



**TriOx**  
**TRIPLE AIR STAGED ULTRA LOW NOx BURNER**

**Natural Gas Operation**

TRIOX 1000 AND 2000 SERIES		BURNER MODEL				
SPECIFICATIONS		xx06	xx08	xx12	xx14	xx16
Cold Air Capacity <sup>1</sup>	(MMBTU/hr)	4.2	8.0	14.9	20.9	27.6
	(kW)	1,120	2,120	3,950	5,540	7,310
Hot Air Capacity <sup>1</sup>	(MMBTU/hr)	2.6	5.1	9.2	13.0	17.1
	(kW)	700	1,360	2,450	3,430	4,520
Air Pressure <sup>2</sup>	(in. w.c.)	22.5	23.5	19.1	17.6	18.2
	(mbar)	55.9	58.4	47.4	43.8	45.4
Gas Pressure <sup>2</sup>	(in. w.c.)	28.4	12.2	22.4	25.9	14.1
	(mbar)	70.7	30.3	55.8	64.3	35.1
Flame Length <sup>3</sup>	(ft)	12.0	18.0	18.0	18.0	18.0
	(m)	3.7	5.5	5.5	5.5	5.5
Flame Diameter <sup>3</sup>	(ft)	4.0	5.0	5.0	6.0	6.0
	(m)	1.2	1.5	1.5	1.8	1.8

TRIOX 3000 AND 4000 SERIES		BURNER MODEL			
SPECIFICATIONS		xx08	xx12	xx14	
Cold Air Capacity <sup>1</sup>	(MMBTU/hr)	8.0	14.9	20.9	
	(kW)	2,120	3,950	5,540	
Hot Air Capacity <sup>1</sup>	(MMBTU/hr)	5.1	9.2	13.0	
	(kW)	1,360	2,450	3,430	
Air Pressure <sup>2</sup>	(in. w.c.)	19.8	15.9	16.4	
	(mbar)	49.1	39.6	40.9	
Gas Pressure <sup>2</sup>	(in. w.c.)	11.2	22.5	25.9	
	(mbar)	27.8	55.9	64.3	
Combustion Zone Length <sup>3</sup>	(ft)	18.0	18.0	18.0	
	(m)	5.5	5.5	5.5	
Combustion Zone Diameter <sup>3</sup>	(ft)	5.0	5.0	6.0	
	(m)	1.5	1.5	1.8	

**NOTES:**

- Capacities based on Natural Gas with HHV of 1034 BTU/ft<sup>3</sup> (Standard), and LHV of 10.21 kWh/nm<sup>3</sup> (Metric), 0.59 S.G., and a stoichiometric ratio 9.74:1 with burner firing into chamber under no pressure at 5% excess air. Cold air capacity based on STP operating conditions at sea level and industry standard piping. Hot air capacity based on 900°F/482°C preheat temperature.
- Air and Gas pressure listed for component sizing only and will vary depending on operation and conditions. See individual burner data for information specific to the operating mode and conditions intended.
- Flame length and diameter measured from end of refractory combustion tile. Dimensions will be smaller with hot air.

In accordance with Hauck's commitment to Total Quality Improvement, Hauck reserves the right to change the specifications of products without prior notice

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**BURNER MODEL TriOx 1006**

**FIRING MODE**

**NATURAL GAS, AMBIENT COMBUSTION AIR OPERATION**

SPECIFICATIONS		OPERATIONAL INFORMATION			
Capacity (at 5% Excess Air)	(MMBTU/hr)	0.6	1.8	3.0	4.2
	(kW)	160	480	800	1,120
Air Capacity	(SCFH)	5,900	17,900	30,000	41,900
	(nm <sup>3</sup> /hr)	160	480	800	1,120
Air Pressure (Stages 1 and 2)	(in.w.c.)	0.3	2.5	7.1	13.9
	(mbar)	0.7	6.3	17.7	34.6
Air Pressure (Stage 3)	(in.w.c.)	0.2	1.4	3.9	7.6
	(mbar)	0.4	3.5	9.7	18.9
Air Pressure (Switching Valve) <sup>4</sup>	(in.w.c.)	0.4	3.7	10.4	20.3
	(mbar)	1.0	9.2	25.9	50.5
Gas Inlet Pressure	(in.w.c.)	0.5	5.0	14.0	27.4
	(mbar)	1.4	12.4	34.9	68.2
Flame Length (5% Excess Air) <sup>5</sup>	(ft)	5.0	7.0	9.0	12.0
	(m)	1.5	2.1	2.7	3.7
Flame Diameter (5% Excess Air) <sup>5</sup>	(ft)	2.5	2.5	3.0	4.0
	(m)	0.8	0.8	0.9	1.2
Maximum Excess	(Air %)	500	750	1,000	1,500
	(Fuel %)	+30	+30	+30	+30

**INVISIFLAME MODE<sup>6</sup>**

**NATURAL GAS, AMBIENT COMBUSTION AIR OPERATION**

SPECIFICATIONS		OPERATIONAL INFORMATION			
Capacity (at 5% Excess Air)	(MMBTU/hr)	0.6	1.8	3.0	4.2
	(kW)	160	480	800	1,120
Air Capacity	(SCFH)	5,900	17,900	30,000	41,900
	(nm <sup>3</sup> /hr)	160	480	800	1,120
Air Pressure (Stages 1 and 2)	(in.w.c.)	0.0	0.1	0.2	0.5
	(mbar)	0.0	0.2	0.6	1.2
Air Pressure (Stage 3)	(in.w.c.)	0.3	3.0	8.4	16.4
	(mbar)	0.8	7.4	20.9	40.7
Air Pressure (Switching Valve) <sup>4</sup>	(in.w.c.)	0.4	3.8	10.6	20.6
	(mbar)	1.0	9.4	26.3	51.3
Gas Inlet Pressure	(in.w.c.)	0.6	5.2	14.6	28.4
	(mbar)	1.4	12.9	36.2	70.7
Combustion Zone Length	(ft)	5.0	7.0	9.0	12.0
	(m)	1.5	2.1	2.7	3.7
Combustion Zone Diameter	(ft)	2.5	2.5	3.0	4.0
	(m)	0.8	0.8	0.9	1.2
Maximum Excess	(Air %)	500	750	1,000	1,500
	(Fuel %)	+30	+30	+30	+30

**NOTES:**

- Capacities based on Natural Gas with HHV of 1034 BTU/ft<sup>3</sup> (Standard), and LHV of 10.21 kWh/nm<sup>3</sup> (Metric), 0.59 S.G., and a stoichiometric ratio of 9.74:1 with burner firing into chamber under no pressure at 5% excess air.
- Air and fuel flows based on STP operating conditions at sea level and industry standard air and gas piping practices.
- Flame detection via UV scanner in Firing Mode only.
- For models equipped with a switching valve (valve allows burner to switch between Firing and Invisiflame Mode) this is the required combustion air supply pressure to the inlet of the valve.
- Flame length and diameter measured from end of refractory combustion tile.
- Invisiflame™ Mode is suitable for furnace or chamber temperatures above 1600°F or 870°C only. For temperatures less than 1600°F or 870°C the TriOx burner must be used in Firing Mode only. The combustion zone when operating in Invisiflame™ Mode is not visible unless used with preheated combustion air.

(2006 Capacities on Reverse Side)

In accordance with Hauck's commitment to Total Quality Improvement, Hauck reserves the right to change the specifications of products without prior notice.

**TriOx**  
**TRIPLE AIR STAGED ULTRA LOW NOX BURNER**

# BURNER MODEL TriOx 2006

## FIRING MODE

### NATURAL GAS, 900°F / 482°C COMBUSTION AIR OPERATION

SPECIFICATIONS		OPERATIONAL INFORMATION			
<b>Capacity (at 5% Excess Air)</b>	<b>(MMBTU/hr)</b>	<b>0.4</b>	<b>1.1</b>	<b>1.9</b>	<b>2.6</b>
	<b>(kW)</b>	<b>100</b>	<b>300</b>	<b>500</b>	<b>700</b>
Air Capacity	(SCFH)	3,700	11,100	18,600	26,000
	(nm <sup>3</sup> /hr)	100	300	500	700
Air Pressure (Stages 1 and 2)	(in.w.c.)	0.3	2.5	7.1	13.9
	(mbar)	0.7	6.3	17.7	34.6
Air Pressure (Stage 3)	(in.w.c.)	0.1	1.2	3.5	6.8
	(mbar)	0.3	3.1	8.7	16.9
Air Pressure (Switching Valve) <sup>4</sup>	(in.w.c.)	0.4	3.7	10.4	20.4
	(mbar)	1.0	9.3	26.0	50.8
Gas Inlet Pressure	(in.w.c.)	0.3	2.5	7.1	13.8
	(mbar)	0.7	6.3	17.6	34.3
Flame Length (5% Excess Air) <sup>5</sup>	(ft)	6.0	8.0	9.0	12.0
	(m)	1.8	2.4	2.7	3.7
Flame Diameter (5% Excess Air) <sup>5</sup>	(ft)	2.5	3.0	3.5	4.0
	(m)	0.8	0.9	1.1	1.2
Maximum Excess	(Air %)	250	500	750	1,000
	(Fuel %)	+30	+30	+30	+30

## INVISIFLAME MODE<sup>6</sup>

### NATURAL GAS, 900°F / 482°C COMBUSTION AIR OPERATION

SPECIFICATIONS		OPERATIONAL INFORMATION			
<b>Capacity (at 5% Excess Air)</b>	<b>(MMBTU/hr)</b>	<b>0.4</b>	<b>1.1</b>	<b>1.9</b>	<b>2.6</b>
	<b>(kW)</b>	<b>100</b>	<b>300</b>	<b>500</b>	<b>700</b>
Air Capacity	(SCFH)	3,700	11,100	18,600	26,000
	(nm <sup>3</sup> /hr)	100	300	500	700
Air Pressure (Stages 1 and 2)	(in.w.c.)	0.0	0.1	0.2	0.5
	(mbar)	0.0	0.2	0.6	1.2
Air Pressure (Stage 3)	(in.w.c.)	0.3	3.0	8.4	16.4
	(mbar)	0.8	7.5	20.9	40.9
Air Pressure (Switching Valve) <sup>4</sup>	(in.w.c.)	0.5	4.1	11.5	22.5
	(mbar)	1.1	10.2	28.6	55.9
Gas Inlet Pressure	(in.w.c.)	0.3	2.8	7.8	15.3
	(mbar)	0.8	6.9	19.4	38.0
Combustion Zone Length	(ft)	6.0	8.0	9.0	12.0
	(m)	1.8	2.4	2.7	3.7
Combustion Zone Diameter	(ft)	2.5	3.0	3.5	4.0
	(m)	0.8	0.9	1.1	1.2
Maximum Excess	(Air %)	250	500	750	1,000
	(Fuel %)	+30	+30	+30	+30

#### NOTES:

- Capacities based on Natural Gas with HHV of 1034 BTU/ft<sup>3</sup> (Standard), and LHV of 10.21 kWh/nm<sup>3</sup> (Metric), 0.59 S.G., and a stoichiometric ratio of 9.74:1 with burner firing into chamber under no pressure at 5% excess air.
- Air and fuel flows based on STP operating conditions at sea level and industry standard air and gas piping practices.
- Flame detection via UV scanner in Firing Mode only.
- For models equipped with a switching valve (valve allows burner to switch between Firing and Invisiflame Mode) this is the required combustion air supply pressure to the inlet of the valve.
- Flame length and diameter measured from end of refractory combustion tile.
- Invisiflame™ Mode is suitable for furnace or chamber temperatures above 1600°F or 870°C only. For temperatures less than 1600°F or 870°C the TriOx burner must be used in Firing Mode only. The combustion zone when operating in Invisiflame™ Mode is not visible unless used with preheated combustion air.
- For ambient air start-up of the 2000 series burner, reference the 1000 data tables.



**BURNER MODEL TriOx 1008**

**FIRING MODE**

**NATURAL GAS, AMBIENT COMBUSTION AIR OPERATION**

**TriOx  
TRIPLE AIR STAGED ULTRA LOW NOX BURNER**

SPECIFICATIONS		OPERATIONAL INFORMATION			
Capacity (at 5% Excess Air) (MMBTU/hr)	(kW)	1.1	3.4	5.7	8.0
		300	910	1,520	2,120
Air Capacity	(SCFH)	11,100	33,900	56,600	79,100
	(nm <sup>3</sup> /hr)	300	910	1,520	2,120
Air Pressure (Stages 1 and 2)	(in.w.c.)	0.3	2.6	7.1	13.9
	(mbar)	0.7	6.4	17.7	34.6
Air Pressure (Stage 3)	(in.w.c.)	0.2	2.0	5.7	11.1
	(mbar)	0.5	5.1	14.2	27.7
Air Pressure (Switching Valve) <sup>4</sup>	(in.w.c.)	0.3	2.7	7.5	14.6
	(mbar)	0.7	6.7	18.6	36.3
Gas Inlet Pressure	(in.w.c.)	0.2	2.2	6.2	12.2
	(mbar)	0.6	5.6	15.5	30.3
Flame Length (5% Excess Air) <sup>5</sup>	(ft)	10.0	12.0	15.0	18.0
	(m)	3.0	3.7	4.6	5.5
Flame Diameter (5% Excess Air) <sup>5</sup>	(ft)	3.0	3.5	4.0	5.0
	(m)	0.9	1.1	1.2	1.5
Maximum Excess	(Air %)	500	750	1,000	1,500
	(Fuel %)	+30	+30	+30	+30

**INVISIFLAME MODE<sup>6</sup>**

**NATURAL GAS, AMBIENT COMBUSTION AIR OPERATION**

SPECIFICATIONS		OPERATIONAL INFORMATION			
Capacity (at 5% Excess Air) (MMBTU/hr)	(kW)	1.1	3.4	5.7	8.0
		300	910	1,520	2,120
Air Capacity	(SCFH)	11,100	33,900	56,600	79,100
	(nm <sup>3</sup> /hr)	300	910	1,520	2,120
Air Pressure (Stages 1 and 2)	(in.w.c.)	0.0	0.2	0.6	1.1
	(mbar)	0.1	0.5	1.4	2.7
Air Pressure (Stage 3)	(in.w.c.)	0.3	3.2	8.8	17.2
	(mbar)	0.8	7.9	21.9	42.9
Air Pressure (Switching Valve) <sup>4</sup>	(in.w.c.)	0.4	3.9	10.9	21.3
	(mbar)	1.0	9.7	27.2	53.0
Gas Inlet Pressure	(in.w.c.)	0.2	2.1	5.7	11.2
	(mbar)	0.5	5.1	14.3	27.9
Combustion Zone Length	(ft)	10.0	12.0	15.0	18.0
	(m)	3.0	3.7	4.6	5.5
Combustion Zone Diameter	(ft)	3.0	3.5	4.0	5.0
	(m)	0.9	1.1	1.2	1.5
Maximum Excess	(Air %)	500	750	1,000	1,500
	(Fuel %)	+30	+30	+30	+30

**NOTES:**

- Capacities based on Natural Gas with HHV of 1034 BTU/ft<sup>3</sup> (Standard), and LHV of 10.21 kWh/nm<sup>3</sup> (Metric), 0.59 S.G., and a stoichiometric ratio of 9.74:1 with burner firing into chamber under no pressure at 5% excess air.
- Air and fuel flows based on STP operating conditions at sea level and industry standard air and gas piping practices.
- Flame detection via UV scanner in Firing Mode only.
- For models equipped with a switching valve (valve allows burner to switch between Firing and Invisiflame Mode) this is the required combustion air supply pressure to the inlet of the valve.
- Flame length and diameter measured from end of refractory combustion tile.
- Invisiflame™ Mode is suitable for furnace or chamber temperatures above 1600°F or 870°C only. For temperatures less than 1600°F or 870°C the TriOx burner must be used in Firing Mode only. The combustion zone when operating in Invisiflame™ Mode is not visible unless used with preheated combustion air.

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# BURNER MODEL TriOx 2008

## FIRING MODE

### NATURAL GAS, 900°F / 482°C COMBUSTION AIR OPERATION

SPECIFICATIONS		OPERATIONAL INFORMATION			
<b>Capacity (at 5% Excess Air)</b>	(MMBTU/hr)	<b>0.7</b>	<b>2.2</b>	<b>3.7</b>	<b>5.1</b>
	(kW)	<b>190</b>	<b>580</b>	<b>970</b>	<b>1,360</b>
Air Capacity	(SCFH)	7,100	21,700	36,200	50,600
	(nm <sup>3</sup> /hr)	190	580	970	1,360
Air Pressure (Stages 1 and 2)	(in. w.c.)	0.3	2.6	7.1	13.9
	(mbar)	0.7	6.4	17.7	34.6
Air Pressure (Stage 3)	(in. w.c.)	0.2	1.9	5.3	10.4
	(mbar)	0.5	4.8	13.3	25.9
Air Pressure (Switching Valve) <sup>4</sup>	(in. w.c.)	0.3	2.9	8.0	15.6
	(mbar)	0.8	7.2	19.9	38.9
Gas Inlet Pressure	(in. w.c.)	0.1	1.2	3.3	6.4
	(mbar)	0.3	2.9	8.2	16.0
Flame Length (5% Excess Air) <sup>5</sup>	(ft)	8.0	10.0	12.0	15.0
	(m)	2.4	3.0	3.7	4.6
Flame Diameter (5% Excess Air) <sup>5</sup>	(ft)	2.5	3.0	3.5	4.0
	(m)	0.8	0.9	1.1	1.2
Maximum Excess	(Air %)	250	500	750	1,000
	(Fuel %)	+30	+30	+30	+30

## INVISIFLAME MODE<sup>6</sup>

### NATURAL GAS, 900°F / 482°C COMBUSTION AIR OPERATION

SPECIFICATIONS		OPERATIONAL INFORMATION			
<b>Capacity (at 5% Excess Air)</b>	(MMBTU/hr)	<b>0.7</b>	<b>2.2</b>	<b>3.7</b>	<b>5.1</b>
	(kW)	<b>190</b>	<b>580</b>	<b>970</b>	<b>1,360</b>
Air Capacity	(SCFH)	7,100	21,700	36,200	50,600
	(nm <sup>3</sup> /hr)	190	580	970	1,360
Air Pressure (Stages 1 and 2)	(in. w.c.)	0.0	0.2	0.5	0.9
	(mbar)	0.0	0.4	1.2	2.3
Air Pressure (Stage 3)	(in. w.c.)	0.4	3.4	9.5	18.6
	(mbar)	0.9	8.5	23.7	46.2
Air Pressure (Switching Valve) <sup>4</sup>	(in. w.c.)	0.5	4.3	12.0	23.5
	(mbar)	1.1	10.7	29.9	58.4
Gas Inlet Pressure	(in. w.c.)	0.1	1.3	3.6	7.0
	(mbar)	0.3	3.2	8.9	17.3
Combustion Zone Length	(ft)	8.0	10.0	12.0	15.0
	(m)	2.4	3.0	3.7	4.6
Combustion Zone Diameter	(ft)	2.5	3.0	3.5	4.0
	(m)	0.8	0.9	1.1	1.2
Maximum Excess	(Air %)	250	500	750	1,000
	(Fuel %)	+30	+30	+30	+30

#### NOTES:

- Capacities based on Natural Gas with HHV of 1034 BTU/ft<sup>3</sup> (Standard), and LHV of 10.21 kWh/nm<sup>3</sup> (Metric), 0.59 S.G., and a stoichiometric ratio of 9.74:1 with burner firing into chamber under no pressure at 5% excess air.
- Air and fuel flows based on STP operating conditions at sea level and industry standard air and gas piping practices.
- Flame detection via UV scanner in Firing Mode only.
- For models equipped with a switching valve (valve allows burner to switch between Firing and Invisiflame Mode) this is the required combustion air supply pressure to the inlet of the valve.
- Flame length and diameter measured from end of refractory combustion tile.
- Invisiflame™ Mode is suitable for furnace or chamber temperatures above 1600°F or 870°C only. For temperatures less than 1600°F or 870°C the TriOx burner must be used in Firing Mode only. The combustion zone when operating in Invisiflame™ Mode is not visible unless used with preheated combustion air.
- For ambient air start-up of the 2000 series burner, reference the 1000 data tables.



**BURNER MODEL TriOx 1012**

**FIRING MODE**

**NATURAL GAS, AMBIENT COMBUSTION AIR OPERATION**

SPECIFICATIONS		OPERATIONAL INFORMATION			
<b>Capacity (at 5% Excess Air)</b>	<b>(MMBTU/hr)</b>	<b>2.1</b>	<b>6.4</b>	<b>10.7</b>	<b>14.9</b>
	<b>(kW)</b>	<b>560</b>	<b>1,690</b>	<b>2,830</b>	<b>3,950</b>
Air Capacity	(SCFH)	20,800	63,200	105,700	147,600
	(nm <sup>3</sup> /hr)	560	1,690	2,830	3,950
Air Pressure (Stages 1 and 2)	(in.w.c.)	0.3	2.5	7.1	13.9
	(mbar)	0.7	6.3	17.7	34.6
Air Pressure (Stage 3)	(in.w.c.)	0.2	2.0	5.5	10.8
	(mbar)	0.5	4.9	13.7	26.8
Air Pressure (Switching Valve) <sup>4</sup>	(in.w.c.)	0.3	2.7	7.7	14.9
	(mbar)	0.7	6.8	19.1	37.2
Gas Inlet Pressure	(in.w.c.)	0.4	3.8	10.7	20.8
	(mbar)	1.0	9.5	26.6	51.9
Flame Length (5% Excess Air) <sup>5</sup>	(ft)	8.0	12.0	15.0	18.0
	(m)	2.4	3.7	4.6	5.5
Flame Diameter (5% Excess Air) <sup>5</sup>	(ft)	3.0	3.5	4.0	5.0
	(m)	0.9	1.1	1.2	1.5
Maximum Excess	(Air %)	500	750	1,000	1,500
	(Fuel %)	+30	+30	+30	+30

**INVISIFLAME MODE<sup>6</sup>**

**NATURAL GAS, AMBIENT COMBUSTION AIR OPERATION**

SPECIFICATIONS		OPERATIONAL INFORMATION			
<b>Capacity (at 5% Excess Air)</b>	<b>(MMBTU/hr)</b>	<b>2.1</b>	<b>6.4</b>	<b>10.7</b>	<b>14.9</b>
	<b>(kW)</b>	<b>560</b>	<b>1,690</b>	<b>2,830</b>	<b>3,950</b>
Air Capacity	(SCFH)	20,800	63,200	105,700	147,600
	(nm <sup>3</sup> /hr)	560	1,690	2,830	3,950
Air Pressure (Stages 1 and 2)	(in.w.c.)	0.0	0.1	0.3	0.6
	(mbar)	0.0	0.3	0.7	1.4
Air Pressure (Stage 3)	(in.w.c.)	0.3	2.7	7.7	14.9
	(mbar)	0.7	6.8	19.1	37.2
Air Pressure (Switching Valve) <sup>4</sup>	(in.w.c.)	0.3	3.2	8.9	17.4
	(mbar)	0.9	7.9	22.2	43.2
Gas Inlet Pressure	(in.w.c.)	0.4	4.1	11.5	22.4
	(mbar)	1.1	10.2	28.6	55.8
Combustion Zone Length	(ft)	8.0	12.0	15.0	18.0
	(m)	2.4	3.7	4.6	5.5
Combustion Zone Diameter	(ft)	3.0	3.5	4.0	5.0
	(m)	0.9	1.1	1.2	1.5
Maximum Excess	(Air %)	500	750	1,000	1,500
	(Fuel %)	+30	+30	+30	+30

**NOTES:**

- Capacities based on Natural Gas with HHV of 1034 BTU/ft<sup>3</sup> (Standard), and LHV of 10.21 kWh/nm<sup>3</sup> (Metric), 0.59 S.G., and a stoichiometric ratio of 9.74:1 with burner firing into chamber under no pressure at 5% excess air.
- Air and fuel flows based on STP operating conditions at sea level and industry standard air and gas piping practices.
- Flame detection via UV scanner in Firing Mode only.
- For models equipped with a switching valve (valve allows burner to switch between Firing and Invisiflame Mode) this is the required combustion air supply pressure to the inlet of the valve.
- Flame length and diameter measured from end of refractory combustion tile.
- Invisiflame™ Mode is suitable for furnace or chamber temperatures above 1600°F or 870°C only. For temperatures less than 1600°F or 870°C the TriOx burner must be used in Firing Mode only. The combustion zone when operating in Invisiflame™ Mode is not visible unless used with preheated combustion air.

In accordance with Hauck's commitment to Total Quality Improvement, Hauck reserves the right to change the specifications of products without prior notice.

**TriOx  
TRIPLE AIR STAGED ULTRA LOW NOX BURNER**

# BURNER MODEL TriOx 2012

## FIRING MODE

### NATURAL GAS, 900°F / 482°C COMBUSTION AIR OPERATION

SPECIFICATIONS		OPERATIONAL INFORMATION			
Capacity (at 5% Excess Air)	(MMBTU/hr)	1.3	4.0	6.6	9.2
	(kW)	340	1,050	1,750	2,450
Air Capacity	(SCFH)	12,800	39,100	65,400	91,300
	(nm <sup>3</sup> /hr)	340	1,050	1,750	2,450
Air Pressure (Stages 1 and 2)	(in.w.c.)	0.3	2.5	7.1	13.9
	(mbar)	0.7	6.3	17.7	34.5
Air Pressure (Stage 3)	(in.w.c.)	0.2	2.0	5.5	10.8
	(mbar)	0.5	4.9	13.7	26.8
Air Pressure (Switching Valve) <sup>4</sup>	(in.w.c.)	0.3	2.9	8.0	15.6
	(mbar)	0.8	7.1	19.9	38.9
Gas Inlet Pressure	(in.w.c.)	0.2	1.6	4.5	8.7
	(mbar)	0.4	4.0	11.1	21.6
Flame Length (5% Excess Air) <sup>5</sup>	(ft)	7.0	10.0	12.0	15.0
	(m)	2.1	3.0	3.7	4.6
Flame Diameter (5% Excess Air) <sup>5</sup>	(ft)	2.5	3.0	3.5	4.0
	(m)	0.8	0.9	1.1	1.2
Maximum Excess	(Air %)	250	500	750	1,000
	(Fuel %)	+30	+30	+30	+30

## INVISIFLAME MODE<sup>6</sup>

### NATURAL GAS, 900°F / 482°C COMBUSTION AIR OPERATION

SPECIFICATIONS		OPERATIONAL INFORMATION			
Capacity (at 5% Excess Air)	(MMBTU/hr)	1.3	4.0	6.6	9.2
	(kW)	340	1,050	1,750	2,450
Air Capacity	(SCFH)	12,800	39,100	65,400	91,300
	(nm <sup>3</sup> /hr)	340	1,050	1,750	2,450
Air Pressure (Stages 1 and 2)	(in.w.c.)	0.0	0.1	0.3	0.6
	(mbar)	0.0	0.3	0.7	1.4
Air Pressure (Stage 3)	(in.w.c.)	0.3	2.7	7.7	14.9
	(mbar)	0.7	6.8	19.1	37.2
Air Pressure (Switching Valve) <sup>4</sup>	(in.w.c.)	0.4	3.5	9.8	19.1
	(mbar)	0.9	8.7	24.3	47.4
Gas Inlet Pressure	(in.w.c.)	0.2	1.5	4.2	8.2
	(mbar)	0.4	3.8	10.5	20.4
Combustion Zone Length	(ft)	7.0	10.0	12.0	15.0
	(m)	2.1	3.0	3.7	4.6
Combustion Zone Diameter	(ft)	2.5	3.0	3.5	4.0
	(m)	0.8	0.9	1.1	1.2
Maximum Excess	(Air %)	250	500	750	1,000
	(Fuel %)	+30	+30	+30	+30

#### NOTES:

- Capacities based on Natural Gas with HHV of 1034 BTU/ft<sup>3</sup> (Standard), and LHV of 10.21 kWh/nm<sup>3</sup> (Metric), 0.59 S.G., and a stoichiometric ratio of 9.74:1 with burner firing into chamber under no pressure at 5% excess air.
- Air and fuel flows based on STP operating conditions at sea level and industry standard air and gas piping practices.
- Flame detection via UV scanner in Firing Mode only.
- For models equipped with a switching valve (valve allows burner to switch between Firing and Invisiflame Mode) this is the required combustion air supply pressure to the inlet of the valve.
- Flame length and diameter measured from end of refractory combustion tile.
- Invisiflame™ Mode is suitable for furnace or chamber temperatures above 1600°F or 870°C only. For temperatures less than 1600°F or 870°C the TriOx burner must be used in Firing Mode only. The combustion zone when operating in Invisiflame™ Mode is not visible unless used with preheated combustion air.
- For ambient air start-up of the 2000 series burner, reference the 1000 data tables.





**BURNER MODEL TriOx 1014**

**FIRING MODE**

**NATURAL GAS, AMBIENT COMBUSTION AIR OPERATION**

SPECIFICATIONS		OPERATIONAL INFORMATION			
Capacity (at 5% Excess Air)	(MMBTU/hr)	2.9	9.0	15.0	20.9
	(kW)	780	2,370	3,970	5,540
Air Capacity	(SCFH)	29,100	88,600	148,100	206,900
	(nm <sup>3</sup> /hr)	780	2,370	3,970	5,540
Air Pressure (Stages 1 and 2)	(in.w.c.)	0.3	2.5	7.1	13.9
	(mbar)	0.7	6.3	17.7	34.6
Air Pressure (Stage 3)	(in.w.c.)	0.2	1.8	4.9	9.6
	(mbar)	0.5	4.4	12.2	23.9
Air Pressure (Switching Valve) <sup>4</sup>	(in.w.c.)	0.3	2.6	7.3	14.2
	(mbar)	0.7	6.5	18.1	35.3
Gas Inlet Pressure	(in.w.c.)	0.5	4.7	13.0	25.4
	(mbar)	1.3	11.6	32.4	63.2
Flame Length (5% Excess Air) <sup>5</sup>	(ft)	8.0	13.0	15.0	18.0
	(m)	2.4	4.0	4.6	5.5
Flame Diameter (5% Excess Air) <sup>5</sup>	(ft)	3.0	5.0	5.5	6.0
	(m)	0.9	1.5	1.7	1.8
Maximum Excess	(Air %)	500	750	1,000	1,500
	(Fuel %)	+30	+30	+30	+30

**INVISIFLAME MODE<sup>6</sup>**

**NATURAL GAS, AMBIENT COMBUSTION AIR OPERATION**

SPECIFICATIONS		OPERATIONAL INFORMATION			
Capacity (at 5% Excess Air)	(MMBTU/hr)	2.9	9.0	15.0	20.9
	(kW)	780	2,370	3,970	5,540
Air Capacity	(SCFH)	29,100	88,600	148,100	206,900
	(nm <sup>3</sup> /hr)	780	2,370	3,970	5,540
Air Pressure (Stages 1 and 2)	(in.w.c.)	0.0	0.1	0.2	0.3
	(mbar)	0.0	0.2	0.4	0.8
Air Pressure (Stage 3)	(in.w.c.)	0.3	2.8	7.9	15.4
	(mbar)	0.8	7.0	19.7	38.4
Air Pressure (Switching Valve) <sup>4</sup>	(in.w.c.)	0.3	2.9	8.2	16.0
	(mbar)	0.8	7.3	20.4	39.8
Gas Inlet Pressure	(in.w.c.)	0.5	4.7	13.2	25.9
	(mbar)	1.3	11.8	33.0	64.3
Combustion Zone Length	(ft)	8.0	13.0	15.0	18.0
	(m)	2.4	4.0	4.6	5.5
Combustion Zone Diameter	(ft)	3.0	5.0	5.5	6.0
	(m)	0.9	1.5	1.7	1.8
Maximum Excess	(Air %)	500	750	1,000	1,500
	(Fuel %)	+30	+30	+30	+30

**NOTES:**

- Capacities based on Natural Gas with HHV of 1034 BTU/ft<sup>3</sup> (Standard), and LHV of 10.21 kWh/nm<sup>3</sup> (Metric), 0.59 S.G., and a stoichiometric ratio of 9.74:1 with burner firing into chamber under no pressure at 5% excess air.
- Air and fuel flows based on STP operating conditions at sea level and industry standard air and gas piping practices.
- Flame detection via UV scanner in Firing Mode only.
- For models equipped with a switching valve (valve allows burner to switch between Firing and Invisiflame Mode) this is the required combustion air supply pressure to the inlet of the valve.
- Flame length and diameter measured from end of refractory combustion tile.
- Invisiflame™ Mode is suitable for furnace or chamber temperatures above 1600°F or 870°C only. For temperatures less than 1600°F or 870°C the TriOx burner must be used in Firing Mode only. The combustion zone when operating in Invisiflame™ Mode is not visible unless used with preheated combustion air.

In accordance with Hauck's commitment to Total Quality Improvement, Hauck reserves the right to change the specifications of products without prior notice.

**TriOx  
TRIPLE AIR STAGED ULTRA LOW NOx BURNER**

# BURNER MODEL TriOx 2014

## FIRING MODE

### NATURAL GAS, 900°F / 482°C COMBUSTION AIR OPERATION

SPECIFICATIONS		OPERATIONAL INFORMATION			
<b>Capacity (at 5% Excess Air)</b>	(MMBTU/hr)	<b>1.8</b>	<b>5.6</b>	<b>9.3</b>	<b>13.0</b>
	(kW)	<b>480</b>	<b>1,470</b>	<b>2,460</b>	<b>3,430</b>
Air Capacity	(SCFH)	18,000	54,900	91,700	128,100
	(nm <sup>3</sup> /hr)	480	1,470	2,460	3,430
Air Pressure (Stages 1 and 2)	(in.w.c.)	0.3	2.6	7.1	13.9
	(mbar)	0.7	6.4	17.7	34.6
Air Pressure (Stage 3)	(in.w.c.)	0.2	1.8	4.9	9.6
	(mbar)	0.5	4.4	12.2	23.9
Air Pressure (Switching Valve) <sup>4</sup>	(in.w.c.)	0.3	2.8	7.9	15.4
	(mbar)	0.8	7.0	19.6	38.3
Gas Inlet Pressure	(in.w.c.)	0.2	1.9	5.4	10.5
	(mbar)	0.5	4.8	13.4	26.1
Flame Length (5% Excess Air) <sup>5</sup>	(ft)	7.0	11.0	13.0	15.0
	(m)	2.1	3.4	4.0	4.6
Flame Diameter (5% Excess Air) <sup>5</sup>	(ft)	2.5	3.0	4.0	4.0
	(m)	0.8	0.9	1.2	1.2
Maximum Excess	(Air %)	250	500	750	1,000
	(Fuel %)	+30	+30	+30	+30

## INVISIFLAME MODE<sup>6</sup>

### NATURAL GAS, 900°F / 482°C COMBUSTION AIR OPERATION

SPECIFICATIONS		OPERATIONAL INFORMATION			
<b>Capacity (at 5% Excess Air)</b>	(MMBTU/hr)	<b>1.8</b>	<b>5.6</b>	<b>9.3</b>	<b>13.0</b>
	(kW)	<b>480</b>	<b>1,470</b>	<b>2,460</b>	<b>3,430</b>
Air Capacity	(SCFH)	18,000	54,900	91,700	128,100
	(nm <sup>3</sup> /hr)	480	1,470	2,460	3,430
Air Pressure (Stages 1 and 2)	(in.w.c.)	0.0	0.1	0.2	0.4
	(mbar)	0.0	0.2	0.6	1.1
Air Pressure (Stage 3)	(in.w.c.)	0.3	2.8	7.9	15.4
	(mbar)	0.8	7.0	19.6	38.3
Air Pressure (Switching Valve) <sup>4</sup>	(in.w.c.)	0.3	3.2	9.0	17.6
	(mbar)	0.9	8.1	22.5	43.8
Gas Inlet Pressure	(in.w.c.)	0.2	1.9	5.3	10.3
	(mbar)	0.5	4.7	13.1	25.6
Combustion Zone Length	(ft)	7.0	11.0	13.0	15.0
	(m)	2.1	3.4	4.0	4.6
Combustion Zone Diameter	(ft)	2.5	3.0	4.0	4.0
	(m)	0.8	0.9	1.2	1.2
Maximum Excess	(Air %)	250	500	750	1,000
	(Fuel %)	+30	+30	+30	+30

#### NOTES:

- Capacities based on Natural Gas with HHV of 1034 BTU/ft<sup>3</sup> (Standard), and LHV of 10.21 kWh/nm<sup>3</sup> (Metric), 0.59 S.G., and a stoichiometric ratio of 9.74:1 with burner firing into chamber under no pressure at 5% excess air.
- Air and fuel flows based on STP operating conditions at sea level and industry standard air and gas piping practices.
- Flame detection via UV scanner in Firing Mode only.
- For models equipped with a switching valve (valve allows burner to switch between Firing and Invisiflame Mode) this is the required combustion air supply pressure to the inlet of the valve.
- Flame length and diameter measured from end of refractory combustion tile.
- Invisiflame™ Mode is suitable for furnace or chamber temperatures above 1600°F or 870°C only. For temperatures less than 1600°F or 870°C the TriOx burner must be used in Firing Mode only. The combustion zone when operating in Invisiflame™ Mode is not visible unless used with preheated combustion air.
- For ambient air start-up of the 2000 series burner, reference the 1000 data tables.



**BURNER MODEL TriOx 1016**

**FIRING MODE**

**NATURAL GAS, AMBIENT COMBUSTION AIR OPERATION**

SPECIFICATIONS		OPERATIONAL INFORMATION			
Capacity (at 5% Excess Air)	(MMBTU/hr)	3.9	11.8	19.7	27.6
	(kW)	1,030	3,130	5,230	7,310
Air Capacity	(SCFH)	38,400	116,900	195,300	272,900
	(nm <sup>3</sup> /hr)	1,030	3,130	5,230	7,310
Air Pressure (Stages 1 and 2)	(in.w.c.)	0.3	2.6	7.1	13.9
	(mbar)	0.7	6.3	17.7	34.6
Air Pressure (Stage 3)	(in.w.c.)	0.2	1.6	4.5	8.7
	(mbar)	0.4	4.0	11.1	21.6
Air Pressure (Switching Valve) <sup>4</sup>	(in.w.c.)	0.3	2.6	7.3	14.2
	(mbar)	0.7	6.5	18.1	35.3
Gas Inlet Pressure	(in.w.c.)	0.3	2.6	7.2	14.1
	(mbar)	0.7	6.4	18.0	35.1
Flame Length (5% Excess Air) <sup>5</sup>	(ft)	8.0	12.0	16.0	18.0
	(m)	2.4	3.7	4.9	5.5
Flame Diameter (5% Excess Air) <sup>5</sup>	(ft)	3.0	4.0	5.0	6.0
	(m)	0.9	1.2	1.5	1.8
Maximum Excess	(Air %)	500	750	1,000	1,500
	(Fuel %)	+30	+30	+30	+30

**INVISIFLAME MODE<sup>6</sup>**

**NATURAL GAS, AMBIENT COMBUSTION AIR OPERATION**

SPECIFICATIONS		OPERATIONAL INFORMATION			
Capacity (at 5% Excess Air)	(MMBTU/hr)	3.9	11.8	19.7	27.6
	(kW)	1,030	3,130	5,230	7,310
Air Capacity	(SCFH)	38,400	116,900	195,300	272,900
	(nm <sup>3</sup> /hr)	1,030	3,130	5,230	7,310
Air Pressure (Stages 1 and 2)	(in.w.c.)	0.0	0.0	0.1	0.2
	(mbar)	0.0	0.1	0.3	0.5
Air Pressure (Stage 3)	(in.w.c.)	0.3	2.6	7.1	13.9
	(mbar)	0.7	6.3	17.7	34.6
Air Pressure (Switching Valve) <sup>4</sup>	(in.w.c.)	0.3	3.1	8.6	16.7
	(mbar)	0.8	7.6	21.3	41.5
Gas Inlet Pressure	(in.w.c.)	0.2	2.3	6.4	12.5
	(mbar)	0.6	5.7	15.9	31.1
Combustion Zone Length	(ft)	8.0	12.0	16.0	18.0
	(m)	2.4	3.7	4.9	5.5
Combustion Zone Diameter	(ft)	3.0	4.0	5.0	6.0
	(m)	0.9	1.2	1.5	1.8
Maximum Excess	(Air %)	500	750	1,000	1,500
	(Fuel %)	+30	+30	+30	+30

**NOTES:**

- Capacities based on Natural Gas with HHV of 1034 BTU/ft<sup>3</sup> (Standard), and LHV of 10.21 kWh/nm<sup>3</sup> (Metric), 0.59 S.G., and a stoichiometric ratio of 9.74:1 with burner firing into chamber under no pressure at 5% excess air.
- Air and fuel flows based on STP operating conditions at sea level and industry standard air and gas piping practices.
- Flame detection via UV scanner in Firing Mode only.
- For models equipped with a switching valve (valve allows burner to switch between Firing and Invisiflame Mode) this is the required combustion air supply pressure to the inlet of the valve.
- Flame length and diameter measured from end of refractory combustion tile.
- Invisiflame™ Mode is suitable for furnace or chamber temperatures above 1600°F or 870°C only. For temperatures less than 1600°F or 870°C the TriOx burner must be used in Firing Mode only. The combustion zone when operating in Invisiflame™ Mode is not visible unless used with preheated combustion air.

In accordance with Hauck's commitment to Total Quality Improvement, Hauck reserves the right to change the specifications of products without prior notice.

**HAUCK MANUFACTURING CO., P.O. Box 90 Lebanon, PA 17042-0090 717-272-3051**

**TriOx  
TRIPLE AIR STAGED ULTRA LOW NOX BURNER**

(2016 Capacities on Reverse Side)

# BURNER MODEL TriOx 2016

## FIRING MODE

### NATURAL GAS, 900°F / 482°C COMBUSTION AIR OPERATION

SPECIFICATIONS		OPERATIONAL INFORMATION			
<b>Capacity (at 5% Excess Air)</b>	<b>(MMBTU/hr)</b>	<b>2.4</b>	<b>7.3</b>	<b>12.2</b>	<b>17.1</b>
	<b>(kW)</b>	<b>630</b>	<b>1,940</b>	<b>3,240</b>	<b>4,520</b>
Air Capacity	(SCFH)	23,700	72,300	120,800	168,722
	(nm <sup>3</sup> /hr)	630	1,940	3,240	4,520
Air Pressure (Stages 1 and 2)	(in.w.c.)	0.3	2.6	7.1	13.9
	(mbar)	0.7	6.4	17.7	34.6
Air Pressure (Stage 3)	(in.w.c.)	0.2	1.6	4.5	8.7
	(mbar)	0.4	4.0	11.1	21.6
Air Pressure (Switching Valve) <sup>4</sup>	(in.w.c.)	0.3	2.8	7.8	15.3
	(mbar)	0.8	7.0	19.5	38.0
Gas Inlet Pressure	(in.w.c.)	0.1	1.3	3.6	7.0
	(mbar)	0.3	3.2	8.9	17.3
Flame Length (5% Excess Air) <sup>5</sup>	(ft)	7.0	10.0	13.0	15.0
	(m)	2.1	3.0	4.0	4.6
Flame Diameter (5% Excess Air) <sup>5</sup>	(ft)	3.0	3.5	4.0	5.0
	(m)	0.9	1.1	1.2	1.5
Maximum Excess	(Air %)	250	500	750	1,000
	(Fuel %)	+30	+30	+30	+30

## INVISIFLAME MODE<sup>6</sup>

### NATURAL GAS, 900°F / 482°C COMBUSTION AIR OPERATION

SPECIFICATIONS		OPERATIONAL INFORMATION			
<b>Capacity (at 5% Excess Air)</b>	<b>(MMBTU/hr)</b>	<b>2.4</b>	<b>7.3</b>	<b>12.2</b>	<b>17.1</b>
	<b>(kW)</b>	<b>630</b>	<b>1,940</b>	<b>3,240</b>	<b>4,520</b>
Air Capacity	(SCFH)	23,700	72,300	120,800	168,722
	(nm <sup>3</sup> /hr)	630	1,940	3,240	4,520
Air Pressure (Stages 1 and 2)	(in.w.c.)	0.0	0.0	0.1	0.2
	(mbar)	0.0	0.1	0.2	0.4
Air Pressure (Stage 3)	(in.w.c.)	0.3	2.6	7.1	13.9
	(mbar)	0.7	6.4	17.7	34.6
Air Pressure (Switching Valve) <sup>4</sup>	(in.w.c.)	0.4	3.4	9.4	18.2
	(mbar)	0.9	8.3	23.3	45.4
Gas Inlet Pressure	(in.w.c.)	0.1	1.0	2.8	5.4
	(mbar)	0.3	2.5	6.9	13.4
Combustion Zone Length	(ft)	7.0	10.0	13.0	15.0
	(m)	2.1	3.0	4.0	4.6
Combustion Zone Diameter	(ft)	3.0	3.5	4.0	5.0
	(m)	0.9	1.1	1.2	1.5
Maximum Excess	(Air %)	250	500	750	1,000
	(Fuel %)	+30	+30	+30	+30

#### NOTES:

- Capacities based on Natural Gas with HHV of 1034 BTU/ft<sup>3</sup> (Standard), and LHV of 10.21 kWh/nm<sup>3</sup> (Metric), 0.59 S.G., and a stoichiometric ratio of 9.74:1 with burner firing into chamber under no pressure at 5% excess air.
- Air and fuel flows based on STP operating conditions at sea level and industry standard air and gas piping practices.
- Flame detection via UV scanner in Firing Mode only.
- For models equipped with a switching valve (valve allows burner to switch between Firing and Invisiflame Mode) this is the required combustion air supply pressure to the inlet of the valve.
- Flame length and diameter measured from end of refractory combustion tile.
- Invisiflame™ Mode is suitable for furnace or chamber temperatures above 1600°F or 870°C only. For temperatures less than 1600°F or 870°C the TriOx burner must be used in Firing Mode only. The combustion zone when operating in Invisiflame™ Mode is not visible unless used with preheated combustion air.
- For ambient air start-up of the 2000 series burner, reference the 1000 data tables.



**BURNER MODEL TriOx 3008**

**INVISIFLAME MODE<sup>5</sup>**

**NATURAL GAS, AMBIENT COMBUSTION AIR OPERATION**

SPECIFICATIONS		OPERATIONAL INFORMATION			
Capacity (at 5% Excess Air)	(MMBTU/hr)	<b>1.1</b>	<b>3.2</b>	<b>5.3</b>	<b>8.0</b>
	(kW)	<b>280</b>	<b>840</b>	<b>1,410</b>	<b>2,120</b>
Air Capacity	(SCFH)	10,400	31,500	52,700	79,100
	(nm <sup>3</sup> /hr)	280	840	1,410	2,120
Air Pressure (Body)	(in.w.c.)	0.3	2.9	8.2	18.4
	(mbar)	0.8	7.2	20.3	45.7
Gas Inlet Pressure	(in.w.c.)	0.2	1.8	5.0	11.2
	(mbar)	0.5	4.4	12.3	27.8
Combustion Zone Length <sup>4</sup>	(ft)	10.0	12.0	15.0	18.0
	(m)	3.0	3.7	4.6	5.5
Combustion Zone Diameter <sup>4</sup>	(ft)	3.0	3.5	4.0	5.0
	(m)	0.9	1.1	1.2	1.5
Maximum Excess	(Air %)	500	750	1,000	1,500
	(Fuel %)	+30	+30	+30	+30

**BURNER MODEL TriOx 4008**

**INVISIFLAME MODE<sup>5</sup>**

**NATURAL GAS, 900°F / 482°C COMBUSTION AIR OPERATION**

SPECIFICATIONS		OPERATIONAL INFORMATION			
Capacity (at 5% Excess Air)	(MMBTU/hr)	<b>0.6</b>	<b>2.0</b>	<b>3.3</b>	<b>5.1</b>
	(kW)	<b>170</b>	<b>520</b>	<b>870</b>	<b>1,360</b>
Air Capacity	(SCFH)	6,400	19,400	32,500	50,600
	(nm <sup>3</sup> /hr)	170	520	870	1,360
Air Pressure (Body)	(in.w.c.)	0.3	2.9	8.1	19.8
	(mbar)	0.8	7.2	20.3	49.1
Gas Inlet Pressure	(in.w.c.)	0.1	1.0	2.9	6.9
	(mbar)	0.3	2.5	7.1	17.3
Combustion Zone Length <sup>4</sup>	(ft)	8.0	10.0	12.0	15.0
	(m)	2.4	3.0	3.7	4.6
Combustion Zone Diameter <sup>4</sup>	(ft)	2.5	3.0	3.5	4.0
	(m)	0.8	0.9	1.1	1.2
Maximum Excess	(Air %)	250	500	750	1,000
	(Fuel %)	+30	+30	+30	+30

**NOTES:**

- Capacities based on Natural Gas with HHV of 1034 BTU/ft<sup>3</sup> (Standard), and LHV of 10.21 kWh/nm<sup>3</sup> (Metric), 0.59 S.G., and a stoichiometric ratio of 9.74:1 with burner firing into chamber under no pressure at 5% excess air.
- Air and fuel flows based on STP operating conditions at sea level and industry standard air and gas piping practices.
- Flame detection is not possible on the 3000 and 4000 Invisiflame™ Mode only versions of the burner.
- The combustion zone when operating Invisiflame™ Mode is not visible unless used with preheated combustion air.
- Invisiflame™ Mode is suitable for furnace or chamber temperatures above 1600°F or 870°C only. For temperatures less than 1600°F or 870°C the TriOx burner must be used in Firing Mode only.

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**TriOx  
TRIPLE AIR STAGED ULTRA LOW NOX BURNER**

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**BURNER MODEL TriOx 3012**

**INVISIFLAME MODE<sup>5</sup>**

**NATURAL GAS, AMBIENT COMBUSTION AIR OPERATION**

SPECIFICATIONS		OPERATIONAL INFORMATION			
Capacity (at 5% Excess Air)	(MMBTU/hr)	<b>2.1</b>	<b>6.4</b>	<b>10.7</b>	<b>14.9</b>
	(kW)	<b>560</b>	<b>1,690</b>	<b>2,830</b>	<b>3,950</b>
Air Capacity	(SCFH)	20,800	63,200	105,700	147,600
	(nm <sup>3</sup> /hr)	560	1,690	2,830	3,950
Air Pressure (Body)	(in.w.c.)	0.3	2.9	8.2	15.9
	(mbar)	0.8	7.3	20.3	39.6
Gas Inlet Pressure	(in.w.c.)	0.4	4.1	11.5	22.5
	(mbar)	1.1	10.2	28.7	55.9
Combustion Zone Length <sup>4</sup>	(ft)	8.0	12.0	15.0	18.0
	(m)	2.4	3.7	4.6	5.5
Combustion Zone Diameter <sup>4</sup>	(ft)	3.0	3.5	4.0	5.0
	(m)	0.9	1.1	1.2	1.5
Maximum Excess	(Air %)	500	750	1,000	1,500
	(Fuel %)	+30	+30	+30	+30

**BURNER MODEL TriOx 4012**

**INVISIFLAME MODE<sup>5</sup>**

**NATURAL GAS, 900°F / 482°C COMBUSTION AIR OPERATION**

SPECIFICATIONS		OPERATIONAL INFORMATION			
Capacity (at 5% Excess Air)	(MMBTU/hr)	<b>1.3</b>	<b>4.0</b>	<b>6.6</b>	<b>9.2</b>
	(kW)	<b>340</b>	<b>1,050</b>	<b>1,750</b>	<b>2,450</b>
Air Capacity	(SCFH)	12,800	39,100	65,400	91,300
	(nm <sup>3</sup> /hr)	340	1,050	1,750	2,450
Air Pressure (Body)	(in.w.c.)	0.3	2.9	8.2	15.9
	(mbar)	0.8	7.3	20.3	39.5
Gas Inlet Pressure	(in.w.c.)	0.2	1.5	4.2	8.2
	(mbar)	0.4	3.8	10.5	20.4
Combustion Zone Length <sup>4</sup>	(ft)	7.0	10.0	12.0	15.0
	(m)	2.1	3.0	3.7	4.6
Combustion Zone Diameter <sup>4</sup>	(ft)	2.5	3.0	3.5	4.0
	(m)	0.8	0.9	1.1	1.2
Maximum Excess	(Air %)	250	500	750	1,000
	(Fuel %)	+30	+30	+30	+30

**NOTES:**

1. Capacities based on Natural Gas with HHV of 1034 BTU/ft<sup>3</sup> (Standard), and LHV of 10.21 kWh/nm<sup>3</sup> (Metric), 0.59 S.G., and a stoichiometric ratio of 9.74:1 with burner firing into chamber under no pressure at 5% excess air.
2. Air and fuel flows based on STP operating conditions at sea level and industry standard air and gas piping practices.
3. Flame detection is not possible on the 3000 and 4000 Invisiflame™ Mode only versions of the burner.
4. The combustion zone when operating Invisiflame™ Mode is not visible unless used with preheated combustion air.
5. Invisiflame™ Mode is suitable for furnace or chamber temperatures above 1600°F or 870°C only. For temperatures less than 1600°F or 870°C the TriOx burner must be used in Firing Mode only.

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**TriOx  
TRIPLE AIR STAGED ULTRA LOW NOX BURNER**

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**BURNER MODEL TriOx 3014**

**INVISIFLAME MODE<sup>5</sup>**

**NATURAL GAS, AMBIENT COMBUSTION AIR OPERATION**

SPECIFICATIONS		OPERATIONAL INFORMATION			
Capacity (at 5% Excess Air)	(MMBTU/hr)	<b>2.9</b>	<b>8.8</b>	<b>14.7</b>	<b>20.9</b>
	(kW)	<b>770</b>	<b>2,340</b>	<b>3,910</b>	<b>5,540</b>
Air Capacity	(SCFH)	28,600	87,200	145,800	206,900
	(nm <sup>3</sup> /hr)	770	2,340	3,910	5,540
Air Pressure (Body)	(in.w.c.)	0.3	2.9	8.2	16.4
	(mbar)	0.8	7.3	20.3	40.9
Gas Inlet Pressure	(in.w.c.)	0.5	4.6	12.8	25.9
	(mbar)	1.2	11.4	31.9	64.3
Combustion Zone Length <sup>4</sup>	(ft)	8.0	13.0	15.0	18.0
	(m)	2.4	4.0	4.6	5.5
Combustion Zone Diameter <sup>4</sup>	(ft)	3.0	5.0	5.5	6.0
	(m)	0.9	1.5	1.7	1.8
Maximum Excess	(Air %)	500	750	1,000	1,500
	(Fuel %)	+30	+30	+30	+30

**BURNER MODEL TriOx 4014**

**INVISIFLAME MODE<sup>5</sup>**

**NATURAL GAS, 900°F / 482°C COMBUSTION AIR OPERATION**

SPECIFICATIONS		OPERATIONAL INFORMATION			
Capacity (at 5% Excess Air)	(MMBTU/hr)	<b>1.8</b>	<b>5.5</b>	<b>9.1</b>	<b>13.0</b>
	(kW)	<b>470</b>	<b>1,450</b>	<b>2,420</b>	<b>3,430</b>
Air Capacity	(SCFH)	17,700	54,000	90,300	128,100
	(nm <sup>3</sup> /hr)	470	1,450	2,420	3,430
Air Pressure (Body)	(in.w.c.)	0.3	2.9	8.1	16.4
	(mbar)	0.8	7.2	20.3	40.8
Gas Inlet Pressure	(in.w.c.)	0.2	1.8	5.1	10.3
	(mbar)	0.5	4.6	12.7	25.6
Combustion Zone Length <sup>4</sup>	(ft)	7.0	11.0	13.0	15.0
	(m)	2.1	3.4	4.0	4.6
Combustion Zone Diameter <sup>4</sup>	(ft)	2.5	3.0	4.0	4.0
	(m)	0.8	0.9	1.2	1.2
Maximum Excess	(Air %)	250	500	750	1,000
	(Fuel %)	+30	+30	+30	+30

**NOTES:**

1. Capacities based on Natural Gas with HHV of 1034 BTU/ft<sup>3</sup> (Standard), and LHV of 10.21 kWh/nm<sup>3</sup> (Metric), 0.59 S.G., and a stoichiometric ratio of 9.74:1 with burner firing into chamber under no pressure at 5% excess air.
2. Air and fuel flows based on STP operating conditions at sea level and industry standard air and gas piping practices.
3. Flame detection is not possible on the 3000 and 4000 Invisiflame™ Mode only versions of the burner.
4. The combustion zone when operating Invisiflame™ Mode is not visible unless used with preheated combustion air.
5. Invisiflame™ Mode is suitable for furnace or chamber temperatures above 1600°F or 870°C only. For temperatures less than 1600°F or 870°C the TriOx burner must be used in Firing Mode only.

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**TriOx  
TRIPLE AIR STAGED ULTRA LOW NOX BURNER**

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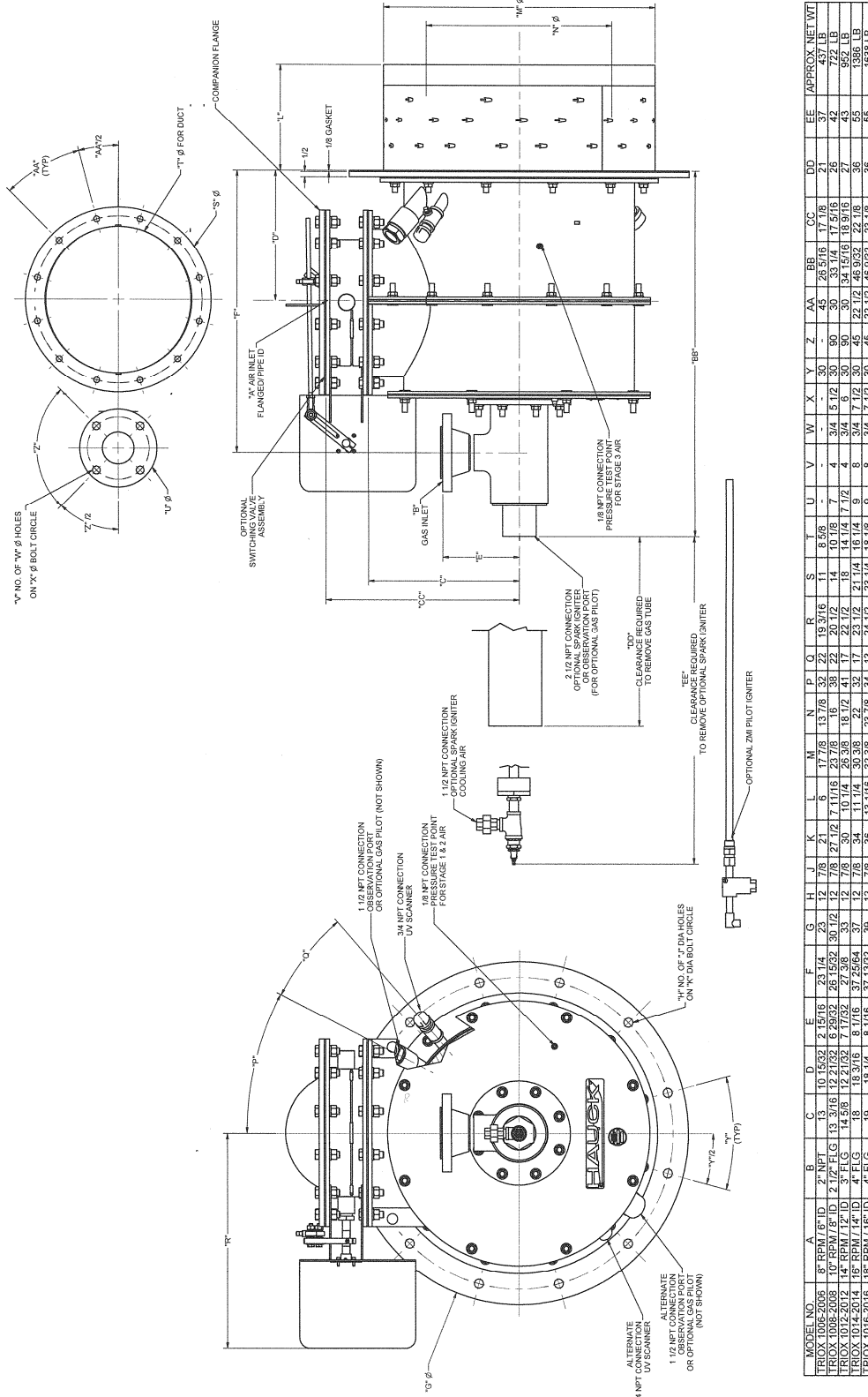


# DIMENSIONS

## TriOx

### TRIPLE AIR STAGED ULTRA LOW NOx BURNER

TriOx 1006 – TriOx 2016



- NOTES:
- AIR INLET MOUNTING CAN BE LOCATED @ 6 AND 12 O'CLOCK POSITIONS ONLY.
  - GAS INLET CAN BE LOCATED IN ANY POSITION.
  - GAS INLET FLANGE CONNECTIONS ARE ANSI 150 LB BOLT PATTERN.

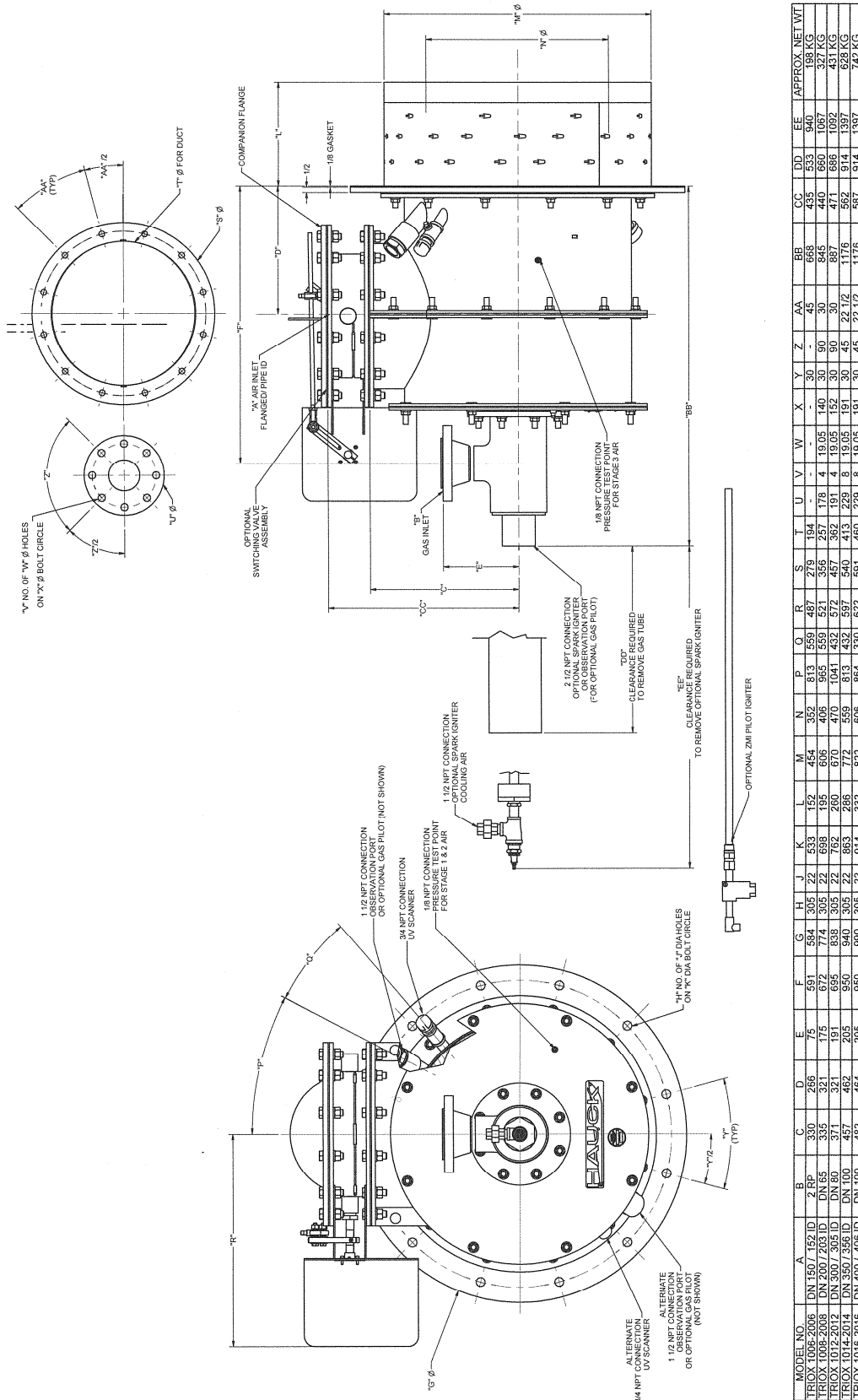
Y8695  
(NOT TO SCALE)

(See Reverse Side For Metric Dimensions)

# METRIC DIMENSIONS

## TriOx TRIPLE AIR STAGED ULTRA LOW NOx BURNER

### TriOx 1006 – TriOx 2116



MODEL NO.	A	B	C	D	E	F	G	H	J	K	L	M	N	O	R	S	T	U	V	W	X	Y	Z	AA	BB	CC	DD	EE	APPROX. NET WT		
TRIOX 1006-2006	DN 150 / 152 ID	2 RP	330	266	75	591	584	305	22	533	152	454	352	813	559	487	279	194	-	-	30	-	45	668	435	533	940	199	KG		
TRIOX 1006-2008	DN 200 / 203 ID	DN 65	335	321	175	672	774	305	22	698	185	606	406	955	559	521	356	257	178	4	19.05	140	30	90	30	645	440	660	1067	327	KG
TRIOX 1012-2012	DN 300 / 305 ID	DN 80	371	321	191	695	838	305	22	762	260	670	470	1041	432	572	457	362	191	4	19.05	152	30	90	30	887	471	696	1092	431	KG
TRIOX 1014-2014	DN 350 / 356 ID	DN 100	457	462	205	940	940	305	22	863	286	772	559	813	432	597	540	413	229	8	19.05	191	30	45	22 1/2	1178	587	914	1397	742	KG
TRIOX 1016-2016	DN 400 / 406 ID	DN 100	482	464	295	990	990	305	22	914	332	822	606	894	330	622	591	460	223	8	19.05	181	30	45	22 1/2	1178	587	914	1397	742	KG

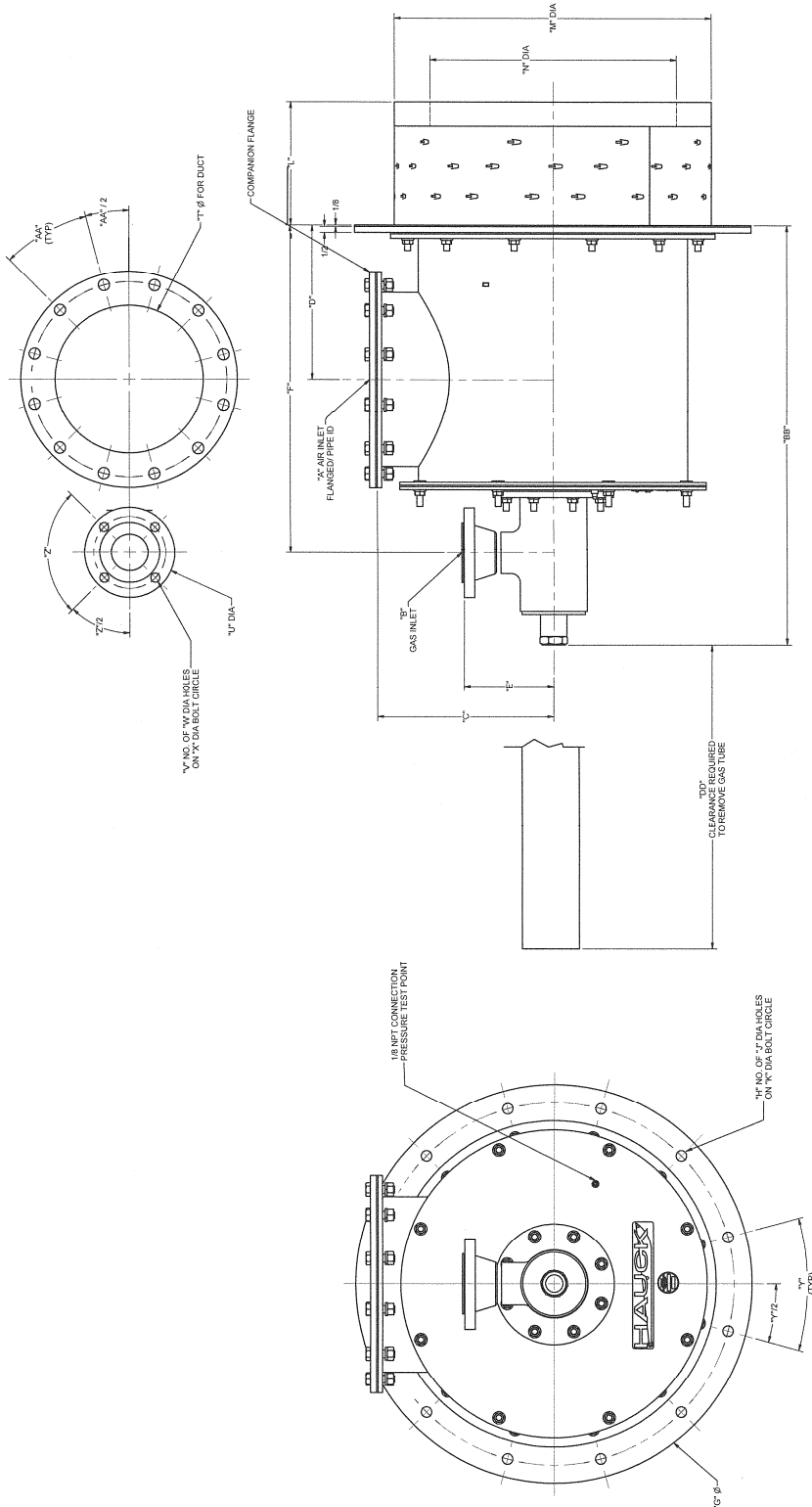
- NOTES:
- AIR INLET MOUNTING CAN BE LOCATED @ 6 AND 12 O'CLOCK POSITIONS ONLY.
  - GAS INLET CAN BE LOCATED IN ANY POSITION.
  - GAS INLET FLANGE CONNECTIONS ARE DIN BOLT PATTERN.
- Y8720 METRIC  
(NOT TO SCALE)



# DIMENSIONS

## TriOx TRIPLE AIR STAGED ULTRA LOW NOx BURNER

TriOx 3008 – TriOx 4014



MODEL NO.	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R	S	T	U	V	W	X	Y	Z	AA	BB	CC	DD	EE	APPROX. NET WT	
TRIOX 3008-4008	5" RPM / 6" ID	2 1/2" FLG	13 3/16	12 25/32	6 29/32	26 3/8	30 1/2	12	7/8	27 1/2	7 11/16	23 7/8	16	-	-	-	14	257	178	4	19	140	30	90	30	845	-	-	660	-	602 LB
TRIOX 3012-4012	14" RPM / 12" ID	3" FLG	14 5/8	12 29/32	7 17/32	27 5/16	33	12	7/8	30	10 1/4	26 3/8	18 1/2	-	-	-	18	362	191	8	19	152	30	90	22 1/2	887	-	-	686	-	830 LB
TRIOX 3014-4014	16" RPM / 14" ID	4" FLG	18	18 9/32	8 1/16	37 5/16	37	12	7/8	34	11 1/4	30 3/8	22	-	-	-	21 1/4	413	229	8	19	191	30	45	22 1/2	1164	-	914	-	1235 LB	

- NOTES:
- AIR INLET MOUNTING CAN BE LOCATED @ 6 AND 12 O'CLOCK POSITIONS ONLY.
  - GAS INLET CAN BE LOCATED IN ANY POSITION.
  - GAS INLET FLANGE CONNECTIONS ARE ANSI 150 LB BOLT PATTERN.

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(NOT TO SCALE)

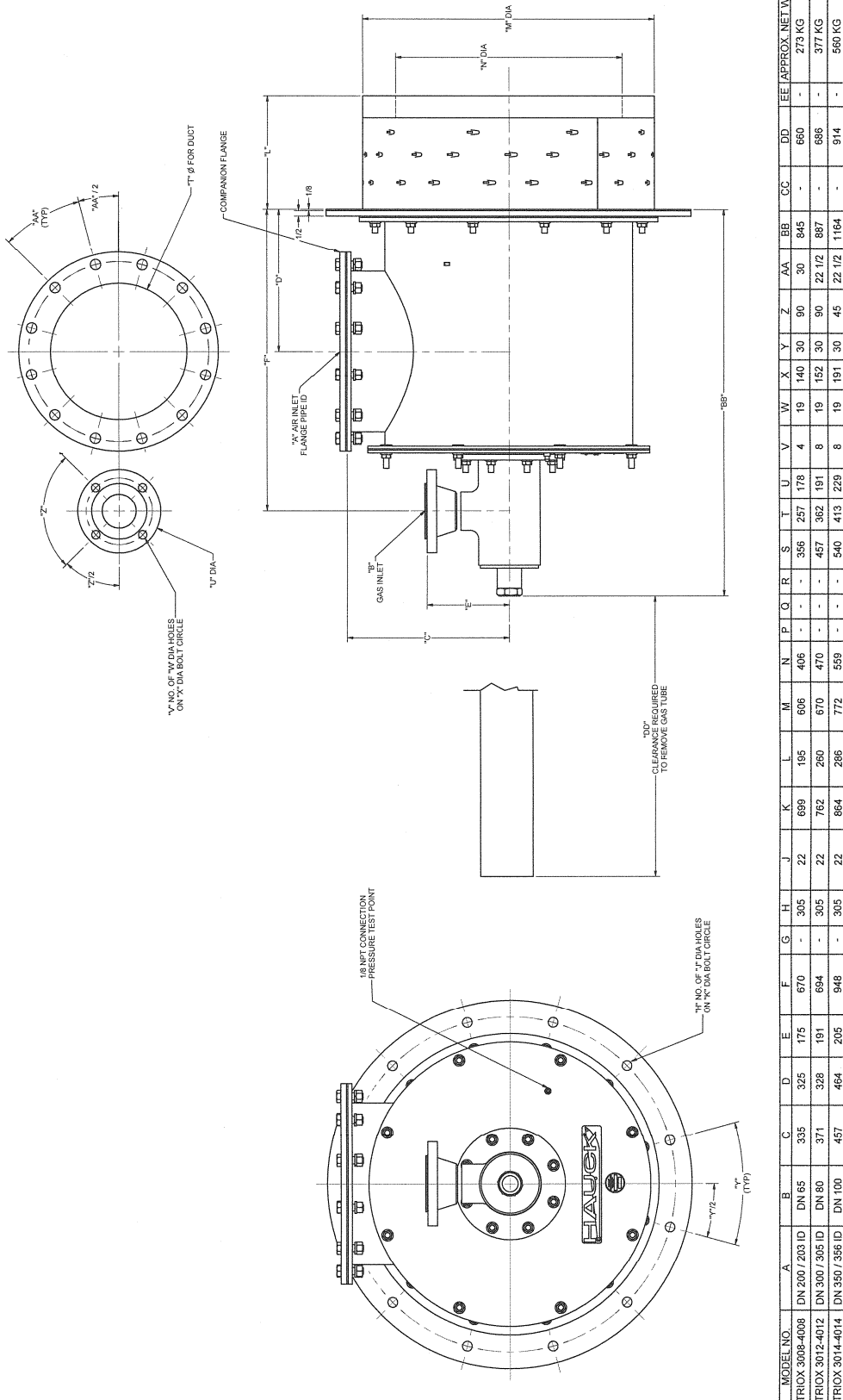
(See Reverse Side For Metric Dimensions)

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# METRIC DIMENSIONS

## TriOx TRIPLE AIR STAGED ULTRA LOW NOx BURNER

### TriOx 3008 – TriOx 4014

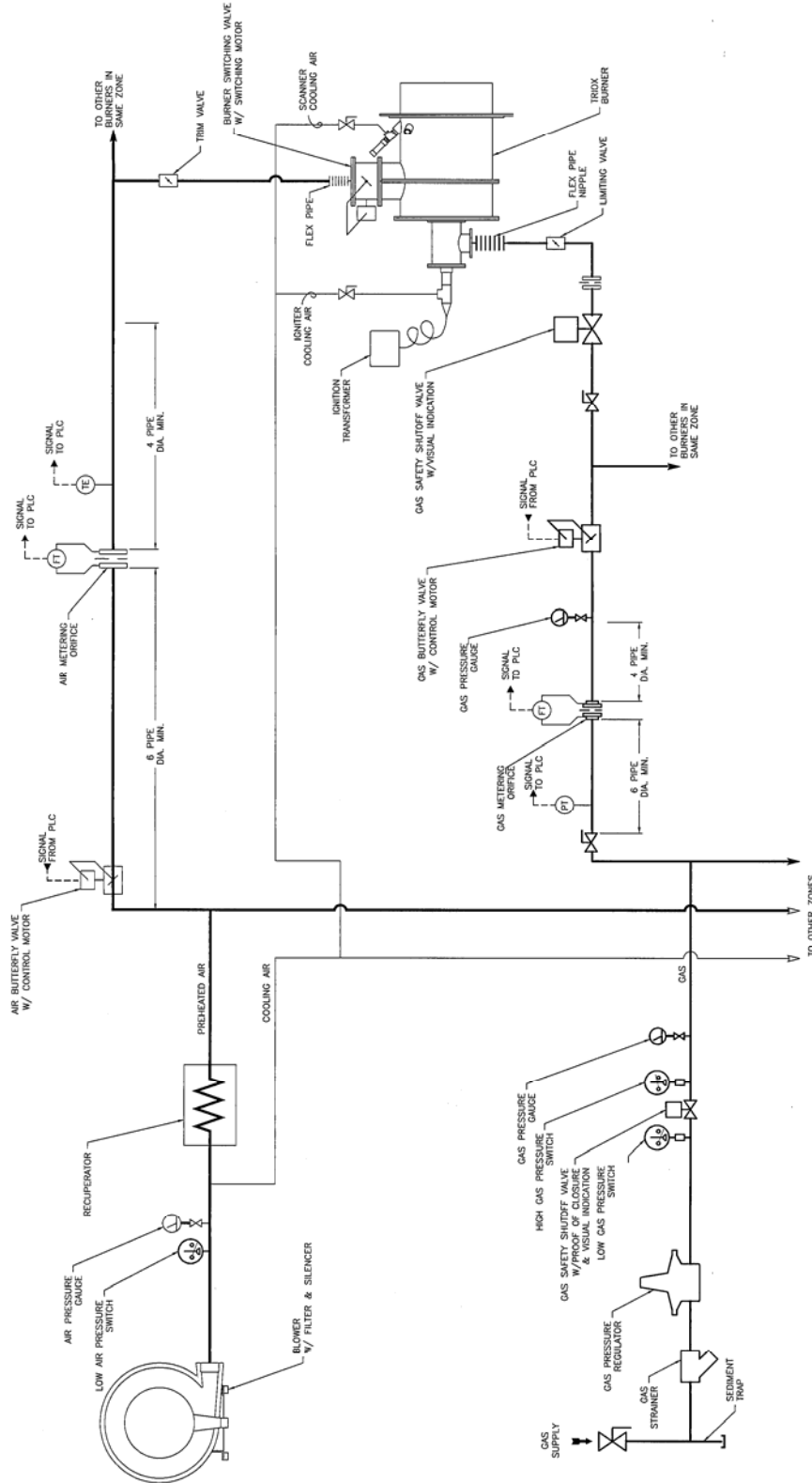


- NOTES:**
1. AIR INLET MOUNTING CAN BE LOCATED @ 6 AND 12 O'CLOCK POSITIONS ONLY.
  2. GAS INLET CAN BE LOCATED IN ANY POSITION.
  3. GAS INLET FLANGE CONNECTIONS ARE DIN BOLT PATTERN.
- Y8719 METRIC  
(NOT TO SCALE)

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# TriOx TRIPLE AIR STAGED ULTRA LOW NOx BURNER

## TYPICAL MULTIPLE BURNER SYSTEM PREHEATED AIR MASS FLOW CONTROL



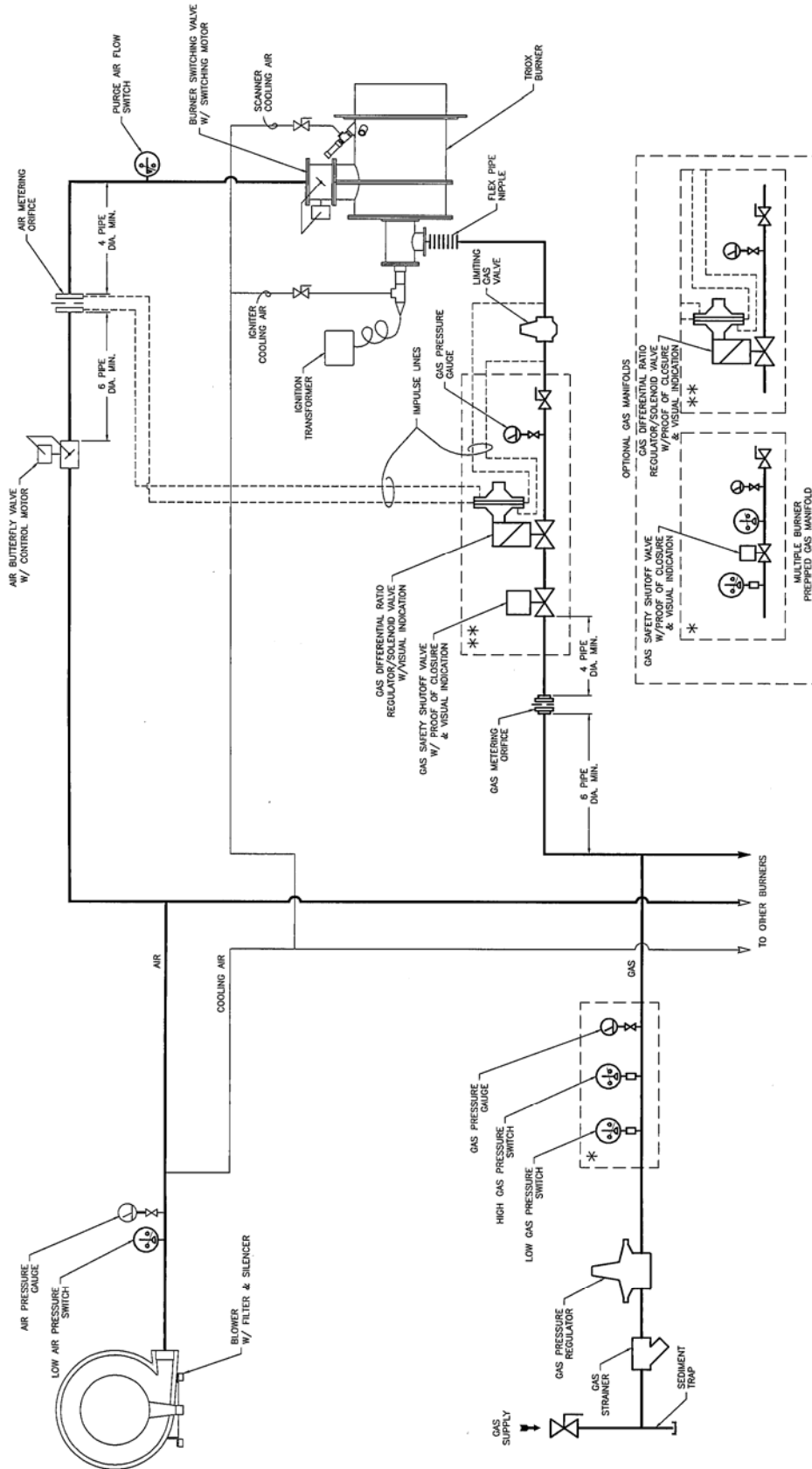
Y8688  
(NOT TO SCALE)

- NOTES:
1. OPTIONAL GAS MANIFOLDS ARE PERMITTED AS AN EXCEPTION PER NFPA 86 2011 EDITION REQUIREMENTS FOR MULTIPLE BURNERS FIRING INTO A COMMON HEATING CHAMBER, HOWEVER, SPECIAL FEATURES ARE REQUIRED IN THE ASSOCIATED CONTROL SYSTEM (SEE HAUCK APPLICATION SHEET GJ76).
  2. IF USING OPTIONAL GAS PILOT (NOT SHOWN), CONSULT HAUCK FOR INSTALLATION SPECIFICS.
  3. INVISIFLAME ONLY VERSION OF BURNER DOES NOT HAVE SWITCHING VALVE OR COOLING AIR.
  4. GAS OVER PRESSURE PROTECTION MAY BE REQUIRED.

(OVER)

# TriOx TRIPLE AIR STAGED ULTRA LOW NOx BURNER

## TYPICAL MULTIPLE BURNER SYSTEM RATIO CONTROL (AMBIENT AIR)



- NOTES:**
- OPTIONAL GAS MANIFOLDS ARE PERMITTED AS AN EXCEPTION PER NFPA 86 2003 EDITION REQUIREMENTS FOR MULTIPLE BURNERS FIRING INTO A COMMON HEATING CHAMBER, HOWEVER, SPECIAL FEATURES ARE REQUIRED IN THE ASSOCIATED CONTROL SYSTEM (SEE HAUCK APPLICATION SHEET GJ76).
  - IF USING OPTIONAL GAS PILOT IGNITER (NOT SHOWN), CONSULT HAUCK FOR INSTALLATION SPECIFICS.
  - INVISIFLAME ONLY VERSION OF BURNER DOES NOT HAVE SWITCHING VALVE OR COOLING AIR.
  - GAS OVER PRESSURE PROTECTION MAY BE REQUIRED.

Y8689  
(NOT TO SCALE)





## TriOx TRIPLE AIR STAGED ULTRA LOW NOx BURNER ORDERING INFORMATION

	TriOx	2	1	08	C	-	S	C	-	6	-	6
<b>Burner Type</b>												
<b>Series</b> 1 – Cold Air, Switching Ready 2 – Hot Air, Switching Ready 3 – Cold Air, Invisiflame Only 4 – Hot Air, Invisiflame Only												
<b>Ignition</b> 0 – Direct Spark Igniter 1 – IPG Pilot 3 – ZMI Pilot 9 – None X – Special (Ordered on separate line item)												
<b>Size</b> 06 08 12 14 16												
<b>Burner Revision</b>												
<b>Mode</b> S – Switching Valve F – Firing Mode Only I – Invisiflame Only												
<b>Flame Supervision</b> U – UV Scanner (UVS10) C – Self Check UV Scanner 9 – None												
<b>Designation</b> Omit For Domestic E – European Export (Picks companion flange for air, DIN flange for gas, other adapters if applicable)												
<b>Air Inlet Rotation</b> 6 – 6 O’Clock Inlet 12 – 12 O’Clock Inlet												
<b>Gas Inlet Rotation</b> 3 – 3 O’Clock Inlet 6 – 6 O’Clock Inlet 9 – 9 O’Clock Inlet 12 – 12 O’Clock Inlet												

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