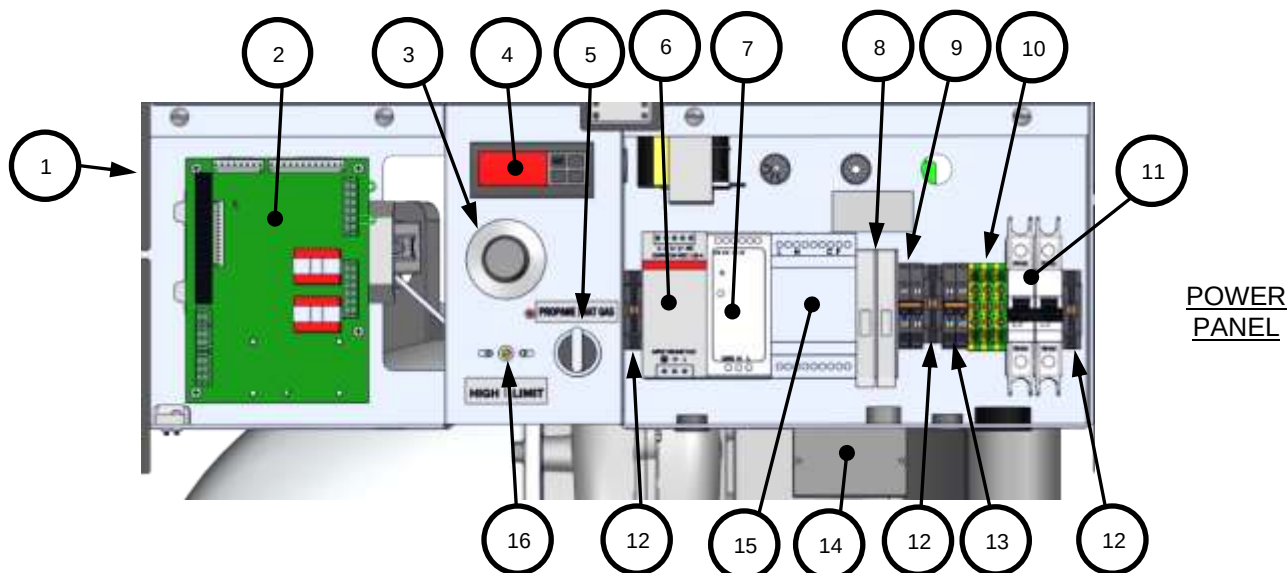
AERCO International,
Inc. Blauvelt, NY
10913

Benchmark 1500 & 2000 with Edge [i] Part List

Benchmark 1500 – 29506-TAB rev D – 8/25/2020
Benchmark 2000 – 29508-TAB rev F – 1/12/2021

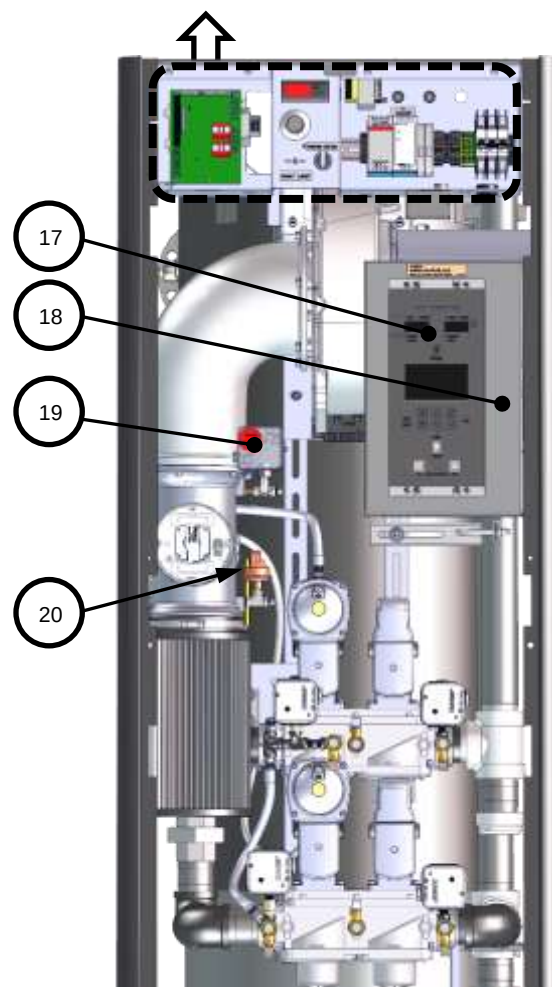
Sheet 3 of 5

SECTION 3: BENCHMARK 1500 & 2000 PART LIST



POWER PANEL

Power Panel			
Item #	Qty	Part #	Description
1	1	69274	Power Panel 110-220V, Single Phase
2	1	69172	I/O Board (for Edge [i])
3	1	123966	Adjustable Temp Limit Switch
4	1	64088	Digital Limit Control Temperature
5	1	63035-1	Fuel Selector Switch & Harness – Dual Fuel Only
6	1	65162	24V Power Supply (Sequencing Valve)
7	1	65109	12V POWER SUPPLY
8	2	65118	Fuse Terminal: DIN Mounted
9	2	65120	Terminal Block, Black
10	3	65122	Terminal Ground Block: DIN Mounted
11	1	60037	2 Pole Circuit Breaker, 20A
12	3	69141	DIN Rail End Stop
13	2	65121	Terminal Block, White
14	1	69102-3	Relay
15	1	65156	Flame Rod Signal Amplifier
16	1	123552	Over Temp Switch, Manual Reset
Front View (Front panel removed)			
17	1	69344-3	Edge [i] Control Panel
18	1	33170	Controller Mounting Plate
19	1	60011-4	Blower Proof Switch, BMK 1500
		60011-2	Blower Proof Switch, BMK 2000
21	1	61002-5	Blocked Inlet Switch, -4.5" W.C.



PARTIAL FRONT VIEW

AERCO International, Inc. Blauvelt, NY 10913	Benchmark 1500 & 2000 with Edge [i] Part List	
	Benchmark 1500 – 29506-TAB rev D – 8/25/2020 Benchmark 2000 – 29508-TAB rev F – 1/12/2021	Sheet 4 of 5

SECTION 3: BENCHMARK 1500 & 2000 PART LIST

Spare Parts Kits: BMK 1500 P/N 58088-TAB, BMK 2000 P/N 58087-TAB	
Part #	Description
123540	External 2" Ball Valve
24441	Condensate Trap
See Table Below	Pressure Relief Valve
See Table Below	Pressure/Temp Gauge

BMK 1500 Spare Parts Kits P/N 58088-TAB				BMK 2000 Spare Parts Kits P/N 58087-TAB			
Kit Number *	Description	Pressure Relief Valve	Pressure /Temp Gauge	Kit Number *	Description	Pressure Relief Valve	Pressure/ Temp Gauge
58088-C30	30 PSI (207 kPa) KIT (CONBRACO)	92023-1	123675-5	58087-1	30 PSI (207 kPa)	123620-W30	123675-5
58088-C50	50 PSI (345 kPa) KIT (CONBRACO)	92023-2	123675-5	58087-2	50 PSI (345 kPa)	123620-W50	123675-5
58088-C60	60 PSI (414 kPa) KIT (CONBRACO)	92023-3	123675-6	58087-3	75 PSI (517 kPa)	123620-W75	123675-6
58088-C75	75 PSI (517 kPa) KIT (CONBRACO)	92023-4	123675-6	58087-4	100 PSI (689 kPa)	123620-W100	123675-6
58088-C100	100 PSI (689 kPa) KIT (CONBRACO)	92023-5	123675-6	58087-5	150 PSI (1034 kPa)	123620-W150	123675-7
58088-C125	125 PSI (862 kPa) KIT (CONBRACO)	92023-6	123675-6	58087-6	60 PSI (414 kPa)	123620-W60	123675-6
58088-C150	150 PSI (1034 kPa) KIT (CONBRACO)	92023-7	123675-7	58087-7	125 PSI (862 kPa)	123620-W125	123675-6
58088-W30	30 PSI (207 kPa) KIT (WATTS)	92023-8	123675-5	58087-8	160 PSI (1103 kPa)	123620-K160	123675-7
58088-W50	50 PSI (345 kPa) KIT (WATTS)	92023-9	123675-5	58087-9	40 PSI (276 kPa)	92015-45	123675-5
58088-W60	60 PSI (414 kPa) KIT (WATTS)	92023-10	123675-6				
58088-W75	75 PSI (517 kPa) KIT (WATTS)	92023-11	123675-6				
58088-W100	100 PSI (689 kPa) KIT (WATTS)	92023-12	123675-6				
58088-W125	125 PSI (862 kPa) KIT (WATTS)	92023-13	123675-6				
58088-W150	150 PSI (1034 kPa) KIT (WATTS)	92023-14	123675-7				
58088-K160	160 PSI (1103 kPa) KIT (KUNKLE)	92023-15	123675-7				

* For Dual Fuel units add "DF" to the part number (i.e., 58088-C30-DF)

Other Accessories / Parts (Optional)	
Part #	Description
92084-6	MOTORIZED SEQUENCING VALVE

Wiring Harnesses (not shown)	
Part #	Description
63057	HARNESS: BLOWER POWER
63058	HARNESS: BLOWER SIGNAL
63083	HARNESS: O2 SENSOR
63090	HARNESS: TEMPERATURE LIMIT CONTROL
63103	HARNESS: SHELL
63104	HARNESS: I/O INTERLOCK
63105	HARNESS: I/O SENSOR/COMM
63111	HARNESS: CONTROL
63121	HARNESS: 12 V POWER SOURCE
63134	VENT FAN POWER WIRE – DUAL FUEL ONLY
63150	HARNESS: FLAME ROD
63156	HARNESS: POWER CABLE, 24 V SEQUENCE VALVE
65104	CABLE, H.V. IGNITION

Benchmark 1500/2000 Kits Available			
Part #	Description	Part #	Description
27086-1 ❶	Actuator: SSOV w/o P.O.C. Switch	24311-3 ❶	A/F Valve Assy BMK 1500/1500DF/2000DF
64048 ❶	SSOV With Pressure Regulator	24311-10 ❶	A/F Valve Assy BMK 2000
58038 ❶	Blower: AMETEK 12.3"	24356-1 ❶	Flame Rod
58023 ❶	Ignitor-Injector		

❶ Replacement Kit and/or Catalog number

AERCO International, Inc. Blauvelt, NY 10913	Benchmark 1500 & 2000 with Edge [i] Part List	Sheet 5 of 5
	Benchmark 1500 – 29506-TAB rev D – 8/25/2020 Benchmark 2000 – 29508-TAB rev F – 1/12/2021	

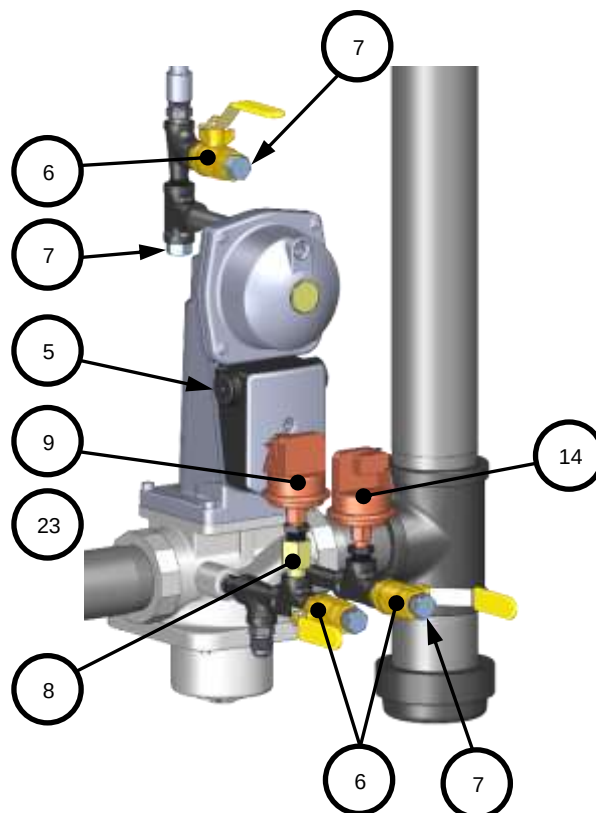
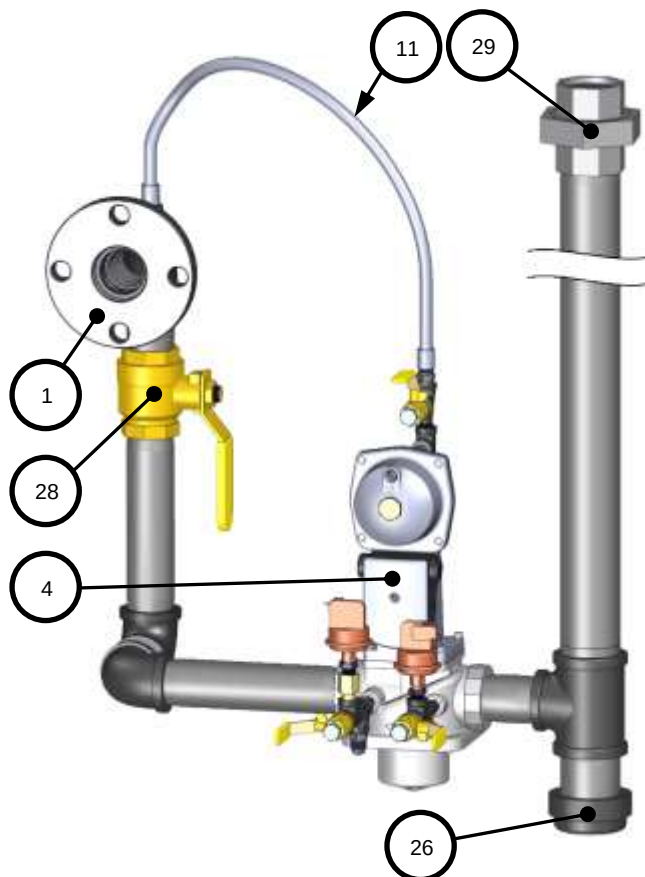
SECTION 3: BENCHMARK 1500 & 2000 PART LIST

Benchmark 1500 & 2000 Natural Gas FM Gas Train

P/N 22188 rev H – 10/28/2019

Item	Qty	Part #	Description	Item	Qty	Part #	Description
1	1	123542	Flange 2" 125# 2" NPT	11	1	97087-20	Flex Gas Hose, 20"
4	1	64048 ①	Actuator, SSOV w/ Regulator	14	1	61002-11	Low Gas Pressure Switch 3.6" W.C.
5	2	12951-2	Bushing, Control Box	23	1	124150	Valve, SSOV 1-1/2" NPT
6	3	92077	Ball Valve, 1/4" NPT MXF Brass	26	1	93382	Cap 2" NPT
7	4	9-22	Pipe Plug, 1/4" NPT, Steel	28	1	92006-7	Ball Valve, 1-1/2" NPT, Brass
8	1	99017	Snubber, Pressure, 1/4"	29	1	9-294	Union, 2" NPT 300#
9	1	61002-12	High Gas Pressure Switch 4.7" W.C.				

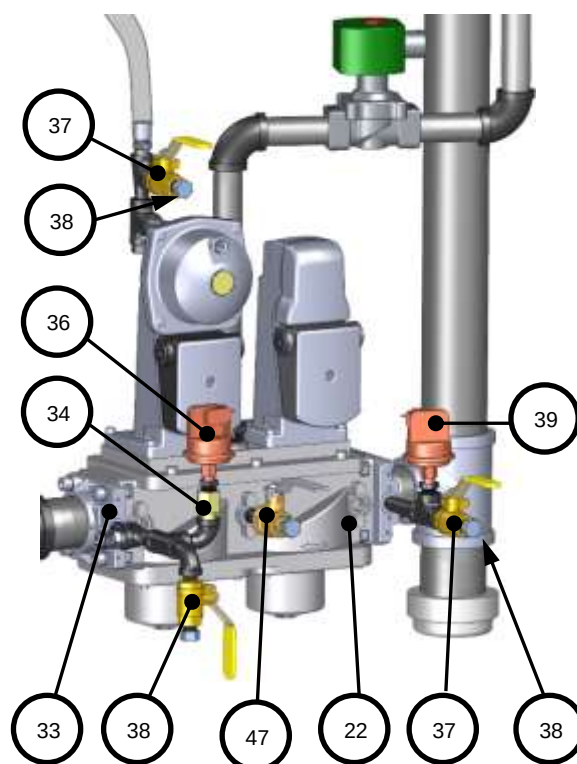
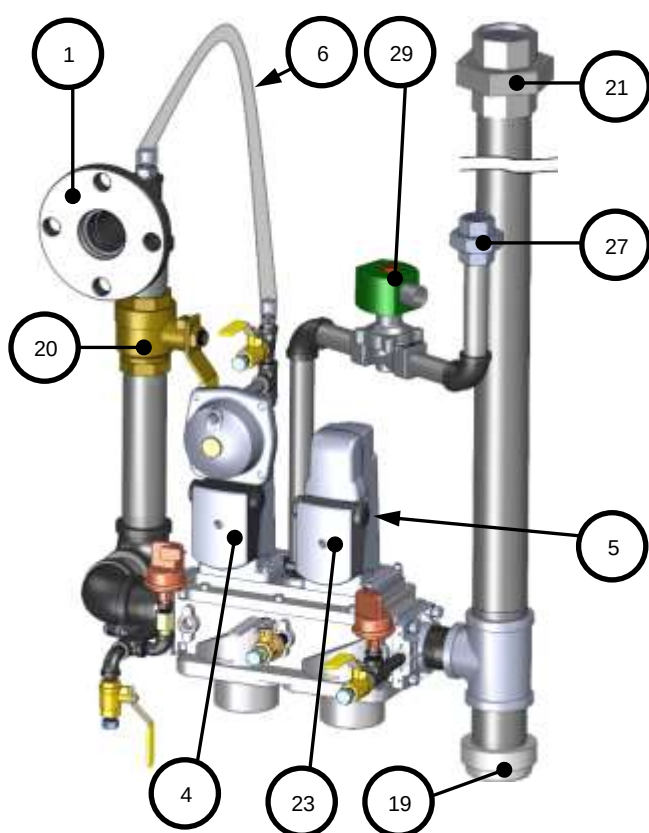
① Replacement Kit and/or Catalog number



SECTION 3: BENCHMARK 1500 & 2000 PART LIST

Benchmark 1500 & 2000 Natural Gas DBB Gas Train							
P/N 22199 rev H – 7/22/2020							
Item	Qty	Part No	Description	Item	Qty	Part No	Description
1	1	123542	Flange 2" 125# 2" NPT	27	1	124094	Union, 3/4" NPT #150
4	1	64048 ❶	Actuator, SSOV w/ Regulator	29	1	GP-122774 ❶	Vent Valve, 3/4" NPT
5	4	12951-2	Bushing, Control Box	33	2	95029	Flange, SSOV 1 1/2" NPT
6	1	97087-20	Tubing, Flexible 20"	34	1	99017	Snubber, Pressure, 1/4"
19	1	93382	Cap 2" NPT	36	1	61002-12	High Gas Pressure Switch 4.7" W.C.
20	1	92006-7	Ball Valve, 1-1/2" NPT Brass	37	3	92077	Ball Valve, 1/4" NPT MXF Brass
21	1	9-294	Union, 2" NPT 300#	38	5	9-22	Pipe Plug, 1/4" NPT, Steel
22	1	124142	Valve, SSOV, Double Body, 2" NPT	39	1	61002-11	Low Gas Pressure Switch 3. 6" W.C.
23	1	27086-1 ❶	Actuator, SSOV w/o P.O.C. Switch	47	1	92143	Ball Valve, 1/4" WATTS

❶ Replacement Kit and/or Catalog number

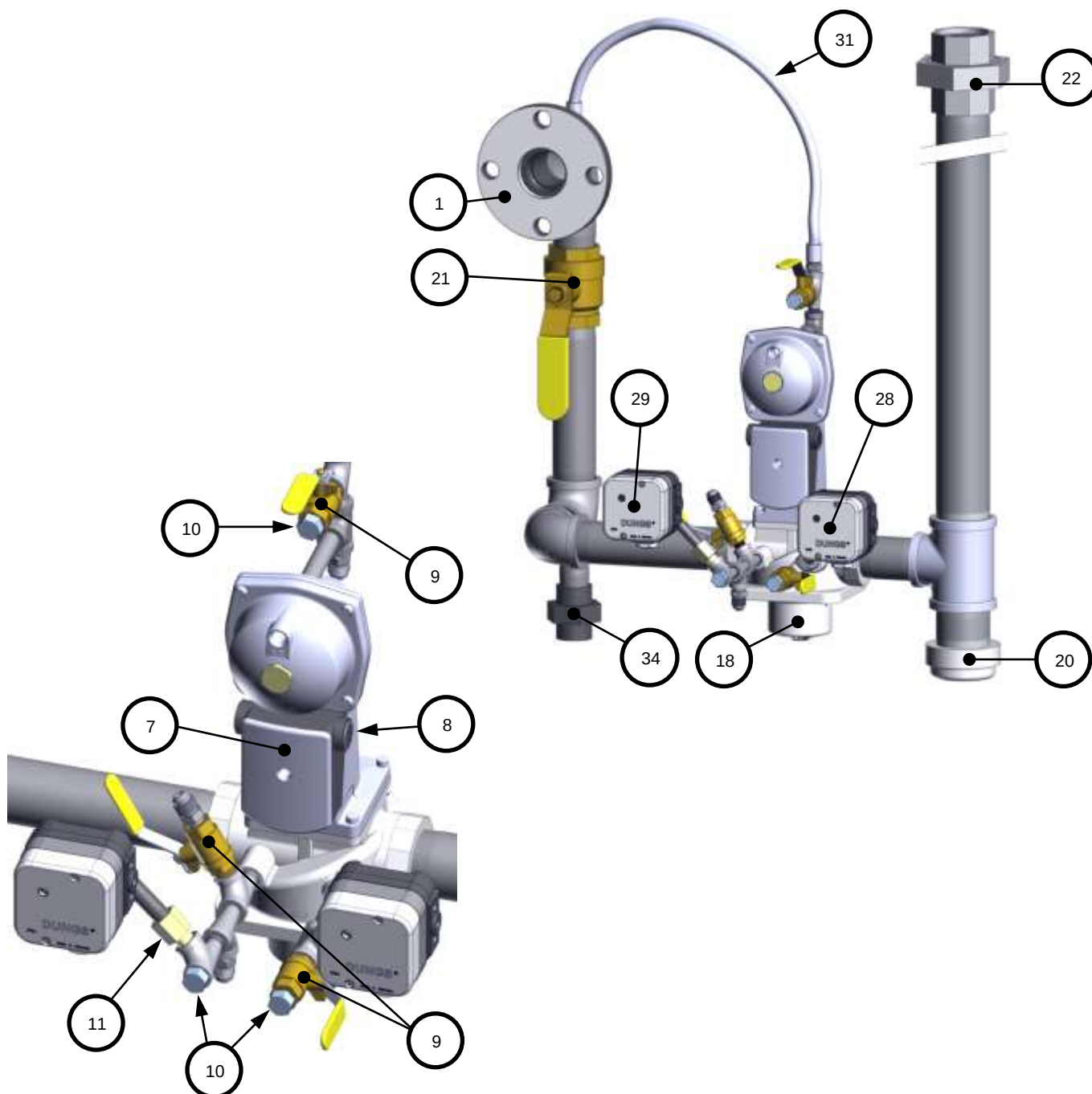


SECTION 3: BENCHMARK 1500 & 2000 PART LIST

Benchmark 1500 & 2000 DUAL FUEL, NATURAL GAS Train P/N 22188-1 rev G – 10/21/2019 – component of DUAL FUEL Gas Train 22198

Item	Qty.	Part No.	Description	Item	Qty.	Part No.	Description
1	1	123542	Flange 2" 125# 2" NPT	20	1	93382	2" NPT Cap
7	1	64048 ❶	Actuator, SSOV w/ Regulator	21	1	92006-7	Ball Valve, 1-1/2" NPT Brass
8	2	12951-2	Bushing, Control Box	22	1	9-294	Union, 2" NPT 300#
9	3	92077	Ball Valve, 1/4" NPT MXF Brass	28	1	60020	Gas Pressure Switch, 2-20" W.C.
10	3	9-22	Pipe Plug, 1/4" NPT, Steel	29	1	60032-1 ❶	Gas Pressure Switch, 1-20" W.C.
11	1	99017	Snubber, Pressure, 1/4"	31	1	97087-20	Flex Gas Hose, 20"
18	1	124150	Valve, SSOV 1-1/2" NPT	34	1	9-291	Union, 1" NPT 300# BI

❶ Replacement Kit and/or Catalog number

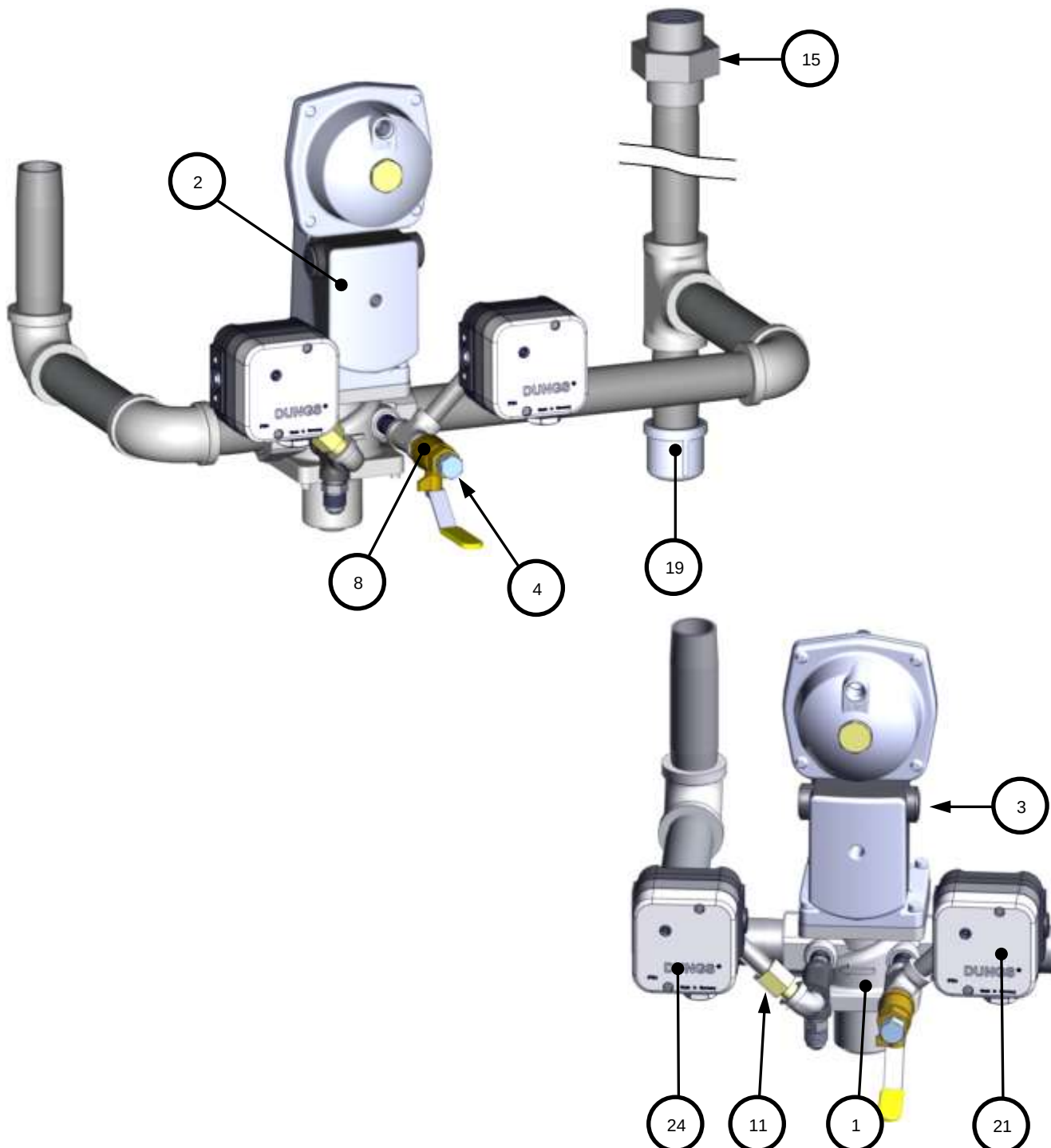


SECTION 3: BENCHMARK 1500 & 2000 PART LIST

Benchmark 1500 & 2000 DUAL FUEL, PROPANE Gas Train

P/N 22197 rev E – 2/26/2018 – component of DUAL FUEL Gas Train 22198

Item	Qty.	Part No.	Description	Item	Qty.	Part No.	Description
1	1	92036	Valve, SSOV 1" NPT	11	1	99017	Snubber, Pressure, 1/4"
2	1	64048	Actuator, SSOV w/ Regulator	15	1	9-291	Union, 1" NPT 300# BI
3	2	12951-2	Bushing, Control Box	19	1	93466	Cap, 1" NPT M/I
4	1	9-22	Pipe Plug, 1/4" NPT, Steel	21	1	60020	Gas Pressure Switch, 2-20" W.C.
8	1	92077	Ball Valve, 1/4" NPT MXF Brass	24	1	60032-1	Gas Pressure Switch, 1-20" W.C.



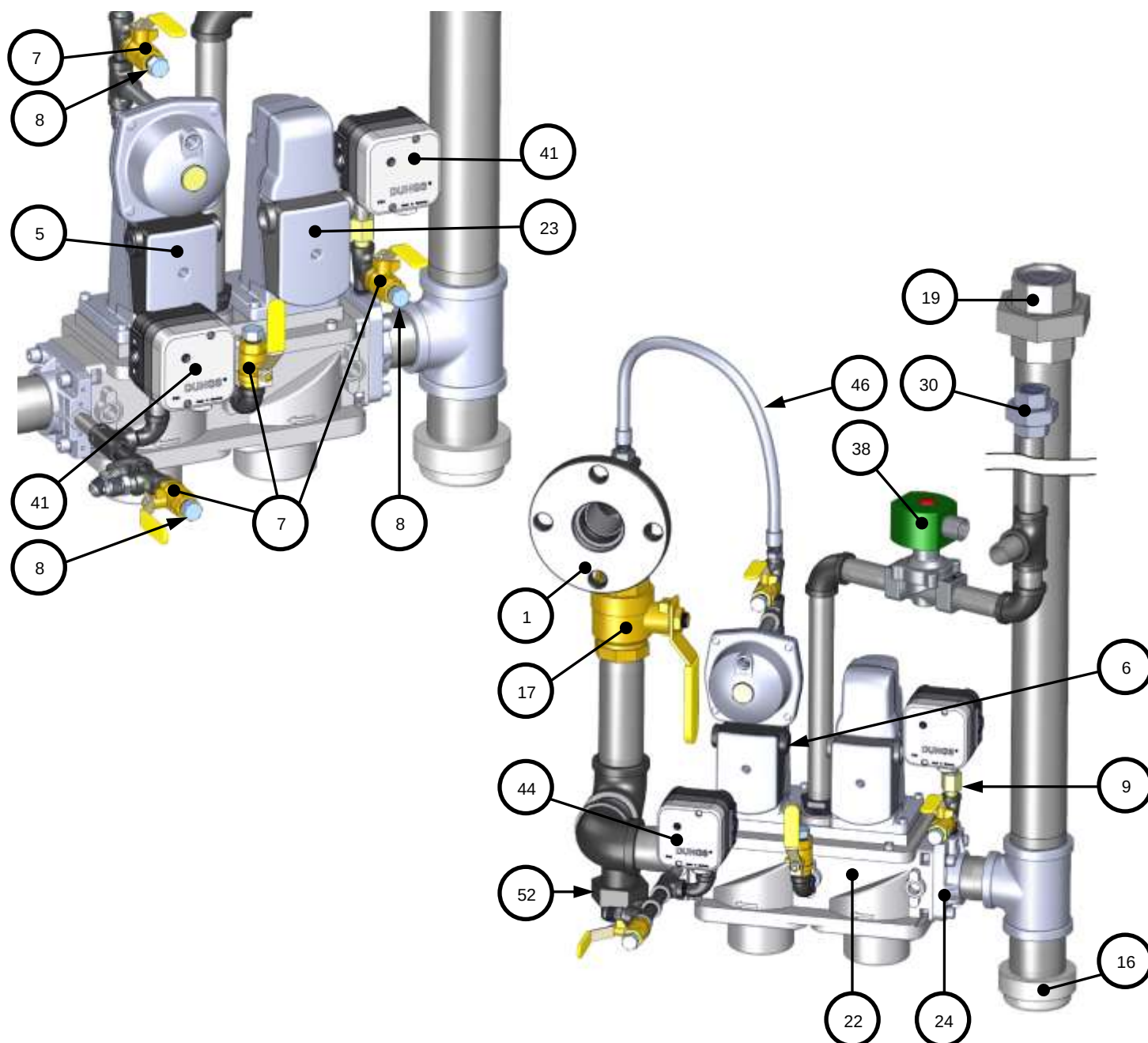
SECTION 3: BENCHMARK 1500 & 2000 PART LIST

Benchmark 1500 & 2000 DF-DBB, NATURAL GAS Train

P/N 22199-1 rev G – 10/29/2019 – component of DUAL FUEL Gas Train 22201

Item	Qty	Part No.	Description	Item	Qty	Part No.	Description
1	1	123542	Flange 2" 125# 2" NPT	22	1	124142	Valve, SSOV, Double Body, 2" NPT
5	1	64048 ①	Actuator, SSOV w/ Regulator	23	1	27086-1 ①	Actuator, SSOV w/o P.O.C. Switch
6	2	12951-2	Bushing, Control Box	24	2	95029	Flange, SSOV 1 1/2" NPT
7	4	92077	1/4" NPT MXF Brass Ball Valve	30	1	124094	Union, 3/4" NPT #150
8	3	9-22	Pipe Plug, 1/4" NPT, Steel	38	1	GP-122774	Vent Valve, 3/4" NPT
9	1	99017	Snubber, Pressure, 1/4"	41	2	60020	Gas Pressure Switch, 2-20" W.C.
16	1	93382	Cap, 2" NPT	46	1	97087-20	Flexible Gas Tube, 20"
17	1	92006-7	Ball Valve, 1-1/2" NPT Brass	52	1	9-291	Union, 1" NPT 300# BI
19	1	9-294	Union, 2" NPT 300#				

① Replacement Kit and/or Catalog number

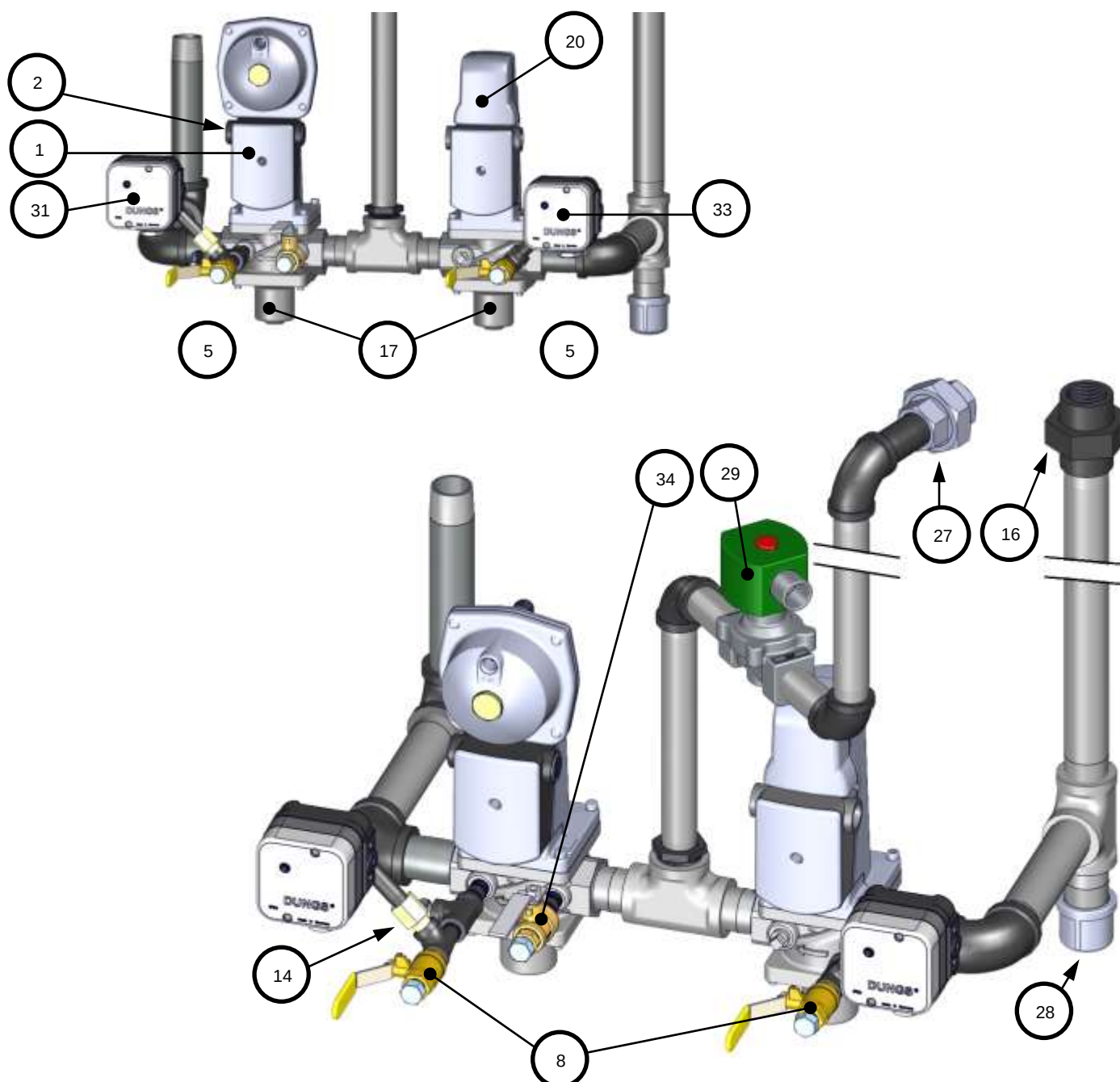


SECTION 3: BENCHMARK 1500 & 2000 PART LIST

Benchmark 1500 & 2000 DF- DBB PROPANE Gas Train P/N 22200 rev F – 3/5/2018 – component of DUAL FUEL Gas Train 22201

Item	Qty	Part #	Description	Item	Qty	Part #	Description
1	1	64048 ❶	Actuator, SSOV w/ Regulator	20	1	27086-1	Actuator, SSOV w/o P.O.C. Switch
2	2	12951-2	Bushing, Control Box	27	1	124094	Union, 3/4" NPT #150
5	3	9-22	Pipe Plug, 1/4" NPT, Steel	28	1	93466	Cap, 1" NPT M/I
8	2	92077	Ball Valve, Brass 1/4" NPT MXF	29	1	GP-122774	Vent Valve, 3/4" NPT
14	1	99017	Snubber, Pressure, 1/4"	31	1	60032-1 ❶	Gas Pressure Switch, 1-20" W.C.
16	1	9-291	Union, 1" NPT 300# BI	33	1	60020	Gas Pressure Switch, 2-20" W.C.
17	2	92036	Valve, SSOV 1" NPT	34	1	92143	Ball Valve, 1/4", WATTS

❶ Replacement Kit and/or Catalog number



SECTION 3: BENCHMARK 1500 & 2000 PART LIST

Benchmark 1500 & 2000 Burner Assembly

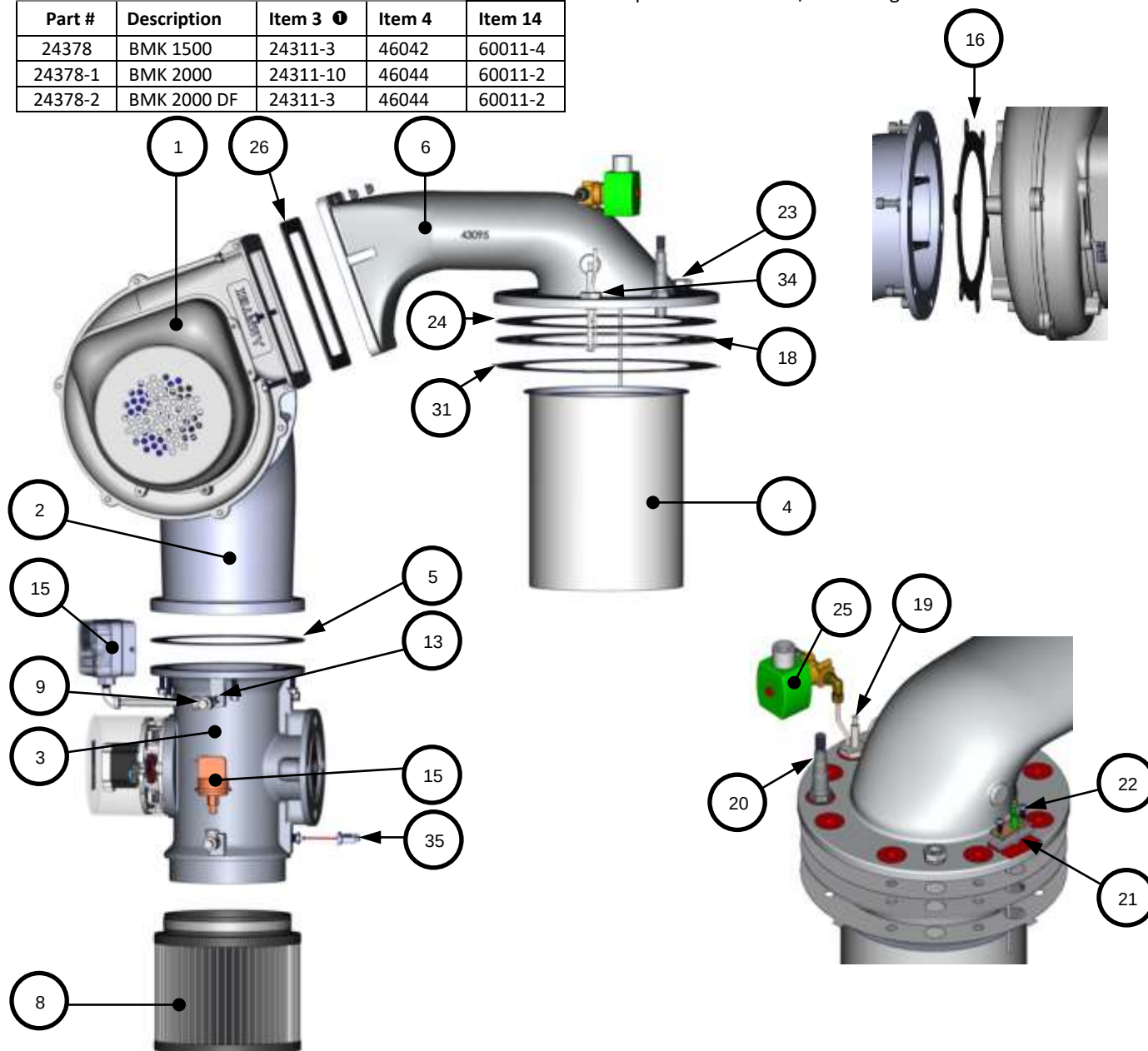
P/N 24378-TAB rev G – 9/13/2018

Item	Qty	Part #	Description	Item	Qty	Part #	Description
1	1	58038 ❶	Blower: AMETEK 12.3"	18	1	81166	Burner Gasket
2	1	43090	Air/Fuel Valve Plenum	19	1	58023 ❶	Ignitor-Injector
3	1	See Table	Air/Fuel Valve Assy	20	1	61026	Oxygen Sensor
4	1	See Table	Burner	21	1	81048	Gasket: Flame Rod
5	1	81057	Gasket: Blower	22	1	24356-1 ❶	Flame Rod
6	1	43095	Blower Plenum	23	1	59104	Observation Port
8	1	59138	Air Filter: 6"	24	1	81183	Burner Gasket: Upper Release
9	5	9-21	Plug: Hex Head 1/8 NPT	25	1	24277	Staged Ignition Assy
13	1	93230	Snubber	26	1	81184	Gasket: Blower
14	1	See Table	Blower Proof Switch Assembly	31	1	81186	Burner Gasket: Lower Release
15	1	61002-5	Blocked Inlet Switch, -4.5" W.C.	34	1	53033	Washer: Clocking
16	1	81100	Gasket: Blower 12.3"	35	1	123449	Air Inlet Temperature Sensor

Burner Assembly Parts

Part #	Description	Item 3 ❶	Item 4	Item 14
24378	BMK 1500	24311-3	46042	60011-4
24378-1	BMK 2000	24311-10	46044	60011-2
24378-2	BMK 2000 DF	24311-3	46044	60011-2

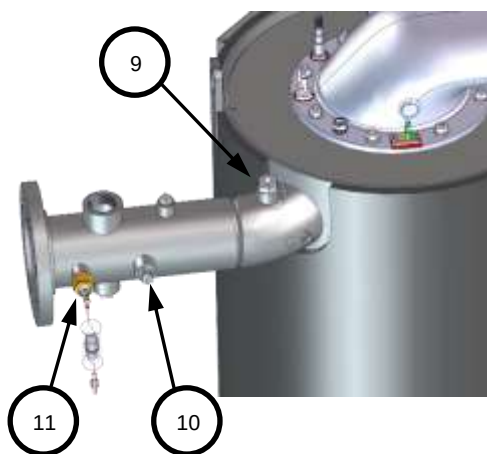
❶ Replacement Kit and/or Catalog number



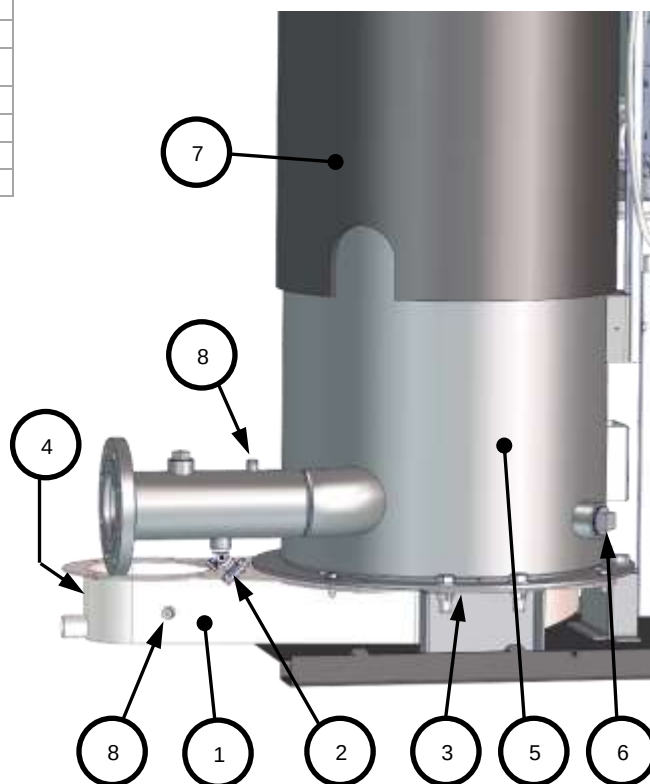
SECTION 4: BENCHMARK 2500 & 3000 PART LIST

Item #	Qty	Part #	Description
EXHAUST MANIFOLD			
1	1	39156	Exhaust Manifold
2	1	92094	Boiler Drain Valve: 3/4 "
3	1	84040	Exhaust Manifold Seal
4	2	9-22	Pipe Plug - Exhaust Manifold
HEAT EXCHANGER			
5	1	58179-5 ❶	BMK 2500 Heat Exchanger, single inlet
		58179-6 ❶	BMK 3000 Heat Exchanger, single inlet
6	1	123692	Plug, 1-1/2" NTP
7	1	80081	Insulation: Shell
CONTROLS			
8	2	123449	Temperature Sensor
9	1	58132 ❶	Thermowell
10	1	61030	Temperature Sensor
11	1	69126 ❶	Low Water Cutoff

❶ Replacement Kit and/or Catalog number



UPPER LEFT-REAR VIEW

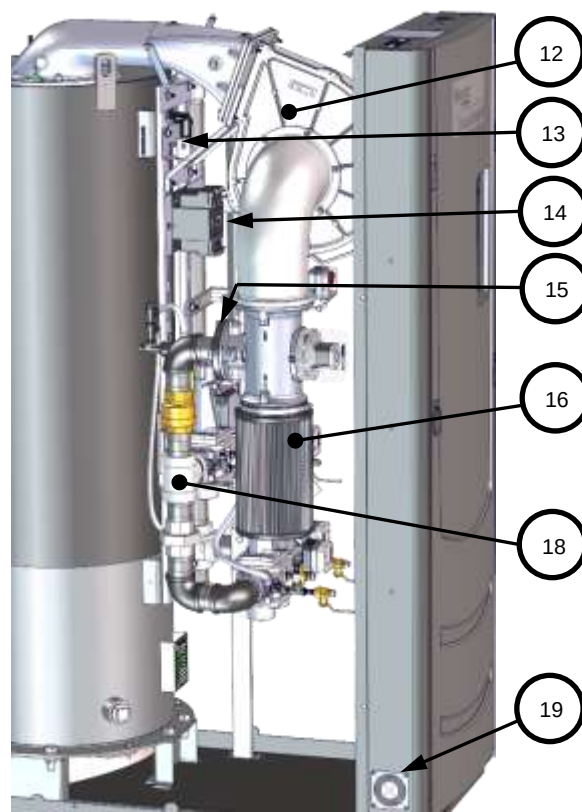


LOWER LEFT-REAR VIEW

AERCO International, Inc. Blauvelt, NY 10913	Benchmark 2500 & 3000 with Edge [i] Part List	
	Benchmark 2500 29510-TAB rev C – 8/12/2020 Benchmark 3000 29512-TAB rev D – 8/26/2020	Sheet 1 of 5

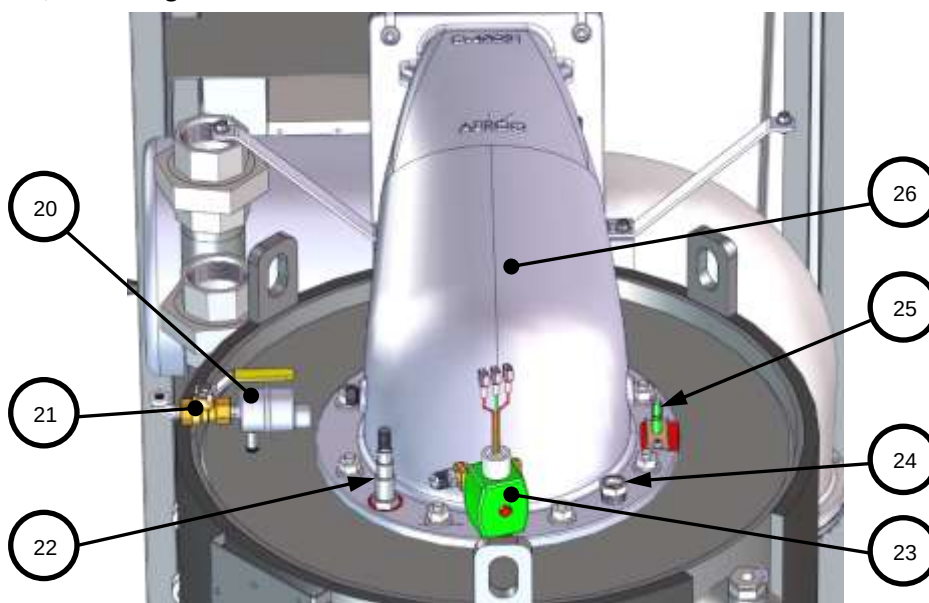
SECTION 4: BENCHMARK 2500 & 3000 PART LIST

BURNER-BLOWER (See full diagram below)			
12	1	26015-TAB	BMK 2500 Burner-Blower Assy.
		26014-TAB	BMK 3000 Burner-Blower Assy.
13	1	65085	Transformer, Ignition
14	1	124310	Transformer, Step Down (480V units)
15	1	88003	O-Ring, #2-339 (gas train to A/F Valve)
16	1	88014	Air Filter, 8"
17	1	97087-72	Flex Gas Tube 72" (1.83 m) (not shown)
GAS TRAIN ASSEMBLIES (See full diagrams below)			
18	1	22190	BMK 2500 FM GAS TRAIN ASSY
		22211	BMK 2500 GAS TRAIN: DBB
		22210	BMK 2500 GAS TRAIN: Dual Fuel , includes: — 22210-1 Natural Gas Gas Train — 22210 Propane Gas Train
		22209	BMK 2500 DBB GAS TRAIN: Dual Fuel , includes: — 22209-1 Natural Gas Gas Train — 22209-2 Propane Gas Train
		22171	BMK 3000 FM GAS TRAIN
		22173	BMK 3000 GAS TRAIN: DBB
		22174	BMK 3000 GAS TRAIN: Dual Fuel , includes: — 22177 Natural Gas Gas Train — 22178 Propane Gas Train
		22183	BMK 3000 DBB GAS TRAIN: Dual Fuel , includes: — 22177-1 Natural Gas Gas Train — 22178-1 Propane Gas Train
CONTROLS			
19	1	66035	EBM 12V Fan — DUAL FUEL ONLY
20	1	59178	Vent: Air 1/8 NPT
21	1	123863	Valve: Ball 1/8" NPT
22	1	61026	O ₂ Sensor
23	1	124866	Staged Ignition Assy.
24	1	59104	Observation Port
25	1	24356-1 ❶	Flame Rod
26	1	43091	Blower Plenum



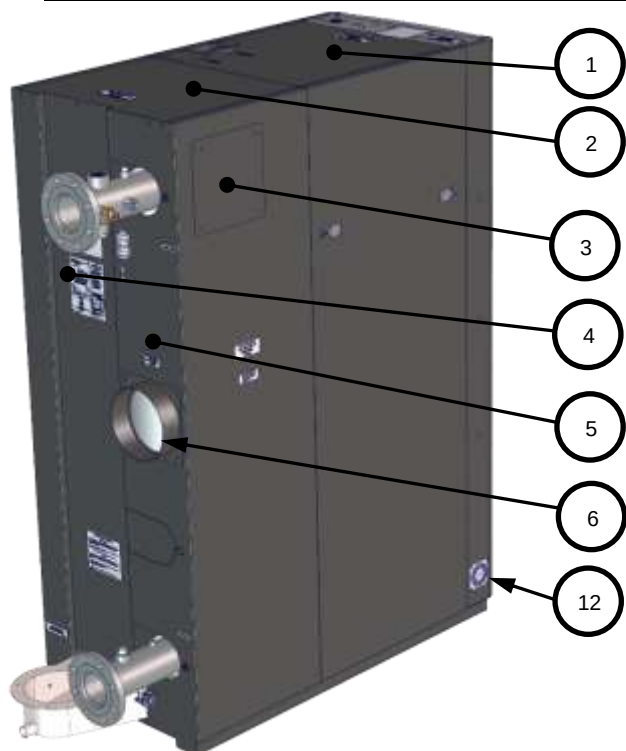
LEFT-SIDE VIEW

① Replacement Kit and/or Catalog number



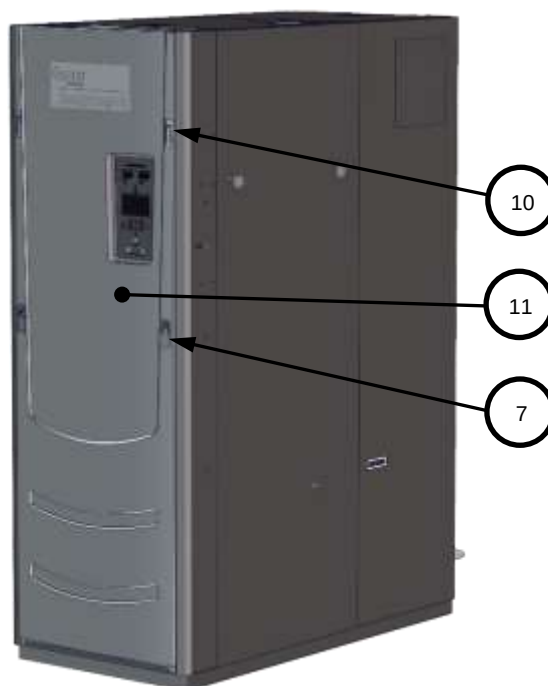
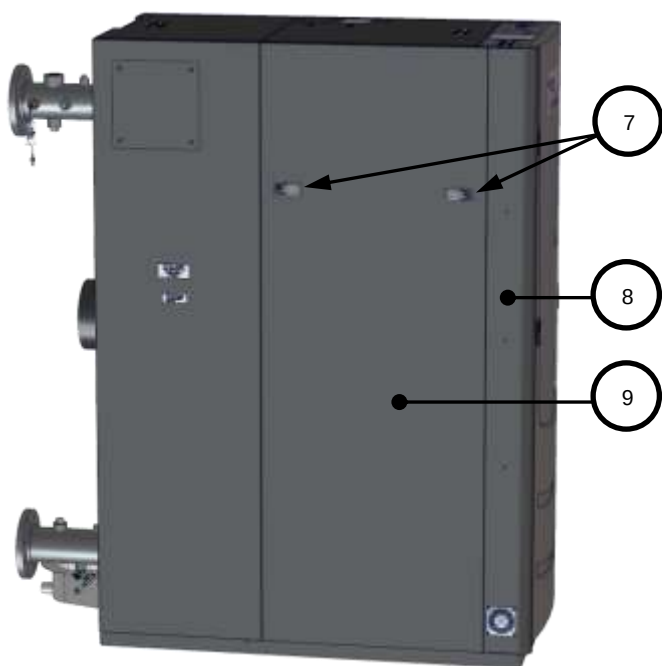
AERCO International, Inc. Blauvelt, NY 10913	Benchmark 2500 & 3000 with Edge [i] Part List	
	Benchmark 2500 29510-TAB rev C – 8/12/2020 Benchmark 3000 29512-TAB rev D – 8/26/2020	Sheet 2 of 5

SECTION 4: BENCHMARK 2500 & 3000 PART LIST



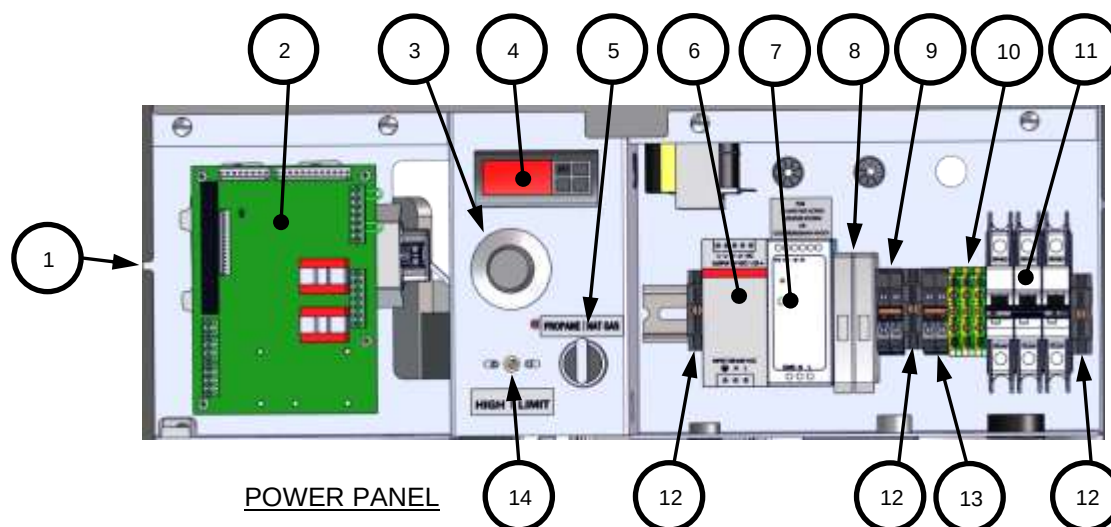
Enclosure Panels

Item #	Qty	Part #	Description
1	1	30156	TOP PANEL: FRONT
2	1	30157	TOP PANEL: BACK
3	2	38044	8" AIR INLET COVER
4	1	37148	BACK PANEL: RIGHT
5	1	37149	BACK PANEL: LEFT
6	1	39215	8" AIR INLET ADAPTER
7	4	59133	LATCH, COMPRESSION
8	1	25087	FRONT FRAME ASSEMBLY
9	2	30155	SIDE PANEL
10	2	59179	HANDEL, CONCEALED PULL
11	1	25085-3	FRONT PANEL ASSEMBLY
12	1	65147	EBM 12VDC AXIAL VENT FAN DUAL FUEL ONLY

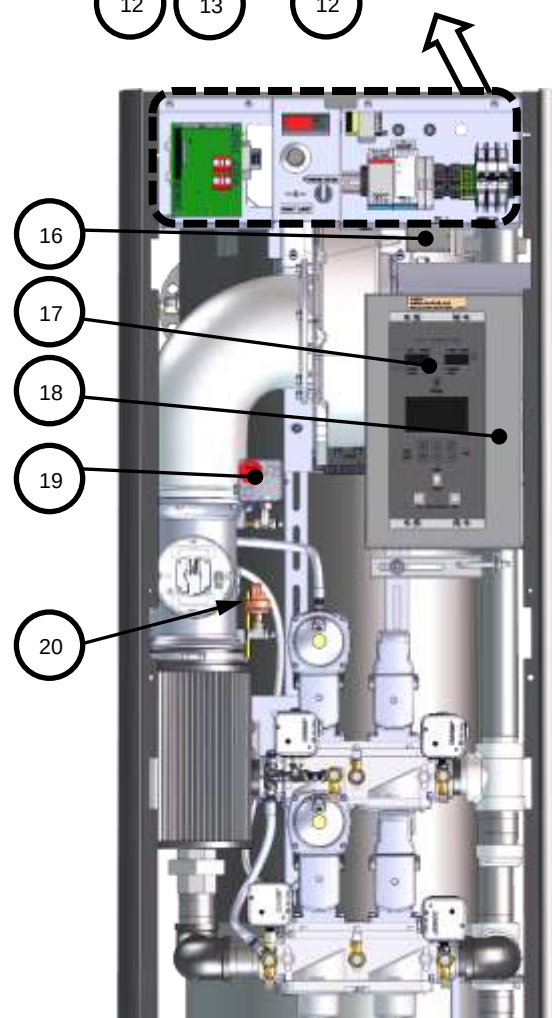


AERCO International, Inc. Blauvelt, NY 10913	Benchmark 2500 & 3000 with Edge [i] Part List	
	Benchmark 2500 29510-TAB rev C – 8/12/2020 Benchmark 3000 29512-TAB rev D – 8/26/2020	Sheet 3 of 5

SECTION 4: BENCHMARK 2500 & 3000 PART LIST



Power Panel			
Item #	Qty	Part #	Description
1	1	24353-1	Power Panel 480V
		24353-2	Power Panel 208V
2	1	69172	I/O Board (for Edge [i])
3	1	123966	Adjustable Temp Limit Switch
4	1	64088	Digital Limit Control Temperature
5	1	63035-1	Fuel Selector Switch & Harness – Dual Fuel Only
6	1	65162	24V Power Supply (Sequencing Valve)
7	1	65109	12V POWER SUPPLY
8	2	65118	Fuse Terminal: DIN Mounted
9	2	65120	Terminal Block, Black
10	3	65122	Terminal Ground Block: DIN Mounted
11	1	60036	3 Pole Circuit Breaker
12	3	69141	DIN Rail End Stop
13	2	65121	Terminal Block, White
14	1	123552	Over Temp Switch, Manual Reset
Front View (Front panel removed)			
16	1	69102-TAB	Pump Relay
17	1	69344-3	Edge [i] Control Panel
18	1	33170	Controller Mounting Plate
19	1	60011-TAB	Blower Proof Switch
21	1	61002-TAB	Blocked Inlet Switch



PARTIAL FRONT VIEW

AERCO International, Inc. Blauvelt, NY 10913	Benchmark 2500 & 3000 with Edge [i] Part List	
	Benchmark 2500 29510-TAB rev C – 8/12/2020 Benchmark 3000 29512-TAB rev D – 8/26/2020	Sheet 4 of 5

SECTION 4: BENCHMARK 2500 & 3000 PART LIST

Benchmark 2500/3000 Spare Parts Kit P/N 58048-TAB					
Kit Number *	Description	Pressure Relief Valve Kit	Pressure/Temp Gauge	Condensate Trap Assy.	2" Ball Valve
58048-C30	30 PSI (207 kPa) KIT (CONBRACO)	92016-1	123675-5	24441	123540
58048-C50	50 PSI (345 kPa) KIT (CONBRACO)	92016-2	123675-5		
58048-C60	60 PSI (414 kPa) KIT (CONBRACO)	92016-3	123675-6		
58048-C75	75 PSI (517 kPa) KIT (CONBRACO)	92016-4	123675-6		
58048-C100	100 PSI (689 kPa) KIT (CONBRACO)	92016-5	123675-6		
58048-C125	125 PSI (862 kPa) KIT (CONBRACO)	92016-6	123675-6		
58048-C150	150 PSI (1034 kPa) KIT (CONBRACO)	92016-7	123675-7		
58048-W50	50 PSI (345 kPa) KIT (WATTS)	92016-8	123675-5		
58048-W60	60 PSI (414 kPa) KIT (WATTS)	92016-9	123675-6		
58048-W75	75 PSI (517 kPa) KIT (WATTS)	92016-10	123675-6		
58048-W100	100 PSI (689 kPa) KIT (WATTS)	92016-11	123675-6		
58048-W125	125 PSI (862 kPa) KIT (WATTS)	92016-12	123675-6		
58048-W150	150 PSI (1034 kPa) KIT (WATTS)	92016-13	123675-7		
58048-K160	160 PSI (1103 kPa) KIT (KUNKLE)	92016-14	123675-7		

* For Dual Fuel units add "DF" to the part number (i.e., 58048-C30-DF)

Wiring Harnesses (not shown)	
Part #	Description
63004	HARNESS: 460V TRANSFORMER – 460 V only
63059	HARNESS: DRIVE REACTOR
63083	HARNESS: O2 SENSOR
63090	HARNESS: TEMPERATURE LIMIT CONTROL
63103	HARNESS: SHELL
63104	HARNESS: I/O INTERLOCK
63105	HARNESS: I/O SENSOR/COMM
63111	HARNESS: CONTROL
63121	HARNESS: 12V POWER SOURCE
63134	VENT FAN POWER WIRE – DUAL FUEL ONLY

Benchmark 2500/3000 Kits Available			
Part #	Description	Part #	Description
92084-6	Motorized Sequencing Valve	24311-8 ❶	A/F Valve Assy BMK 2500 – Single Fuel
27086-1 ❶	Actuator: SSOV w/o P.O.C. Switch	24311-9 ❶	A/F Valve Assy BMK 2500 – Dual Fuel
64048 ❶	SSOV With Pressure Regulator	24311-1 ❶	A/F Valve Assy BMK 3000 – Single Fuel
58023 ❶	Ignitor-Injector	24311-7 ❶	A/F Valve Assy BMK 3000 – Dual Fuel
58063-1 ❶	Blower, 480V	24356-1 ❶	Flame Rod
58063-2 ❶	Blower, 208V		

❶ Replacement Kit and/or Catalog number

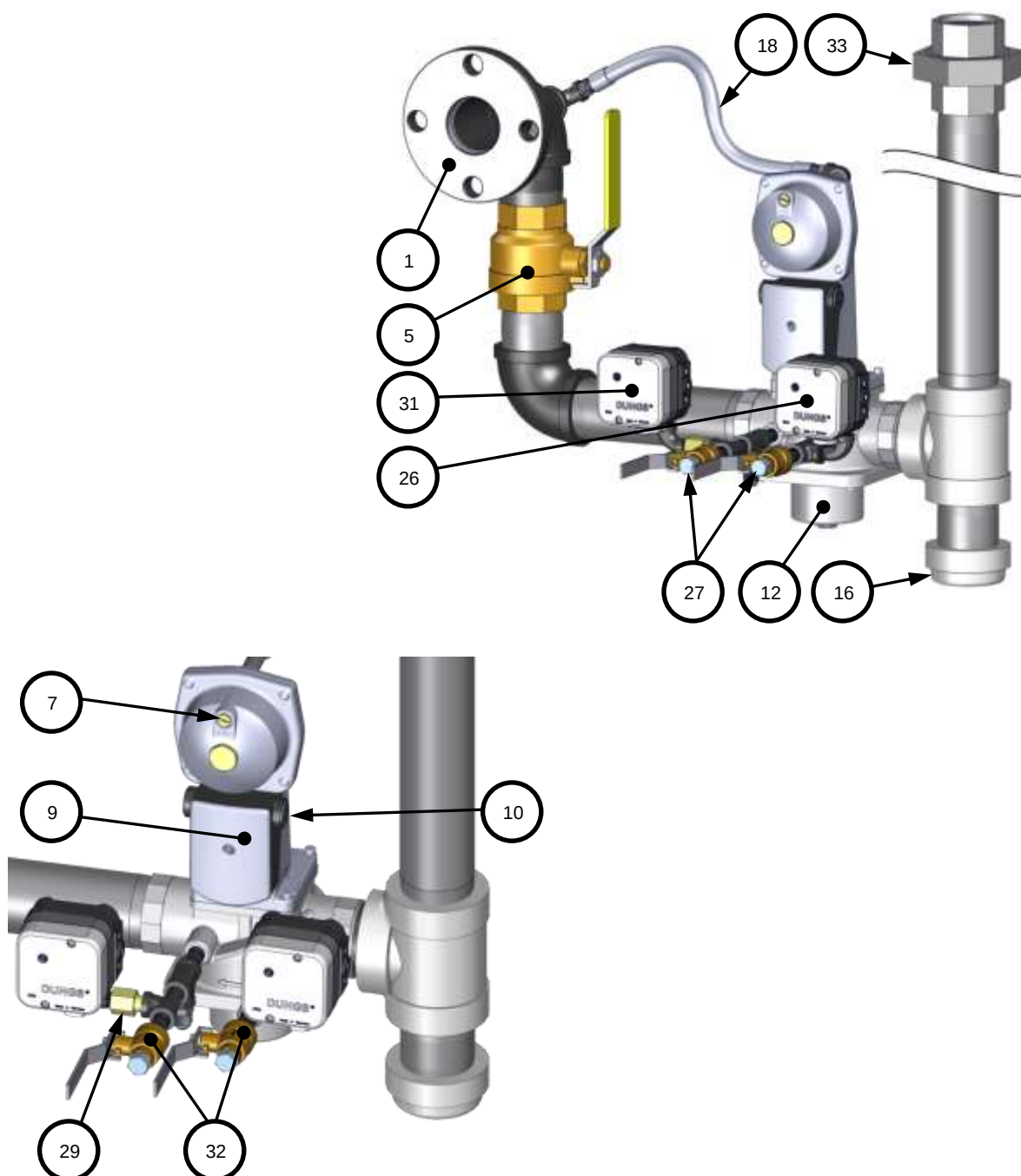
AERCO International, Inc. Blauvelt, NY 10913	Benchmark 2500 & 3000 with Edge [i] Part List	
	Benchmark 2500 29510-TAB rev C – 8/12/2020 Benchmark 3000 29512-TAB rev D – 8/26/2020	Sheet 5 of 5

Benchmark 3000 FM Gas Train

P/N 22171 rev K – 02/15/2019

Item	Qty.	P/N	Description	Item	Qty.	P/N	Description
1	1	123542	Flange 2" 125# 2" NPT	18	1	97087-12	Flex Gas Tubing 12"
5	1	123540	Ball Valve: 2" Full Port	26	1	60020	Gas Pressure Switch 2-20" W.C.
7	1	99015	Damping Orifice: SSOV	27	2	9-22	Pipe Plug: 1/4" NPT: Steel
9	1	64048 ①	Actuator: SSOV w/ Regulator	29	1	99017	Snubber: Pressure: 1/4"
10	2	12951-2	Bushing: Control Box	31	1	60032-1 ①	Gas Pressure Switch 1-20" W.C.
12	1	124136	Valve: SSOV 2" NPT	32	2	92143	1/4" Ball Valve: WATTS
16	1	93382	Cap, 2" NPT	33	1	9-294	Union: 2" NPT 300#

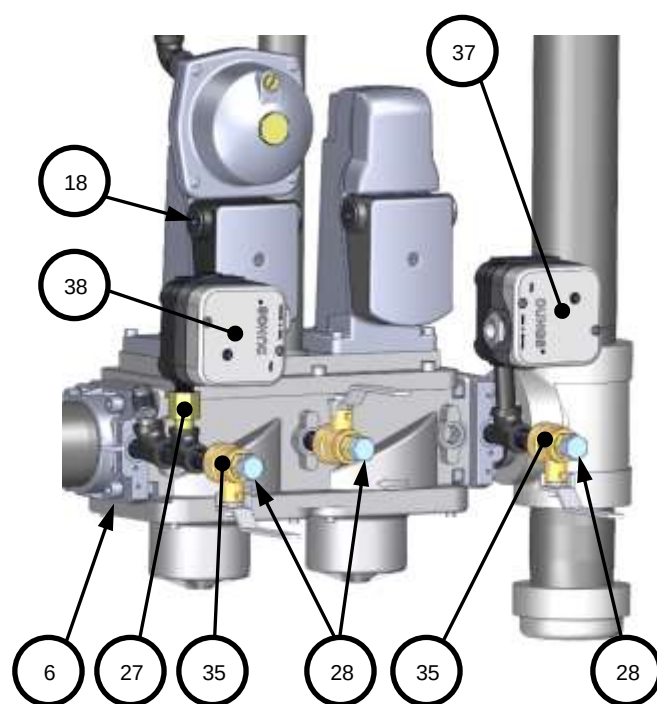
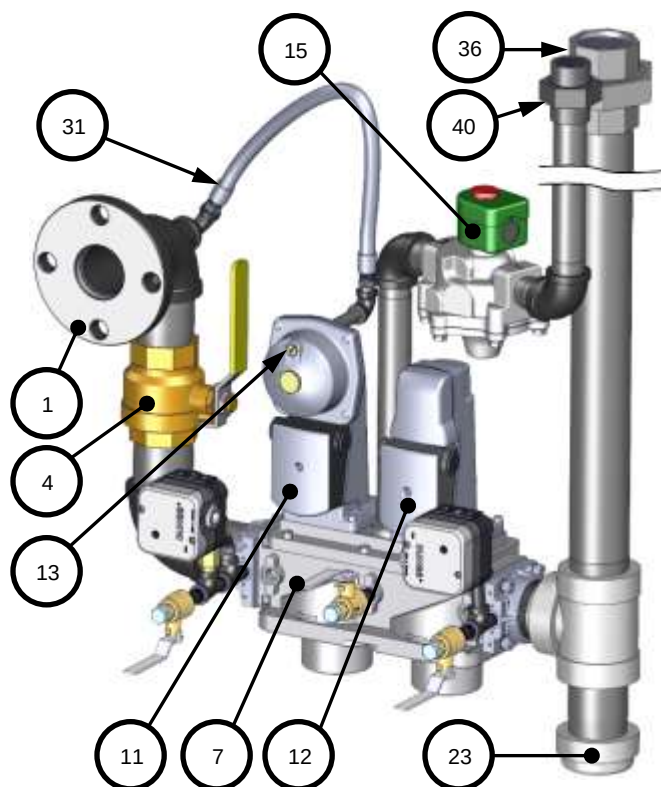
① Replacement Kit and/or Catalog number



SECTION 4: BENCHMARK 2500 & 3000 PART LIST

Benchmark 3000 DBB Gas Train P/N 22173 rev N – 10/02/2019							
Item	Qty	Part #	Description	Item	Qty	Part #	Description
1	1	123542	Flange 2" 125# 2" NPT	23	1	93382	Cap, 2" NPT
4	1	123540	Ball Valve: 2" Full Port	27	1	99017	Snubber: Pressure: 1/4"
6	2	95030	Flange: SSOV 2" NPT	28	3	9-22	Pipe Plug: 1/4" NPT: Steel
7	1	124142	SSOV Valve: Double Body: 2" NPT	31	1	97087-16	Flexible Gas Tubing 16"
11	1	64048 ①	Actuator: SSOV w/ Regulator	35	3	92143	Ball Valve, 1/4": Watts
12	1	27086-1	Actuator: SSOV w/o P.O.C. Switch	36	1	9-294	Union: 2" NPT 300#
13	1	99015	Damping Orifice: SSOV	37	1	60020	Gas Pressure Switch
15	1	123769	Solenoid Valve: N.O. 1" NPT	38	1	60032-1 ①	Gas Pressure Switch 1-20" W.C.
18	4	12951-2	Bushing: Control BOX	40	1	9-291	Union, 1" NPT

① Replacement Kit and/or Catalog number



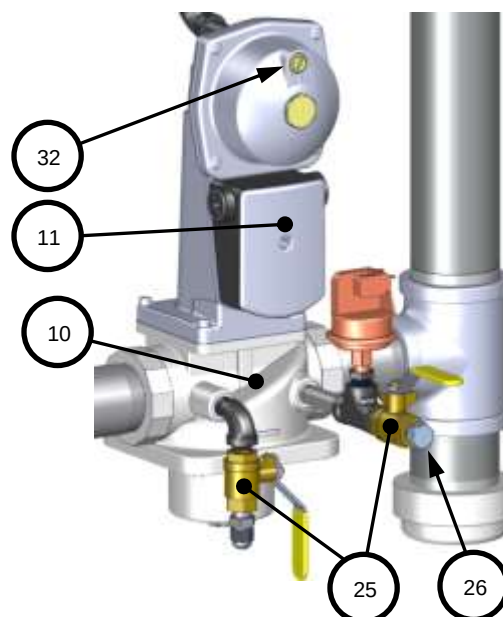
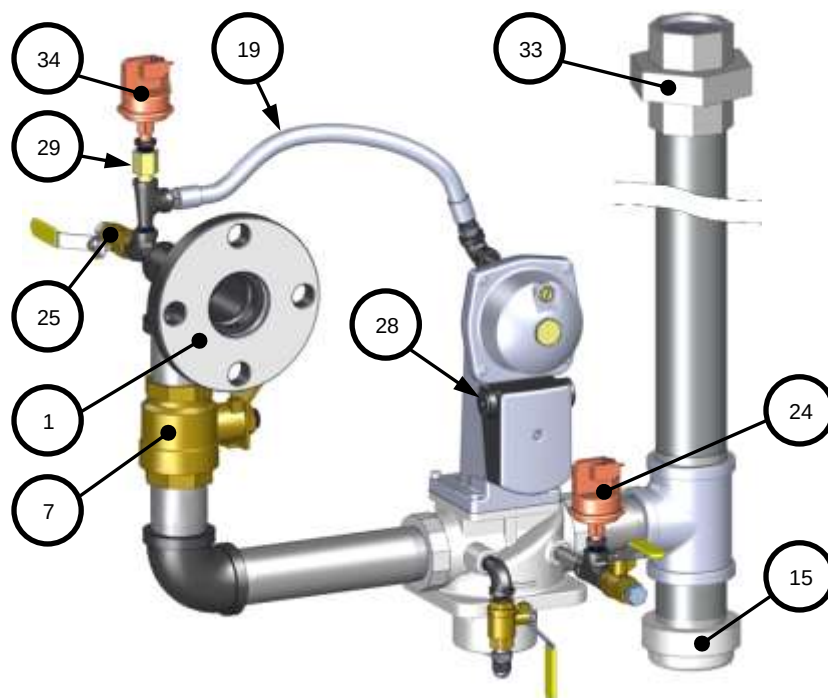
SECTION 4: BENCHMARK 2500 & 3000 PART LIST

Benchmark 2500 FM Gas Train

P/N 22190 rev F – 10/30/2019

Item	Qty	Part #	Description	Item	Qty	Part #	Description
1	1	123542	Flange 2" 125# 2" NPT	25	3	92077	Ball Valve, 1/4" NPT MXF Brass
7	1	92006-7	Ball Valve: Brass 1-1/2" NPT	26	3	9-22	Pipe Plug: 1/4" NPT: Steel
10	1	124150	Valve: SSOV 1-1/2" NPT	28	2	12951-2	Bushing: Control Box
11	1	64048 ①	Actuator: SSOV w/ Regulator	29	1	99017	Snubber: Pressure: 1/4"
15	1	93382	Cap 2" NPT	32	1	99015	Damping Orifice: SSOV
19	1	97087-12	Flex Tubing 12"	33	1	9-294	Union: 2" NPT 300#
24	1	61002-11	Low Gas Pressure Switch 3.6" W.C.	34	1	61002-22	High Gas Pressure Switch 3.0" W.C.

① Replacement Kit and/or Catalog number

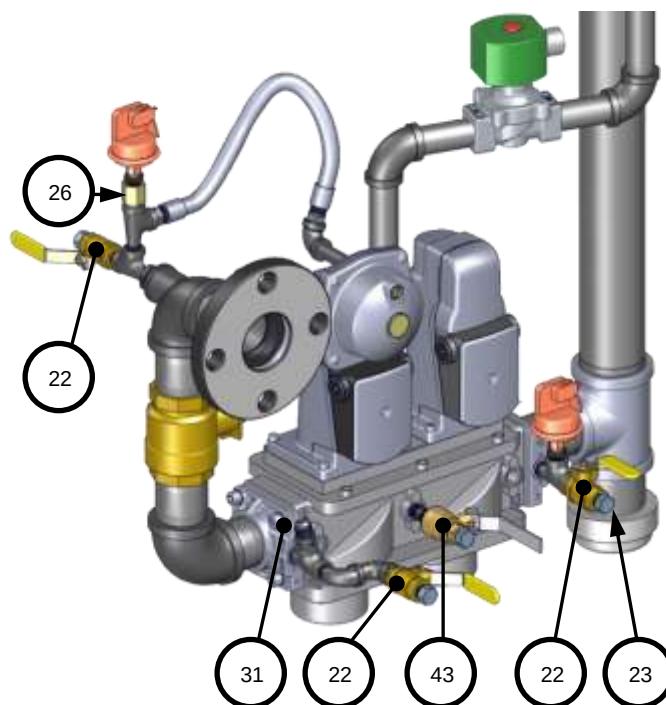
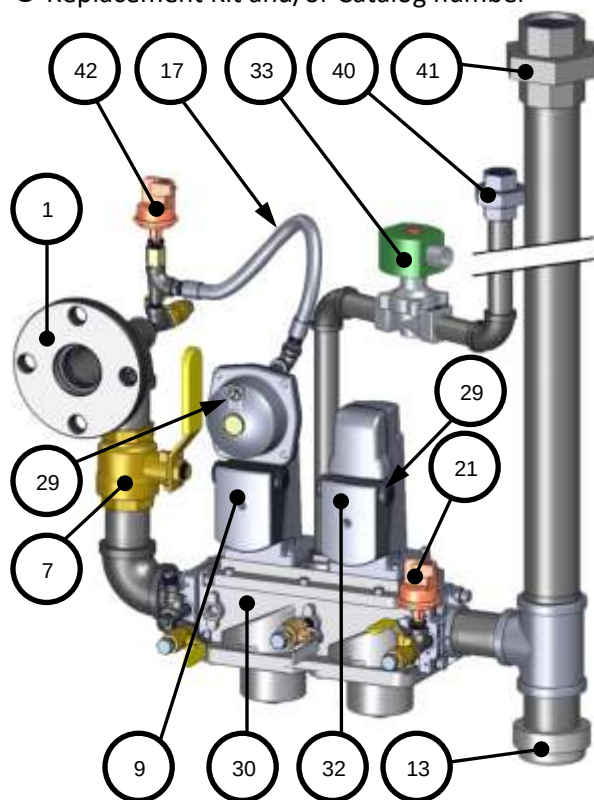


Benchmark 2500 Natural Gas DBB Gas Train

P/N 22211 rev G – 6/12/2018

Item	Qty	Part #	Description	Item	Qty	Part #	Description
1	1	123542	Flange 2" 125# 2" NPT	29	1	99015	Damping Orifice: SSOV
7	1	92006-7	Ball Valve: Brass 1-1/2" NPT	30	1	124137	Valve: SSOV: Double Body: 1-1/2" NPT
9	1	64048❶	Actuator: SSOV w/ Regulator	31	2	95029	Flange: SSOV 1 1/2" NPT
13	1	93382	Cap, 2" NPT	32	1	27086-1❶	Actuator: SSOV w/o P.O.C. Switch
17	1	97087-12	Flex Gas Tubing 12"	33	1	GP-122774	Vent Valve: 3/4" NPT
21	1	61002-11	Low Gas Pressure Switch 3.6" W.C.	40	1	124094	Union: 3/4" NPT #150
22	3	92077	Ball Valve: 1/4" NPT MXF Brass	41	1	9-294	Union: 2" NPT 300#
23	4	9-22	Pipe Plug: 1/4" NPT: Steel	42	1	61002-22	High Gas Pressure Switch: 3.0" W.C.
25	4	12951-2	Bushing: Control Box	43	1	92143	Ball Valve: 1/4" WATTS
26	1	99017	Snubber: Pressure: 1/4"				

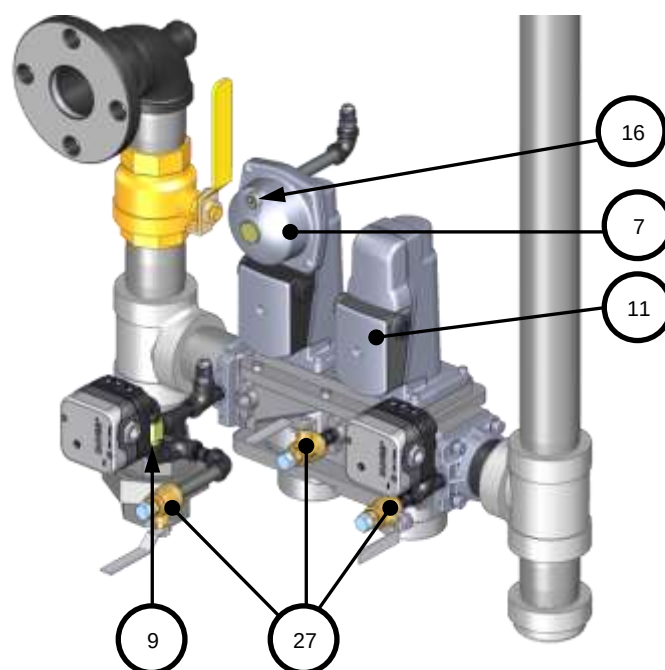
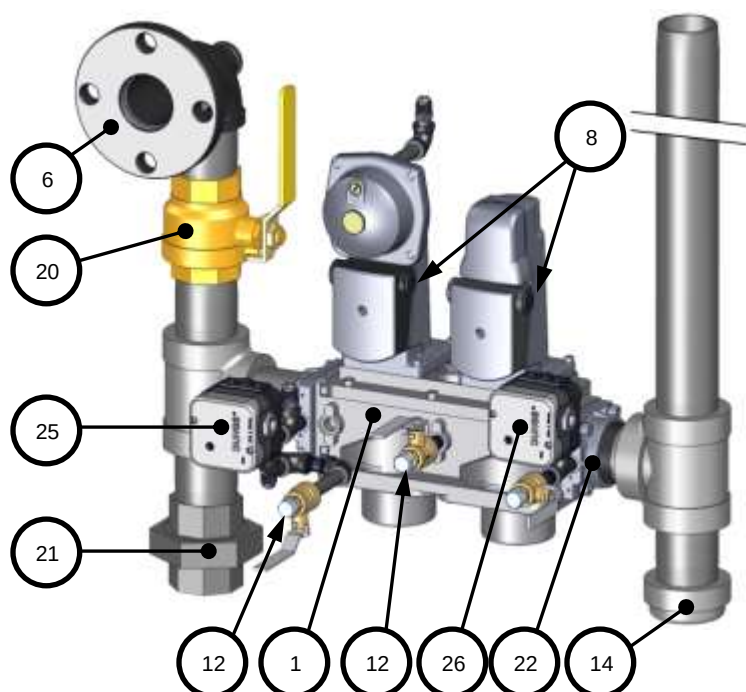
❶ Replacement Kit and/or Catalog number



SECTION 4: BENCHMARK 2500 & 3000 PART LIST

Benchmark 3000 DF Gas Train – NATURAL GAS							
P/N 22177 rev K – 8/30/2017 – Component of Dual Fuel gas train 22174							
Item	Qty	Part #	Description	Item	Qty	Part #	Description
1	1	124142	Valve: SSOV: Double BODY: 2" NPT	16	1	99015	Damping Orifice: SSOV
6	1	123542	Flange 2" 125# 2" NPT	20	1	123540	Ball Valve: 2" Full Port
7	1	64048 ❶	Actuator: SSOV w/ Regulator	21	1	9-294	Union: 2" NPT 300#
8	4	12951-2	Bushing: Control Box	22	2	95030	Flange: SSOV 2" NPT
9	1	99017	Snubber: Pressure: 1/4"	25	1	60032-1 ❶	Gas Pressure Switch: 1-20" W.C.
11	1	27086-1 ❶	Actuator: SSOV w/o P.O.C. Switch	26	1	60020	Gas Pressure Switch: 2-20" W.C.
12	3	9-22	Pipe Plug: 1/4" NPT: Steel	27	3	92143	Ball Valve: 1/4" WATTS
14	1	93382	Cap, 2" NPT				

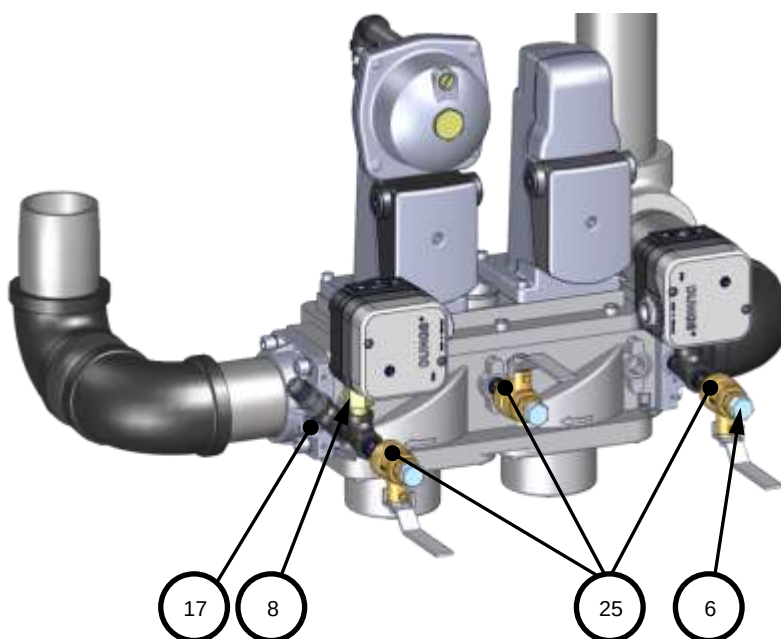
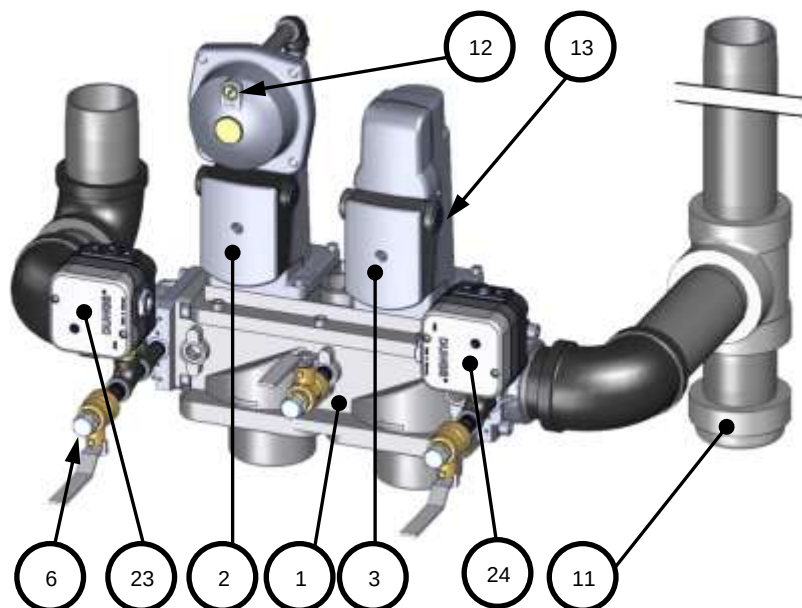
❶ Replacement Kit and/or Catalog number



SECTION 4: BENCHMARK 2500 & 3000 PART LIST

Benchmark 3000 DF Gas Train – PROPANE							
P/N 22178 rev G – 08/03/2017 – Component of Dual Fuel gas train 22174							
Item	Qty	Part #	Description	Item	Qty	Part #	Description
1	1	124142	Valve: SSOV: Double Body: 2" NPT	12	1	99015	Damping Orifice: SSOV
2	1	64048 ❶	Actuator: SSOV w/ Regulator	13	4	12951-2	Bushing: Control Box
3	1	27086-1❶	Actuator: SSOV W/O P.O.C. Switch	17	2	95030	Flange: SSOV 2" NPT
6	2	9-22	Pipe Plug: 1/4" NPT: Steel	23	1	60032-1❶	Gas Pressure Switch: 1-20" W.C.
8	1	99017	Snubber: Pressure: 1/4"	24	1	60020	Gas Pressure Switch: 2-20" W.C.
11	1	93382	Cap, 2" NPT	25	2	92143	Ball Valve: 1/4" WATTS

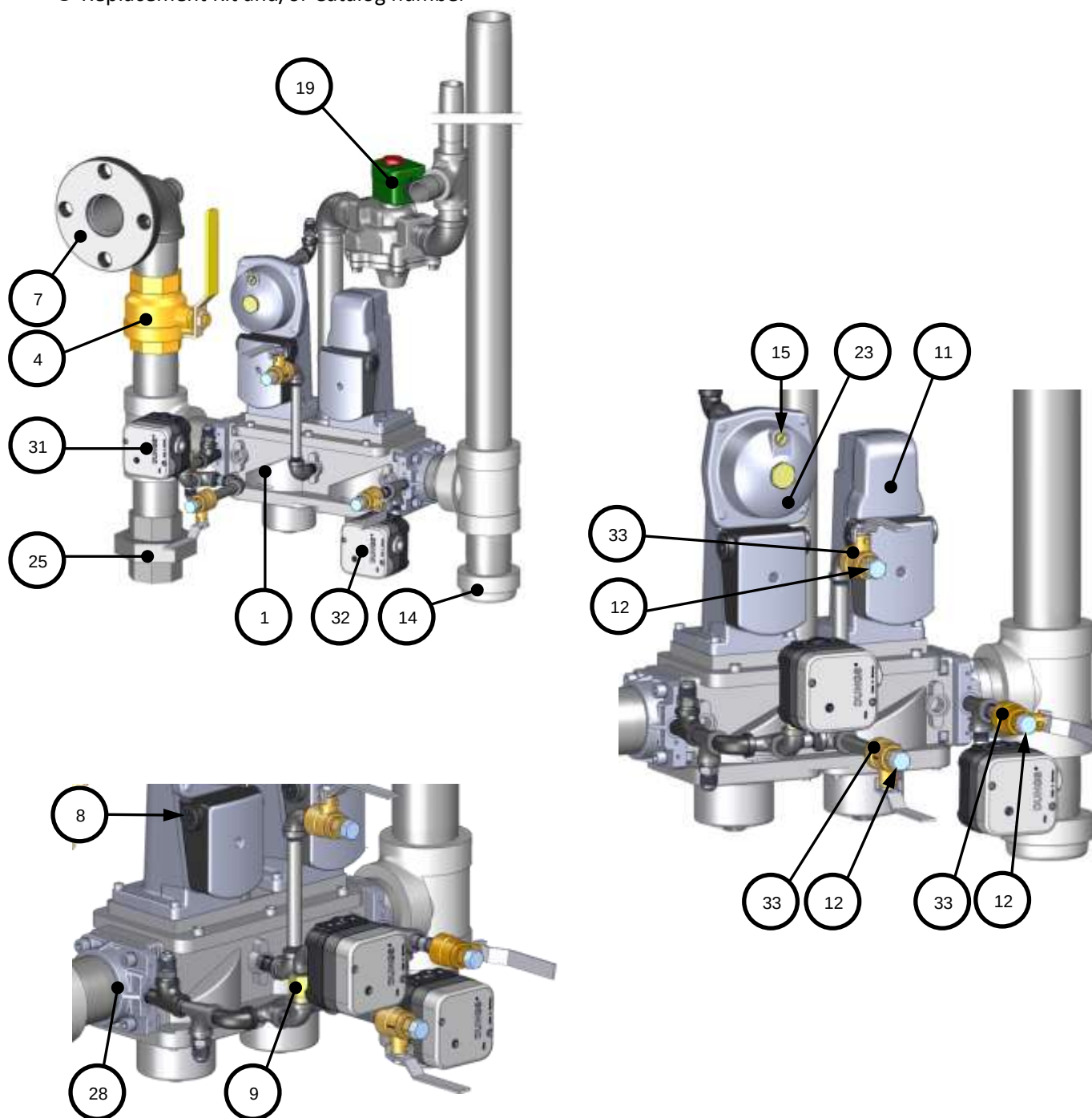
❶ Replacement Kit and/or Catalog number



SECTION 4: BENCHMARK 2500 & 3000 PART LIST

Benchmark 3000 DF DBB Gas Train – NATURAL GAS							
P/N 22177-1 rev K – 2/13/2019 – Component of Dual Fuel gas train 22183							
Item	Qty	Part #	Description	Item	Qty	Part #	Description
1	1	124142	Valve: SSOV: Double Body: 2" NPT	15	1	99015	Damping Orifice: SSOV
4	1	123540	Ball Valve: 2" full port	19	1	123769	Valve, Solenoid N.O. 1" NPT
7	1	123542	Flange 2" 125# 2" NPT	23	1	64048 ❶	Actuator: SSOV w/ Regulator
8	4	12951-2	Bushing: Control Box	25	1	9-294	Union: 2" NPT 300#
9	1	99017	Snubber: Pressure: 1/4"	28	2	95030	Flange: SSOV 2" NPT
11	1	27086-1 ❶	Actuator: SSOV w/o P.O.C. Switch	31	1	60032-1 ❶	Gas Pressure Switch: 1-20" W.C.
12	3	9-22	Pipe Plug: 1/4" NPT: Steel	32	1	60020	Gas Pressure Switch: 2-20" W.C.
14	1	93382	Cap, 2" NPT	33	3	92143	Ball Valve: 1/4" WATTS

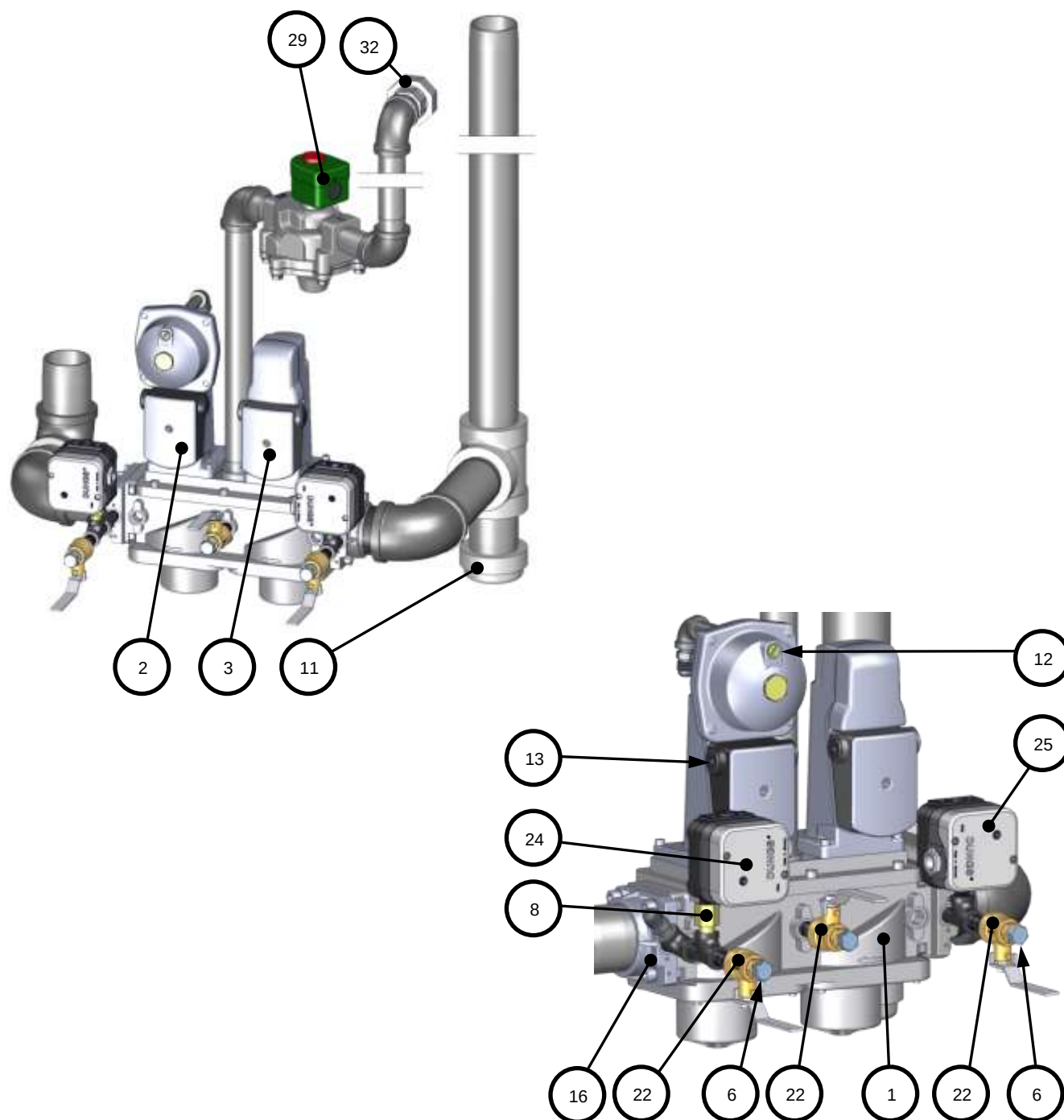
❶ Replacement Kit and/or Catalog number



SECTION 4: BENCHMARK 2500 & 3000 PART LIST

Benchmark 3000 DF DBB PROPANE Gas Train							
P/N 22178-1 rev F – 8/30/2017 – Component of Dual Fuel gas train 22183							
Item	Qty	Part #	Description	Item	Qty	Part #	Description
1	1	124142	Valve: SSOV: Double Body: 2" NPT	13	4	12951-2	Bushing: Control Box
2	1	64048 ❶	Actuator: SSOV w/ Regulator	16	2	95030	Flange: SSOV 2" NPT
3	1	27086-1 ❶	Actuator: SSOV w/o P.O.C. Switch	22	3	92143	Ball Valve: 1/4" WATTS
6	3	9-22	Pipe Plug: 1/4" NPT: Steel	24	1	60032-1 ❶	Gas Pressure Switch: 1-20" W.C.
8	1	99017	Snubber: Pressure: 1/4"	25	1	60020	Gas Pressure Switch: 2-20" W.C.
11	1	93382	Cap, 2" NPT	29	1	123769	Valve: Solenoid N.O. 1" NPT
12	1	99015	Damping Orifice: SSOV	32	1	123771	Union: MA x FEM 1" NPT: 150# M.I.

❶ Replacement Kit and/or Catalog number

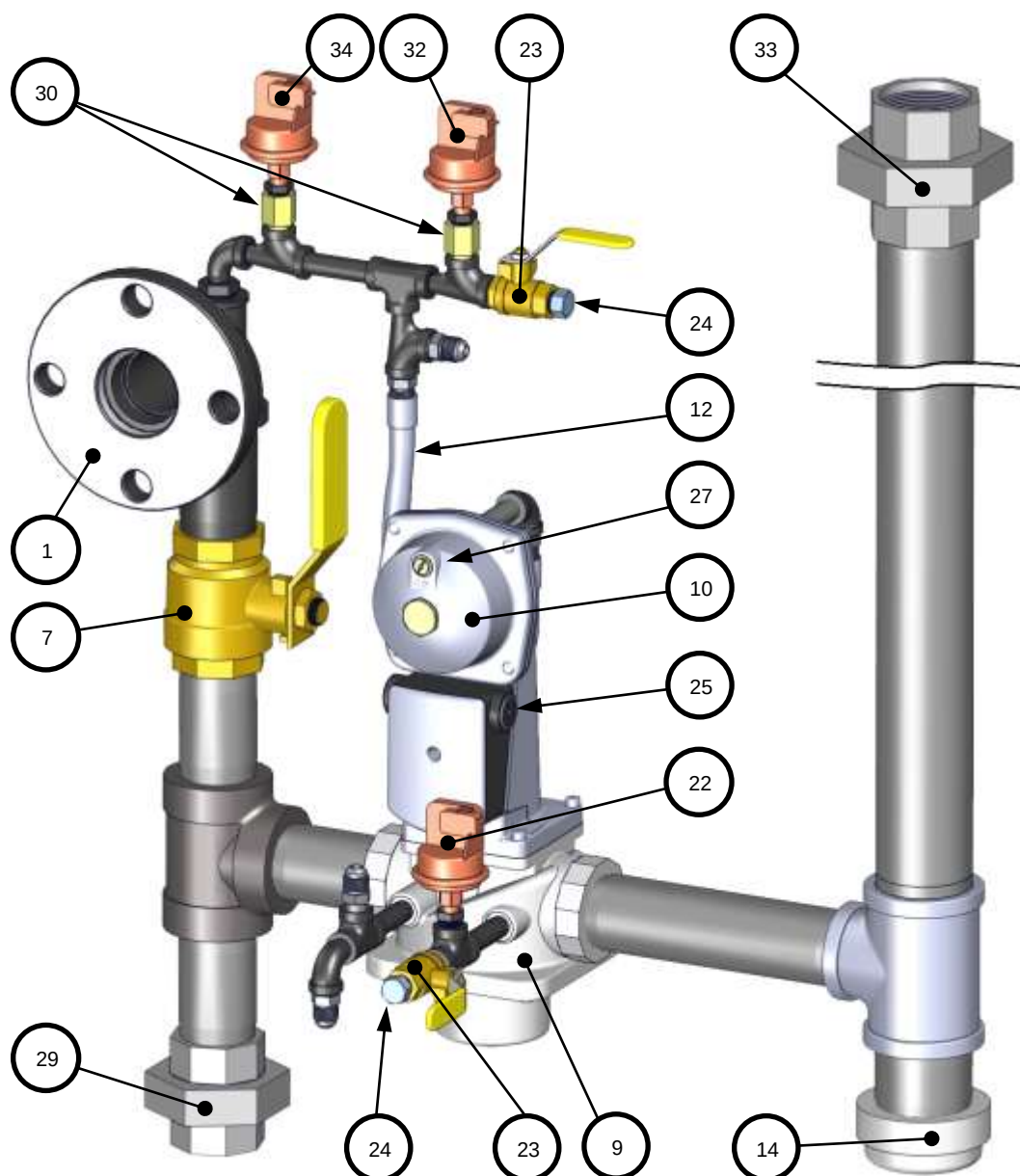


SECTION 4: BENCHMARK 2500 & 3000 PART LIST

Benchmark 2500 Dual Fuel Gas Train – Natural Gas P/N 22210-1 rev D – 6/12/2018 – Component of Dual Fuel gas train 22210

Item	Qty	Part #	Description	Item	Qty	Part #	Description
1	1	123542	Flange 2" 125# 2" NPT	24	2	9-22	Pipe Plug: 1/4" NPT: Steel
7	1	92006-7	Ball Valve: Brass 1-1/2" NPT	25	2	12951-2	Bushing: Control Box
9	1	124150	Valve: SSOV 1-1/2" NPT	27	1	99015	Damping Orifice: SSOV
10	1	64048 ❶	Actuator: SSOV w/ Regulator	29	1	93310	Union: 1-1/2" 150# BLACK Iron
14	1	93382	Cap, 2" NPT	30	2	99017	Snubber: Pressure: 1/4"
17	1	97087-12	Flexible Gas Tubing: 12"	32	1	61002-15	High Gas Pressure Switch 7.0" W.C.
22	1	61002-21	Low Gas Pressure Switch 7.5" W.C.	33	1	9-294	Union: 2" NPT 300#
23	2	92077	Ball Valve, 1/4" NPT MXF Brass	34	1	61002-22	High Pressure Switch 3.0

❶ Replacement Kit and/or Catalog number

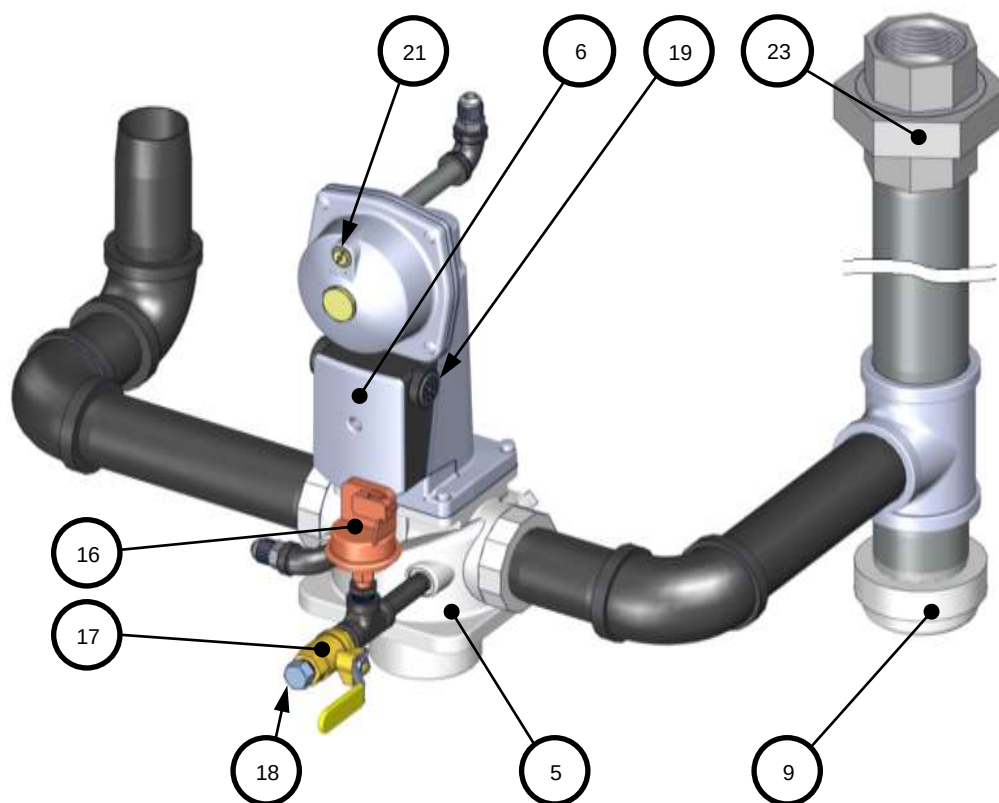


Benchmark 2500 Dual Fuel Gas Train – Propane

P/N 22210-2 rev B – 2/19/2016 – Component of Dual Fuel gas train 22210

Item	Qty	P/N	Description	Item	Qty	P/N	Description
5	1	124150	Valve: SSOV 1-1/2" NPT	18	1	9-22	Pipe Plug: 1/4" NPT: Steel
6	1	64048 ❶	Actuator: SSOV w/ Regulator	19	2	12951-2	Bushing: Control Box
9	1	93382	Cap, 2" NPT	21	1	99015	Damping Orifice: SSOV
16	1	61002-11	Low Gas Pressure Switch 3.6" W.C.	23	1	9-294	Union: 2" NPT 300#
17	1	92077	Ball Valve: 1/4" NPT MXF Brass				

❶ Replacement Kit and/or Catalog number



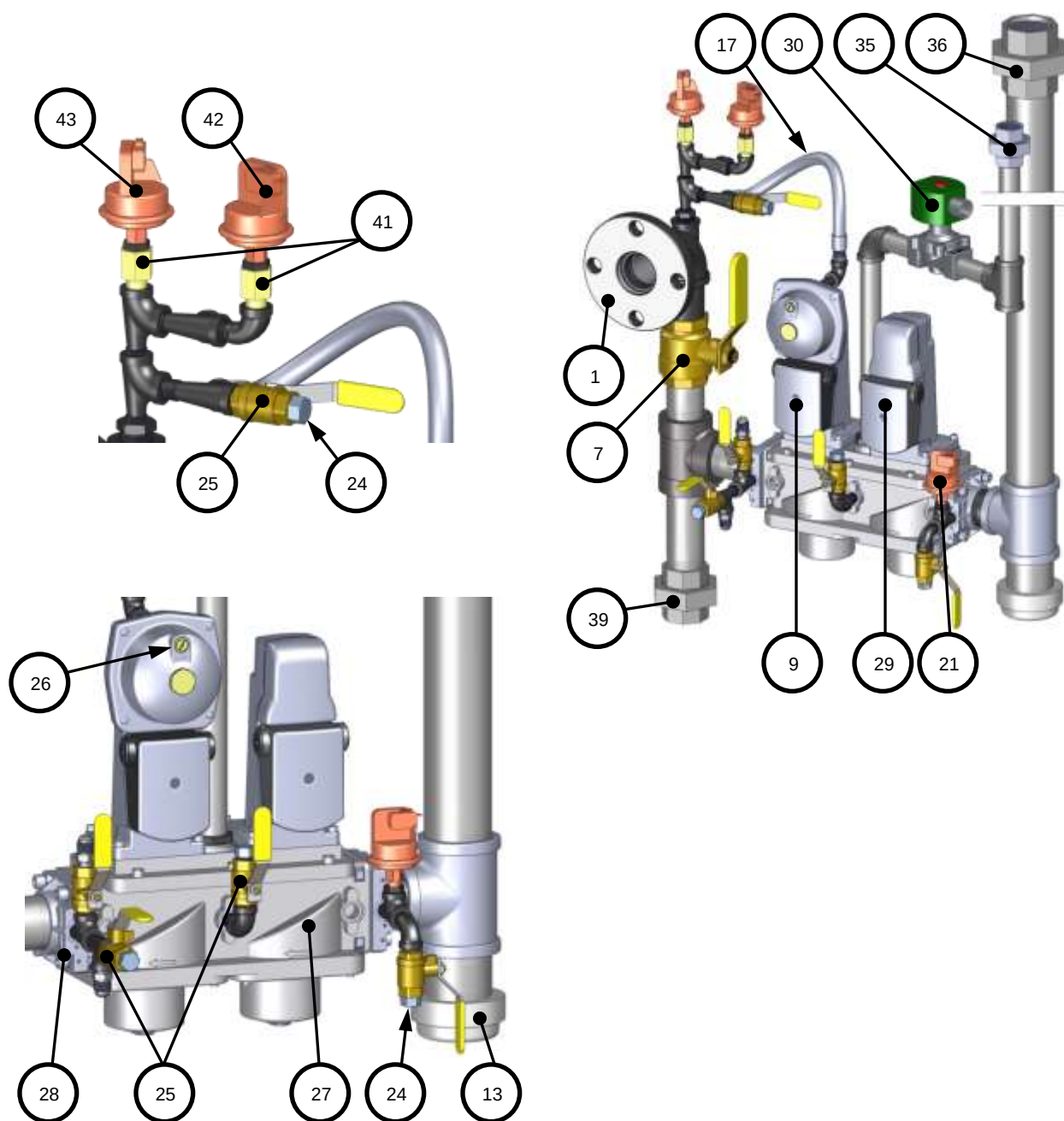
SECTION 4: BENCHMARK 2500 & 3000 PART LIST

Benchmark 2500 DF DBB Gas Train – NATURAL GAS

P/N 22209-1 rev G – 11/1/2019 – component of Dual Fuel gas train 22209

Item	Qty	Part #	Description	Item	Qty	Part #	Description
1	1	123542	Flange 2" 125# 2" NPT	27	1	124137	Valve: SSOV: Double Body: 1-1/2" NPT
7	1	92006-7	Ball Valve: Brass 1-1/2" NPT	28	2	95029	Flange: SSOV 1 1/2" NPT
9	1	64048 ❶	Actuator: SSOV w/ Regulator	29	1	27086-1 ❶	Actuator: SSOV w/o P.O.C. Switch
13	1	93382	Cap 2" NPT	30	1	GP-122774 ❶	Vent Valve: 3/4" NPT
17	1	97087-12	Flexible Gas Tubing, 12"	35	1	124094	Union: 3/4" NPT #150
21	1	61002-21	Low Gas Pressure Switch 7.5" W.C.	36	1	9-294	Union: 2" NPT 300#
23	4	12951-2	Bushing: Control Box	39	1	93310	Union: 1-1/2" 150# Black Iron
24	4	9-22	Pipe Plug: 1/4" NPT: STEEL	41	2	99017	Snubber: Pressure: 1/4"
25	4	92077	Ball Valve: 1/4" NPT MXF Brass	42	1	61002-15	High Gas Pressure Switch 7.0" W.C.
26	1	99015	Damping Orifice: SSOV	43	1	61002-22	Switch, High Pressure 3.0

❶ Replacement Kit and/or Catalog number



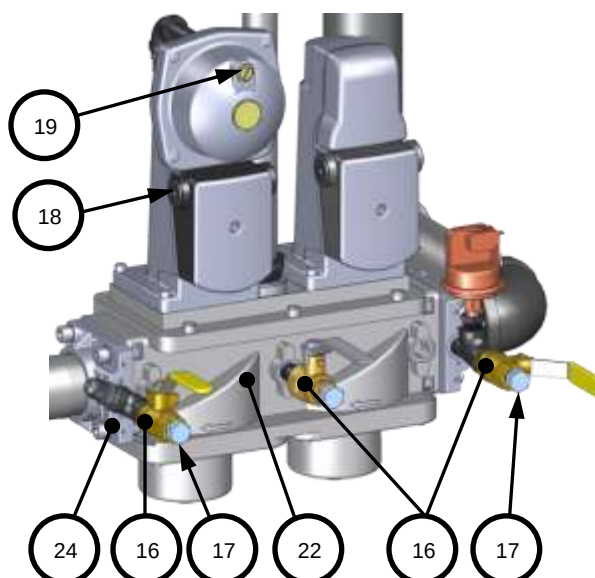
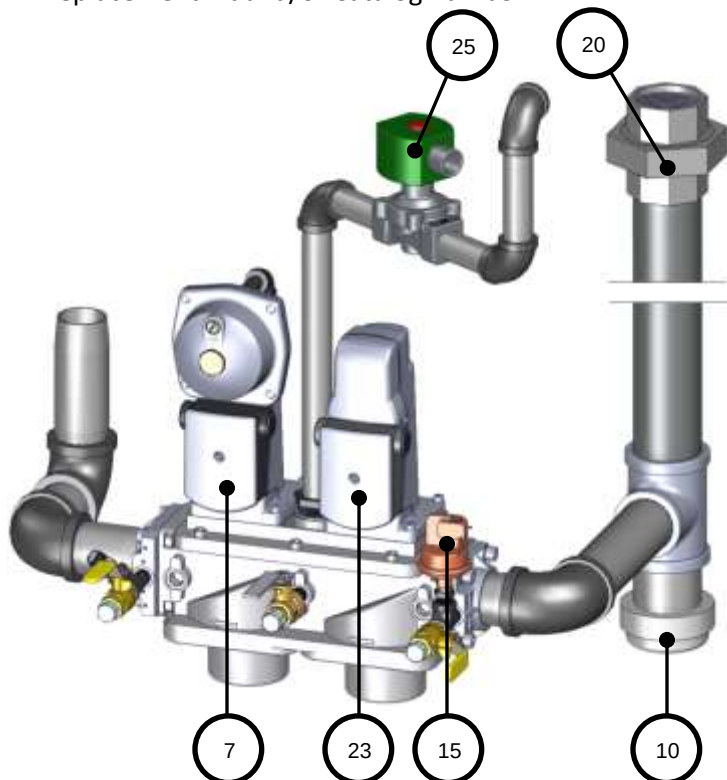
SECTION 4: BENCHMARK 2500 & 3000 PART LIST

Benchmark 2500 DF DBB Gas Train – PROPANE

P/N 22209-2 rev F – 2/13/2019 – component of Dual Fuel gas train 22209

Item	Qty	Part #	Description	Item	Qty	Part #	Description
7	1	64048 ❶	Actuator: SSOV w/ Regulator	20	1	9-294	Union: 2" NPT 300#
10	1	93382	Cap, 2" NPT	22	1	124137	Valve: SSOV: Double Body: 1-1/2" NPT
15	1	61002-11	Low Gas Pressure Switch 3.6" W.C.	23	1	27086-1 ❶	Actuator: SSOV w/o P.O.C. Switch
16	2	92077	Ball Valve, 1/4" NPT MXF Brass	24	2	95029	Flange: SSOV 1 1/2" NPT
17	3	9-22	Pipe Plug: 1/4" NPT: Steel	25	1	122774	Valve, Vent 3/4" NPT
18	4	12951-2	Bushing, Control Box	33	1	92143	Ball Valve, 1/4", WATTS
19	1	99015	Damping Orifice: SSOV				

❶ Replacement Kit and/or Catalog number



SECTION 4: BENCHMARK 2500 & 3000 PART LIST

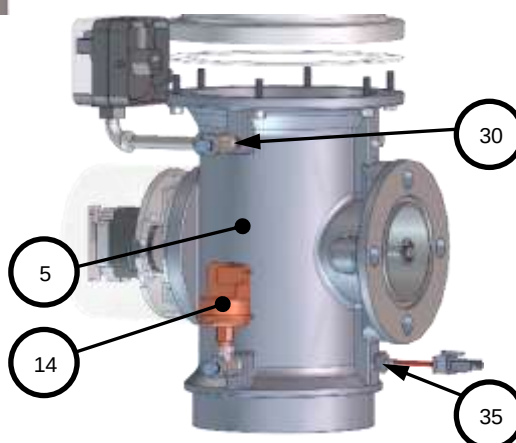
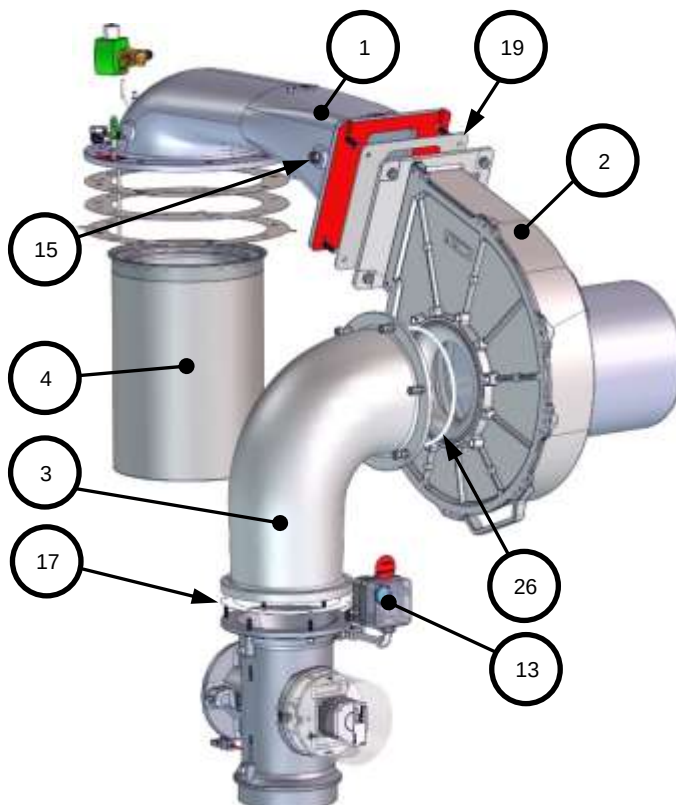
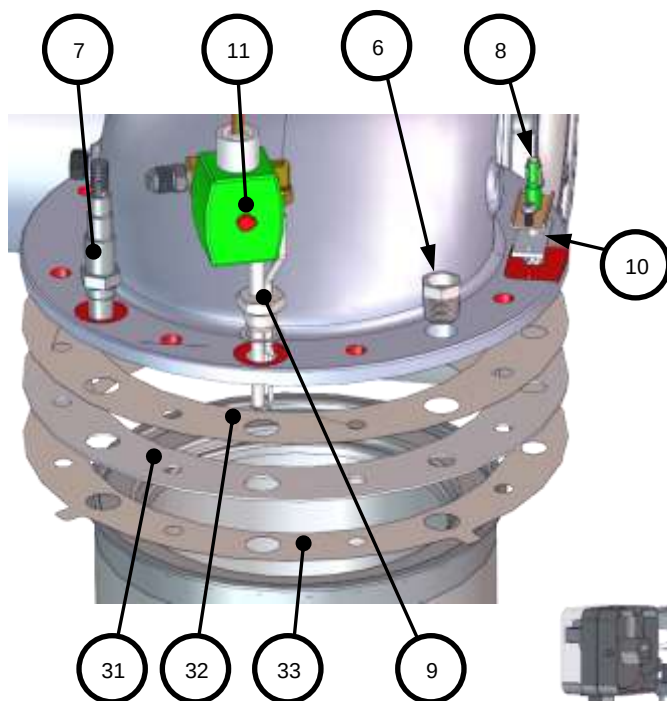
Benchmark 2500-3000 Burner Assembly

- BMK 2500 – 26015-TAB rev F – 5/6/2014
- BMK 3000 – 26014-TAB rev K – 9/13/2018

Item	Qty	Part #	Description	Item	Qty	Part #	Description
1	1	43091	Blower Plenum	13	1	60011-5	Blower Proof Switch, BMK 2500
2	1	See Table	EBM Blower, 3 Phase ❶			60011-2	Blower Proof Switch, BMK 3000
3	1	43090	Air Fuel Valve Plenum	14	1	61002-5	Blocked Inlet Switch -4.5" W.C.
4	1	46039	Burner: BMK 2500	15	2	9-22	Pipe Plug: 1/4" NPT: Steel
		46038	Burner: BMK 3000	17	1	81057	Blower Gasket (A/F Valve to A/F Valve Plenum)
5	1	See Table	A/F Valve Assy ❶	19	1	81157	Blower Gasket (Blower to Blower Plenum)
6	1	59104	Observation Port	26	1	88015	O Ring, 3/16 x 7"
7	1	61026	Oxygen Sensor	30	1	93230	Snubber
8	1	24356-1	Flame Rod ❶	31	1	81180	Gasket: Burner
9	1	58023	Ignitor-Injector ❶	32	1	81173	Release Gasket
10	1	81048	Gasket: Flame Rod	33	1	81185	Release Gasket: Lower
11	1	24277	Staged Ignition Assy	35	1	123449	Air Inlet Temperature Sensor

❶ Replacement Kit and/or Catalog number

Description	Item 2 ❶	Item 5 ❶	
		BMK 2500	BMK 3000
460VAC SINGLE FUEL	58063-1	24311-8	24311-1
208VAC SINGLE FUEL	58063-2	24311-8	24311-1
460VAC DUAL FUEL	58063-1	24311-9	24311-7
208VAC DUAL FUEL	58063-2	24311-9	24311-7

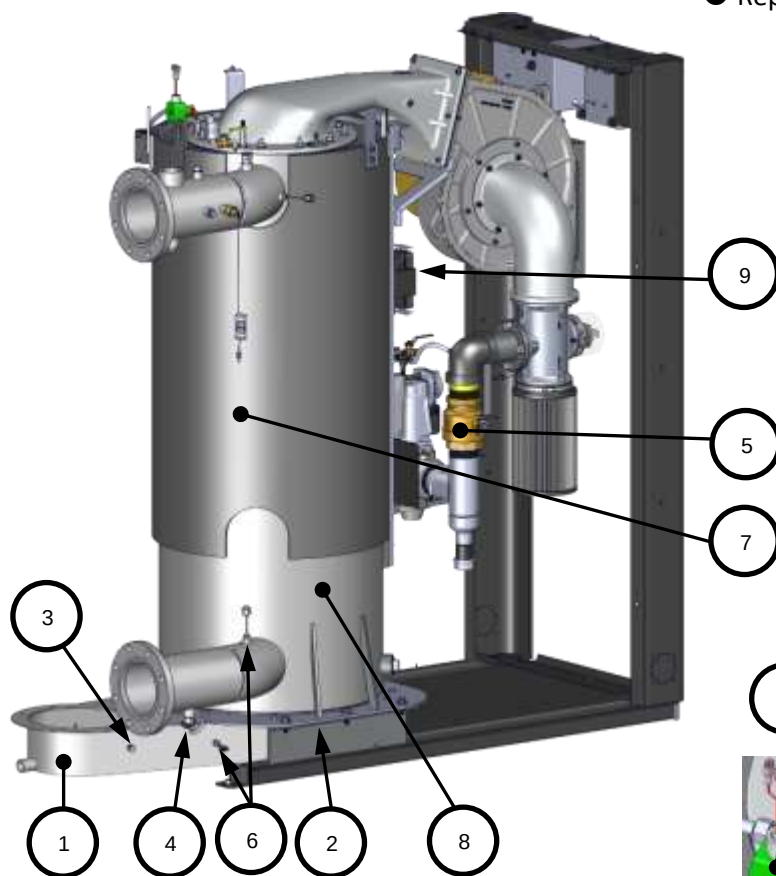


SECTION 5: BENCHMARK 4000 & 5000N PART LIST

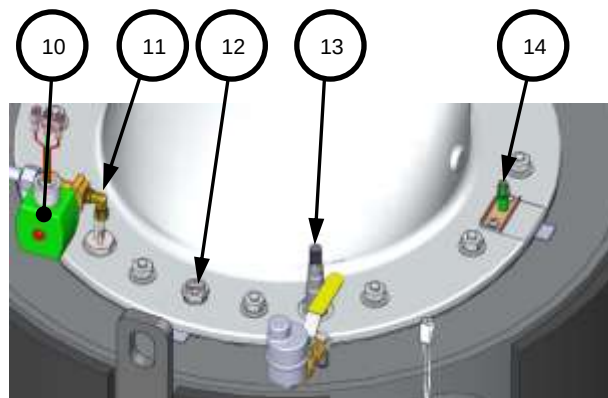
Item #	Qty	Part #	Description
EXHAUST MANIFOLD			
1	1	39220	Exhaust Manifold
2	1	84047	Exhaust Manifold Seal
3	2	9-22	Pipe Plug - Exhaust Manifold
4	1	92094	Boiler Drain Valve, 3/4 "
GAS TRAIN ASSEMBLIES (See full diagrams below)			
5	1	22373-1	BMK 4000 FM Gas Train
		22373-3	BMK 4000 DBB Gas Train
		22373-4	BMK 4000 FM Gas Train with VPS
		22358-1	BMK 5000N FM Gas Train
		22358-3	BMK 5000N DBB Gas Train
		22358-4	BMK 5000N FM Gas Train with VPS
		22367	BMK 5000N DF Gas Train
		22368	BMK 5000N DF DBB Gas Train

Item #	Qty	Part #	Description
HEAT EXCHANGER			
6	2	123449	Temperature Sensor BMK 4000
	3	123449	Temperature Sensor BMK 5000N
7	1	80102	Shell Insulation
8	1	58179-14 ❶	BMK 4000/5000N Heat Exchanger, single inlet
CONTROLS			
9	1	65227	Step Down Transformer 460/230/208 to 120/24 VAC
10	1	24277	Staged Ignition Assy
11	1	58023 ❶	Ignitor-Injector
12	1	59104	Observation Port
13	1	61026	O ₂ Sensor
14	1	24356-1 ❶	Flame Rod

❶ Replacement Kit and/or Catalog number



LEFT-REAR VIEW

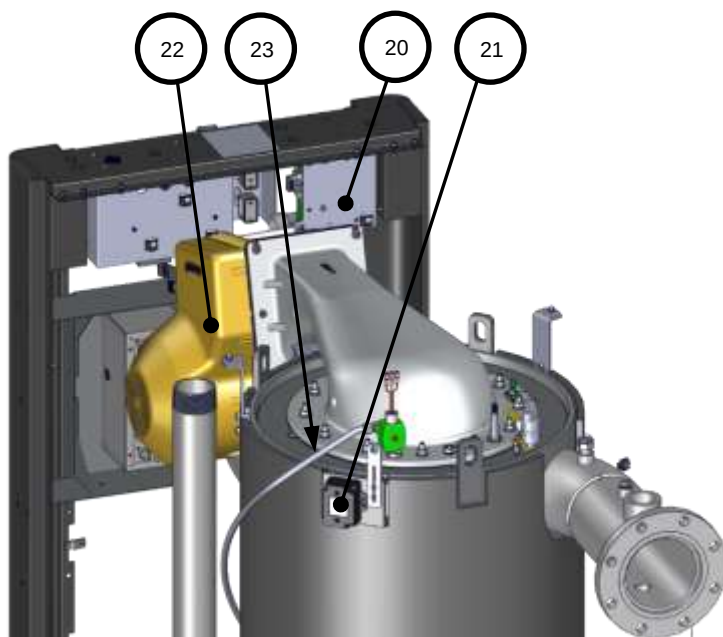
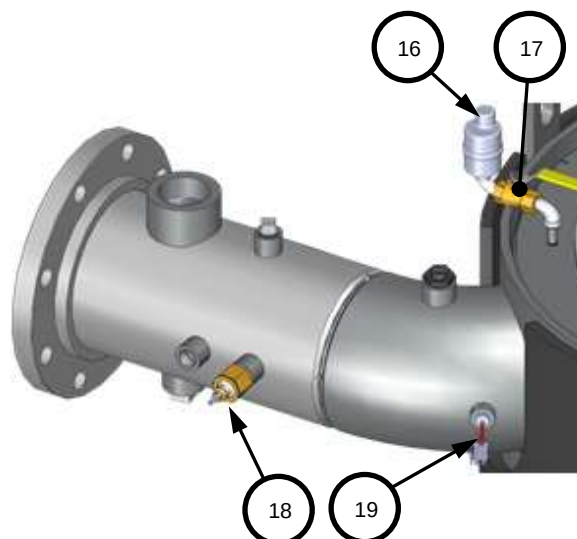


AERCO International, Inc. Blauvelt, NY 10913	Benchmark 4000 & 5000N with Edge [i] Part List	08/27/2020
	BMK 4000 29465-TAB Rev C BMK 5000N 29468-TAB rev D	Sheet 1 of 5

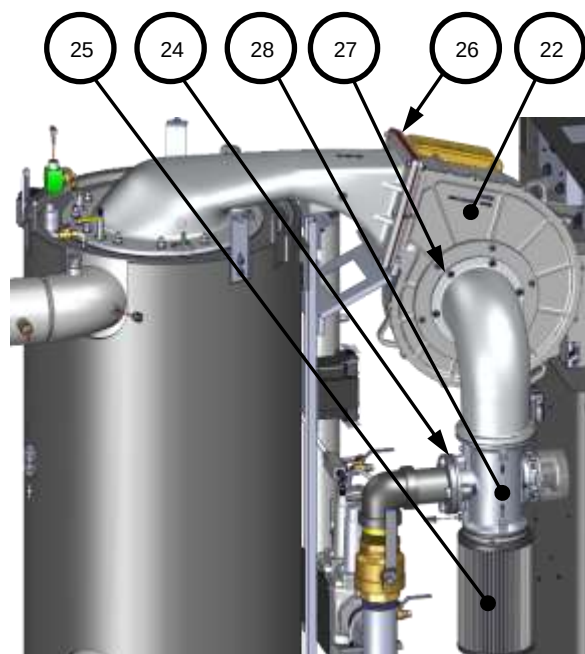
Item #	Qty	Part #	Description
CONTROLS (continued)			
16	1	59178	Air Vent: 1/8 NPT
17	1	123863	Valve: Ball 1/8" NPT
18	1	69126 ❶	Low Water Cutoff
19	1	61030	Temperature Sensor
20	1	64081	ECU (for O ₂ Sensor, behind cover)
21	1	65085	Ignition Transformer
BURNER-BLOWER ASSY – See full diagrams below: BMK 4000 – 26017-TAB, BMK 5000N – 26018-TAB			
22	1	58195-1 ❶	Blower 480 V BMK 4000/5000N
		58195-2 ❶	Blower 208 V BMK 4000/5000N
23	1	97087-72	Flex Gas Tube 72" (1.83 m)
24	1	88003	O-Ring, #2-339
25	2	88014	Air Filter, 6" X 12"
26	1	81215	Blower/Plenum Gasket
27	1	81216	A/F Valve–Blower Gasket
28	1	24311-11 ❶	BMK 4000 A/F Valve Assy.
		24696-1 ❶	BMK 5000N A/F Valve Assy
		24696-2 ❶	BMK 4000/5000N Dual Fuel A/F Valve Assy

❶ Replacement Kit and/or Catalog number

HOT WATER OUTLET



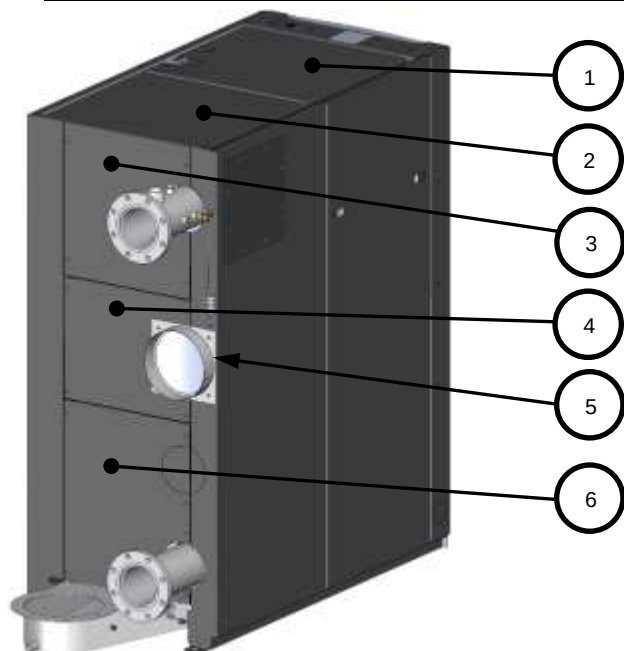
UPPER-RIGHT REAR VIEW



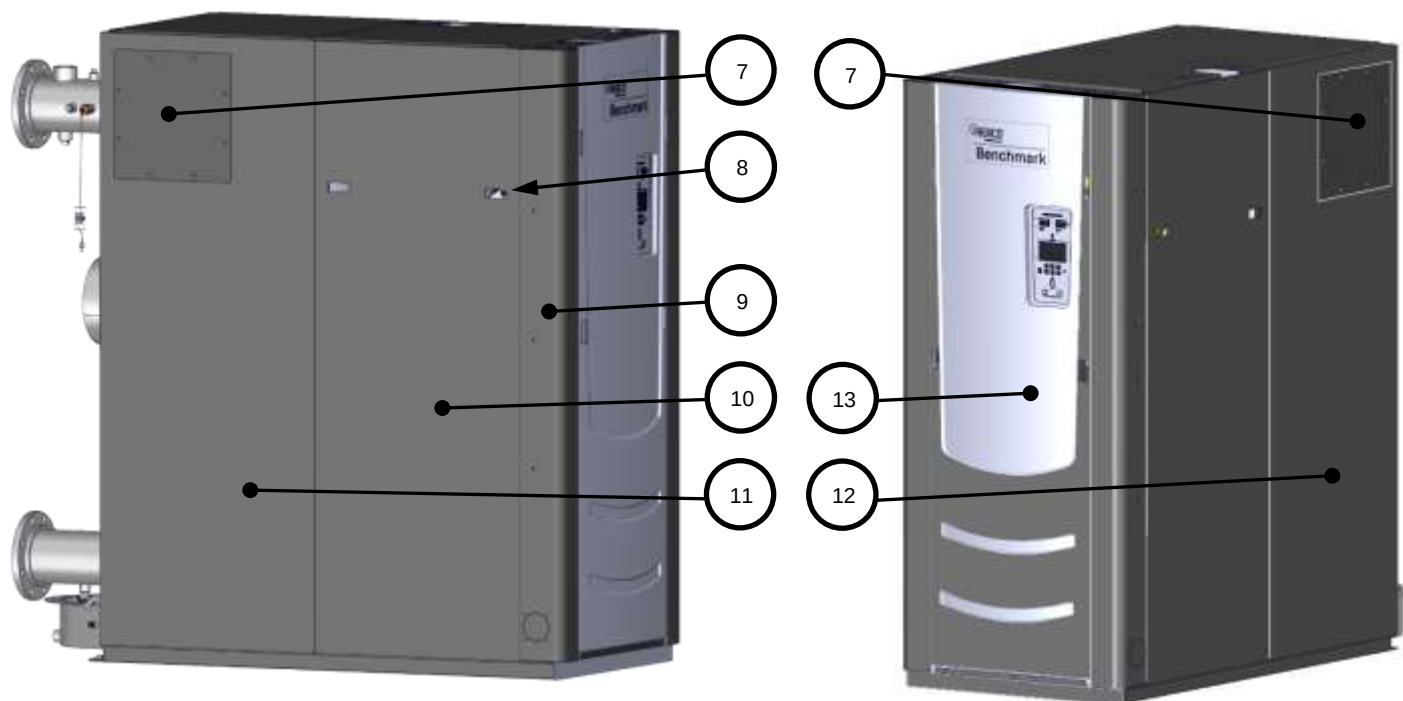
LEFT SIDE VIEW

AERCO International, Inc. Blauvelt, NY 10913	Benchmark 4000 & 5000N with Edge [i] Part List	08/06/2020
	BMK 4000 29465-TAB Rev C BMK 5000N 29468-TAB rev D	Sheet 2 of 5

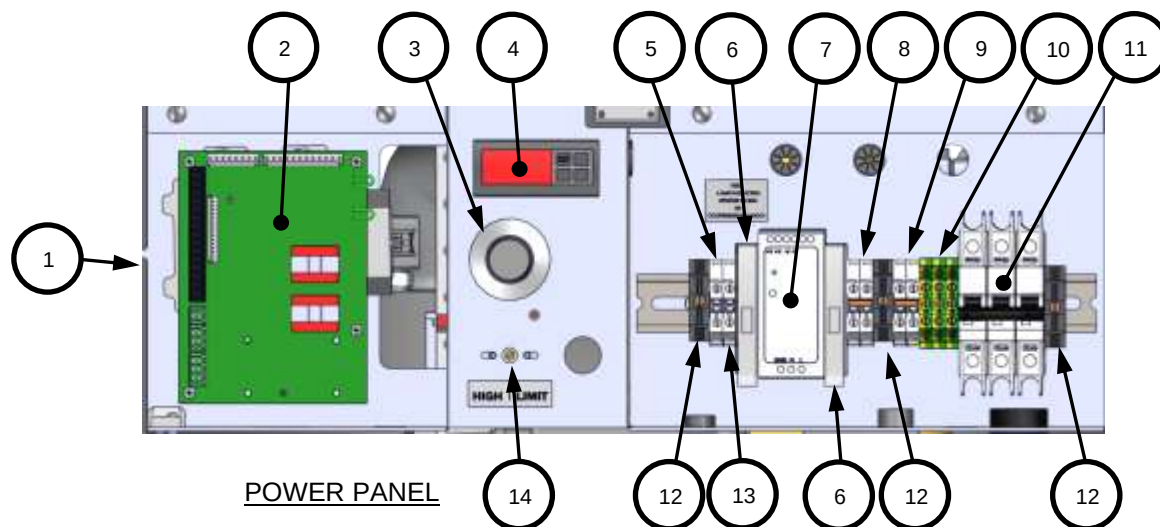
SECTION 5: BENCHMARK 4000 & 5000N PART LIST



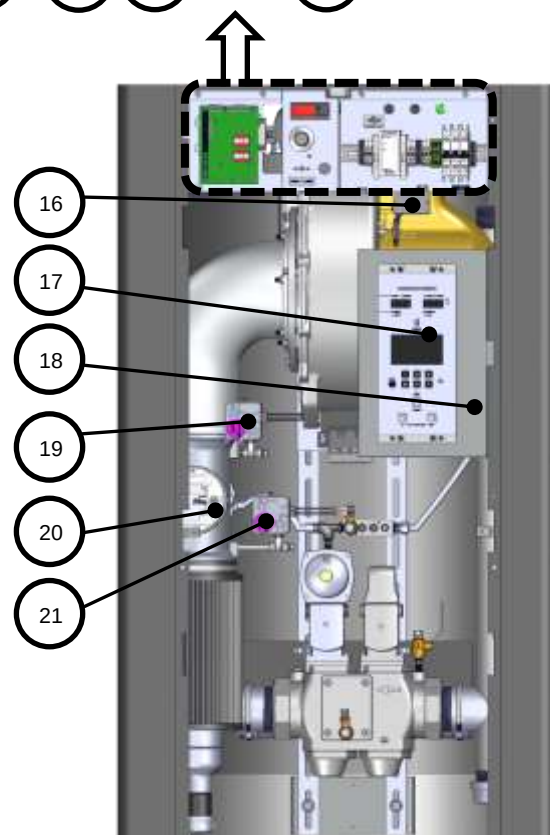
Enclosure Panels			
Item #	Qty	Part #	Description
1	1	37167	Top Panel: Front
2	1	37168	Top Panel: Rear
3	1	30181	Back Panel: Upper
4	1	30180	Back Panel: Center
5	1	39238	10" Air Inlet Adapter
6	1	30179	Back Panel: Lower
7	2	38047	14" Air Inlet Cover Plate
8	4	59133	Latch, Compression
9	1	24682	Front Panel Control Assy
10	2	30155	Side Panel, Front
11	1	30172	Side Panel, Left Rear
12	1	30171	Side Panel, Right Rear
13	1	25085-3	Front Panel Assembly



SECTION 5: BENCHMARK 4000 & 5000N PART LIST



Power Panel			
Item #	Qty	Part #	Description
1	1	24353-5	Power Panel 480V
2	1	69172	I/O Board
3	1	123966	Adjustable Temp Limit Switch
4	1	64088	Digital Limit Control Temperature
5	1	65213	Terminal Block, Yellow
6	2	65118	Fuse Terminal: DIN Mounted
7	1	65109	12V POWER SUPPLY
8	2	65120	Terminal Block, Black
9	2	65121	Terminal Block, White
10	3	65122	Terminal Ground Block: DIN Mounted
11	1	60039	3 Pole Circuit Breaker
12	3	69141	DIN Rail End Stop
13	1	65194	Terminal Block, Red
14	1	123552	Over Temp Switch, Manual Reset
Front View (Front panel removed)			
16	1	69102-TAB	Pump Relay
17	1	69344-3	Edge [i] Control Panel
18	1	33180	Controller Mounting Plate
19	1	60011-2	Blower Proof Switch
20	1	24311-11	BMK 4000 Air/Fuel Valve Assy.
21	1	60041-1	Blocked Inlet Switch Assy.



PARTIAL FRONT VIEW

AERCO International, Inc. Blauvelt, NY 10913	Benchmark 4000 & 5000N with Edge [i] Part List	08/06/2020
	BMK 4000 29465-TAB Rev C BMK 5000N 29468-TAB rev D	Sheet 4 of 5

Benchmark 4000 & 5000N Spare Parts Kit P/N 58187-TAB					
Kit Number	Description	Pressure Relief Valve Kit	Pressure/Temp Gauge	Condensate Trap Assy.	3" Ball Valve
58187-1	30 PSI KIT (207 kPa) (WATTS 740 Series)	92152-1	123675-5	24441	92006-9
58187-2	35 PSI KIT (241 kPa) (WATTS 740 Series)	92152-2	123675-5		
58187-3	50 PSI KIT (345 kPa) (WATTS 174A Series)	92152-3	123675-5		
58187-4	60 PSI KIT (414 kPa) (WATTS 174A Series)	92152-4	123675-6		
58187-5	75 PSI KIT (517 kPa) (WATTS 174A Series)	92152-5	123675-6		
58187-6	80 PSI KIT (552 kPa) (WATTS 174A Series)	92152-6	123675-6		
58187-7	100 PSI KIT (689 kPa) (WATTS 174A Series)	92152-7	123675-6		
58187-8	125 PSI KIT (862 kPa) (WATTS 174A Series)	92152-8	123675-6		
58187-9	150 PSI KIT (1034 kPa) (WATTS 174A Series)	92152-9	123675-7		

Benchmark 4000 Wiring Harnesses (not shown)			
Part #	Description	Part #	Description
63004-1	HARNESS: Stepdown Transformer, 120V/24V	63156	Power Cable 24V Sequencing Valve
63004-2	HARNESS: Stepdown Transformer, 480V Units	63263	HARNESS: Blower Signal
63083	HARNESS: O ₂ Sensor	63268	HARNESS: Shell
63090	HARNESS: Temp Limit Control Power	63269	HARNESS: Gas Train
63104	HARNESS: I/O Interlock	63224	HARNESS: Valve Proving System
63105	HARNESS: I/O Sensor/Comm	63262	HARNESS: Blower Power
63121	HARNESS: 12V Power Source	63264	HARNESS: Control Power
63122	CABLE: GROUND #12		

Other Accessories / Kits	
92084-6	Motorized Sequencing Valve (Optional, not shown)
27086-1 ❶	ACTUATOR: SSOV w/o P.O.C. SWITCH
64048 ❶	SSOV with Pressure Regulator

❶ Replacement Kit and/or Catalog number

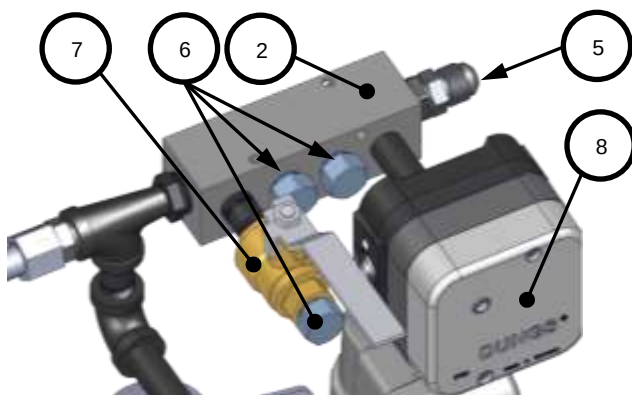
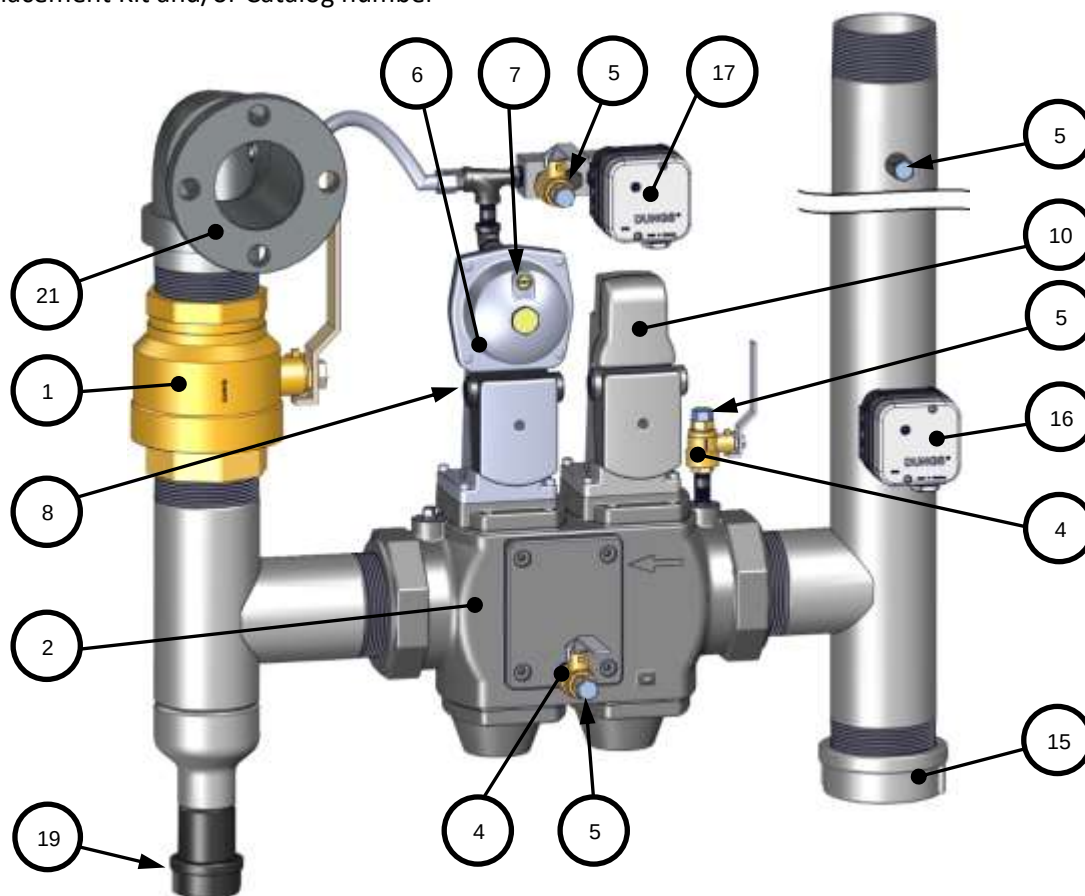
AERCO International, Inc. Blauvelt, NY 10913	Benchmark 4000 & 5000N with Edge [i] Part List	08/06/2020
	BMK 4000 29465-TAB Rev C BMK 5000N 29468-TAB rev D	Sheet 5 of 5

Benchmark 4000 FM 3" Gas Train – NATURAL GAS

P/N 22373-1 rev D – 2/3/2021

Item	Qty.	P/N	Description	Item	Qty.	P/N	Description
1	1	92006-9	Valve: Ball Full Port 3" NPT	10	1	27086-2 ①	Actuator: SSOV
2	1	92146	Valve SSOV: Double Body: 3" NPT	11	1	97087-12	Flex Hose, 12"
4	2	92143	1/4" Ball Valve: WATTS	15	1	93634	Cap, 3" NPT
5	3	9-22	Pipe Plug: 1/4" NPT	16	1	60020	Gas Pressure Switch
6	1	64048 ①	Actuator: SSOV w/ Regulator	17	1	41041-1	Gas Manifold Assy (See below)
7	1	99015	Damping Orifice: SSOV	19	1	93471	Cap, 1 1/2" NPT
8	4	12951-2	Bushing: Control Box	21	1	22379	Elbow, Flanged Assy.
9	1	59228-1	Male Adapter, 1/4" NPT (not shown)				

① Replacement Kit and/or Catalog number



Item 17: 41041-1, Gas Manifold Assembly

2	1	41040	Gas Manifold
6	3	9-22	Pipe Plug: 1/4" NPT
5	2	59228-1	Male Adapter, 1/4" NPT
7	1	92143	1/4" Ball Valve
8	1	60032-1 ①	Gas Pressure Switch, Dungs, 1-20"

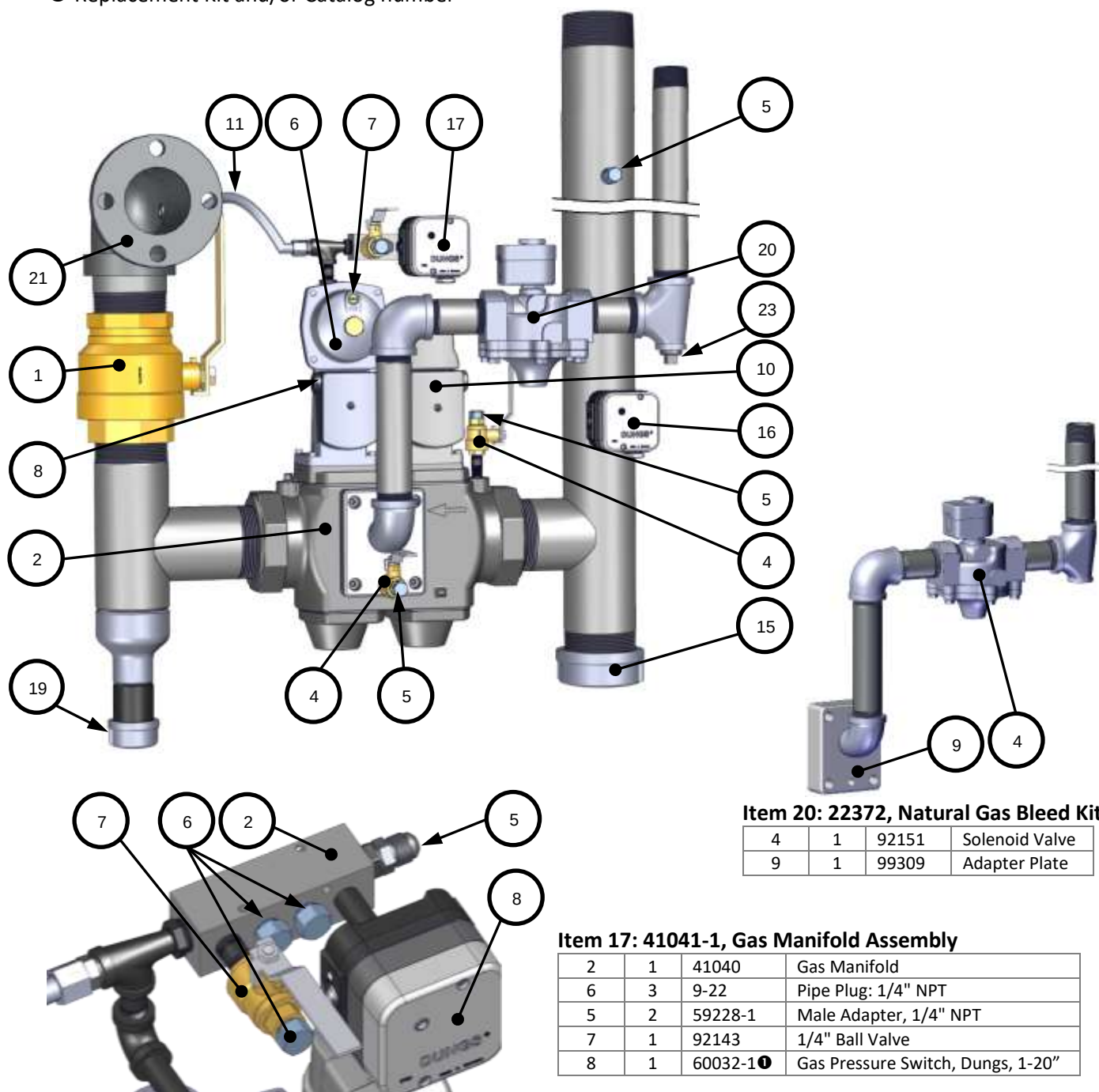
SECTION 5: BENCHMARK 4000 & 5000N PART LIST

Benchmark 4000 Double Block & Bleed 3" Gas Train – NATURAL GAS

P/N 22373-3 rev D – 2/3/2021

Item	Qty.	P/N	Description	Item	Qty.	P/N	Description
1	1	92006-9	Valve: Ball Full Port 3" NPT	11	1	97087-12	Flex Hose, 12"
2	1	92146	Valve SSOV: Double Body: 3" NPT	15	1	93634	Cap, 3" NPT
4	2	92143	1/4" Ball Valve: WATTS	16	1	60020	Gas Pressure Switch
5	3	9-22	Pipe Plug: 1/4" NPT	17	1	41041-1	Gas Manifold Assy (See below)
6	1	64048 ❶	Actuator: SSOV w/ Regulator	19	1	93471	Cap, 1 1/2" NPT
7	1	99015	Damping Orifice: SSOV	20	1	22372	Natural Gas Bleed Kit (See below)
8	4	12951-2	Bushing: Control Box	21	1	22379	Elbow, Flanged Assy.
9	1	59228-1	Male Adapter, 1/4" NPT (not shown)	23	1	93700	Solid Hex Plug, 3/4" NPT
10	1	27086-2 ❶	Actuator: SSOV				

❶ Replacement Kit and/or Catalog number



Item 20: 22372, Natural Gas Bleed Kit

4	1	92151	Solenoid Valve
9	1	99309	Adapter Plate

Item 17: 41041-1, Gas Manifold Assembly

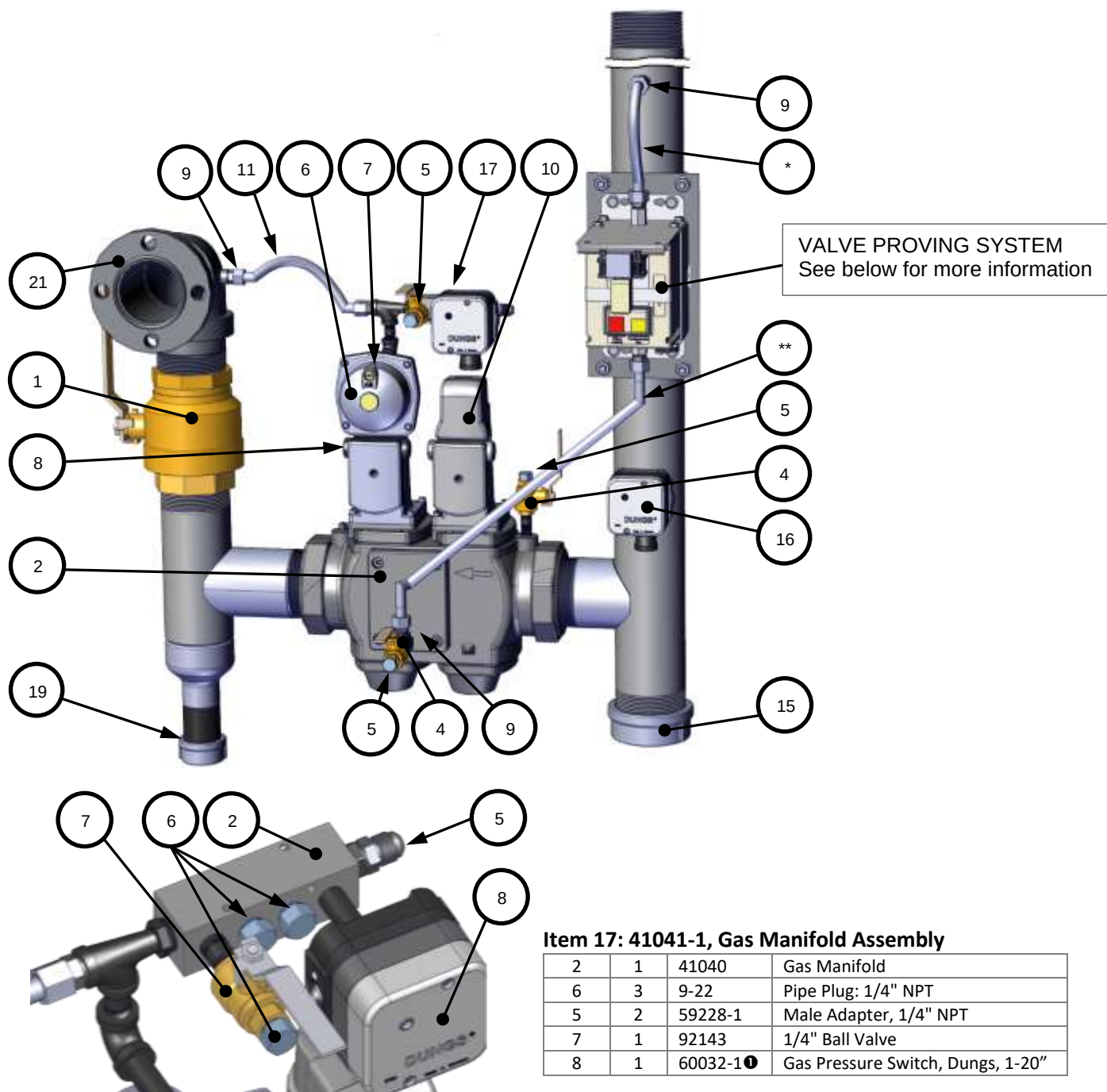
2	1	41040	Gas Manifold
6	3	9-22	Pipe Plug: 1/4" NPT
5	2	59228-1	Male Adapter, 1/4" NPT
7	1	92143	1/4" Ball Valve
8	1	60032-1 ❶	Gas Pressure Switch, Dungs, 1-20"

SECTION 5: BENCHMARK 4000 & 5000N PART LIST

Benchmark 4000 3" Gas Train – NATURAL GAS with Valve Proving System (VPS) P/N 22373-4 rev D – 2/3/2021

Item	Qty.	P/N	Description	Item	Qty.	P/N	Description
1	1	92006-9	Valve: Ball Full Port 3" NPT	11	1	97087-12	Flex Hose, 12"
2	1	92146	Valve SSOV: Double Body: 3" NPT	15	1	93634	Cap, 3" NPT
4	2	92143	1/4" Ball Valve: WATTS	16	1	60020	Gas Pressure Switch
5	2	9-22	Pipe Plug: 1/4" NPT	17	1	41041-1	Gas Manifold Assy (See below)
6	1	64048 ❶	Actuator: SSOV w/ Regulator	19	1	93471	Cap, 1 1/2" NPT
7	1	99015	Damping Orifice: SSOV	21	1	22379	Elbow, Flanged Assy.
8	4	12951-2	Bushing: Control Box	*	1	97087-12	Flex Tube, 12"
9	4	59228-1	Male Adapter, 3/8" O.D. Flair x 1/4"	**	1	97087-26	Flex Tube, 26"
10	1	27086-2 ❶	Actuator: SSOV				

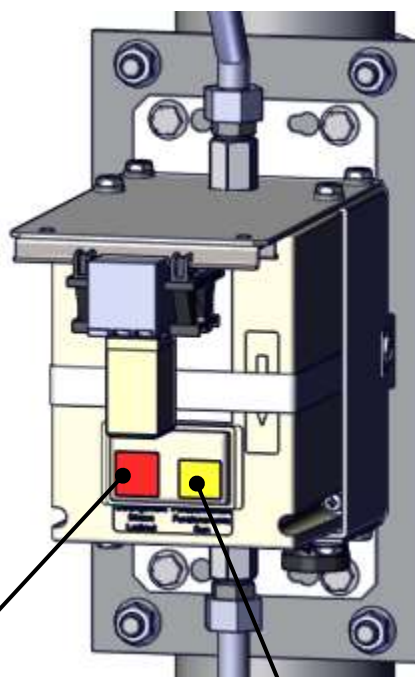
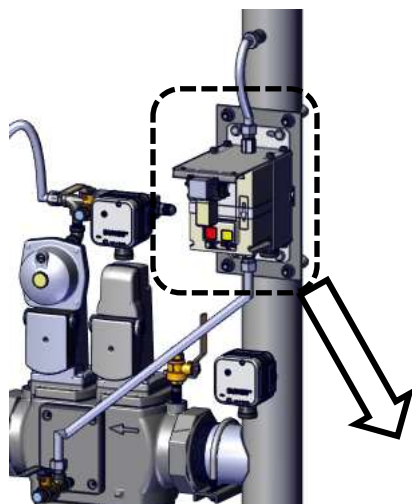
❶ Replacement Kit and/or Catalog number



Valve Proving System (VPS)

One Benchmark 4000 gas train (22373-4) and one 5000N and gas train (22358-4) include the Valve Proving System. This device monitors the gas pressure on both sides of the Actuator. If the pressure difference falls below a fixed value, indicating the failure of the Actuator or leakage in the gas line, it triggers the shutdown of the unit. When this occurs, a **SSOV SWITCH OPEN** message appears in the Edge Controller display.

Once the problem has been diagnosed and corrected, the Valve Proving device must be reset. This is done by pressing the red **RESET** switch before the unit is restarted; the Edge Controller must also be reset.



RED ALARM LIGHT & RESET SWITCH

- **OFF** during normal operation
- **ON** indicates a leak or Actuator failure

YELLOW RUN LIGHT

- **OFF** during normal operation
- **ON** during valve proving operation
- **ON** when the unit is in standby

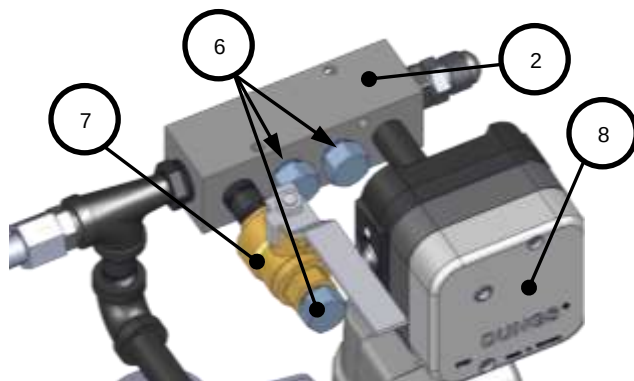
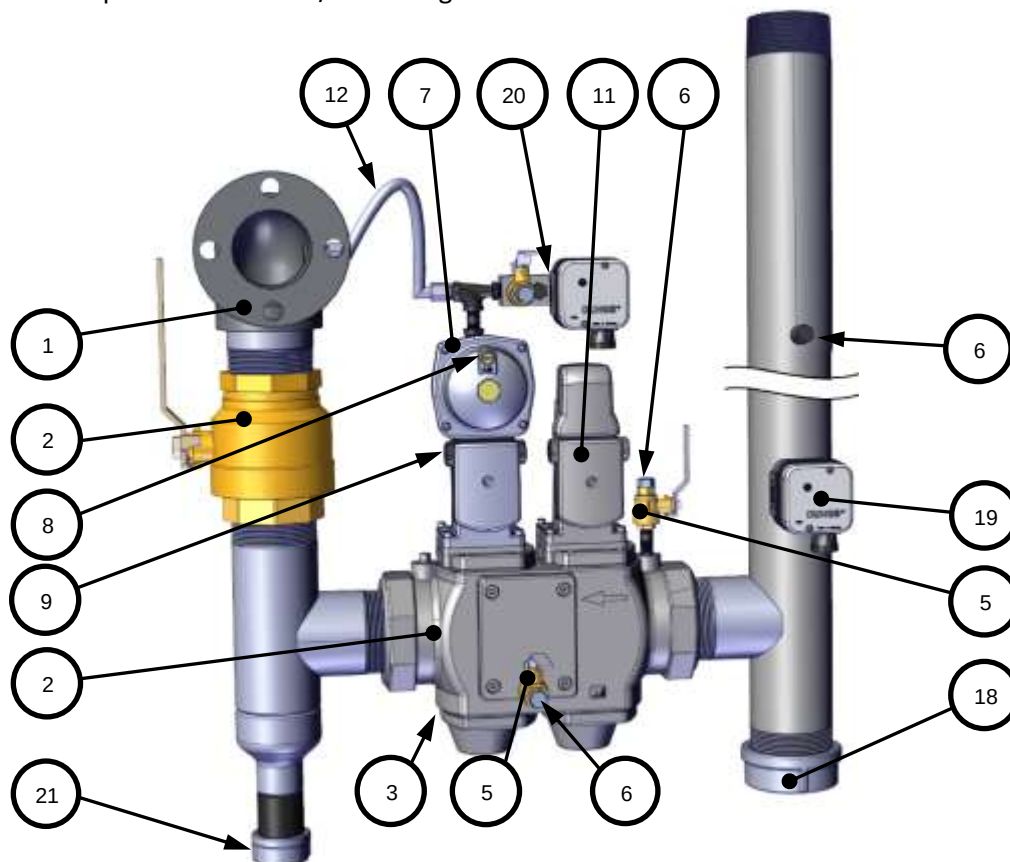
SECTION 5: BENCHMARK 4000 & 5000N PART LIST

Benchmark 5000N FM 3" Gas Train – NATURAL GAS

P/N 22358-1 rev C – 2/3/2021

Item	Qty.	P/N	Description	Item	Qty.	P/N	Description
1	1	22326	FLANGE/ELBOW WELDED ASSY.	11	1	27086-2 ❶	ACTUATOR: SSOV
2	1	92006-9	VALVE: BALL FULL PORT 3" NPT	12	1	97087-26	Flex Hose, 26"
3	1	92146	VALVE SSOV: DOUBLE BODY: 3" NPT	18	1	93634	3" NPT CAP
5	2	92143	1/4" BALL VALVE: WATTS	19	1	60020	SWITCH: GAS PRESSURE
6	3	9-22	PIPE PLUG: 1/4" NPT: STEEL	20	1	41041-1	GAS MANIFOLD ASSY.
7	1	64048 ❶	ACTUATOR: SSOV W/ REGULATOR	21	1	93471	CAP: 1-1/2" NPT
8	1	99015	DAMPING ORIFICE: SSOV				

❶ Replacement Kit and/or Catalog number



Item 20: 41041-1, Gas Manifold Assembly

2	1	41040	Gas Manifold
6	3	9-22	Pipe Plug: 1/4" NPT
7	1	92143	1/4" Ball Valve
8	1	60032-1 ❶	Gas Pressure Switch, Dungs, 1-20"

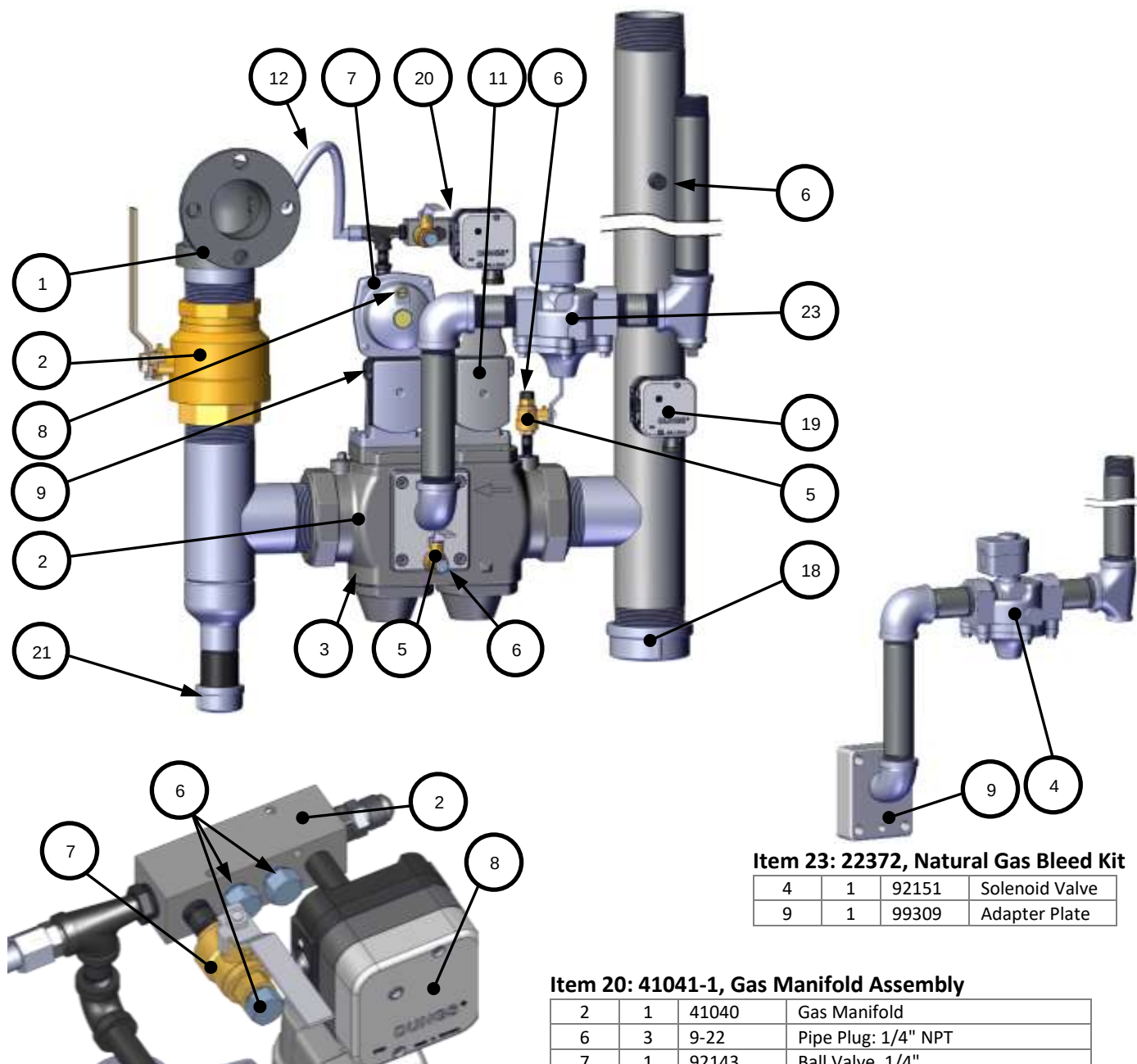
SECTION 5: BENCHMARK 4000 & 5000N PART LIST

Benchmark 5000N Double Block & Bleed 3" Gas Train – NATURAL GAS

P/N 22358-3 rev C – 2/3/2021

Item	Qty.	P/N	Description	Item	Qty.	P/N	Description
1	1	22326	FLANGE/ELBOW WELDED ASSY.	11	1	27086-2 ❶	ACTUATOR: SSOV
2	1	92006-9	VALVE: BALL FULL PORT 3" NPT	12	1	97087-26	Flex Hose, 26"
3	1	92146	VALVE SSOV: DOUBLE BODY: 3" NPT	18	1	93634	3" NPT CAP
5	2	92143	1/4" BALL VALVE: WATTS	19	1	60020	SWITCH: GAS PRESSURE
6	3	9-22	PIPE PLUG: 1/4" NPT: STEEL	20	1	41041-1	GAS MANIFOLD ASSY.
7	1	64048 ❶	ACTUATOR: SSOV W/ REGULATOR	21	1	93471	CAP: 1-1/2" NPT
8	1	99015	DAMPING ORIFICE: SSOV	23	1	22372	Natural Gas Bleed Kit (See below)
9	4	12951-2	BUSHING: CONTROL BOX				

❶ Replacement Kit and/or Catalog number



Item 23: 22372, Natural Gas Bleed Kit

4	1	92151	Solenoid Valve
9	1	99309	Adapter Plate

Item 20: 41041-1, Gas Manifold Assembly

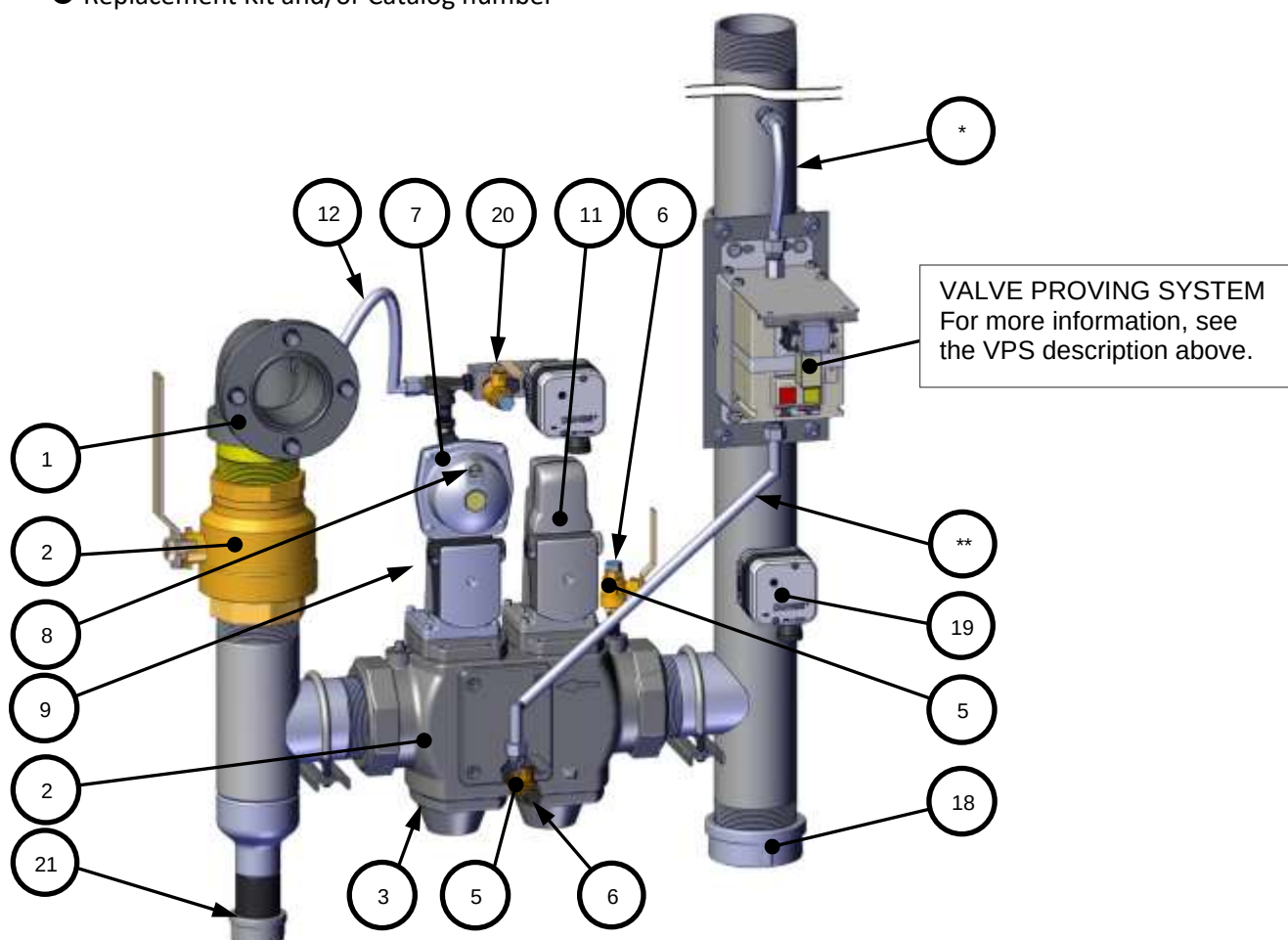
2	1	41040	Gas Manifold
6	3	9-22	Pipe Plug: 1/4" NPT
7	1	92143	Ball Valve, 1/4"
8	1	60032-1 ❶	Gas Pressure Switch, Dungs, 1-20"

SECTION 5: BENCHMARK 4000 & 5000N PART LIST

Benchmark 5000N 3" Gas Train – NATURAL GAS with Valve Proving System (VPS) P/N 22358-4 rev C – 2/3/2021

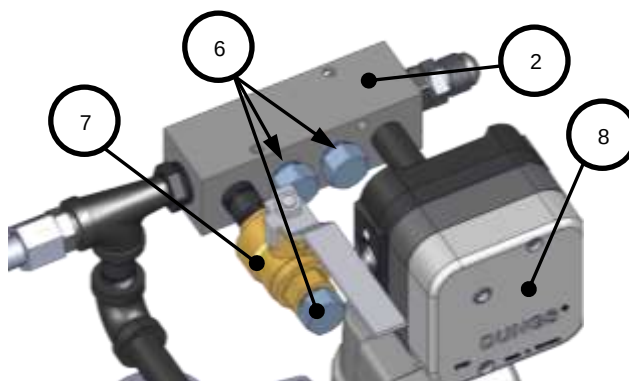
Item	Qty.	P/N	Description	Item	Qty.	P/N	Description
1	1	22326	FLANGE/ELBOW WELDED ASSY.	11	1	27086-2 ❶	ACTUATOR: SSOV
2	1	92006-9	VALVE: BALL FULL PORT 3" NPT	12	1	97087-26	Flex Hose, 26"
3	1	92146	VALVE SSOV: DOUBLE BODY: 3" NPT	18	1	93634	3" NPT CAP
5	2	92143	1/4" BALL VALVE: WATTS	19	1	60020	SWITCH: GAS PRESSURE
6	2	9-22	PIPE PLUG: 1/4" NPT: STEEL	20	1	41041-1	GAS MANIFOLD ASSY.
7	1	64048 ❶	ACTUATOR: SSOV W/ REGULATOR	21	1	93471	CAP: 1-1/2" NPT
8	1	99015	DAMPING ORIFICE: SSOV	*	1	97087-12	Flex Tube, 12"
9	4	12951-2	BUSHING: CONTROL BOX	**	1	97087-26	Flex Tube, 26"

❶ Replacement Kit and/or Catalog number



Item 20: 41041-1, Gas Manifold Assembly

2	1	41040	Gas Manifold
6	3	9-22	Pipe Plug: 1/4" NPT
7	1	92143	1/4" Ball Valve
8	1	60032 -1❶	Gas Pressure Switch, Dungs, 1-20"

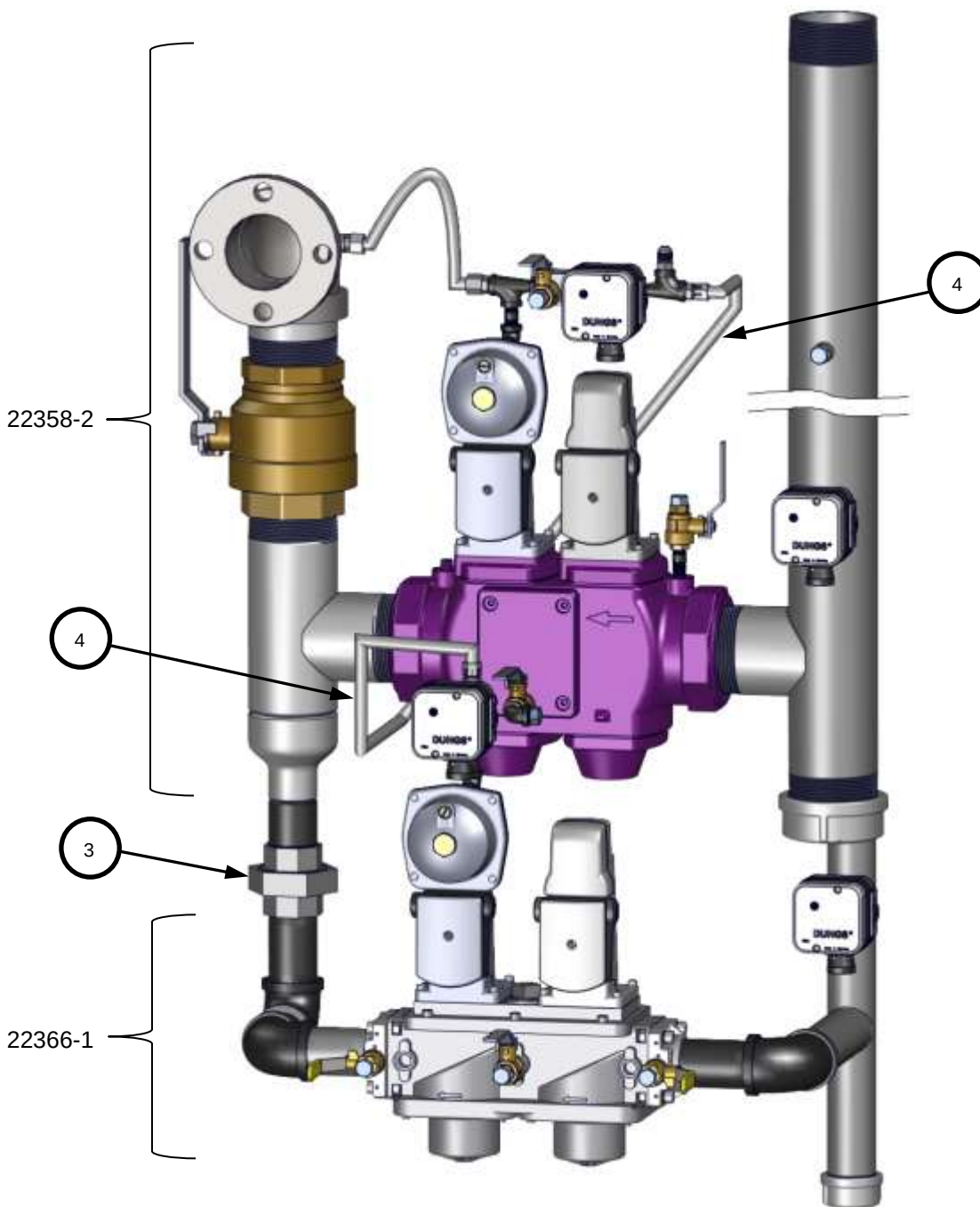


SECTION 5: BENCHMARK 4000 & 5000N PART LIST

Benchmark 4000/5000N Gas Train – DUEL FUEL

P/N 22367 rev A – 8/12/2020

Item	Qty.	P/N	Description	Item	Qty.	P/N	Description
1	1	22358-2	Natural Gas Gas Train	3	1	93310	Union
2	1	22366-1	Propane Gas Train	12	1	97087-26	Flex Hose, 26"



Benchmark 5000N 1-1/2" Gas Train – PROPANE

P/N 22366-1 rev A – 8/12/2020 – component of Dual Fuel gas train 22367

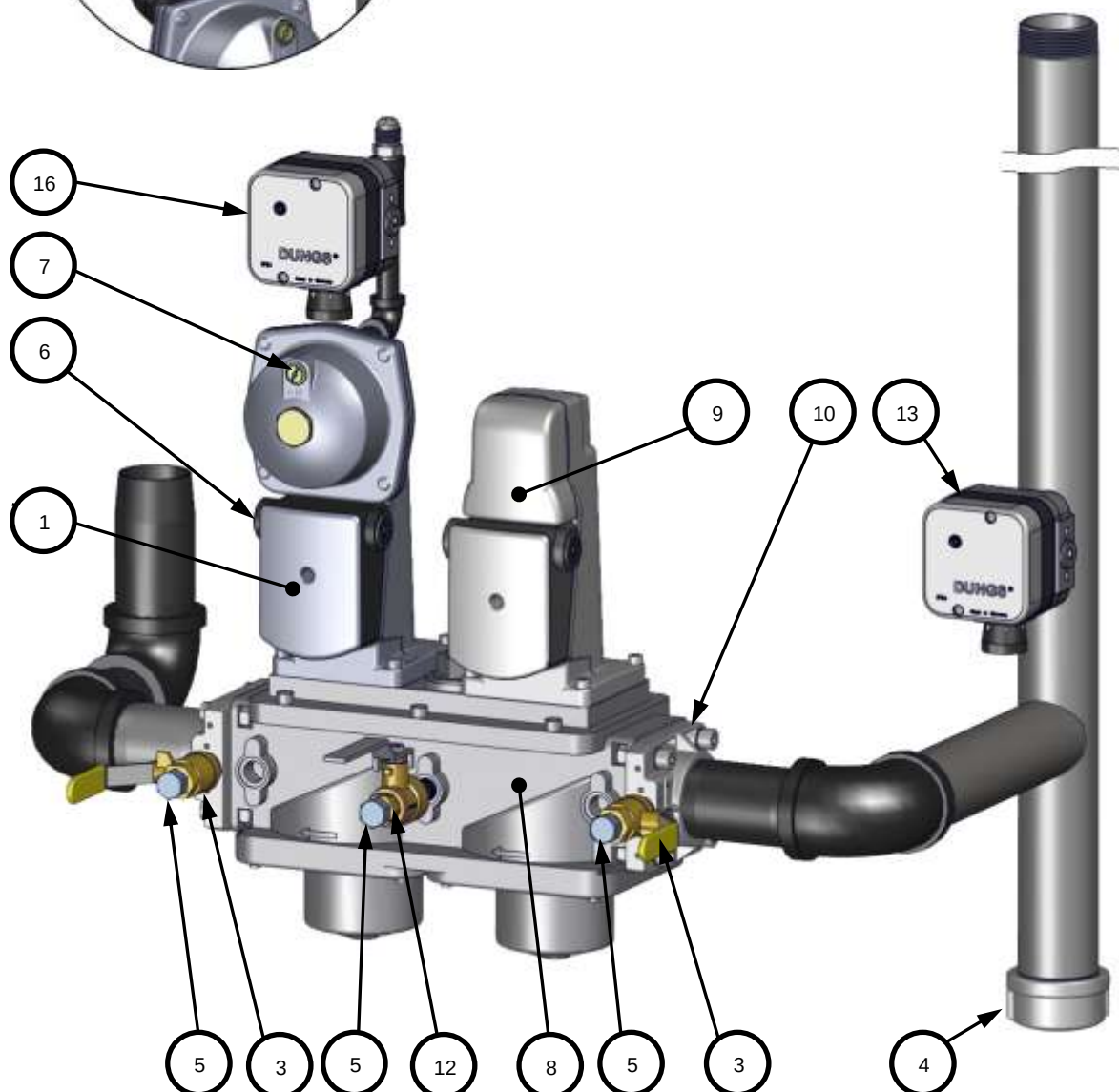
Item	Qty.	P/N	Description	Item	Qty.	P/N	Description
1	1	64048 ❶	ACTUATOR: SSOV W/ REGULATOR	8	1	124137	VALVE SSOV: DOUBLE BODY: 1-1/2" NPT
3	2	92077	Ball Valve, 1/4" NPT MXF Brass	9	1	27086-1 ❶	Actuator: SSOV w/o P.O.C.
4	1	93471	CAP: 1-1/2" NPT	10	2	95029	Flange: SSOV 1-1/2"
5	3	9-22	PIPE PLUG: 1/4" NPT: STEEL	12	1	92143	1/4" BALL VALVE, WATTS
6	4	12951-2	BUSHING: CONTROL BOX	13	1	60020	SWITCH: GAS PRESSURE
7	1	99015	DAMPING ORIFICE: SSOV	16	1	41041-3	GAS MANIFOLD ASSY. (see below)

❶ Replacement Kit and/or Catalog number



Item 16: 41041-3 GAS MANIFOLD ASSY.

Item	Qty.	P/N	Description
5	1	59288-1	Male Adapter, 1/8 OD
8	1	60032	Switch: Gas Pressure Gas Manifold Assy.

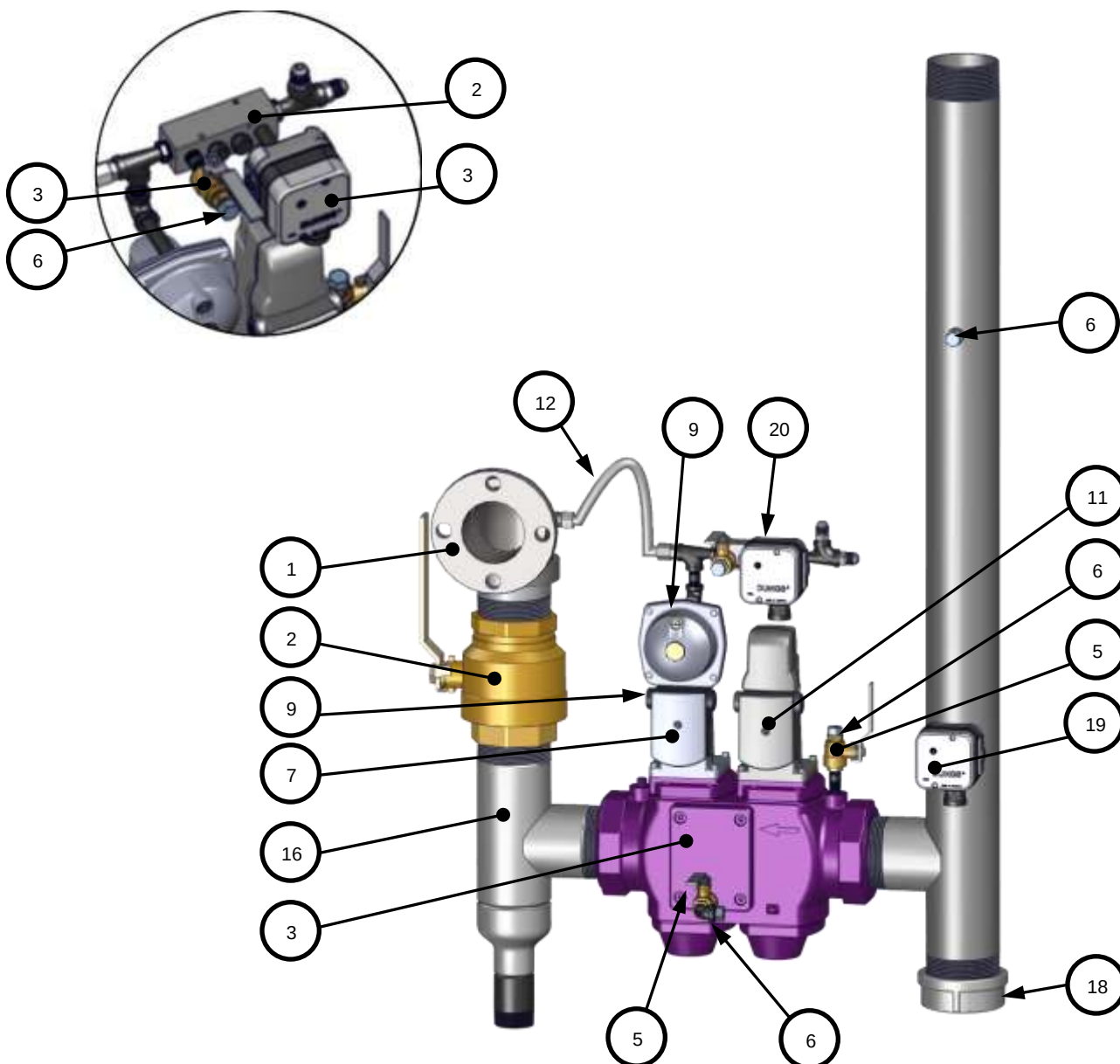


A WATTS Brand

P/N 22358-2 rev C – 2/3/2021 – component of Dual Fuel gas trains 22367 & 22368

1 Replacement Kit and/or Catalog number

Item	Qty.	P/N	Description
2	1	41041	Gas Manifold
6	3	9-22	Pipe Plug
7	1	92143	1/4" Ball Valve
8	1	60032	Switch: Gas Pressure Gas Manifold Assy.

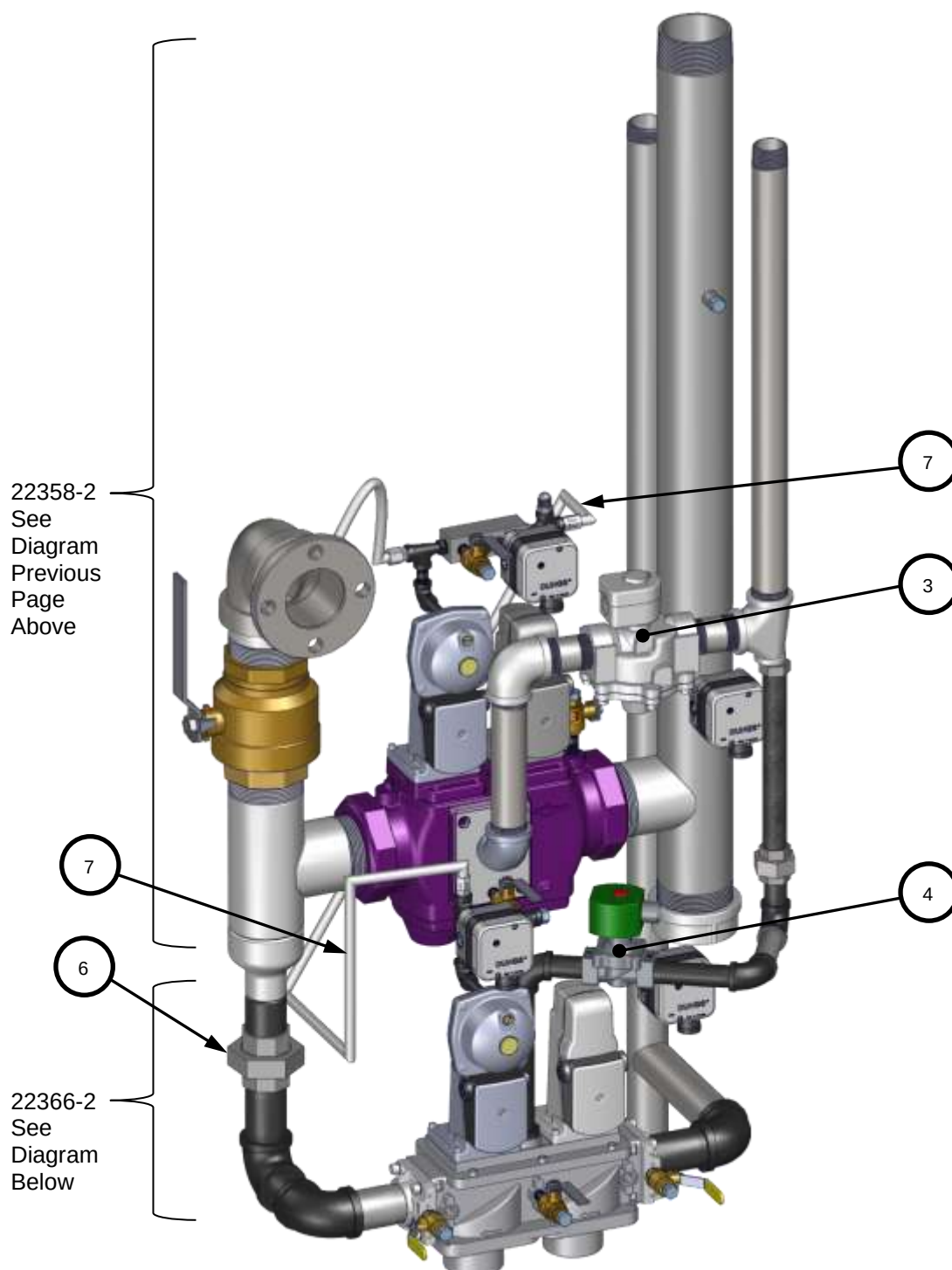


SECTION 5: BENCHMARK 4000 & 5000N PART LIST

Benchmark 4000/5000N Gas Train – DUEL FUEL - DBB

P/N 22368 rev A – 8/12/2020

Item	Qty.	P/N	Description	Item	Qty.	P/N	Description
1	1	22358-2	Natural Gas Gas Train	4	1	22371	Propane Bleed Kit
2	1	22366-2	Propane Gas Train	6	1	93310	Union
3	1	22372	Nat. Gas Bleed Kit	7	1	97087-26	Flex Hose, 26"



SECTION 5: BENCHMARK 4000 & 5000N PART LIST

Benchmark 5000N Gas Train – PROPANE

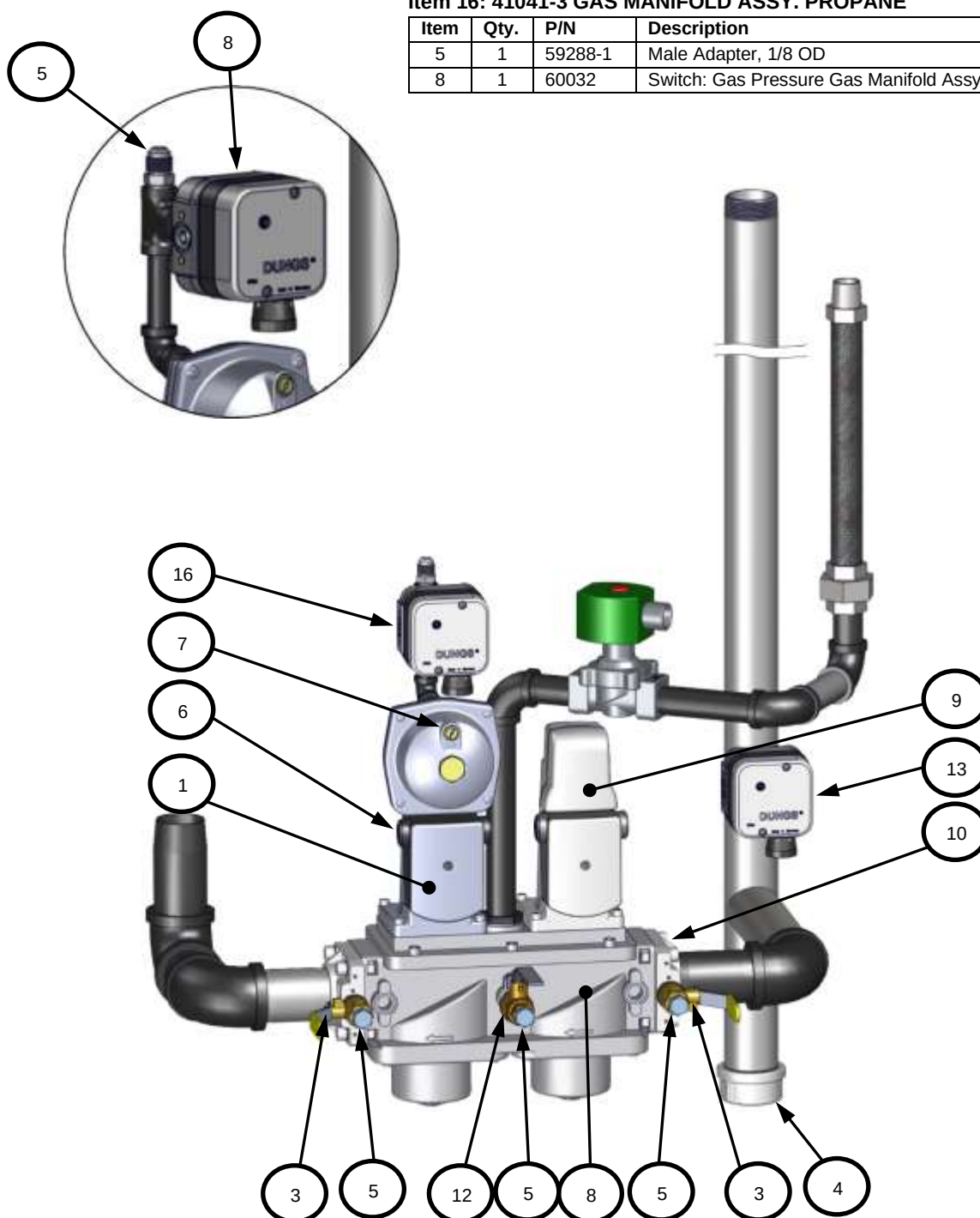
P/N 22366-2 rev B – 2/12/2021 – component of Dual Fuel gas train 22368

Item	Qty.	P/N	Description	Item	Qty.	P/N	Description
1	1	64048 ❶	Actuator: SSOV W/ Regulator	8	1	124137	Valve SSOV: Double Body: 1-1/2" NPT
3	2	92077	Ball Valve, 1/4" NPT MXF Brass	9	1	27086-1 ❶	Actuator: SSOV W/O P.O.C.
4	1	93471	Cap: 1-1/2" NPT	10	2	95029	Flange: SSOV 1-1/2"
5	3	9-22	Pipe Plug: 1/4" NPT: Steel	12	1	92143	1/4" Ball Valve, Watts
6	4	12951-2	Bushing: Control Box	13	1	60020	Switch: Gas Pressure
7	1	99015	Damping Orifice: SSOV	16	1	41041-3	Gas Manifold Assy. Propane (see below)

❶ Replacement Kit and/or Catalog number

Item 16: 41041-3 GAS MANIFOLD ASSY. PROPANE

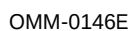
Item	Qty.	P/N	Description
5	1	59288-1	Male Adapter, 1/8 OD
8	1	60032	Switch: Gas Pressure Gas Manifold Assy.



A WATTS Brand

480V - P/N 26017-1, 208V - P/N 26017-5 – rev D, 8/18/2020

1 Replacement Kit and/or Catalog number



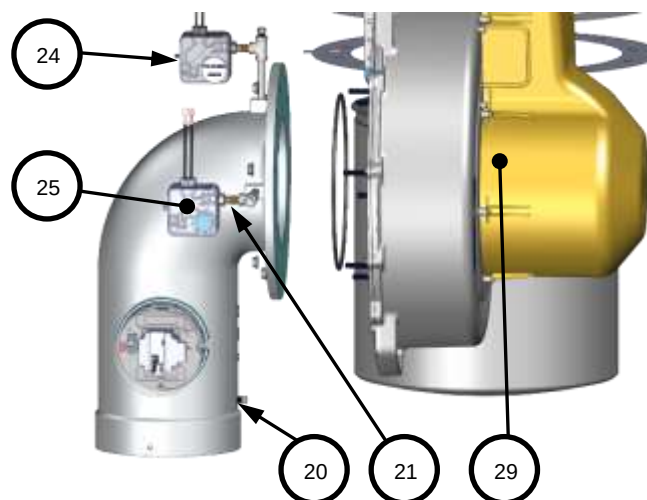
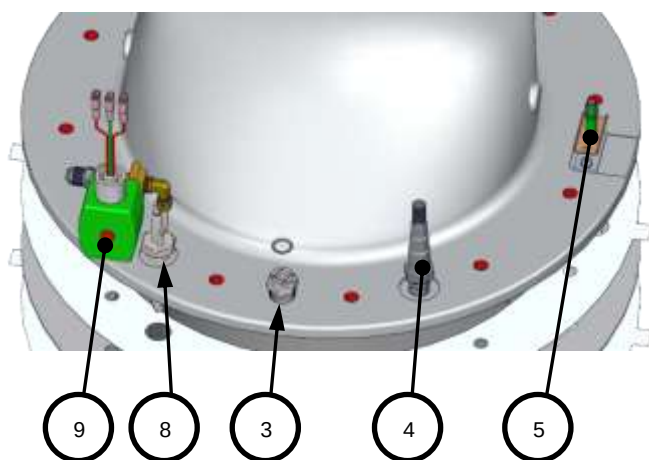
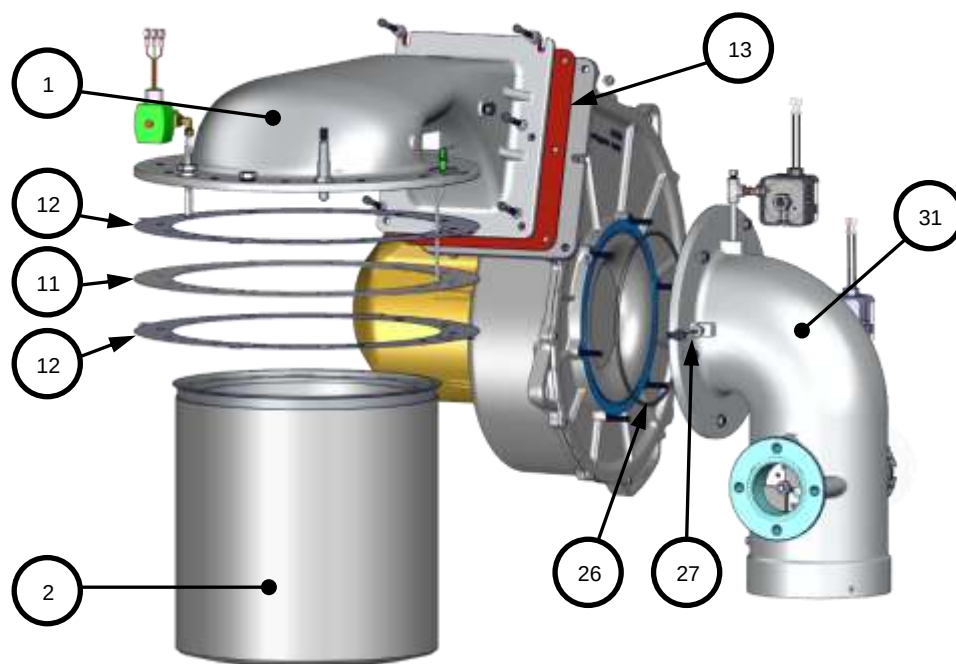
SECTION 5: BENCHMARK 4000 & 5000N PART LIST

Burner Assembly BMK 5000N P/N 26018-TAB rev D, 8/27/2020

Item	Qty	Part #	Description	Item	Qty	Part #	Description
1	1	43123	Blower Plenum	20	3	9-21	Plug: Hex Hd 1/8 NPT
2	1	46060	Burner	21	2	93367	Snubber: Fan Proving Switch
3	1	59104	Observation Port	24	1	60041-2	Blocked Inlet Switch Assy
4	1	61026	O ₂ Sensor	25	1	60011-2	Blower Proof Switch Assy
5	1	24356-1 ❶	Flame Rod and Gasket	26	1	88024	O-Ring: BMK 4000/5000N Blower
8	1	58023 ❶	Ignitor-Injector	27	1	123449	Temperature Sensor
9	1	24277	Staged Ignition Assy	29	1	58195-1 ❶	Blower FRU Kit, BMK 4000-5000N 480V
11	1	81211	Burner Gasket			58195-2 ❶	Blower FRU Kit, BMK 4000-5000N: 208V
12	2	81213	Burner Release Gasket	31	1	24696-1 ❶	BMK 5000N A/F Valve Assy, Edge [i]
13	1	81215	Blower Plenum Gasket			24696-2 ❶	BMK 5000N A/F Valve Assy, Edge [i] Dual Fuel

❶ Replacement Kit and/or Catalog number

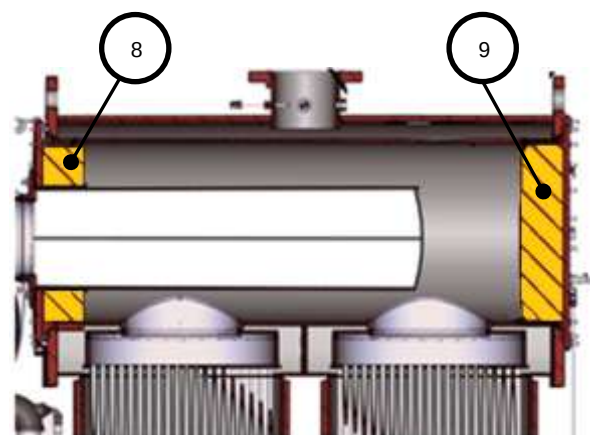
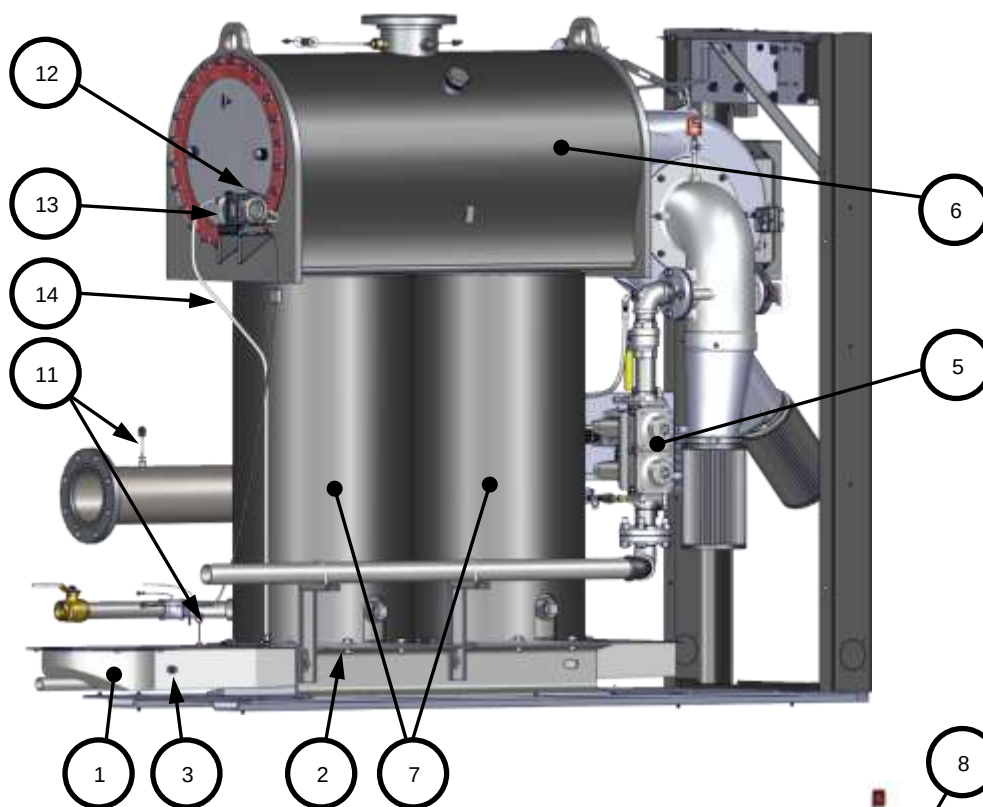
Assy #	Description
26018-1	480V
26018-2	480V DF
26018-5	208V
26018-6	208V DF



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SECTION 6: BENCHMARK 5000 & 6000 PART LIST

Item #	Qty	Part #	Description	Item #	Qty	Part #	Description
EXHAUST MANIFOLD				HEAT EXCHANGER ASSEMBLY			
1	1	39131	Exhaust Manifold	6	1	80084	Insulation: Upper
2	2	84042	Exhaust Manifold Seal	7	2	80101	Insulation, Lower
4	2	9-22	Pipe Plug - Exhaust Manifold	8	1	83031	Front Refractory
GAS TRAIN ASSEMBLIES (See full diagram below)				9	1	83032	Rear Refractory
5	1	22330-1	FM Gas Train	11	2	123449	Temperature Sensor
		22330-2	FM Gas Train w/ VPS	12	1	61026	O ₂ Sensor
		22328	Gas Train, Dual Fuel	13	1	24508-1	Air Eductor Assy.
		22308-1	FM Gas Train LGP 3" NPT	14	1	91119	Air Eductor, Discharge Tube
		22308-2	FM Gas Train LGP 3" NPT w/ VPS				



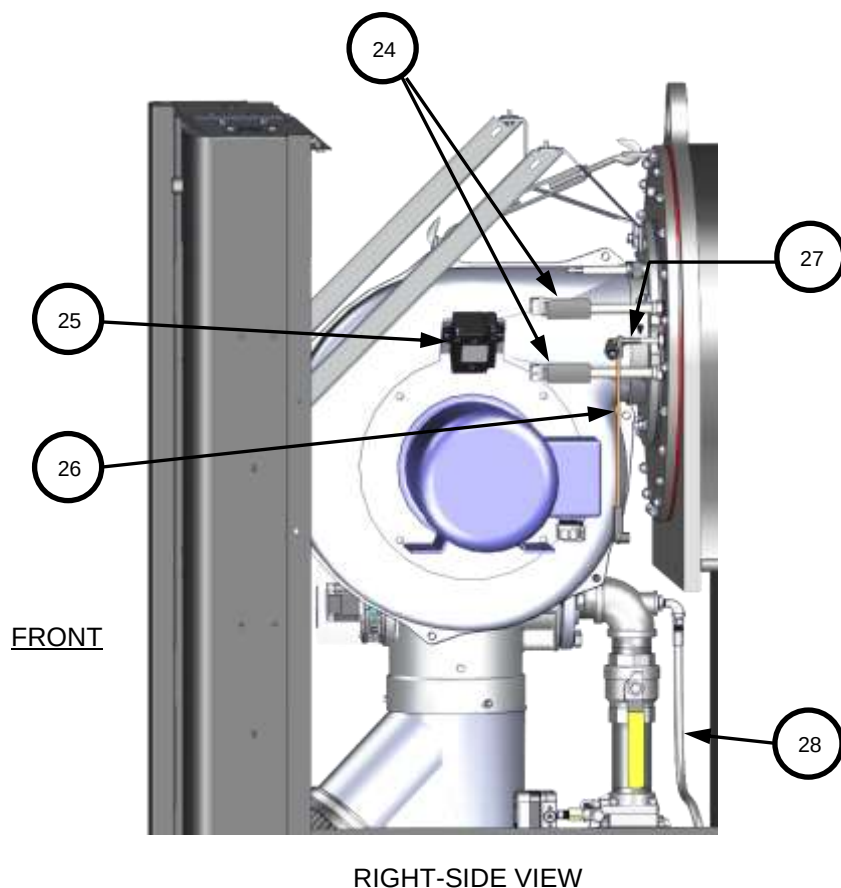
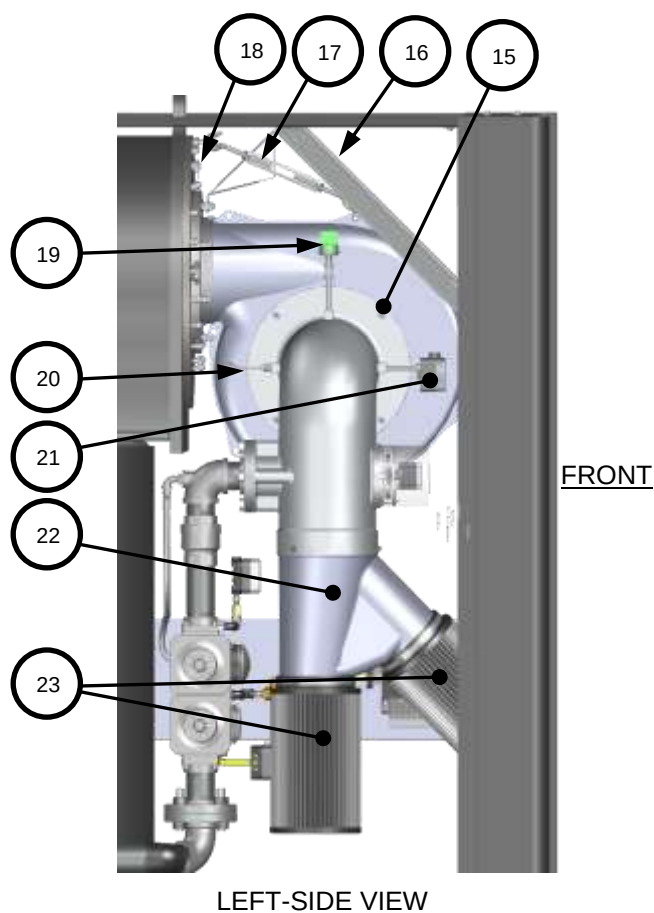
FRONT CROSS-SECTION REAR

AERCO International, Inc. Blauvelt, NY 10913	Benchmark 5000 & 6000 with Edge [i] Part List	9/9/2020
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SECTION 6: BENCHMARK 5000 & 6000 PART LIST

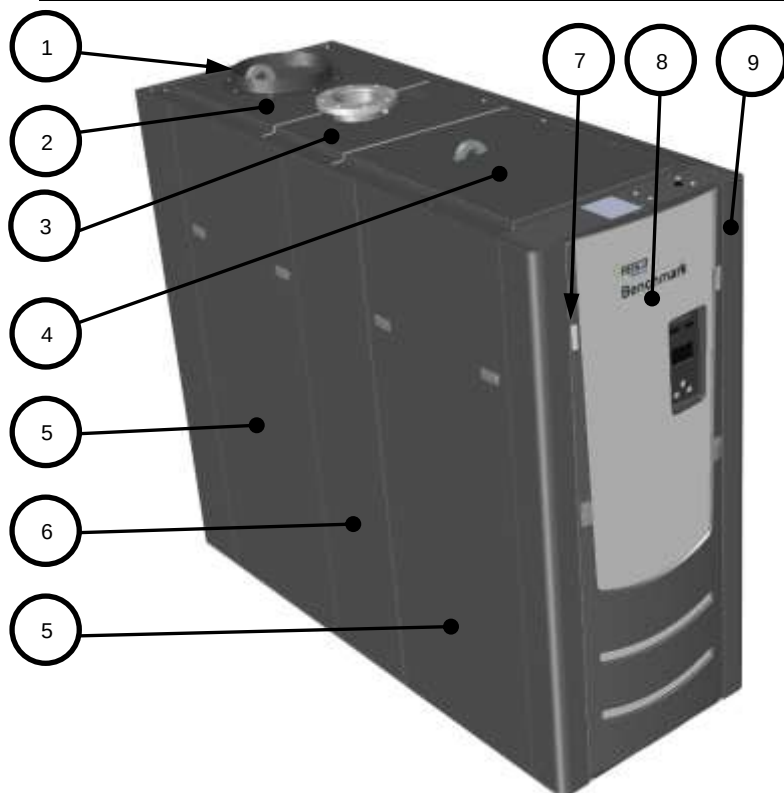
Item #	Qty	Part #	Description
15	1	24328-TAB	Burner-Blower Assy.
16	2	33148	Brace: Diagonal
17	1	59198	Turnbuckle
18	2	61032	Surface Temp Sensor
19	1	61002-5	Blocked Inlet Switch -4.5" W.C.
20	1	123449	Temperature Sensor
21	1	60011-4	Blower Proof Switch Assy.
22	1	96017	Wye-Duct: 8" X 6" X 6"
23	2	88014	Air Filter, 6" x 12"
24	2	61031	Flame Detector
25	1	65085	Transformer, Gas Ignitor
26	1	65220	Cable: H.V. Ignition
27	1	58023 ❶	Ignitor-Injector
28	1	97087-36 97087-26	Flex Gas Tube 36" – Single-Fuel Flex Gas Tube 26" – Dual-Fuel
29	1	65147	Vent Fan – DUAL FUEL only (Not Shown)

❶ Replacement Kit and/or Catalog number

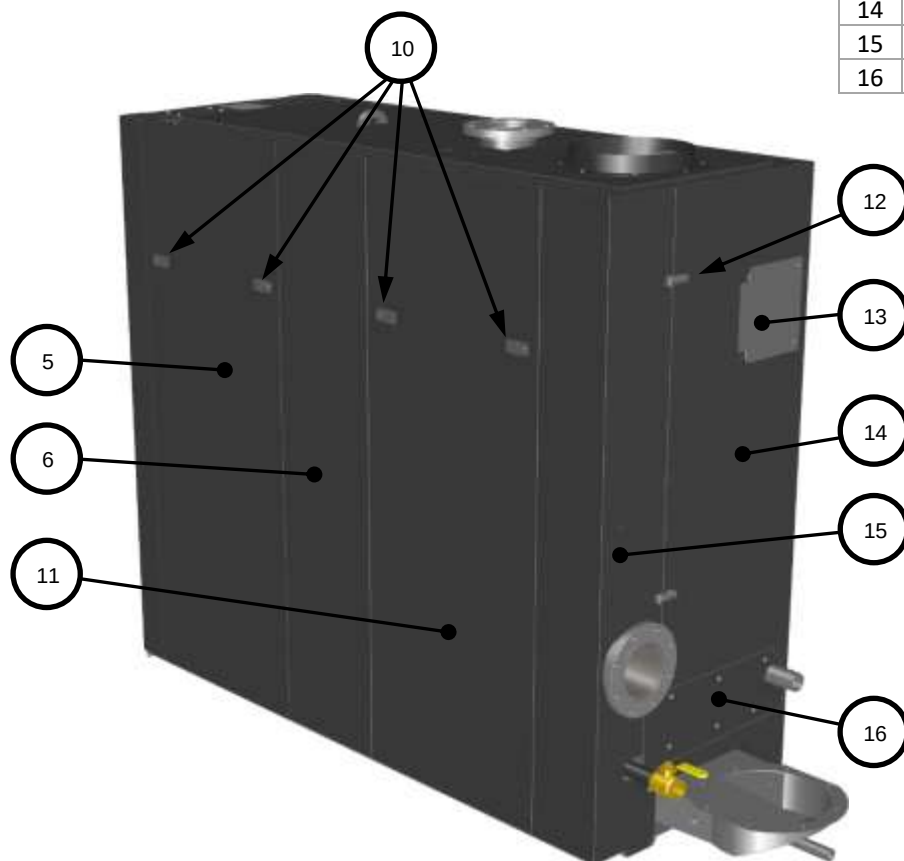


AERCO International, Inc. Blauvelt, NY 10913	Benchmark 5000 & 6000 with Edge [i] Part List	9/9/2020
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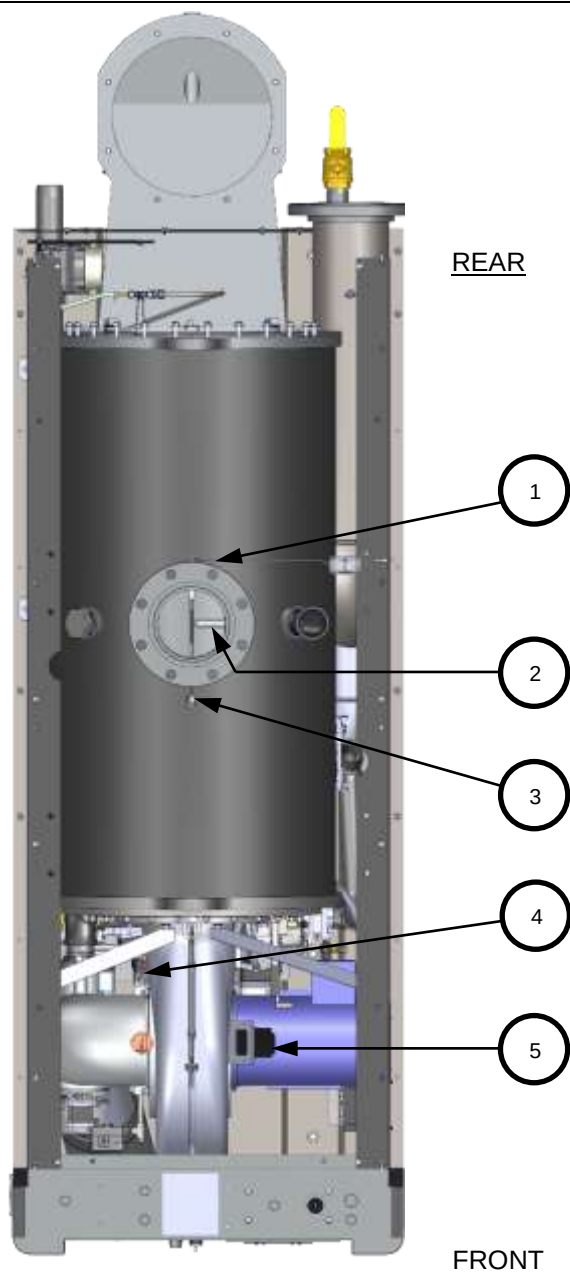
SECTION 6: BENCHMARK 5000 & 6000 PART LIST



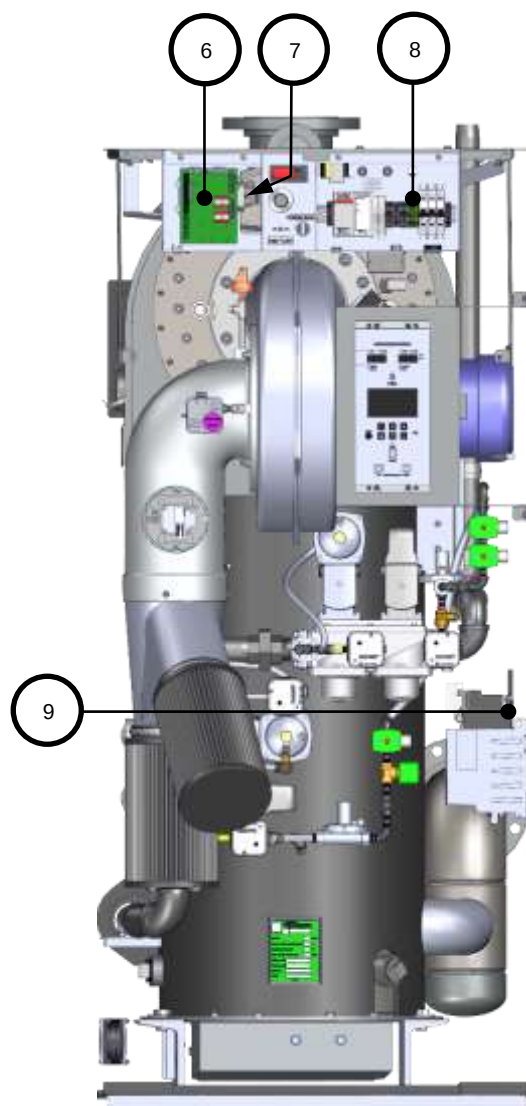
ENCLOSURE PANELS			
Item	Qty	Part #	Description
1	1	39216	14" Air Inlet Adapter
2	1	30164	Top Panel: Rear
3	1	30163	Top Panel: Middle
4	1	30162	Top Panel: Front
5	3	30155	Side Panel
6	2	35049	Side Pillar
7	2	59179	Handel, Concealed Pull
8	1	25085-3	Front Panel Assembly
9	1	25088	Front Frame Assembly
10	8	59133	Latch, Compression
11	1	30178	Side Panel: Right-Rear
12	2	50010	Latch, Draw
13	1	38042	O2 Cover Plate
14	1	30177	Back Panel: Left
15	1	30176	Back Panel: Right
16	1	36102	Cover Plate



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OVERHEAD VIEW



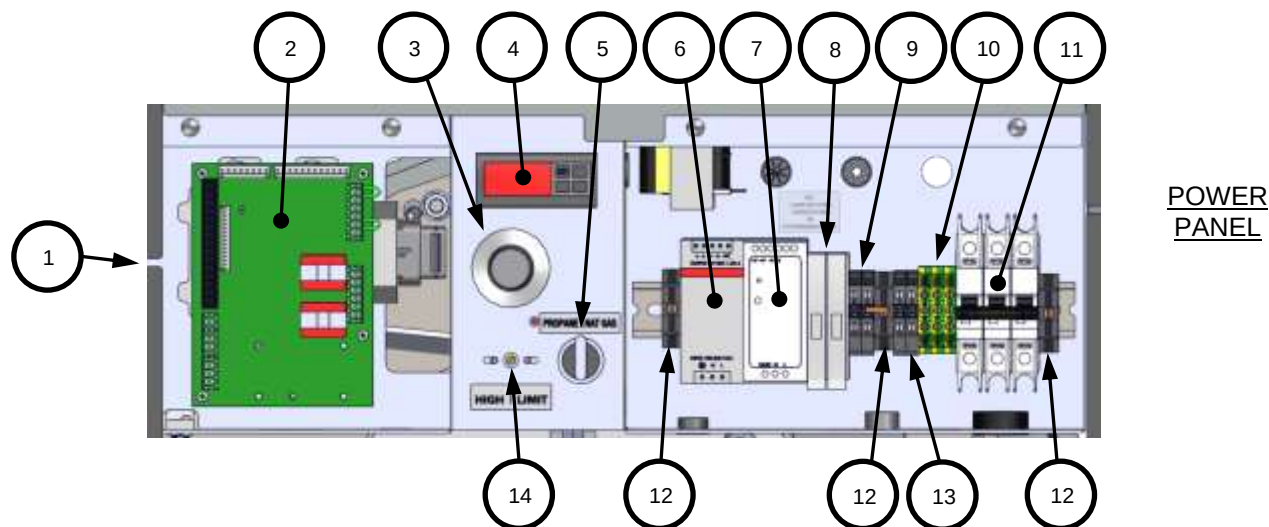
FRONT VIEW (Front Frame removed)

OVERHEAD VIEW			
Item	Qty	Part #	Description
1	1	69126 ❶	Low Water Capacity Cutoff
2	1	61056	Thermocouple & Temperature Sensor
3	1	61030	Direct Immersed Temperature Sensor
4	1	123449	Temperature Sensor
5	1	65085	Ignition Transformer

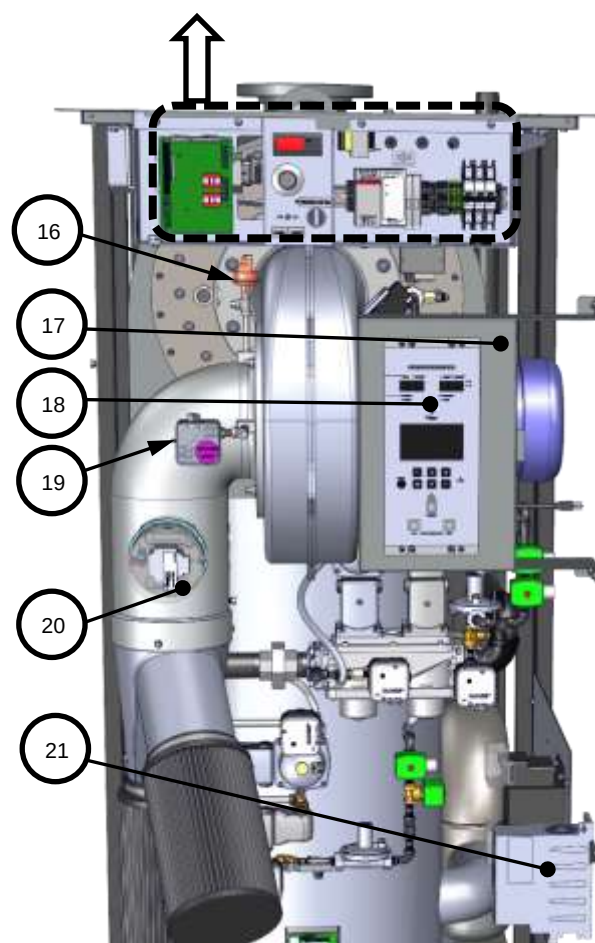
❶ Replacement Kit and/or Catalog number

FRONT VIEW			
Item	Qty	Part #	Description
6	1	69151	I/O Board
7	1	64081	ECU (for O ₂ Sensor)
8	1	25089	Power Panel (see next page)
9	1	Transformer/Relay Bracket – See diagram on Sheet 6	

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Power Panel			
Item #	Qty	Part #	Description
1	1	24353-3	Power Panel, 208V /460V
		24353-4	Power Panel, 600V
2	1	69172	I/O Board Assy. (for Edge [i])
3	1	123966	Adjustable Temp Limit Switch
4	1	64088	Digital Limit Control Temperature
5	1	63035-2	Fuel Selector Switch & Harness – Dual Fuel Only
6	1	65162	24V Power Supply (Sequencing Valve)
7	1	65109	12V POWER SUPPLY
8	2	65118	Fuse Terminal: DIN Mounted
9	2	65120	Terminal Block, Black
10	3	65122	Terminal Ground Block: DIN Mounted
11	1	60042	3 Pole Circuit Breaker
12	3	69141	DIN Rail End Stop
13	2	65121	Terminal Block, White
14	1	123552	Over Temp Switch, Manual Reset
Front View (Front panel and frame removed)			
16	1	61002-4	Blocked Inlet Switch, BMK 5000
		61002-5	Blocked Inlet Switch, BMK 6000
17	1	33180	Controller Mounting Plate
18	1	69344-3	Edge [i] Controller
19	1	60011-4	Blower Proof Switch
20	1	58066-2	Air/Fuel Valve Assy., BMK 5000
		58066-3	Air/Fuel Valve Assy., BMK 5000 LPG
		58066	Air/Fuel Valve Assy., BMK 6000
		58066-1	Air/Fuel Valve Assy., BMK 6000 LPG
21	1	24358-TAB	Relay Bracket (See Next Page)

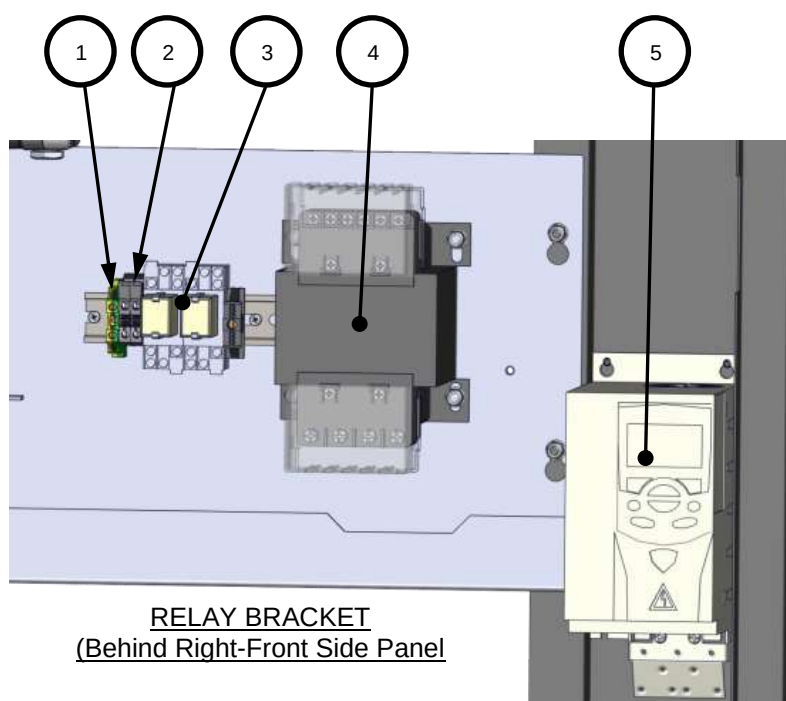


PARTIAL FRONT VIEW

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SECTION 6: BENCHMARK 5000 & 6000 PART LIST

Relay Bracket			
Item #	Qty	Part #	Description
1	1	65122	Terminal Ground Block: DIN Mounted
2	1	65121	Terminal Block, White
3	1	65120	Terminal Block, Black
4	1	65167	Transformer, Stepdown 600V – 120V (575V units only)
		65155	Transformer, Stepdown 380V – 120V (380V units only)
		65236	Transformer, Stepdown 415V – 115V (400V units only)
		124310	Transformer, Stepdown 500V – 120V (480V units only)
5	1	65130	Drive Motor, 480V (480V units only)
		65129	Drive Motor, 208V (208V units only)



81162

Benchmark 5000/6000 Wiring Harnesses (not shown)			
Part #	Description	Part #	Description
63004	HARNESS: Transformer	63162	HARNESS: Double Optical
63113-1	HARNESS: Shell	63218-3	HARNESS: A/F Valve
63125-1-3	HARNESS: Gas Train	63224	HARNESS: Valve proving
63135	HARNESS: VFD Power	63261	HARNESS: Blower
63148-1	HARNESS: SSOV	65220	Ignition Cable

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SECTION 6: BENCHMARK 5000 & 6000 PART LIST

Additional Benchmark 5000/6000 Replacement Kits Available	
Part #	Description
92084-6	Motorized Sequencing Valve (Optional)
27086-2	Actuator, SSOV Replacement Kit
64048	SSOV w/ Regulator Replacement Kit
58084	Igniter Rod
58065-1	Blower Replacement Kit, 460V
58065-2	Blower Replacement Kit, 208V
58065-3	Blower Replacement Kit, 575V
58065-4	Blower Replacement Kit, 380V
58066, 58066-1	Air/Fuel Valve, BMK 6000 (58066-1 = Low Gas pressure)
58066-2, 58066-3	Air/Fuel Valve, BMK 5000 (58066-3 = Low Gas pressure)

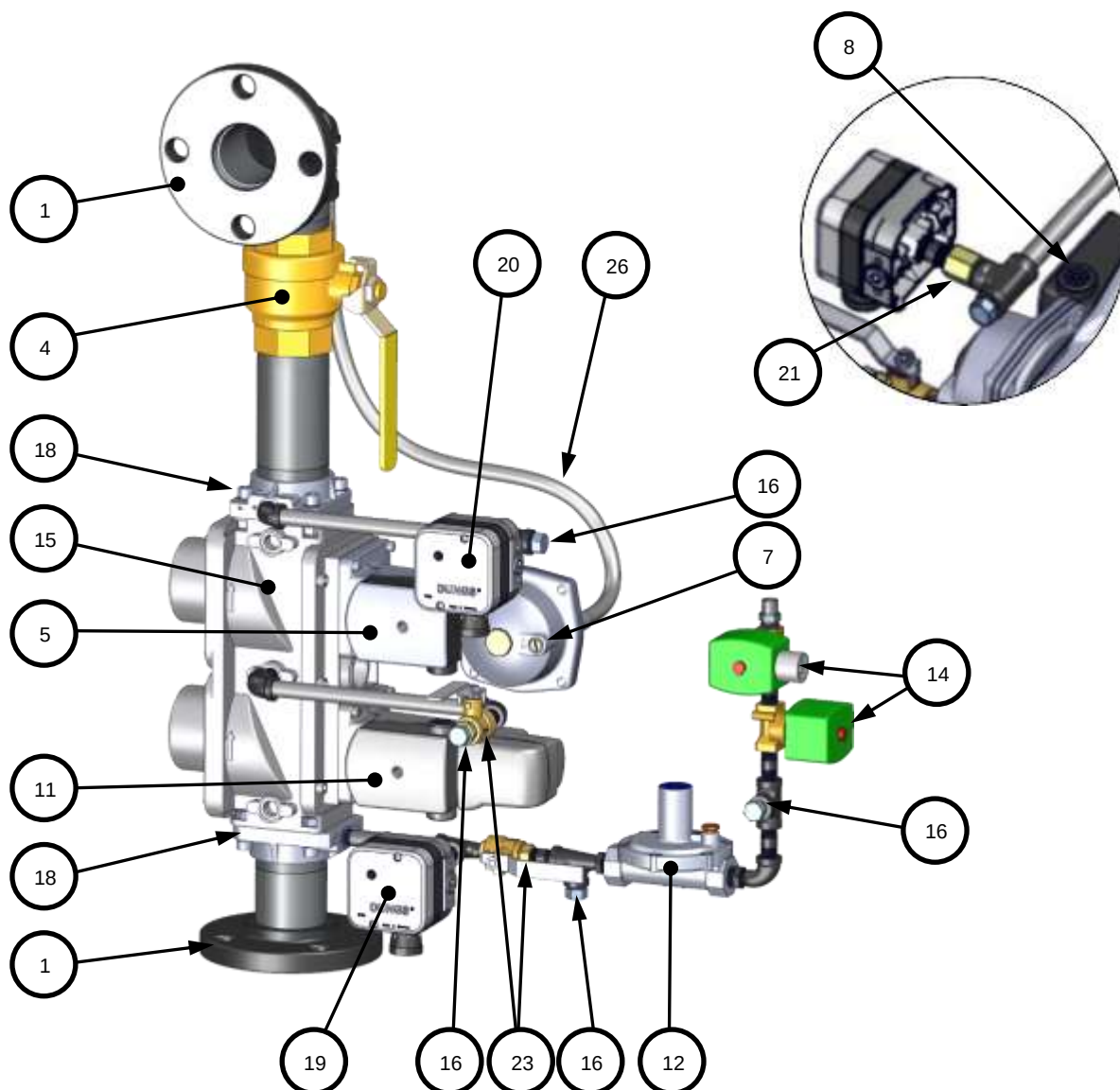
Benchmark 5000/6000 Spare Parts Kit P/N 58053						
Series	Kit Number	Pressure	Pressure Relief Valve #	Tridicator	Condensate Trap Assy.	2" Ball Valve
WATTS 740 Series	58053-1	35 PSI (241 kPa)	92102-1	123675-5	24441	123540
	58053-2	50 PSI (345 kPa)	92102-2	123675-5		
	58053-3	60 PSI (414 kPa)	92102-3	123675-6		
	58053-4	75 PSI (517 kPa)	92102-4	123675-6		
WATTS 174A Series	58053-5	60 PSI (414 kPa)	92102-5	123675-6		
	58053-6	75 PSI (517 kPa)	92102-6	123675-6		
	58053-7	80 PSI (1034 kPa)	92102-7	123675-6		
	58053-8	100 PSI (689 kPa)	92102-8	123675-6		
	58053-9	125 PSI (862 kPa)	92102-9	123675-6		
Apollo / Conbraco 10-60X Series	58053-11	35 PSI (241 kPa)	92102-11	123675-5		
	58053-12	50 PSI (345 kPa)	92102-12	123675-5		
	58053-13	60 PSI (414 kPa)	92102-13	123675-6		
	58053-14	75 PSI (517 kPa)	92102-14	123675-6		
	58053-15	80 PSI (1034 kPa)	92102-15	123675-6		
	58053-16	100 PSI (689 kPa)	92102-16	123675-6		
	58053-17	125 PSI (862 kPa)	92102-17	123675-6		
	58053-18	150 PSI (1034 kPa)	92102-18	123675-7		
Apollo / Conbraco 10-61X Series	58053-19	30 PSI (207 kPa)	92102-19	123675-5		
	58053-20	35 PSI (241 kPa)	92102-20	123675-5		
	58053-21	50 PSI (345 kPa)	92102-21	123675-5		
	58053-22	60 PSI (414 kPa)	92102-22	123675-6		
	58053-23	75 PSI (517 kPa)	92102-23	123675-6		
	58053-24	80 PSI (1034 kPa)	92102-24	123675-6		
	58053-25	100 PSI (689 kPa)	92102-25	123675-6		
	58053-26	125 PSI (862 kPa)	92102-26	123675-6		
	58053-27	150 PSI (1034 kPa)	92102-27	123675-7		

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SECTION 6: BENCHMARK 5000 & 6000 PART LIST

Benchmark 5000-6000 FM Gas Train P/N 22330-1 rev D – 4/13/2020							
Item	Qty	Part #	Description	Item	Qty	Part #	Description
1	2	123542	Flange 2" 125# 2" NPT	15	1	124142	Valve SSOV: Double Body: NPT
4	1	123540	Ball Valve: Full Port 2" NPT	16	4	9-22	Pipe Plug: 1/4" NPT: Steel
5	1	64048 ❶	Actuator: SSOV w/ Regulator	18	2	95030	Flange, SSOV 2" NPT
7	1	99015	Damping Orifice: SSOV	19	1	60020	Gas Pressure Switch: 2-20" W.C.
8	4	12951-2	Bushing: Control Box	20	1	60032-1 ❶	Gas Pressure Switch: 1-20" W.C.
11	1	27086-2 ❶	Actuator: SSOV	21	1	99017	Snubber: Pressure: 1/4"
12	1	24384	Maxitrol Regulator w/ 2-6" Spring	23	2	92143	1/4" Ball Valve: WATTS
14	2	58089 ❶	Solenoid Valve: 1/4" NPT	26	1	97087-26	Flex Hose, 26"

❶ Part number of Replacement Kit

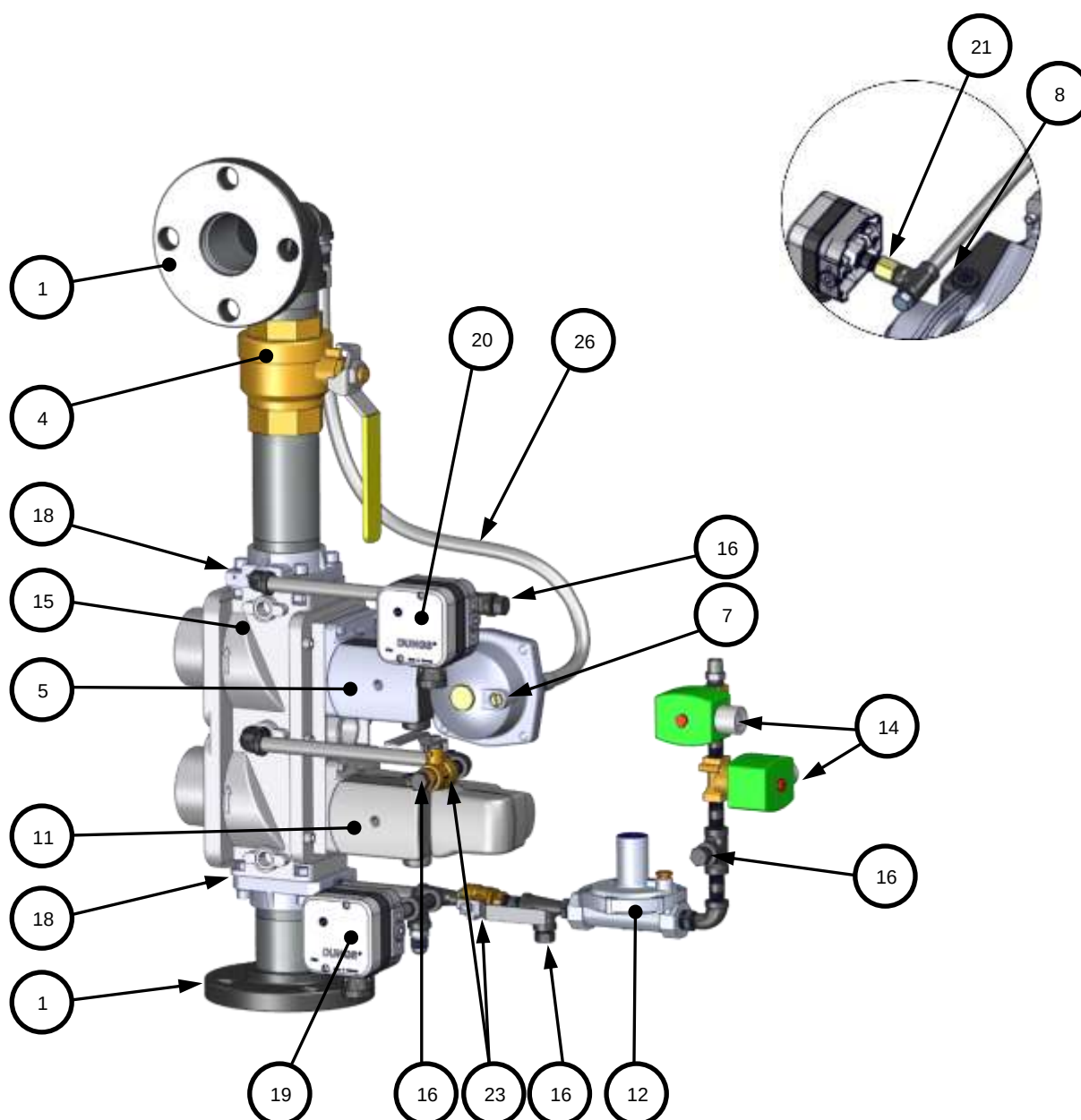


SECTION 6: BENCHMARK 5000 & 6000 PART LIST

Benchmark 5000-6000 Gas Train with Valve Proving System (VPS) P/N 22330-2 rev D – 4/13/2020							
Item	Qty	Part #	Description	Item	Qty	Part #	Description
1	2	123542	Flange 2" 125# 2" NPT	15	1	124142	Valve SSOV: Double Body: NPT
4	1	123540	Ball Valve: Full Port 2" NPT	16	4	9-22	Pipe Plug: 1/4" NPT: Steel
5	1	64048 ❶	Actuator: SSOV w/ Regulator	18	2	95030	Flange, SSOV 2" NPT
7	1	99015	Damping Orifice: SSOV	19	1	60020	Gas Pressure Switch: 2-20" W.C.
8	4	12951-2	Bushing: Control Box	20	1	60032-1 ❶	Gas Pressure Switch: 1-20" W.C.
11	1	27086-2 ❶	Actuator: SSOV	21	1	99017	Snubber: Pressure: 1/4"
12	1	24384	Maxitrol Regulator w/ 2-6" Spring	23	2	92143	1/4" Ball Valve: WATTS
14	2	58089 ❶	Solenoid Valve: 1/4" NPT	26	1	97087-26	Flex Hose, 26"

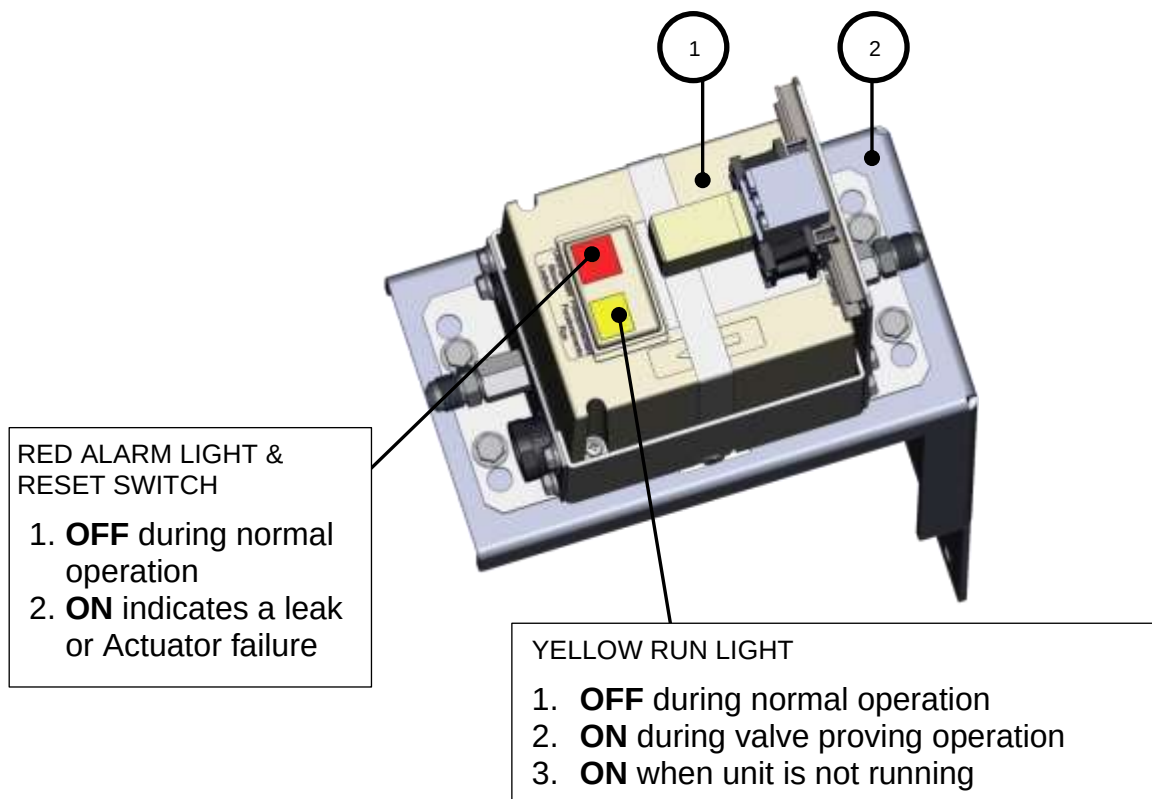
❶ Part number of Replacement Kit

This gas train connects to the Valve Proving System, shown on the next page below.



SECTION 6: BENCHMARK 5000 & 6000 PART LIST

Benchmark 5000-6000 Valve Proving System P/N 24655 rev C – 8/23/2018							
Item	Qty	Part #	Description	Item	Qty	Part #	Description
1	1	24629-5	Valve Proving System Assy.	6	1	97087-48	Flexible Gas Tube (NOT SHOWN)
2	1	33261	Bracket, VPS Support	7	1	97087-26	Flexible Gas Tube (NOT SHOWN)



The Benchmark gas train P/N **22330-2** operates in conjunction with a Valve Proving System, P/N **24655**. This system monitors the gas pressure on both sides of the Actuator. If the pressure difference falls below a fixed value, indicating the failure of the Actuator or leakage in the gas line, it triggers the shutdown of the boiler.

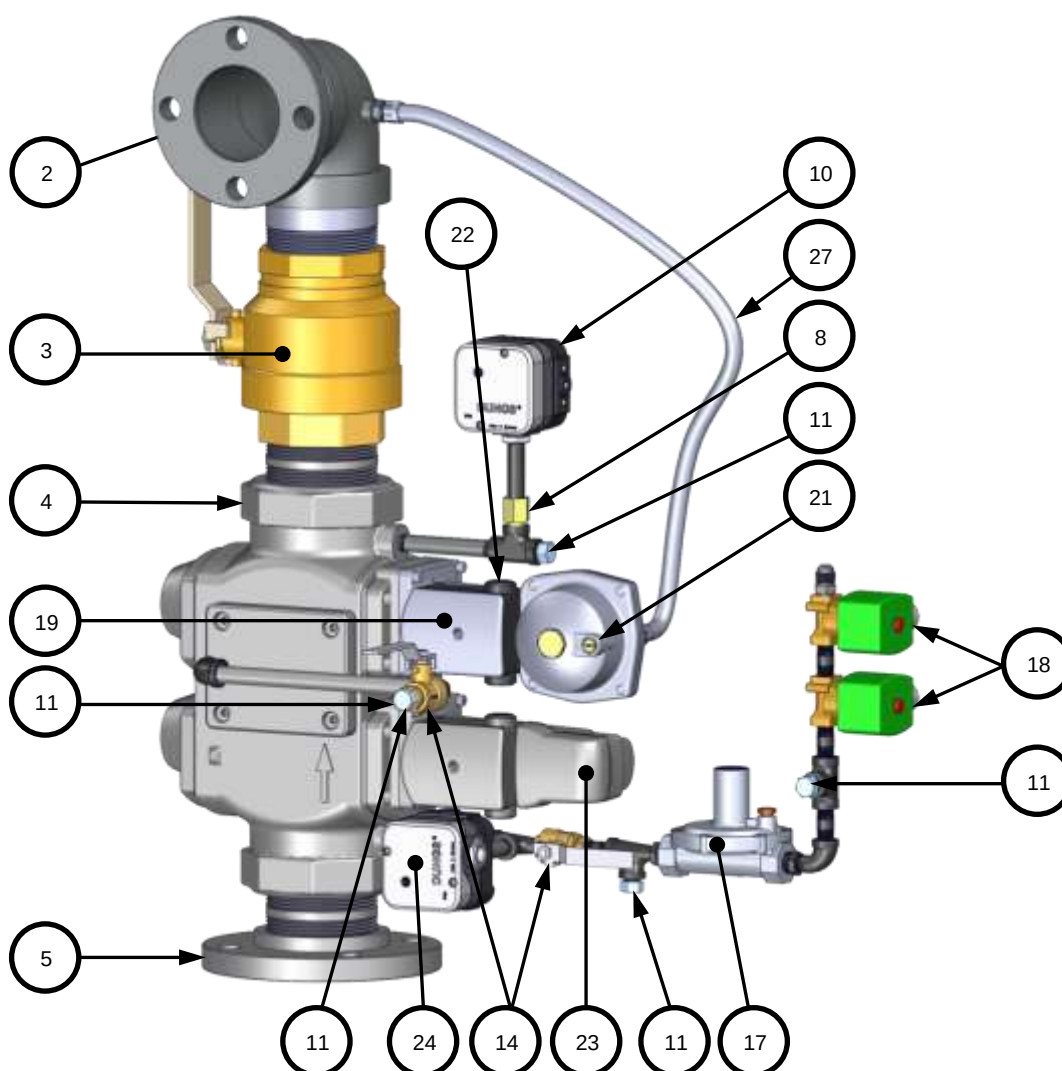
Once the problem has been diagnosed and corrected, the Valve Proving System must be reset by pressing the red **Reset** switch before the unit is restarted.

A WATTS Brand

Benchmark 5000-6000 3" Low Gas Pressure (LGP) Gas Train
P/N 22308-1 rev B – 7/12/2018

Item	Qty	Part #	Description	Item	Qty	Part #	Description
2	1	22326	Flange/Elbow Welded Assy.	17	1	24384	Maxitrol Regulator w/ 2-6" Spring
3	1	92006-9	Ball Valve: Full Port 3" NPT	18	2	58089 ❶	Solenoid Valve: 1/4" NPT
4	1	92146	Valve SSOV: Double Body: 3" NPT	19	1	64048 ❶	Actuator: SSOV w/ Regulator
5	1	95035	Flange SCH 40: 3" NPT: 125#: B.I.	21	1	99015	Damping Orifice: SSOV
8	1	99017	Snubber: Pressure: 1/4"	22	4	12951-2	Bushing: Control Box
10	1	60032-1 ❶	Gas Pressure Switch: 1-20" W.C.	23	1	27086-2 ❶	Actuator: SSOV
11	4	9-22	Pipe Plug: 1/4" NPT: Steel	24	1	60020	Gas Pressure Switch: 2-20" W.C.
14	2	92143	Ball Valve: 1/4" WATTS	27	1	97087-26	Flex Hose, 26"

① Part number of Replacement Kit

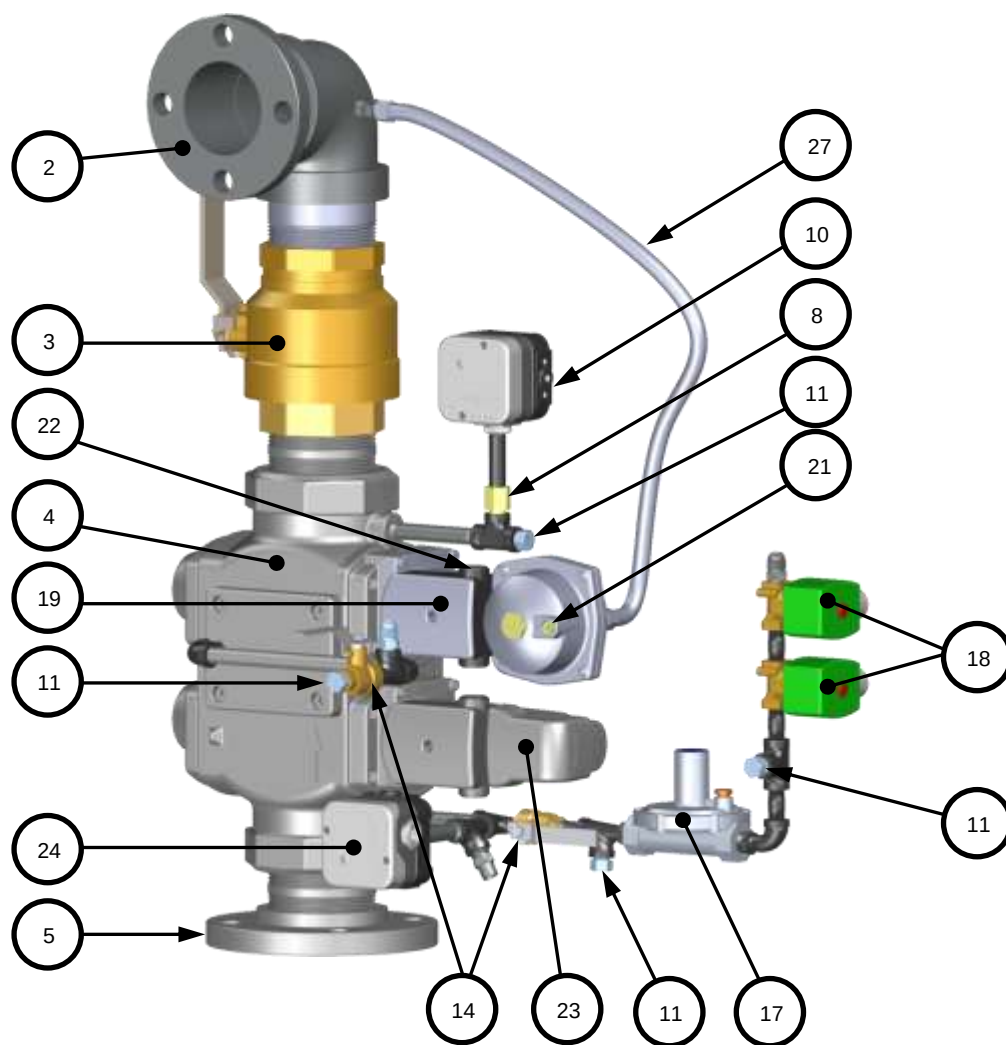


SECTION 6: BENCHMARK 5000 & 6000 PART LIST

Benchmark 5000-6000 3" Low Gas Pressure (LGP) with Valve Proving System (VPS) Gas Train – P/N 22308-2 rev B – 7/12/2018							
Item	Qty	Part #	Description	Item	Qty	Part #	Description
2	1	22326	Flange/Elbow Welded Assy.	17	1	24384	Maxitrol Regulator w/ 2-6" Spring
3	1	92006-9	Ball Valve: Full Port 3" NPT	18	2	58089 ①	Solenoid Valve: 1/4" NPT
4	1	92146	Valve SSOV: Double Body: 3" NPT	19	1	64048 ①	Actuator: SSOV w/ Regulator
5	1	95035	Flange SCH 40: 3" NPT: 125#: B.I.	21	1	99015	Damping Orifice: SSOV
8	1	99017	Snubber: Pressure: 1/4"	22	4	12951-2	Bushing: Control Box
10	1	60032-1 ①	Gas Pressure Switch: 1-20" W.C.	23	1	27086-2 ①	Actuator: SSOV
11	4	9-22	Pipe Plug: 1/4" NPT: Steel	24	1	60020	Gas Pressure Switch: 2-20" W.C.
14	2	92143	Ball Valve: 1/4" WATTS	27	1	97087-26	Flex Hose, 26"

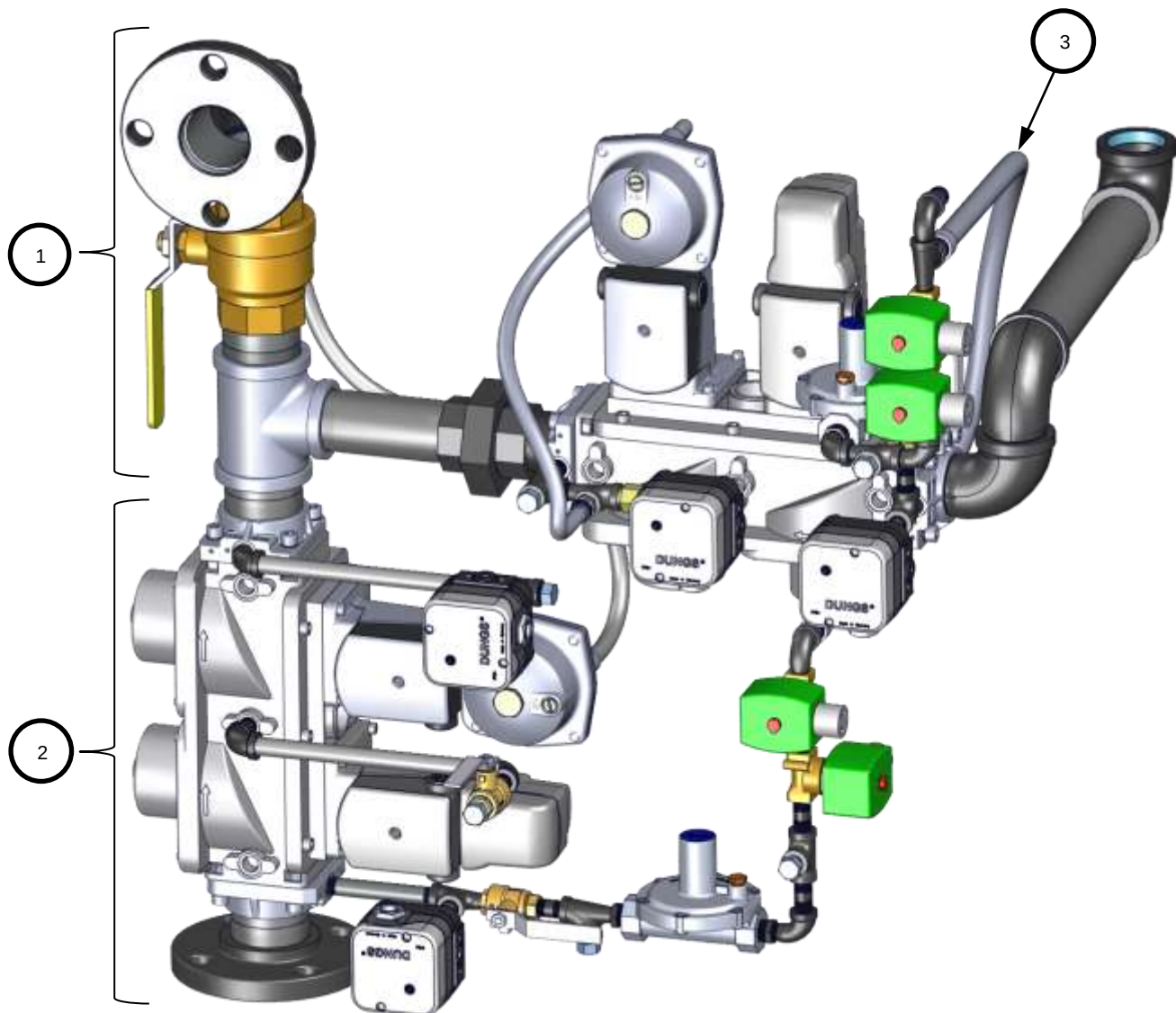
① Part number of Replacement Kit

This gas train connects to the Valve Proving System, shown above.



SECTION 6: BENCHMARK 5000 & 6000 PART LIST

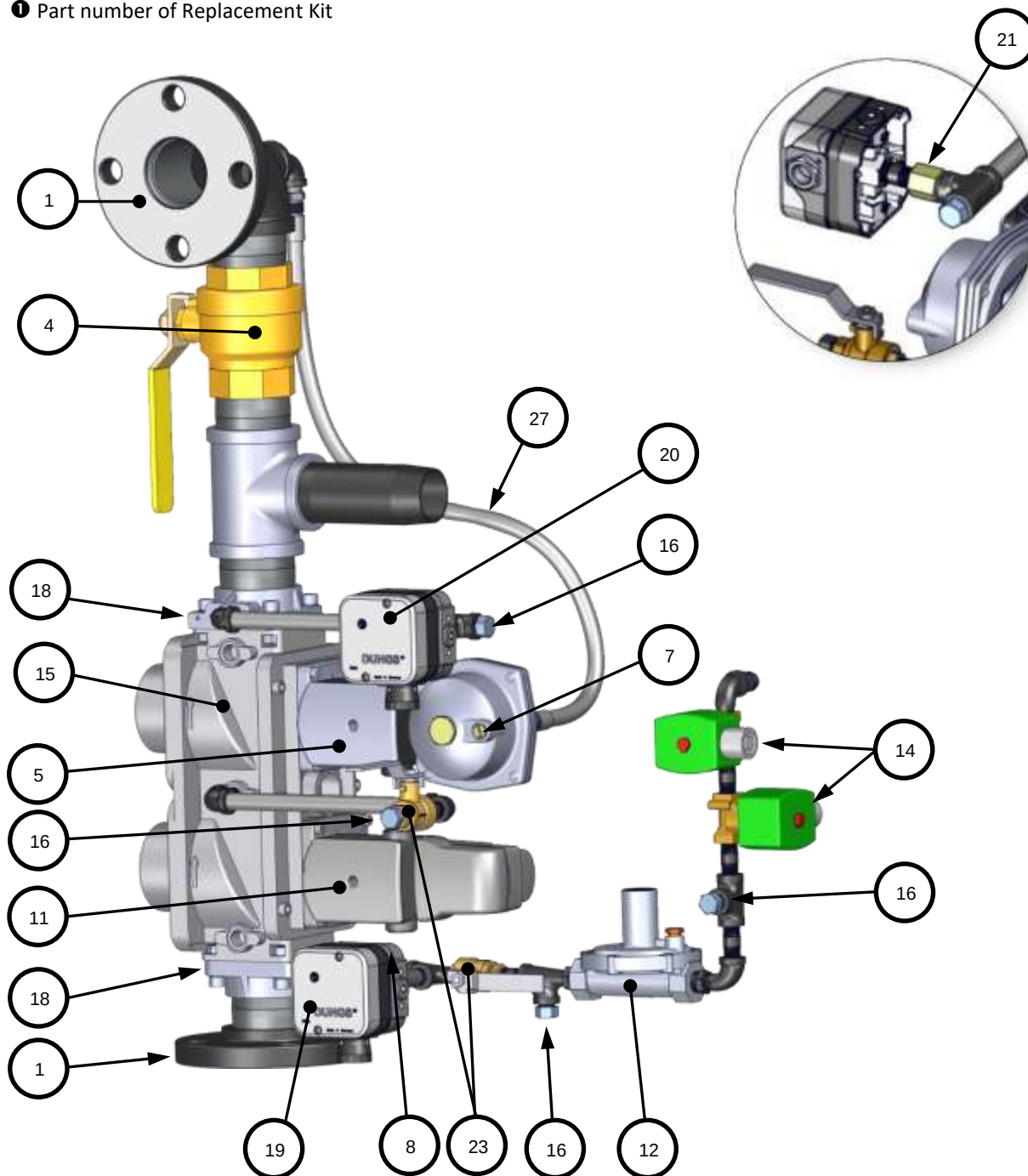
Benchmark 5000 & 6000 Dual Fuel Gas Train P/N 22328 rev B – 9/11/2018			
Item	Qty	Part #	Description
1	1	22330-3	Natural Gas Gas Train
2	1	22330-4	Propane Gas Train
3	1	97087-36	Flexible Gas Tube, 36"



SECTION 6: BENCHMARK 5000 & 6000 PART LIST

Benchmark 5000 & 6000 Dual Fuel Gas Train – Natural Gas							
P/N 22330-3 rev D – 4/13/2020 – component of Dual Fuel gas train 22328							
Item	Qty	Part #	Description	Item	Qty	Part #	Description
1	2	123542	Flange 2" 125# 2" NPT	15	1	124142	Valve: SSOV: Double Body: 2" NPT
4	1	123540	Ball Valve: 2" Full Port	16	4	9-22	Pipe Plug: 1/4" NPT: Steel
5	1	64048 ❶	Actuator: SSOV w/ Regulator	18	2	95030	Flange: SSOV 2" NPT
7	1	99015	Damping Orifice: SSOV	19	1	60020	Gas Pressure Switch: 2-20" W.C.
8	4	12951-2	Bushing: Control Box	20	1	60032-1 ❶	Gas Pressure Switch: 1-20" W.C.
11	1	27086-2 ❶	Actuator: SSOV	21	1	99017	Snubber: Pressure: 1/4"
12	1	24384	Maxitrol Regulator w/ 2-6" Spring	23	2	92143	Ball Valve, 1/4" WATTS
14	2	58089 ❶	Solenoid Valve: 1/4" NPT	27	1	97087-26	Flex Hose, 26"

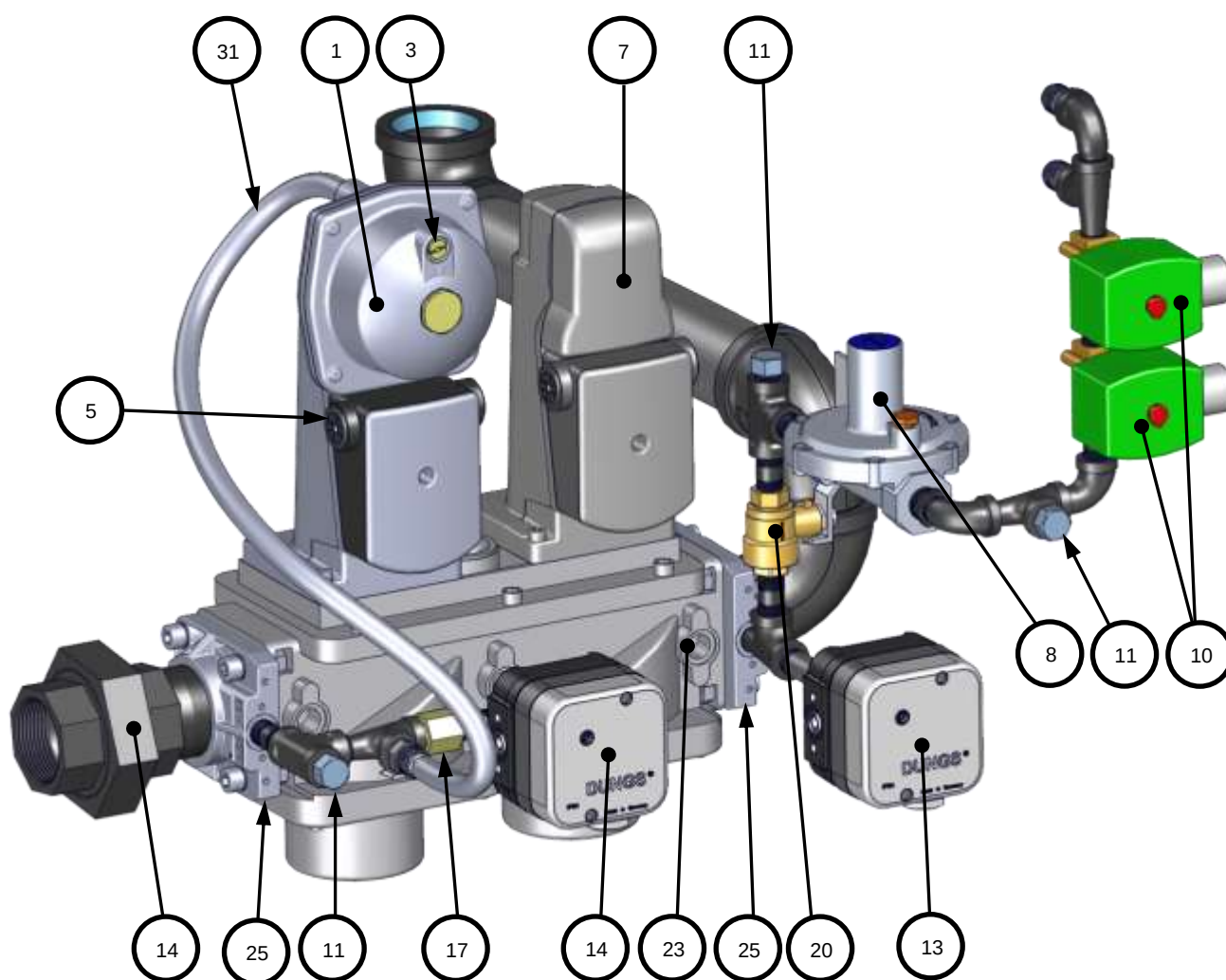
❶ Part number of Replacement Kit



SECTION 6: BENCHMARK 5000 & 6000 PART LIST

Benchmark 5000 & 6000 Dual Fuel Gas Train – Propane P/N 22330-4 rev D – 4/13/2020 – component of Dual Fuel gas train 22328							
Item	Qty	Part #	Description	Item	Qty	Part #	Description
1	1	64048 ❶	Actuator: SSOV w/ Regulator	13	1	60020	Gas Pressure Switch: 2-20" W.C.
3	1	99015	Damping Orifice: SSOV	14	1	60032-1 ❶	Gas Pressure Switch: 1-20" W.C.
5	4	12951-2	Bushing: Control Box	17	1	99017	Snubber: Pressure: 1/4"
7	1	27086-2 ❶	Actuator: SSOV	20	1	92143	Ball Valve, 1/4" WATTS
8	1	24384	Maxitrol Regulator w/ 2-6" Spring	23	1	124137	Valve: SSOV: Double Body: 1-1/2" NPT
10	2	58089 ❶	Solenoid Valve: 1/4" NPT	25	2	95029	Flange: SSOV 1 1/2" NPT
11	3	9-22	Pipe Plug: 1/4" NPT: Steel	31	1	97087-26	Flex Hose 26"

❶ Part number of Replacement Kit



SECTION 6: BENCHMARK 5000 & 6000 PART LIST

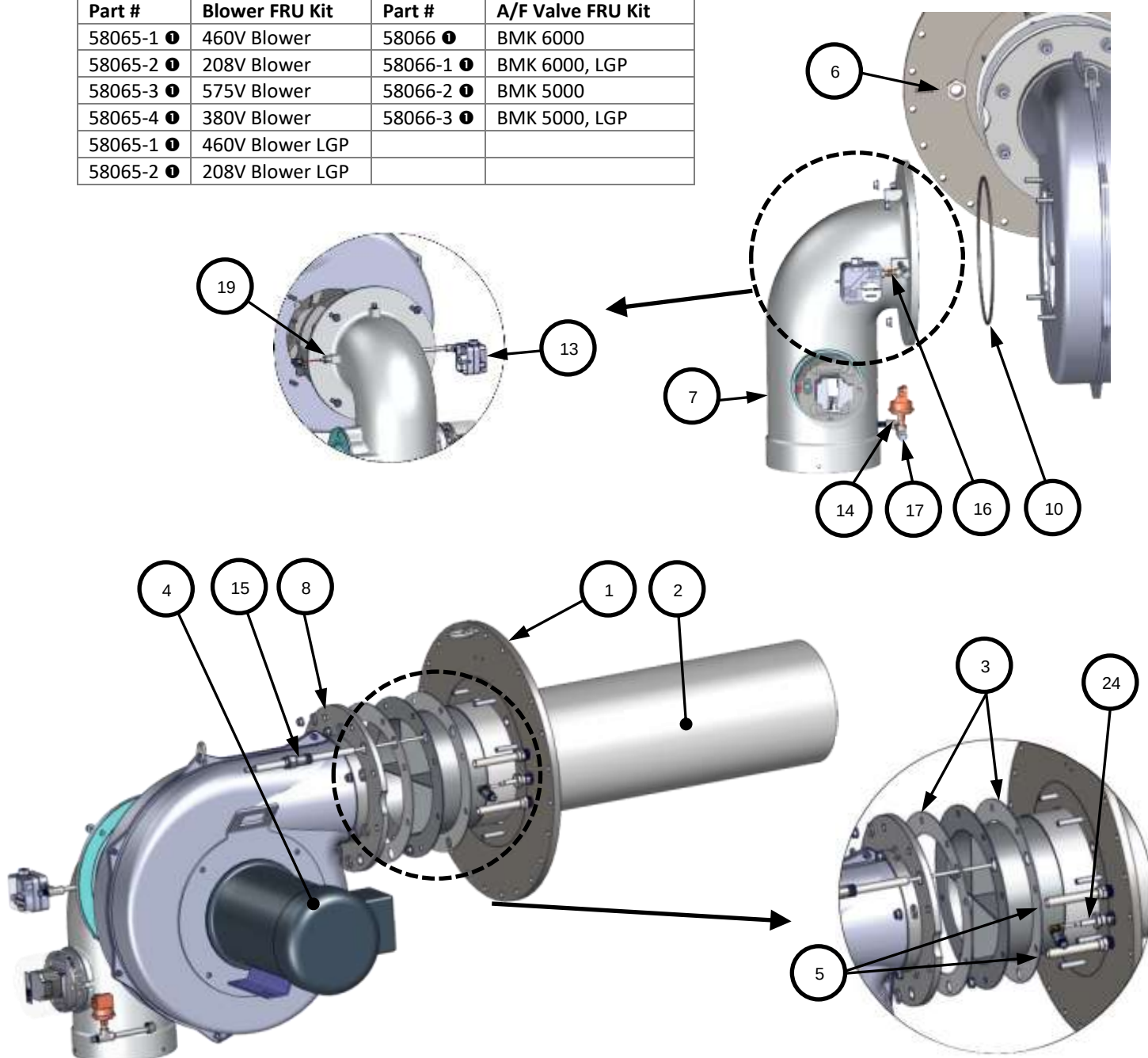
BMK 5000 Burner Assy. P/N 24495-TAB rev F – 6/5/2020

BMK 6000 Burner Assy. P/N 24328-TAB rev M – 6/5/2020

Item	Qty	Part #	Description	Item	Qty	Part #	Description
1	1	42255	Burner Plate	13	1	60011-4	Blower Proof Switch Assy.
2	1	46025	Burner	14	1	61002-5	BMK 6000 Blocked Inlet Switch -4.5" W.C.
3	2	81159	Gasket: Burner			61002-23	BMK 5000 Blocked Inlet Switch -3.9" W.C.
4	1	See Table	Blower Replacement Kit	15	1	65150	Flame Rod Assy
5	2	59192	Observation Port	16	1	93367	Snubber: Fan Proving Switch
6	1	59140	Sight Glass 1"	17	3	9-21	Plug, Hex Head 1/8" NPT
7	1	See Table	A/F Valve Replacement Kit	19		123449	Air Inlet Temperature Sensor
8	13	56004	3/8-16 Nut: Flanged	24	1	66026	Ignitor-Injector
10	1	88016	O-Ring #2-378				

① Part number of Replacement Kit

ITEM 4		ITEM 7	
Part #	Blower FRU Kit	Part #	A/F Valve FRU Kit
58065-1 ①	460V Blower	58066 ①	BMK 6000
58065-2 ①	208V Blower	58066-1 ①	BMK 6000, LGP
58065-3 ①	575V Blower	58066-2 ①	BMK 5000
58065-4 ①	380V Blower	58066-3 ①	BMK 5000, LGP
58065-1 ①	460V Blower LGP		
58065-2 ①	208V Blower LGP		



SECTION 7: SENSOR RESISTANCE CHART

Benchmark Edge units have PT-1000 temperature sensors by default. However, users are allowed to change to the older, Balco sensors.

PT-1000 Temperature Sensor Resistance Chart			
Temperature		Sensor Resistance (Ohms)	
°F	°C	PT-1000	Balco
-40	-40.0	843	779
-30	-34.4	865	797.5
-20	-28.9	887	816.3
-10	-23.3	908	835.4
0	-17.8	930	854.8
10	-12.2	952	874.6
20	-6.7	974	894.7
30	-1.1	996	915.1
40	4.4	1000	935.9
50	10.0	1017	956.9
60	15.6	1039	978.3
70	21.1	1061	1000
80	26.7	1082	1022
90	32.2	1104	1044.4
100	37.8	1125	1067
110	43.3	1147	1090
120	48.9	1168	1113.3
130	54.4	1190	1137
140	60.0	1211	1160.9
150	65.6	1232	1185.2
160	71.1	1254	1209.5
170	76.7	1275	1234.7
180	82.2	1296	1260
190	87.8	1317	1285.6
200	93.3	1339	1311.4
210	98.9	1360	1337.7
212	100.0	1381	
220	104.4	1385	1364.2
230	110.0	1402	1391
240	115.6	1423	1418.2
250	121.1	1444	1445.7

