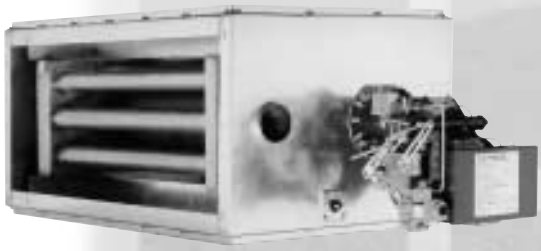
Indirect Fired Duct Furnaces

Technical Guide for:

- **GTD** Two Pass
- **GTDM** Four Pass



GTD Series

GTDM Series

Temprite

Keeps You

Warm

TEMPRITE® INDUSTRIES

Indirect Fired Duct Furnaces Technical Guide

TEMPRITE® INDUSTRIES

In the business of industrial heating, efficient and low-cost operation is essential. Temprite keeps you warm for less.

Since 1963, Temprite has been providing cost-effective, reliable heating solutions. Our proven Indirect Fired Duct Furnaces adds warm clean air to your work environment, but without the products of combustion in the airstream.

This Technical Guide will help you choose an Temprite Indirect Fired Gas Duct Furnace to provide efficient, cost-effective heating and ventilation for your facility. The Guide covers:

- Technical Specifications — Configure the right system components (e.g., motors, drive, filter, options, etc.) to meet your needs.
  - Model "GTD" for two pass units
  - Model "GTDM" for four pass units
- Installation Information — Plan details of on-site installation (dimensions, gas piping, etc.).

If you have questions, please contact Temprite's Customer Service Department at 214-638-6010. We'll be glad to help.

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Engineering Data – GTD Series

Capacity and Internal Data

	Model Size	160	320	480	800	1120
SIZE & CAPACITY	Input B.T.U./Hour (Maximum)	200,000	400,000	600,000	1,000,000	1,400,000
	Output B.T.U./Hour(B)	160,000	320,000	480,000	800,000	1,120,000
	Input B.T.U./Hour (Minimum)	100,000	100,000	86,000	294,118	435,294
FIRING RATE & MANIFOLD SIZE	Natural Gas at 1,000 B.T.U./C.F.	200	400	600	1,000	1,400
	Nat. Gas Std. Pipe Size (7" W.C.)	3/4"	3/4"	1"	1"	1-1/4"
	Manifold Pressure	1.5	2.8	4.7	2.0	2.0
	Orifice Size	#4	NR	NR	NR	NR
	Propane Fuel at 2,500 B.T.U./C.F.	80	160	240	400	560
	L. P. Gas Std. Pipe Size (11" W.C.)	3/4"	3/4"	1"	1"	1-1/4"
	Manifold Pressure	1.5	2.2	2.5	1.7	1.2
	Orifice Size	#2	#6	NR	NR	NR
SUPPLY AIR CAPACITY	Minimum Airflow	1,481	2,963	4,444	7,407	10,370
	Maximum Airflow	4,938	9,877	14,815	24,691	34,568
COMBUSTION AIR & VENTING REQUIREMENTS	Combustion Air Requirements (CFM)	39	77	115	192	268
	Recommended Minimum Stack Size Diameter	4"	6"	7"	9"	10"
	Maximum Vent Length - Equivalent Length (Ft)	50	50	50	50	50
INTERNAL DATA OF HEAT EXCHANGER (A)	Primary Heating Surface – Sq. Feet	13.49	21.35	32.97	51.21	66.65
	Secondary Htg. Surface (Tubes & Headers) – Sq. Feet	16.23	27.87	45.75	65.46	94.18
	Primary Combustion Volume – Cu. Feet	3.47	6.94	12.73	25.75	39.49
	Secondary Combustion Volume – Cu. Feet	0.93	1.74	2.76	4.22	5.64
	Total Combustion Chamber Volume – Cu. Feet	4.40	8.68	15.49	29.97	45.13
AMP DRAW	115 Volt, 1 Phase	8.70	8.70	13.04	13.04	13.04
	230 Volt, 1 Phase	4.35	4.35	6.52	6.52	6.52
	200 Volt, 3 Phase	5.00	5.00	7.50	7.50	7.50
	230 Volt, 3 Phase	4.35	4.35	6.52	6.52	6.52
	460 Volt, 3 Phase	2.17	2.17	3.26	3.26	3.26
	575 Volt, 3 Phase	1.74	1.74	2.61	2.61	2.61

(A) Standard construction - 400 series stainless steel primary and secondary material.

(B) Based on 80% operating efficiency.

Dimensions

Models GTD Duct Furnaces

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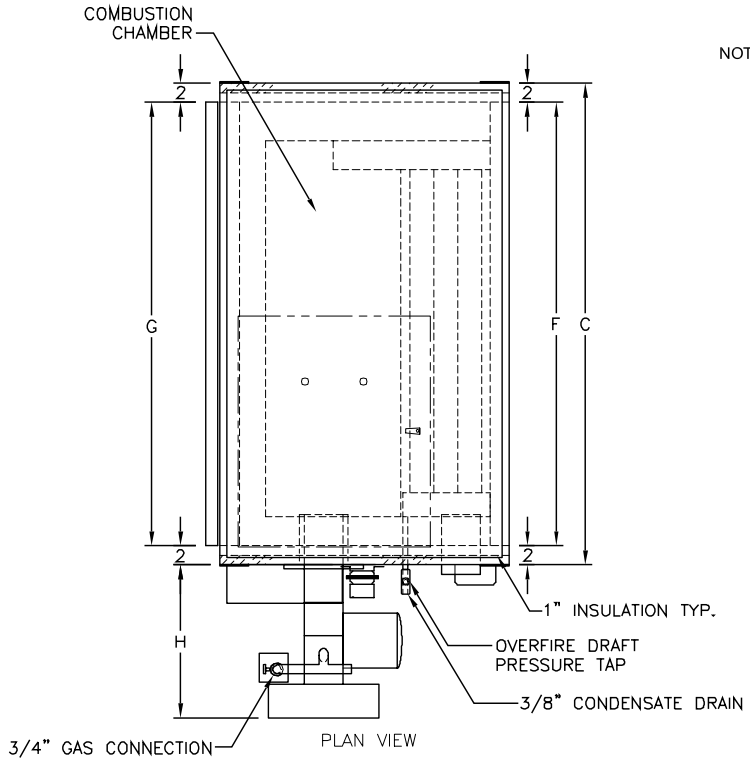
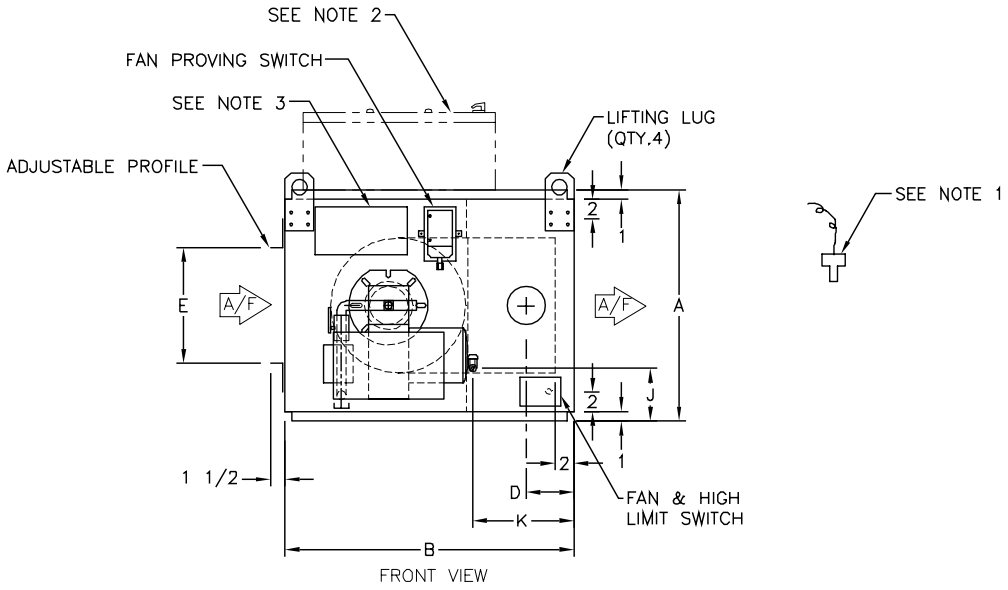


NOTE:
1. MOUNT DISCHARGE SENSOR IN SUPPLY AIR DUCT A MINIMUM OF 36" FROM UNIT (BY OTHERS).
2. CONTROL CABINET SHIPPED TEMPORARILY MOUNTED TO UNIT.
3. JUNCTION BOX WITH 10 FOOT WIRE HARNESS TO CONTROL CABINET.

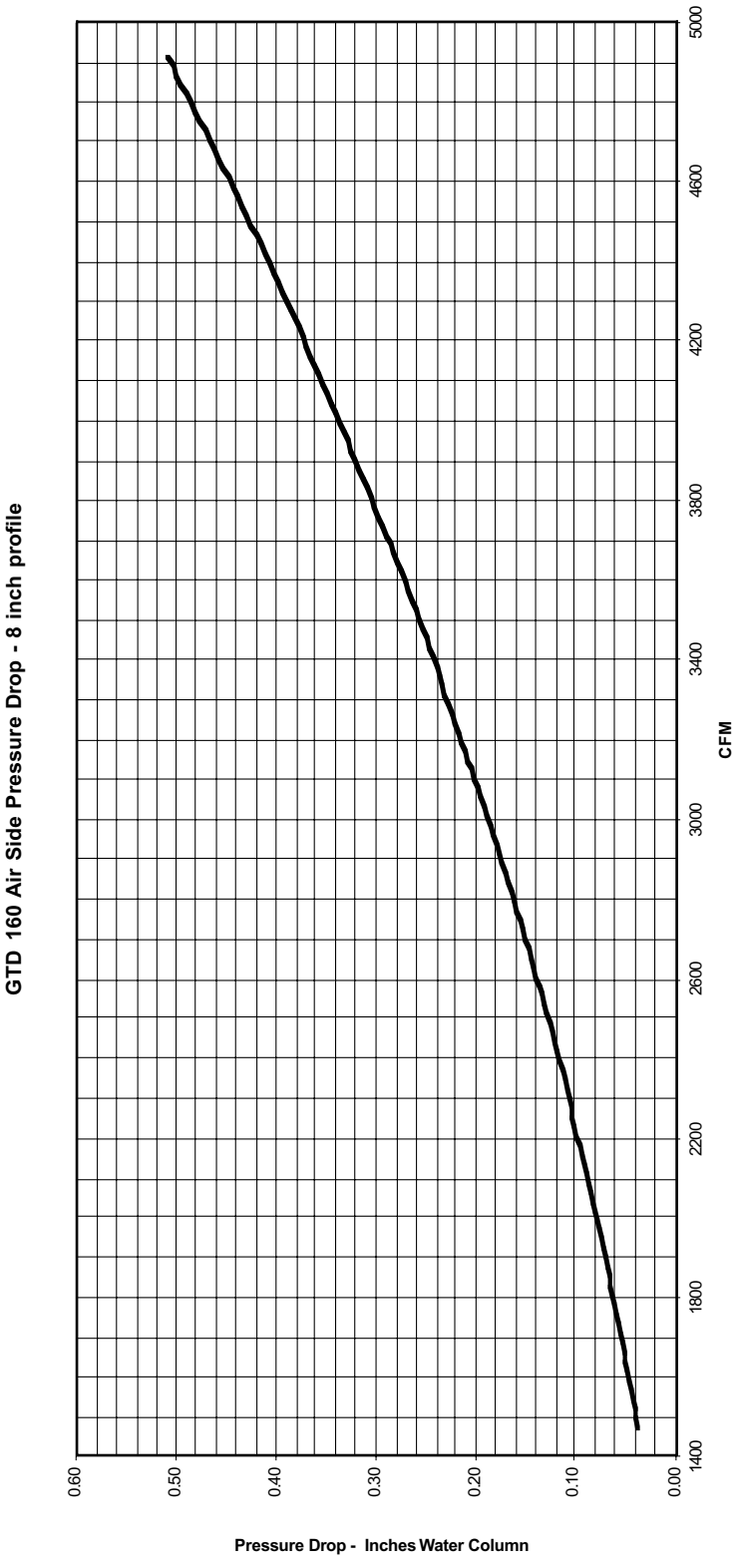


GTD Model	Approximate Weight	Dimensions										
		" A"	" B"	" C"	" D"	" E"		" F"	" G"	" H"	" J"	" K"
160	508	24	30	50	5	10	±4	46	46	$15\frac{7}{8}$	$5\frac{1}{2}$	$10\frac{9}{16}$
320	685	30	40	58	9	$12\frac{1}{2}$	±4	54	54	$15\frac{7}{8}$	$6\frac{7}{16}$	$15\frac{9}{16}$
480	837	32	42	74	9	15	±4	70	70	$15\frac{7}{8}$	7	$15\frac{9}{16}$
800	1237	41	49	83	$10\frac{1}{4}$	19	±4	79	79	20	$7\frac{1}{16}$	$17\frac{1}{16}$
1120	1713	51	59	86	10	28	±14	82	82	$24\frac{9}{16}$	$8\frac{7}{8}$	$17\frac{9}{16}$

NOTE: *All dimensions in inches subject to manufacturing tolerances.*

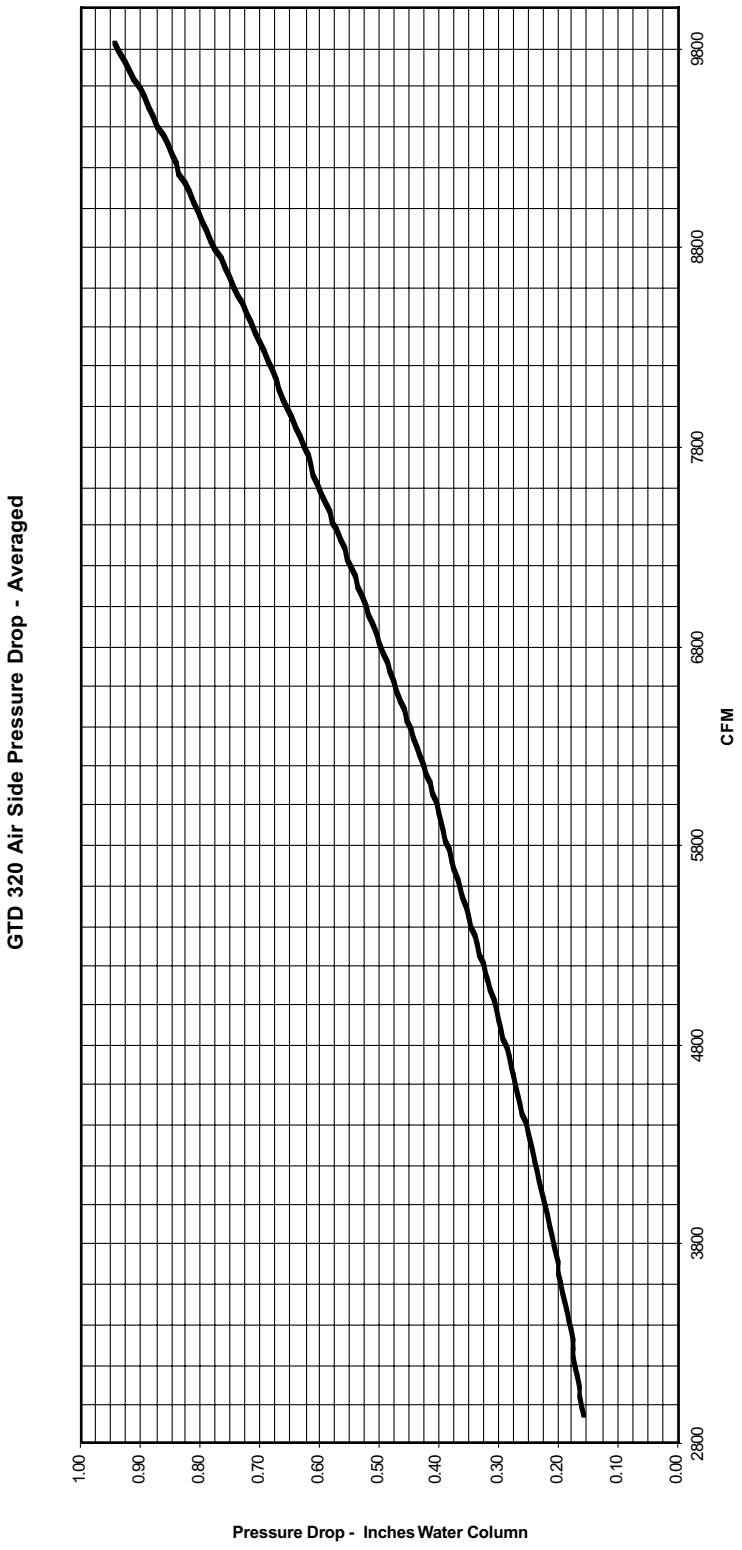
Pressure Drop Chart

Model GTD-160



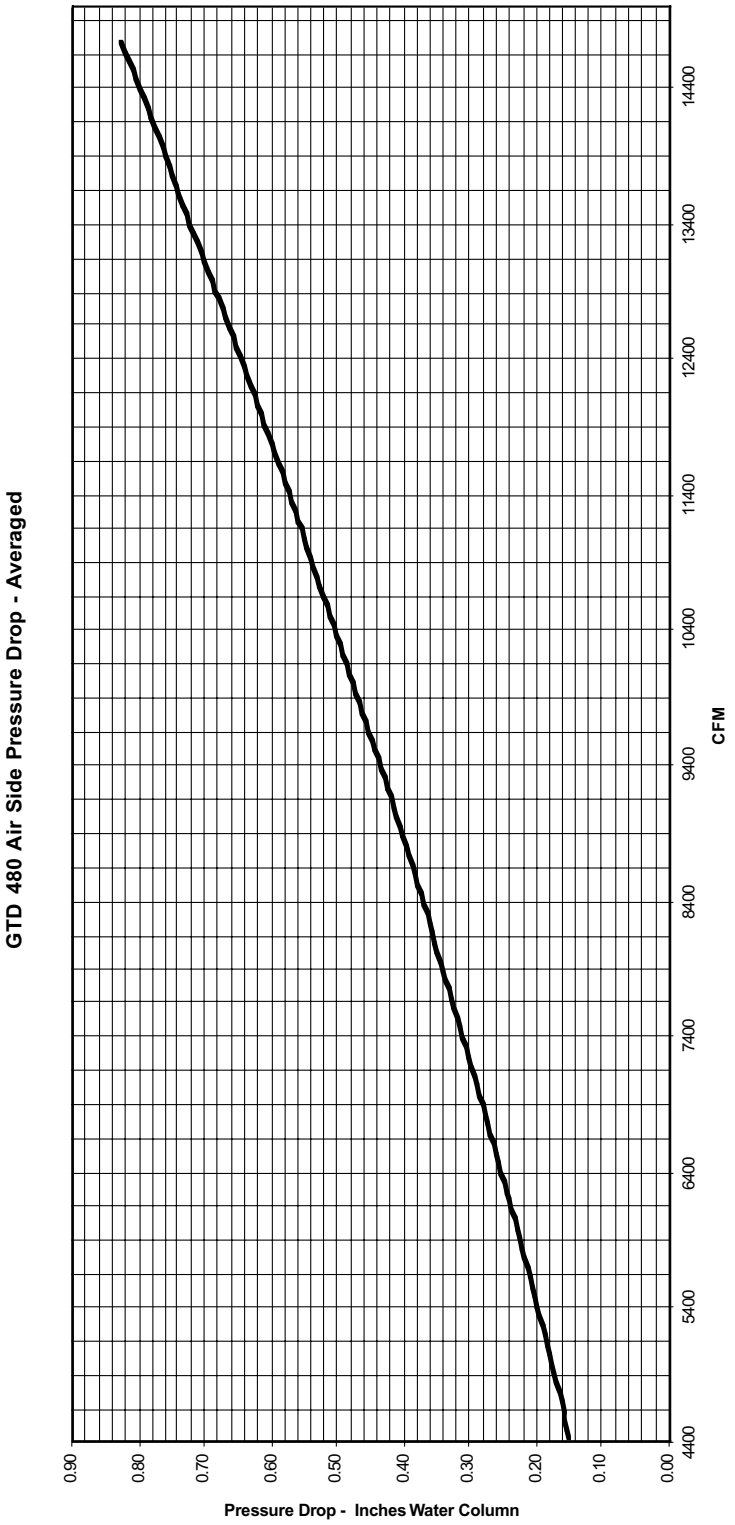
Pressure Drop Chart

Model GTD-320



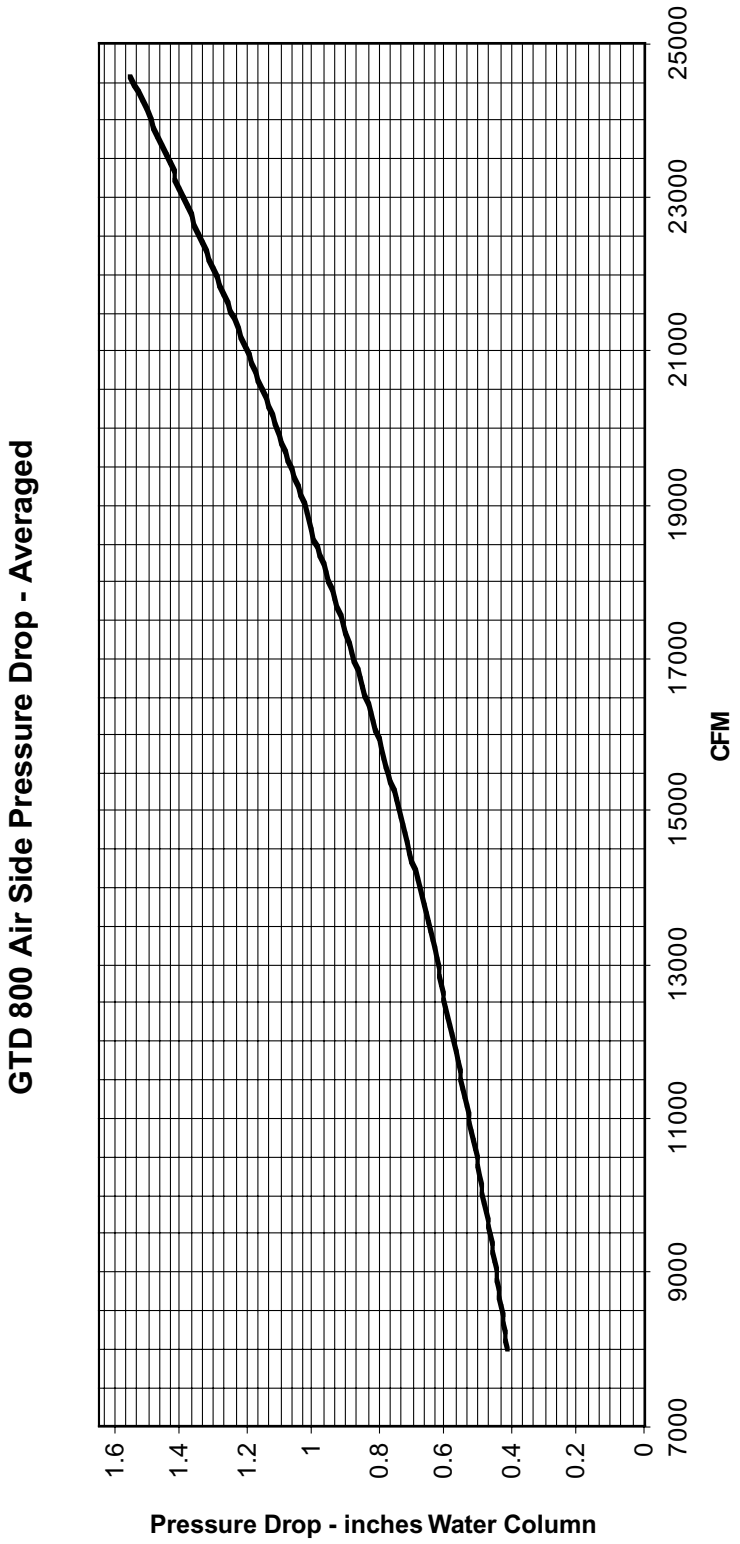
Pressure Drop Chart

Model GTD-480



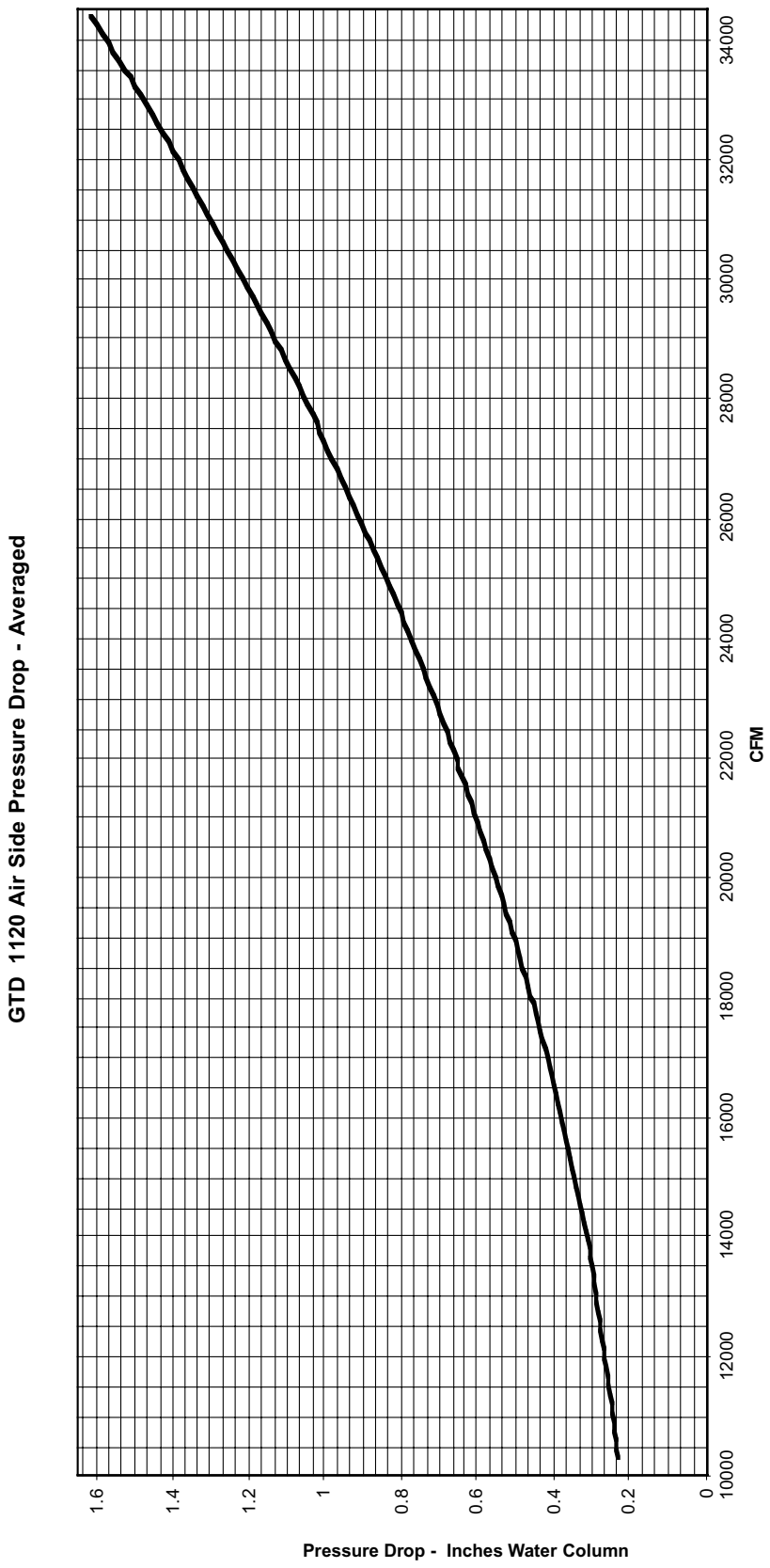
Pressure Drop Chart

Model GTD-800



Pressure Drop Chart

Model GTD-1120



Gas Piping Layout

Schematic Component Diagrams

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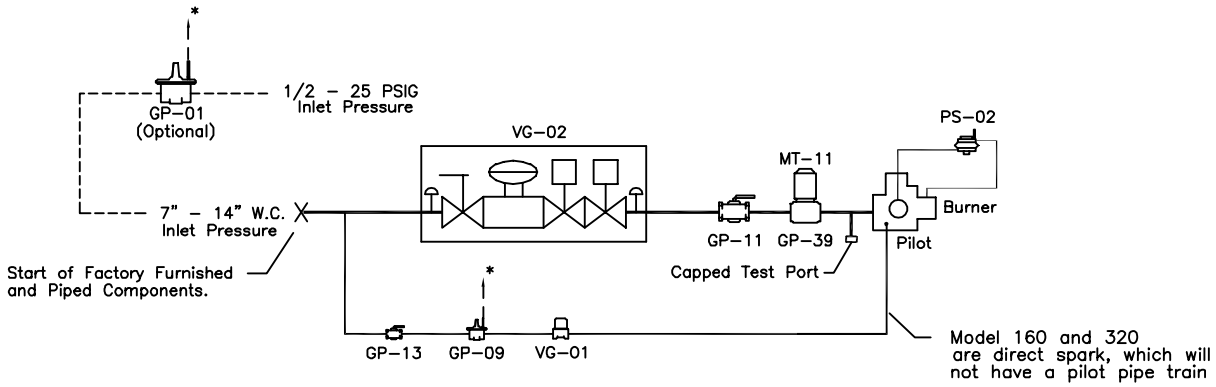
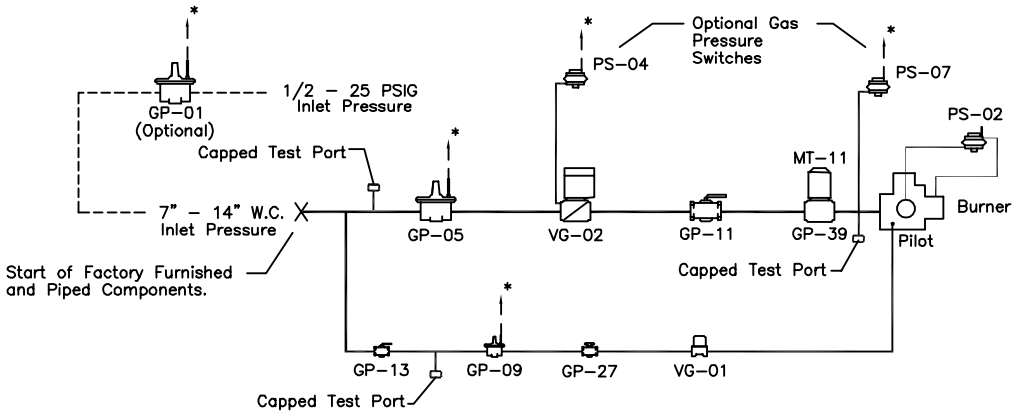
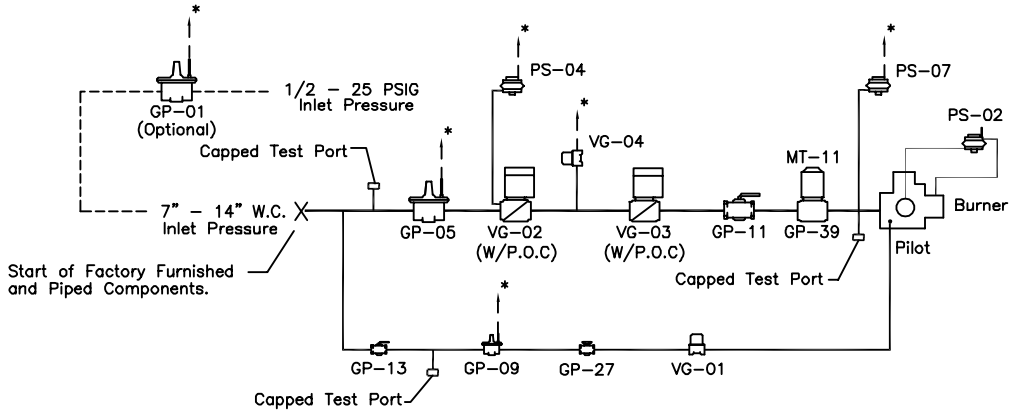


STANDARD & FM & IRI SIZES 160 UP TO 480



STANDARD & FM & IRI SIZES 800 & 1120



"BLOCK & BLEED" OPTION FOR SIZES 800 & 1120

COMPONENT IDENTIFICATION

GP-01 HIGH GAS PRESSURE REGULATOR (OPTIONAL)
GP-05 MAIN GAS PRESSURE REGULATOR
GP-09 PILOT GAS PRESSURE REGULATOR
GP-11 FIRING VALVE
GP-13 PILOT FIRING VALVE
GP-27 NEEDLE ORIFICE VALVE
GP-39 BUTTERFLY VALVE
MT-11 MODULATING VALVE MOTOR
VG-01 PILOT GAS VALVE
VG-02 MAIN GAS VALVE
VG-03 AUXILARY GAS VALVE
VG-04 N/O VENT VALVE
PS-02 BURNER AIR FLOW SWITCH
PS-04 LOW GAS PRESSURE SWITCH
PS-07 HIGH GAS PRESSURE SWITCH

NOTES:

* 1. Vent limiting devices provided wherever possible, when venting is required the venting to outside is by others on indoor units and furnished by factory on outdoor units.

2. For inlet pressures under 7" W.C. please consult factory.

Wiring Diagram

Typical Wiring Diagram – GTD-160 & 320

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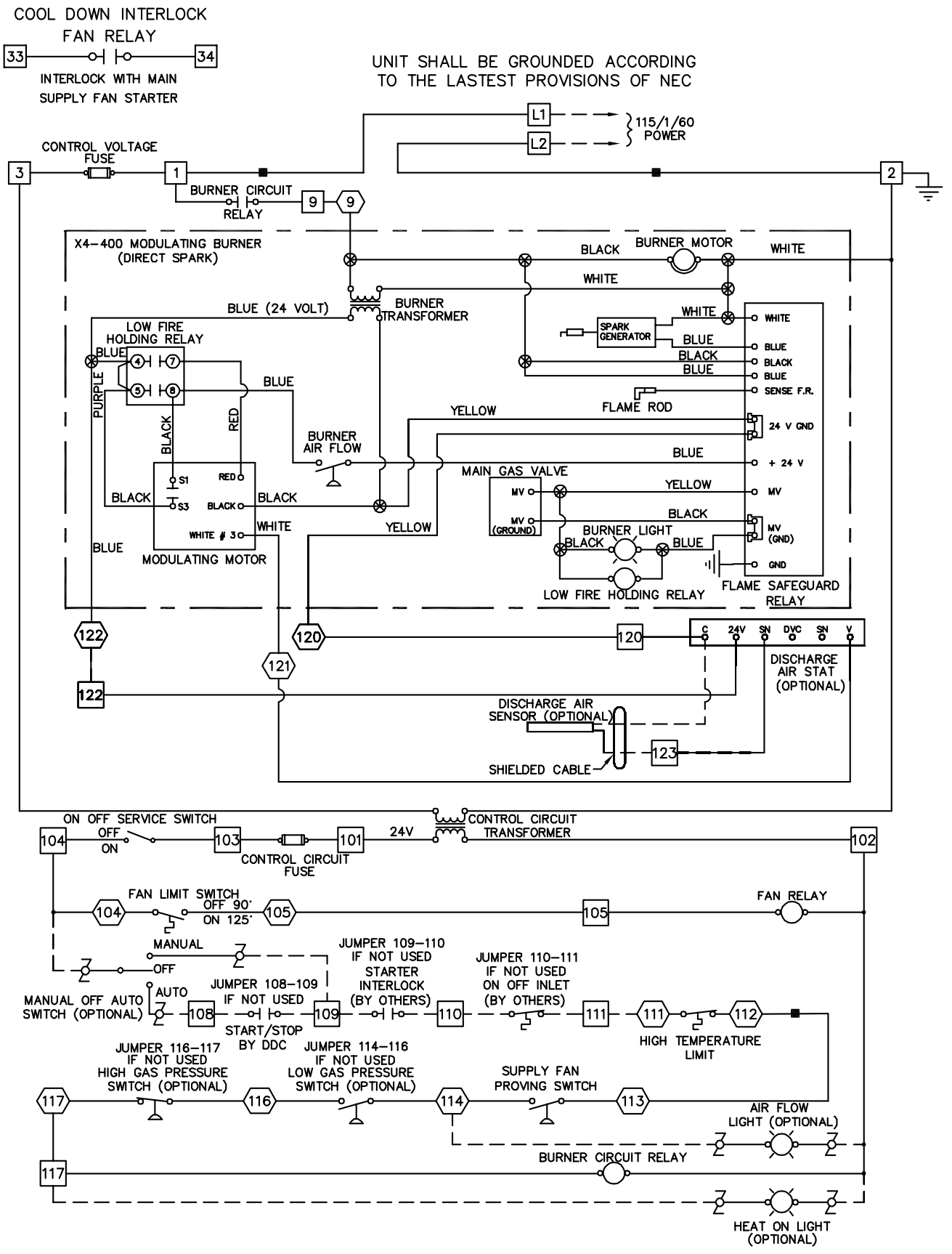

Wiring Diagram

Typical Wiring Diagram – GTD-480

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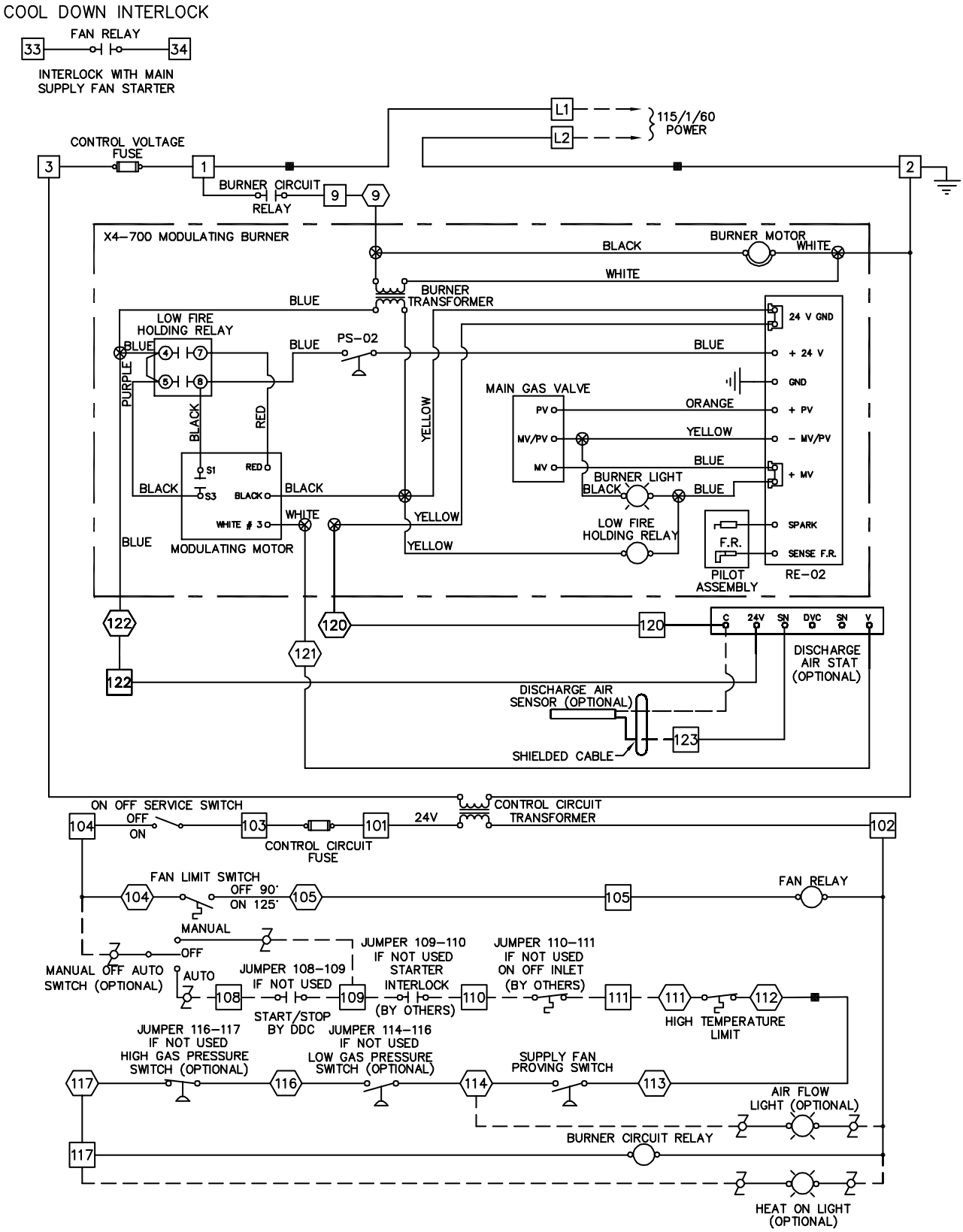

Wiring Diagram

Typical Wiring Diagram – GTD-800 Through 1120

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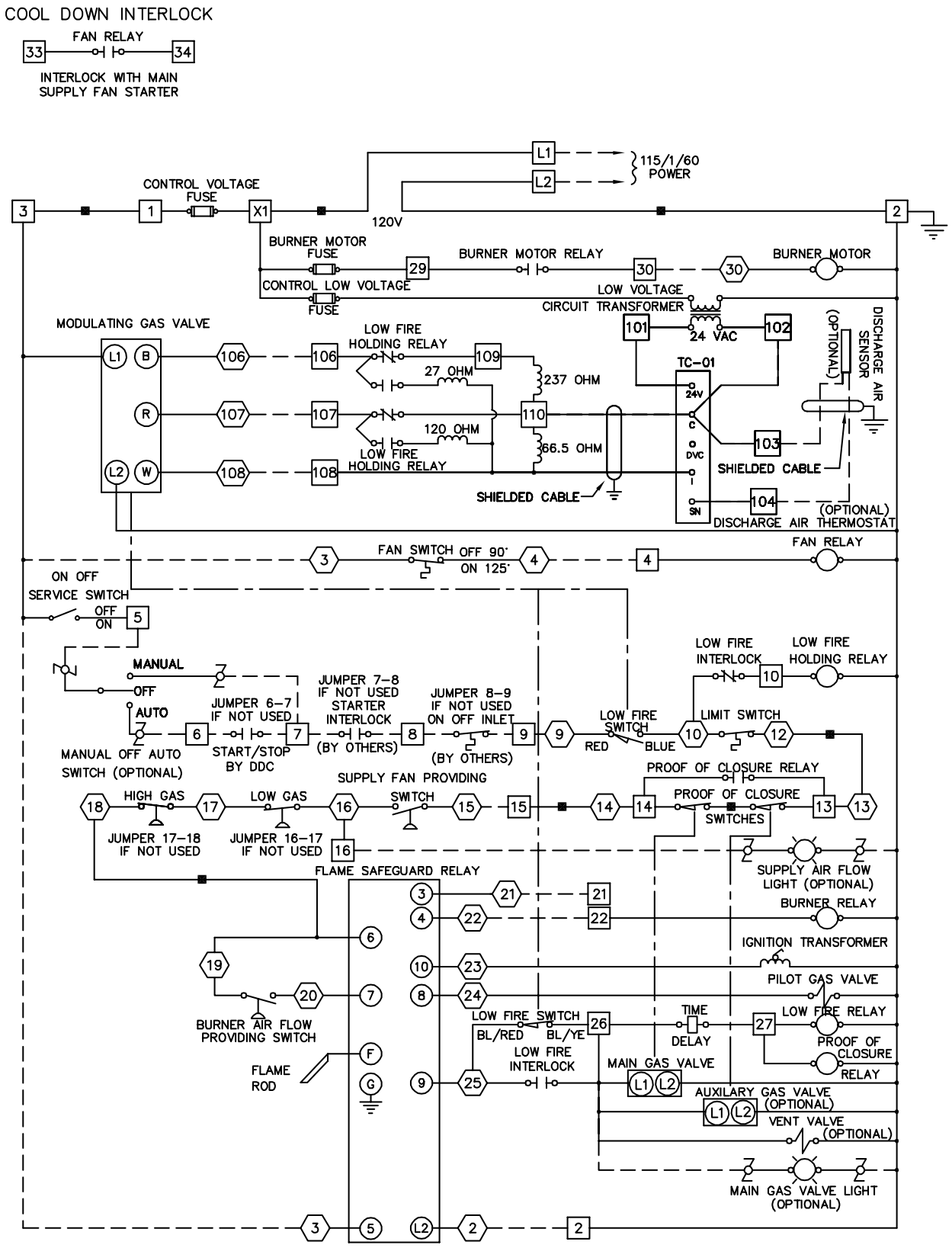

Guide Specification – GTD Series

Base Bid Temprite Model GTD _____ Indirect Fired Duct Furnace. The unit shall be factory fabricated, assembled, wired and tested prior to shipment in accordance with the specification and equipment schedule. The unit will include all components herein and as shown on the drawings. Alternate equipment, equal in design, construction, performance and capacity to unit(s) specified, must be shown with price deduct/add, if any. Approval of alternate equipment will be subject to review of shop drawings. The unit shall be capable of handling_____SCFM. The unit shall be ETL listed.

CASING

The unit casing shall consist of formed 18 gauge galvanized steel panels to ensure rigid construction. Cabinet design shall allow unit(s) to be mounted in the horizontal arrangement with no external framework. The casing enclosing the heat exchanger shall be of double wall construction with a galvanized steel inner wall serving as a radiation shield. Radiation and transmission losses shall not exceed 2% of the rated input. The casing enclosing the heat exchanger shall be insulated with 1", 1½ lb. density fiberglass insulation.

HEAT EXCHANGER

The entire primary and secondary heat transfer surface shall be 400 series stainless steel. The heat exchanger design shall permit unrestricted lateral and peripheral expansion during the heating and cooling cycle. The flue gas travel shall be of two-pass design, with internal baffles in the secondary tubes. The surface temperature of the heat exchanger shall not exceed 75% of its scaling temperature when operating at rated capacity. The heat exchanger shall be rated at a minimum of 80% efficiency throughout complete operating range.

BURNER

The gas burner shall be of the power type, complete with integral combustion air blower and motor, combustion air proving switch, and removable pilot assembly. Burner shall be complete with an observation window to view the flame. The combustion air damper shall be interlocked with the gas control valve to insure a proper gas/air mixture throughout the complete range of operation. Burner and controls shall be capable of delivering _____MBH output firing on (natural gas) (propane) at an inlet pressure of _____ (inches water column) (PSIG). The standard ETL listed unit will meet ANSI, FM, and IRI requirements. Burner and controls shall be arranged for full modulation with low fire start and a _____ turndown ratio. Burner combustion shall be on-ratio throughout the complete operating range. The factory wired and piped valve train shall be complete with:

- low pressure appliance regulator
- motorized gas control valve
- main manual test firing shut-off valve
- main automatic shut-off valve(s)
- pilot manual shut-off valve (Models 480 & larger)
- pilot pressure regulator (Models 480 & larger)
- pilot automatic shut-off valve (Models 480 & larger)
- pilot manual test firing shut-off valve (Models 480 & larger)

ELECTRICAL CONTROLS

A factory wired NEMA 1 control panel complete with hinged access door and 10 foot wiring harness shall be shipped with duct furnace. All control components are to be labeled and individually wired to a numbered terminal strip to aid in servicing. All wiring shall be color coded and number tagged at each end to match the control diagram supplied. Full operating and maintenance instructions shall accompany each unit. All wiring between the controls and valves shall be run in flexible conduit. All electrical components shall bear the U.L. label. The control system shall include but not be limited to the following components required for automatic operation:

- control circuit transformer
- control circuit fuses
- control relays
- electronic flame relay
- high limit switch
- automatic/manual fan switch
- spark generator (Models 160-480)
- heavy duty ignition transformer (Models 800-1120)

Engineering Data – GTDM Series

Capacity and Internal Data

	Model Size	25	35	40	50	55
SIZE & CAPACITY	Input MBH	312	437	500	625	687
	Output MBH(A)	250	350	400	500	550
FIRING RATE & MANIFOLD SIZE	Natural Gas @ 1,000 B.T.U./C.F.	312	437	500	625	687
	Gas Connection @ 7" W.C. (Natural Gas)	3/4"	3/4"	1"	1"	1"
	Gas Connection @ 14" W.C. (Natural Gas)	3/4"	3/4"	3/4"	3/4"	1"
EQUIPMENT DATA	Combustion Air Required (C.F.M.)	80	110	130	160	180
	Exhauster Model	12	12	12	12	12
	Exhauster H.P.	1/3	1/3	1/3	1/3	1/3
	Burner H.P.	1/3	1/3	1/3	1/3	1/3
	Recommended Min. Stack Size – Dia.	8"	8"	8"	8"	8"
AMP DRAW (B)	200 Volt, 3 Phase	21.9	21.9	16.3	16.3	16.3
	230 Volt, 3 Phase	20.9	20.9	15.1	15.1	15.1
	460 Volt, 3 Phase	17.7	17.7	11.2	11.2	11.2
	575 Volt, 3 Phase	17.0	17.0	10.4	10.4	10.4
	Model Size	**65**	**75**	**85**	**100**	**125**
SIZE & CAPACITY	Input MBH	812	987	1,062	1,250	1,562
	Output MBH(A)	650	750	850	1,000	1,250
FIRING RATE & MANFOLD SIZE	Natural Gas @ 1,000 B.T.U./C.F.	812	987	1,062	1,250	1,562
	Gas Connection @ 7" W.C. (Natural Gas)	1 1/4"	1 1/4"	1 1/4"	1 1/2"	1 1/2"
	Gas Connection @ 14" W.C. (Natural Gas)	1"	1"	1"	1"	1 1/4"
EQUIPMENT DATA	Combustion Air Required (C.F.M.)	210	240	275	325	400
	Exhauster Model	12	12	14	14	18
	Exhauster H.P.	1/3	1/3	1/2	1/2	2
	Burner H.P.	1/3	1/3	1/3	1/3	1/2
	Recommended Min. Stack Size – Dia.	10"	10"	10"	10"	12"
AMP DRAW (B)	200 Volt, 3 Phase	16.3	16.3	17.2	19.7	26.7
	230 Volt, 3 Phase	15.1	15.1	15.9	18.1	24.5
	460 Volt, 3 Phase	11.2	11.2	11.6	12.6	17.1
	575 Volt, 3 Phase	10.4	10.4	10.7	11.6	15.7

(A) Based on 80% operating efficiency.

(B) Based on G-P burners.

Engineering Data – GTDM Series

Capacity and Internal Data

	Model Size	150	175	200	250	275
SIZE & CAPACITY	Input MBH	1,875	2,187	2,500	3,125	3,438
	Output MBH(A)	1,500	1,750	2,000	2,500	2,750
FIRING RATE & MANIFOLD SIZE	Natural Gas @ 1,000 B.T.U./C.F.	1,875	2,187	2,500	3,125	3,438
	Gas Connection @ 7" W.C. (Natural Gas)	2"	2"	2"	2"	2 1/2"
	Gas Connection @ 14" W.C. (Natural Gas)	1 1/2"	1 1/2"	1 1/2"	2"	2"
EQUIPMENT DATA	Combustion Air Required (C.F.M.)	480	560	650	800	880
	Exhauster Model	18	18	18	21	21
	Exhauster H.P.	2	2	2	3	3
	Burner H.P.	1/2	1/2	1/2	1	1
	Recommended Min. Stack Size – Dia.	12"	12"	12"	12"	14"
AMP DRAW (B)	200 Volt, 3 Phase	26.7	27.6	27.6	19.6	19.6
	230 Volt, 3 Phase	24.5	25.3	25.3	17.1	17.1
	460 Volt, 3 Phase	17.1	17.5	17.5	8.5	8.5
	575 Volt, 3 Phase	15.7	16.0	16.0	6.8	6.8
	Model Size	**300**	**350**	**400**	**500**	**600**
SIZE & CAPACITY	Input MBH	3,750	4,375	5,000	6,250	7,500
	Output MBH(A)	3,000	3,500	4,000	5,000	6,000
FIRING RATE & MANFOLD SIZE	Natural Gas @ 1,000 B.T.U./C.F.	3,750	4,375	5,000	6,250	7,500
	Gas Connection @ 7" W.C. (Natural Gas)	2 1/2"	3"	3"	NA	NA
	Gas Connection @ 14" W.C. (Natural Gas)	2"	2"	2 1/2"	3"	3"
EQUIPMENT DATA	Combustion Air Required (C.F.M.)	960	1,120	1,300	1,600	1,920
	Exhauster Model	21	21	21	21	21
	Exhauster H.P.	3	3	3	5	5
	Burner H.P.	1	1-1/2	2	3	5
	Recommended Min. Stack Size – Dia.	14"	14"	14"	18"	18"
AMP DRAW (B)	200 Volt, 3 Phase	19.6	21.7	22.6	32.3	38.7
	230 Volt, 3 Phase	17.1	18.9	19.7	28.1	33.7
	460 Volt, 3 Phase	8.5	9.4	9.8	14.0	16.8
	575 Volt, 3 Phase	6.8	7.5	7.9	11.2	13.5

(A) Based on 80% operating efficiency.

(B) Based on G-P burners.

Dimensions

Model GTDM Duct Furnaces

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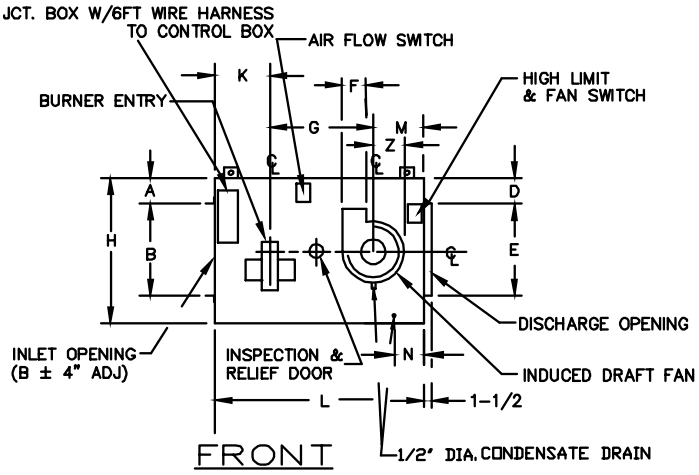
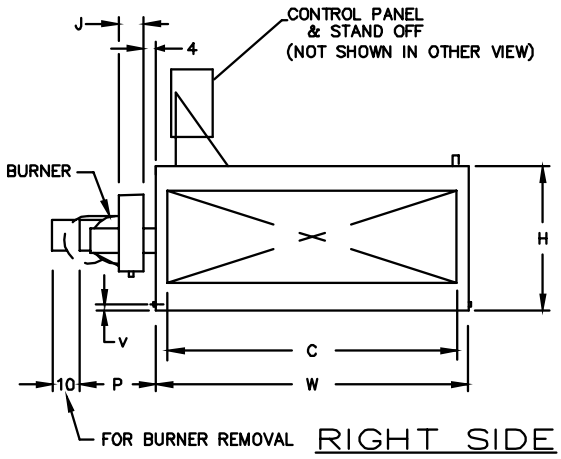
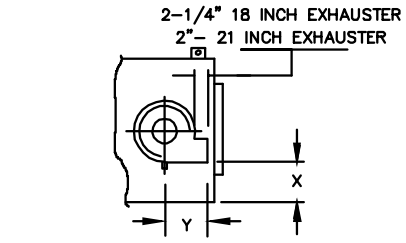
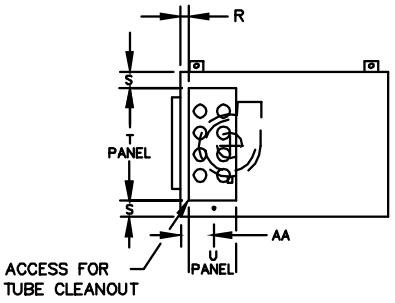






ALTERNATE POSITION
INDUCED DRAFT FAN



SELECTION PROCEDURE

1. Given: CFM and temperature rise or heat output
2. Go to pressure drop charts (page 20-28) and select cabinet based on CFM
3. If temperature rise is given, calculate required heat output using this fomula: MBH = CFM x Temperature Rise x 1.08/1000
4. Select heat exchanger model capable of providing the required heat output.

Example:

Require 6900 CFM and a 50°F temperature rise

From pressure drop chart on page 21, select cabinet size 55 with a 0.42" pressure drop

Calculate MBH: 6900 x 50 x 1.08/1000 = 372.6 MBH

Select size 40 heater

Proper Model is GTDM55/40

Dimensions

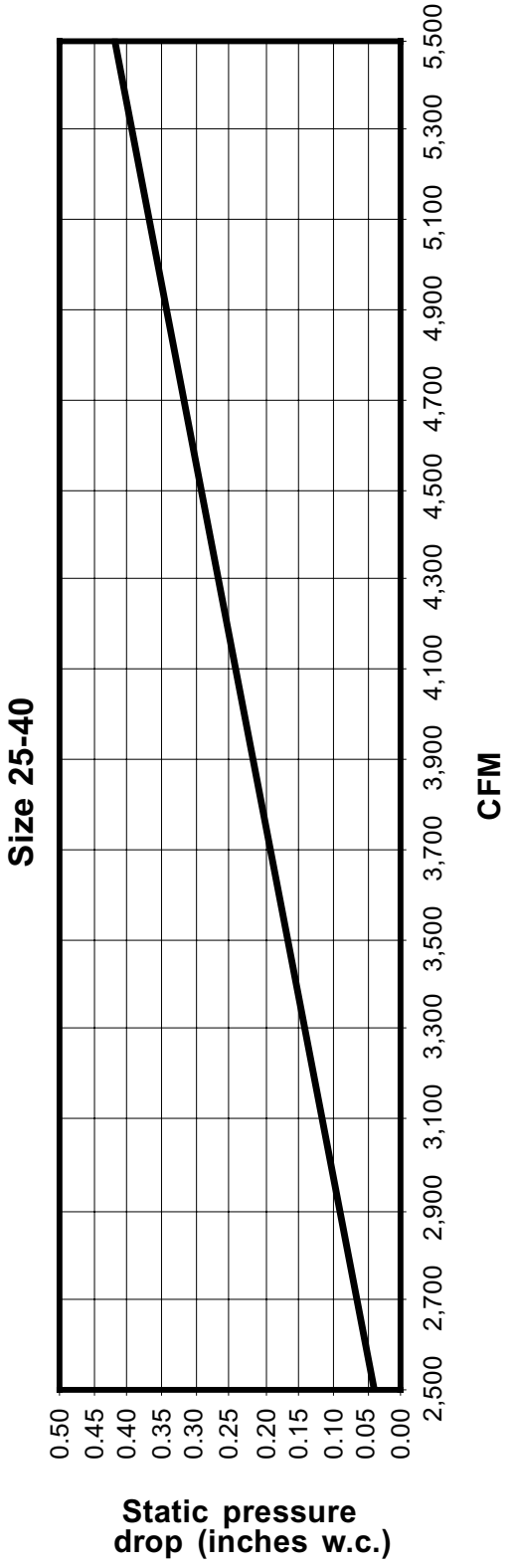
Model GTDM Duct Furnaces

Model	Approximate Weight	Dimensions											
		"A"	"B"	"C"	"D"	"E"	"F"	"G"	"H"	"J"	"K"	"L"	"M"
25, 35 or 40	1025	11 1/2	9	44	7	18	6 1/4	24	32	6 3/8	13	47	10
55/25, 35 or 40	1100	12 1/2	11	56	9	18	6 1/4	24	36	6 3/8	13	47	10
75/25, 35 or 40	1220	12 3/4	10 1/2	76	9	18	6 1/4	24	36	6 3/8	13	47	10
45 or 55	1280	12 1/2	11	56	9	18	6 1/4	28	36	6 3/8	15	55	12
75/45 or 55	1355	12 3/4	10 1/2	76	9	18	6 1/4	28	36	6 3/8	15	55	12
100/45 or 55	1688	17	14	86	15	18	6 1/4	28	48	6 3/8	15	55	12
65 or 75	1600	12 3/4	10 1/2	76	9	18	7	28	36	7 3/8	15	55	12
100/65 or 75	1833	17	14	86	15	18	7	28	48	7 3/8	15	55	12
85 or 100	2250	17	14	86	15	18	7	32	48	7 3/8	24	68	12
175/85 or 100	2475	19	16	96	15	24	7	32	54	7 3/8	24	68	12
125, 150 or 175	3180	19	16	96	15	24	9	37	54	9 3/8	22 1/2	72	12 1/2
250/125, 150 or 175	3230	19 1/2	21	116	15	30	9	37	60	9 3/8	22 1/2	72	12 1/2
200	4225	20 1/2	19	116	15	30	9	37	60	9 3/8	22 1/2	72	12 1/2
300/200	4171	22	21	136	17 1/2	30	9	37	65	9 3/8	22 1/2	72	12 1/2
400/200	5444	24 1/2	21	154	20	30	9	37	70	9 3/8	22 1/2	72	12 1/2
250	4400	19 1/2	21	116	15	30	10 5/8	37	60	11 1/8	22 1/2	72	12 1/2
300/250	4537	22	21	136	17 1/2	30	10 5/8	37	65	11 1/8	22 1/2	72	12 1/2
400/250	5716	24 1/2	21	154	20	30	10 5/8	37	70	11 1/8	22 1/2	72	12 1/2
275 or 300	5500	22	21	136	17 1/2	30	10 5/8	43	65	11 1/8	27	84	14
400/275 or 300	6002	24 1/2	21	154	20	30	10 5/8	43	70	11 1/8	27	84	14
600/275 or 300	6423	28 1/2	23	174	16	48	10 5/8	43	80	11 1/8	27	84	14
325, 350 or 400	6600	24 1/2	21	154	20	30	10 5/8	57 1/4	70	11 1/8	31 1/4	100	11 1/2
600/325, 350 or 400	6851	28 1/2	23	174	16	48	10 5/8	57 1/4	80	11 1/8	31 1/4	100	11 1/2
500, 550 or 600	8871	28 1/2	23	174	16	48	10 5/8	79 3/4	80	11 1/8	46 1/4	141	15
	Approximate	Dimensions											
Model	Weight	"N"	" P"	"R"	"S"	"T"	"U"	"V"	" W"	"X"	"Y"	"Z"	"AA"
25, 35 or 40	1025	19 1/4	17	2	2	28	16	4	48	6 5/8	9	8 1/4	20 1/4
55/25, 35 or 40	1100	19 1/4	17	2	4	28	16	6	60	8 5/8	9	8 1/4	20 1/4
75/25, 35 or 40	1220	19 1/4	17	2	4	28	16	6	80	8 5/8	9	8 1/4	20 1/4
45 or 55	1280	21 1/4	17	2	4	28	16	5 1/8	60	8 5/8	9	8 1/4	20 1/4
75/45 or 55	1355	21 1/4	17	2	4	28	16	5 1/8	80	8 5/8	9	8 1/4	20 1/4
100/45 or 55	1688	21 1/4	17	2	10	28	16	11 1/8	90	14 5/8	9	8 1/4	20 1/4
65 or 75	1600	21 1/4	17	3 1/4	4	28	16	5 1/8	80	7 1/4	10 1/2	9 1/2	22 1/4
100/65 or 75	1833	21 1/4	17	3 1/4	10	28	16	11 1/8	90	13 1/4	10 1/2	9 1/2	22 1/4
85 or 100	2250	20 3/4	17	3 1/2	5 1/4	37 1/2	16	6 7/8	90	13 1/4	10 1/2	9 1/2	21 3/4
175/85 or 100	2475	20 3/4	17	3 1/2	8 1/4	37 1/2	16	11 1/8	100	16 1/4	10 1/2	9 1/2	22 1/4
125, 150 or 175	3180	22 3/4	21	3 1/2	5	44	16	5 1/2	100	13 1/4	13 1/2	13	21 3/4
250/125, 150 or 175	3230	22 3/4	21	3 1/2	8	44	16	9 7/8	120	16 1/4	13 1/2	13	21 3/4
200	4225	22 3/4	21	2 3/8	7 3/8	45 1/4	21 1/4	6 1/2	120	16 1/4	13 1/2	13	25 3/4
300/200	4171	22 3/4	21	2 3/8	9 7/8	45 1/4	21 1/4	8 1/2	140	16 3/8	13 1/2	13	25 3/4
400/200	5444	22 3/4	21	2 3/8	12 3/8	45 1/4	21 1/4	9	160	18 7/8	13 1/2	13	25 3/4
250	4400	22 3/4	26	2 3/8	7 3/8	45 1/4	21 1/4	6 1/2	120	13 7/8	15 1/2	14 1/4	25 3/4
300/250	4537	22 3/4	26	2 3/8	9 7/8	45 1/4	21 1/4	8 1/2	140	16 3/8	15 1/2	14 1/4	33 1/4
400/250	5716	22 3/4	26	2 3/8	12 3/8	45 1/4	21 1/4	9	160	18 7/8	15 1/2	14 1/4	31 1/4
275 or 300	5500	26 1/4	26	2 1/2	4	57	27	6	140	16 3/8	15 1/2	14 1/4	32 1/4
400/275 or 300	6002	26 1/4	26	2 1/2	6 1/2	57	27	8 1/2	160	18 7/8	15 1/2	14 1/4	25 3/4
600/275 or 300	6423	26 1/4	26	2 1/2	11 1/2	57	27	13 1/2	180	23 7/8	15 1/2	14 1/4	32 1/4
325, 350 or 400	6600	21 1/4	32	3 3/4	6 1/2	57	27	8 1/2	160	18 7/8	15 1/2	14 1/4	33 1/4
600/325, 350 or 400	6851	21 1/4	32	3 3/4	11 1/2	57	27	13 1/2	180	23 7/8	15 1/2	14 1/4	33 1/4
500, 550 or 600	8871	27 1/4	32	4	6 1/4	67 1/2	25	8 1/2	180	23 7/8	15 1/2	14 1/4	31 1/4

NOTE: *All dimensions in inches subject to manufacturing tolerances.*

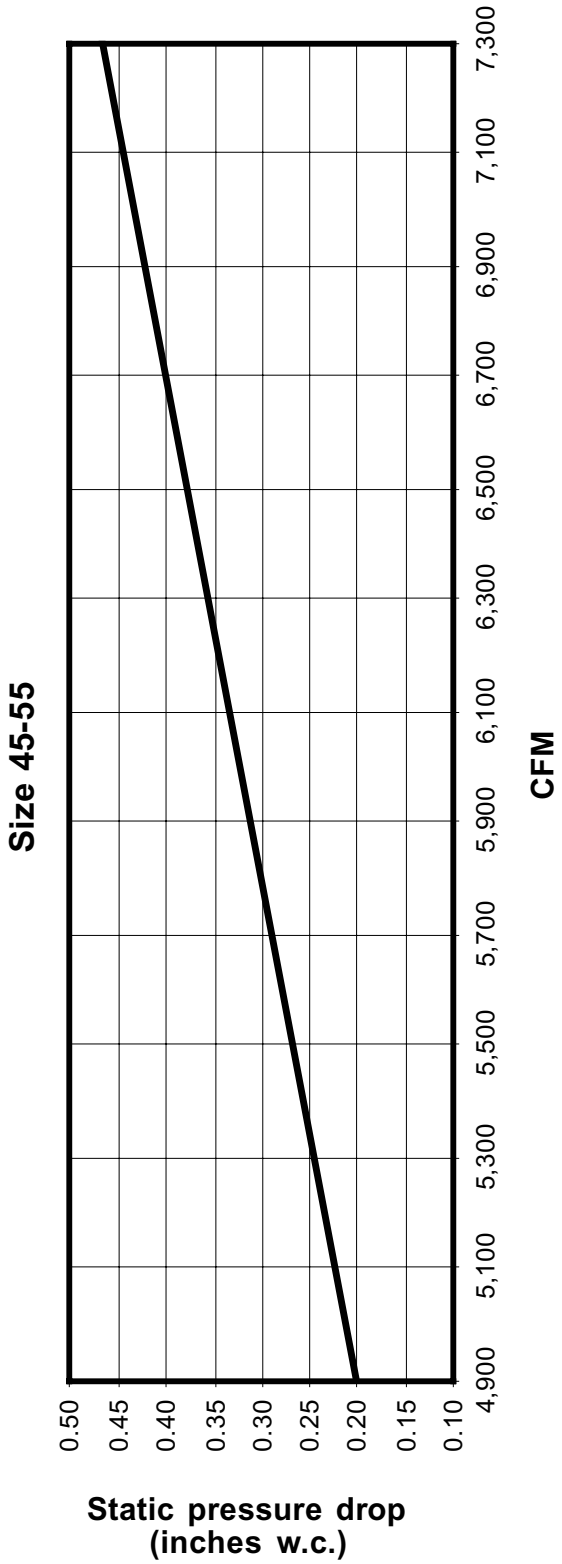
Pressure Drop Chart

Model GTDM-25-40



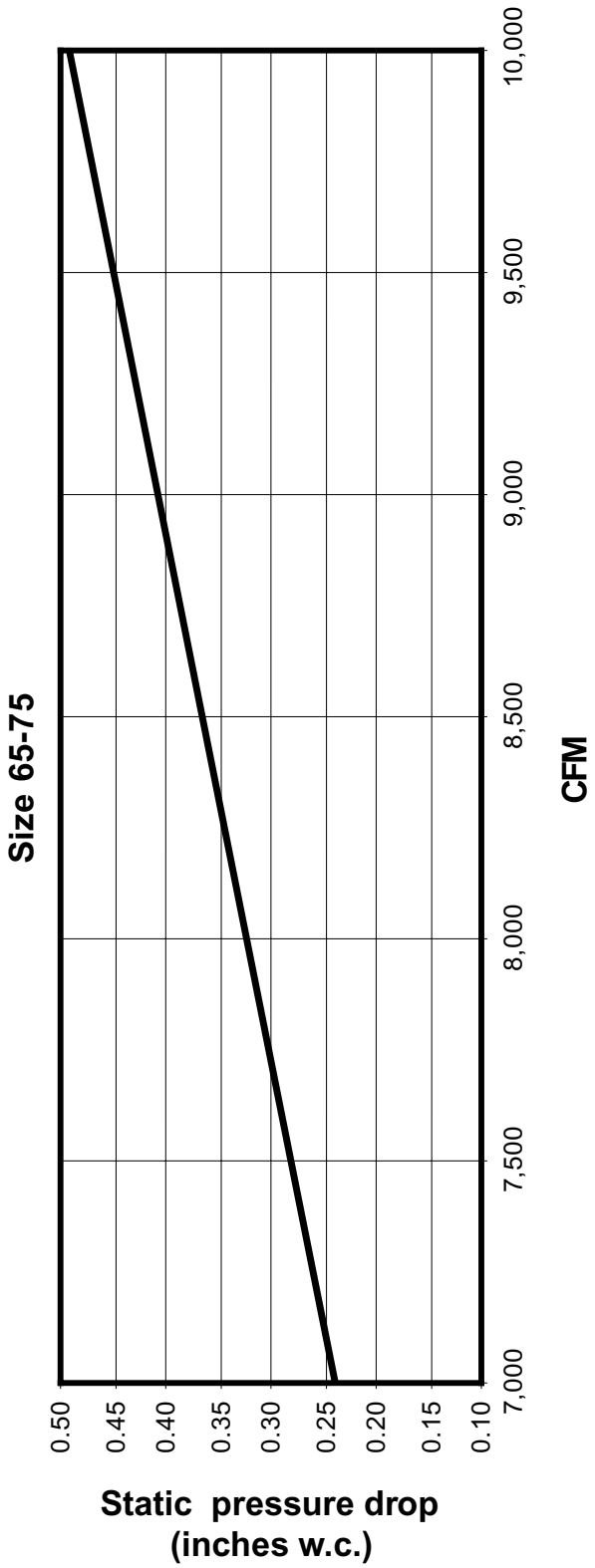
Pressure Drop Chart

Model GTDM-45-55



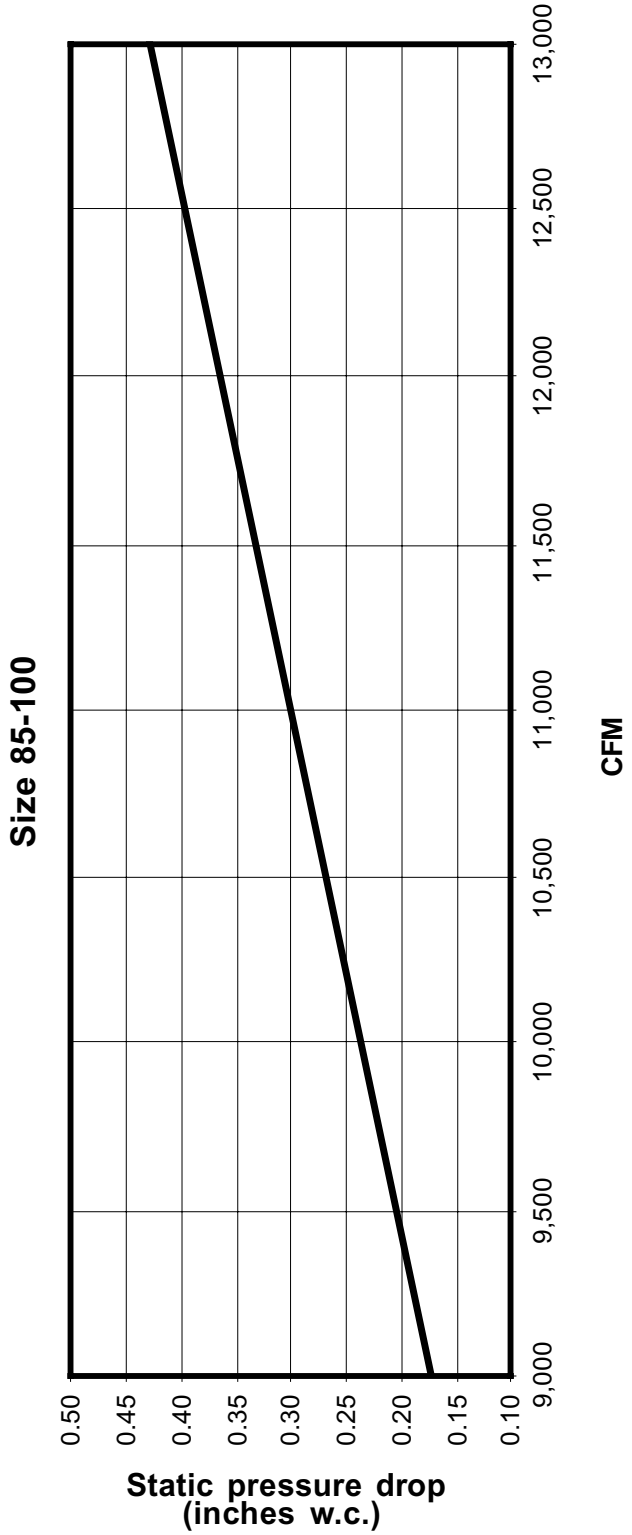
Pressure Drop Chart

Model GTDM-65-75



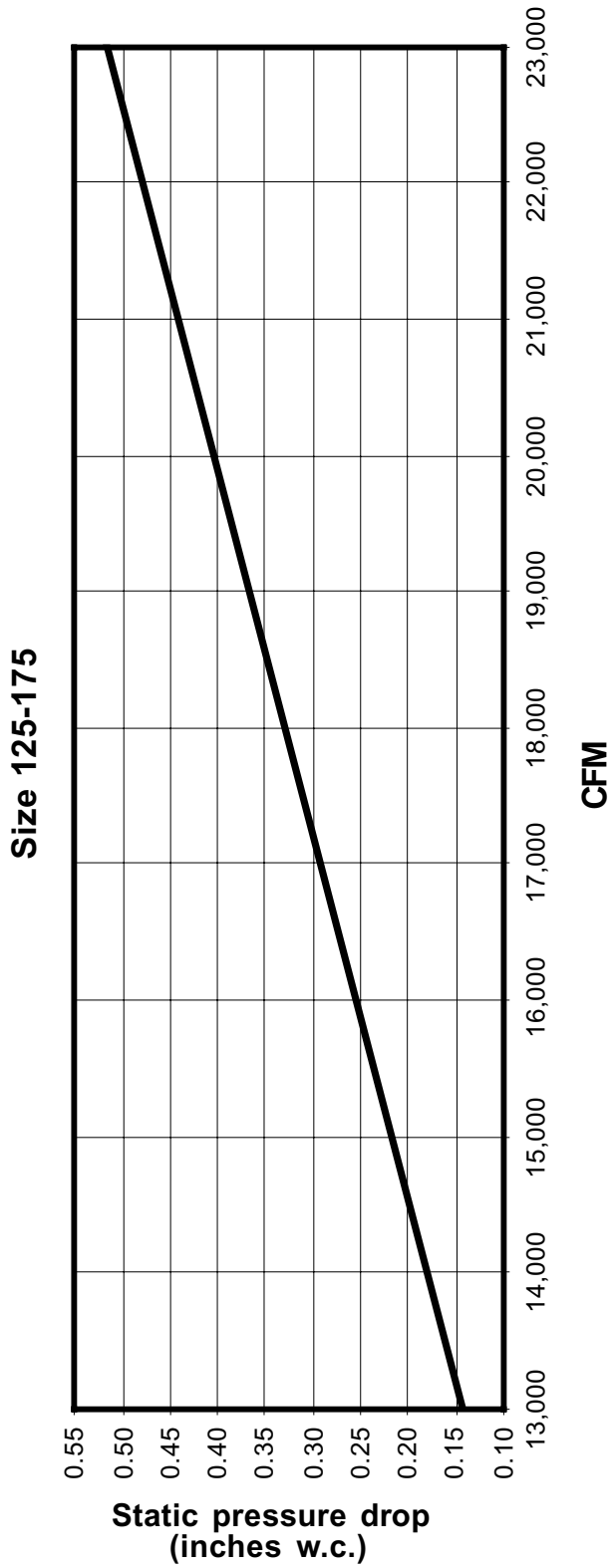
Pressure Drop Chart

Model GTDM-85-100



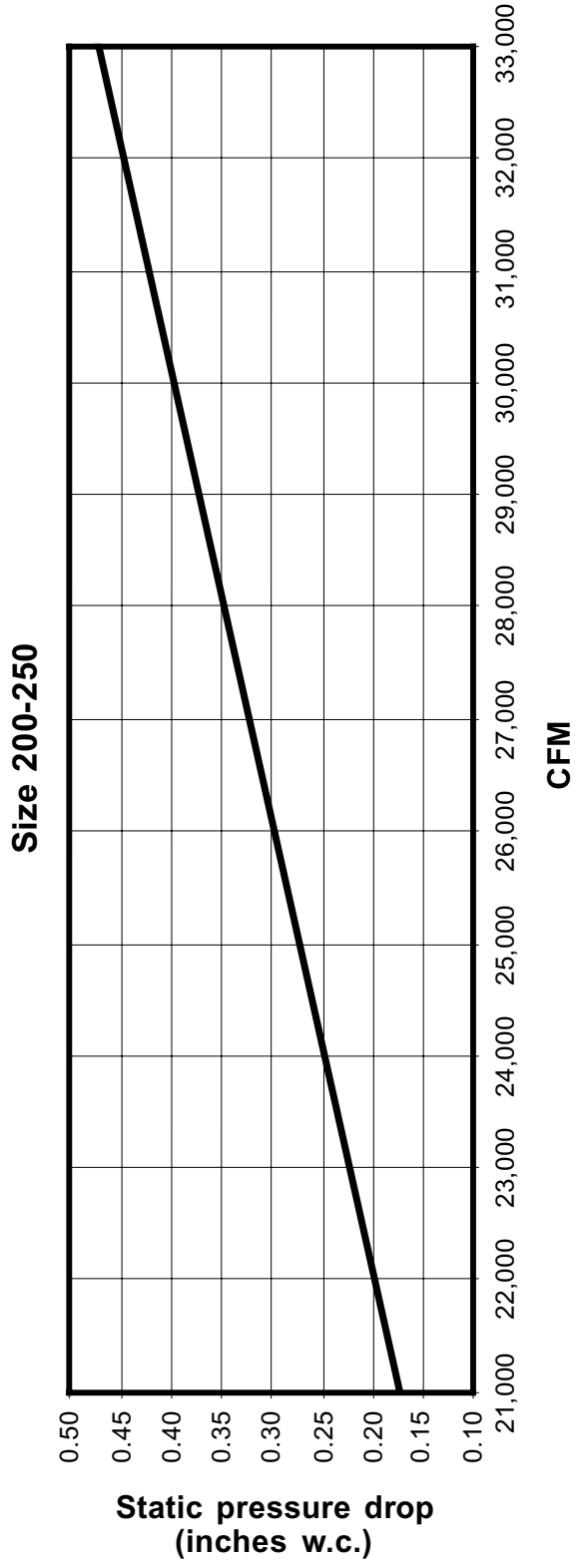
Pressure Drop Chart

Model GTDM-125-175



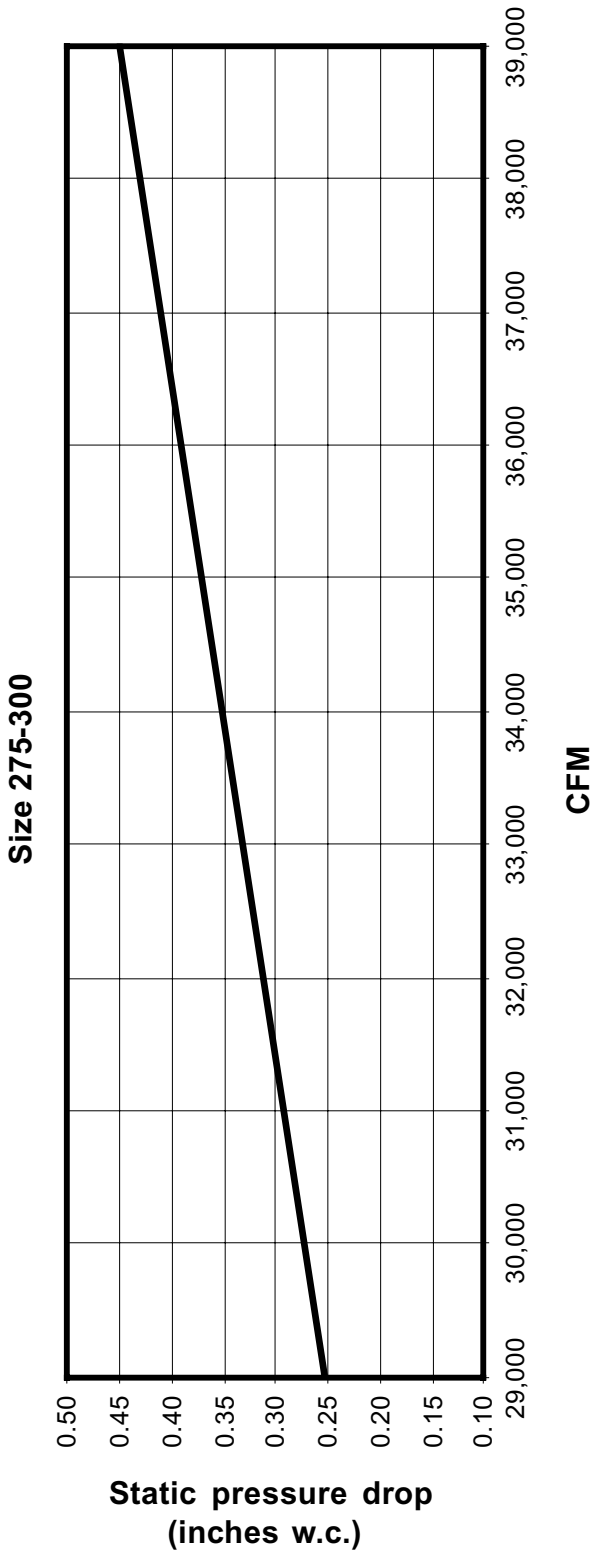
Pressure Drop Chart

Model GTDM-200-250



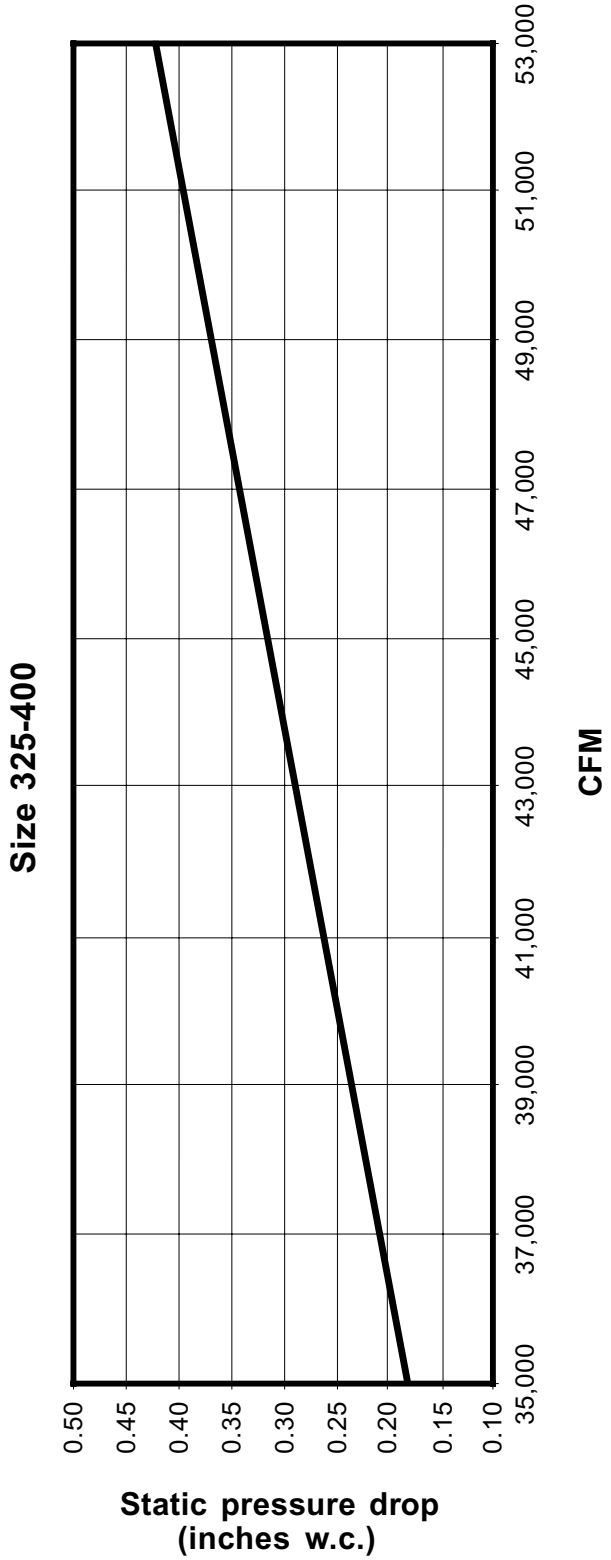
Pressure Drop Chart

Model GTDM-275-300



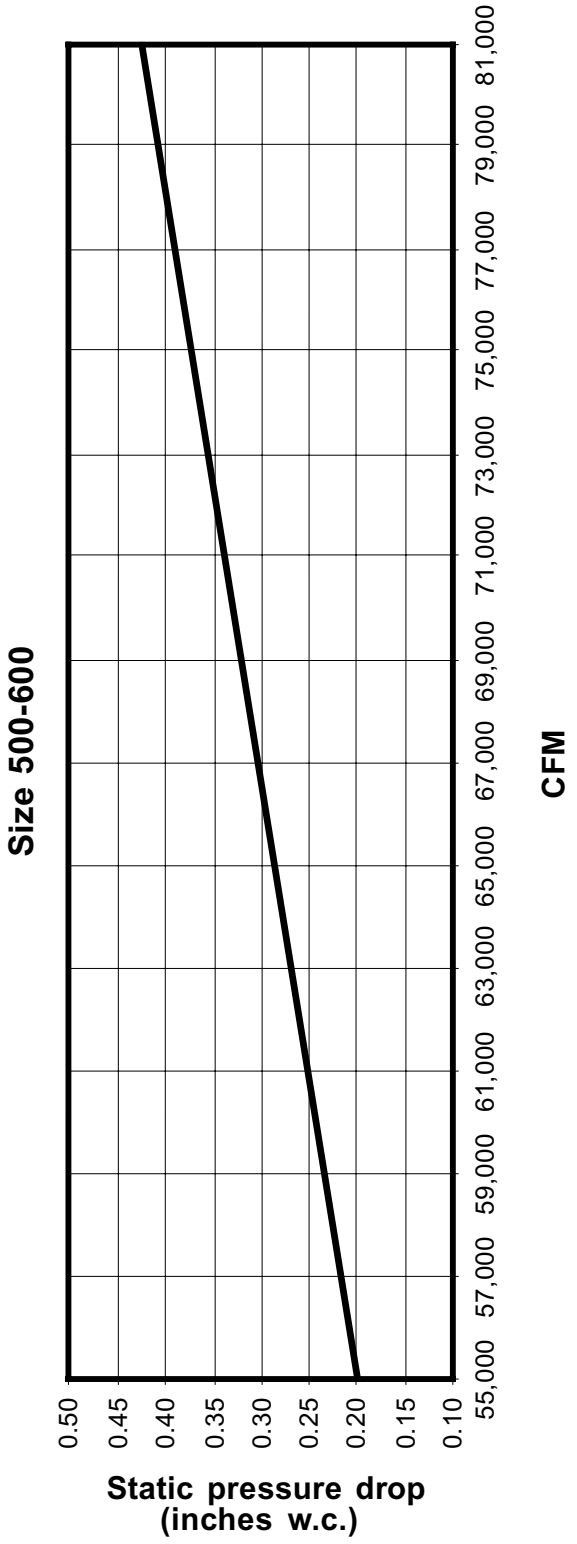
Pressure Drop Chart

Model GTDM-325-400



Pressure Drop Chart

Model GTDM-500-600

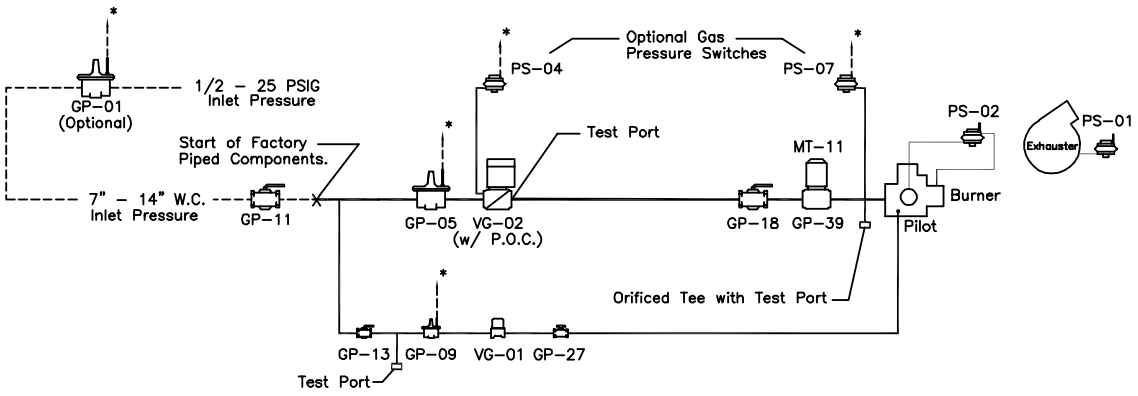


Gas Piping Layout

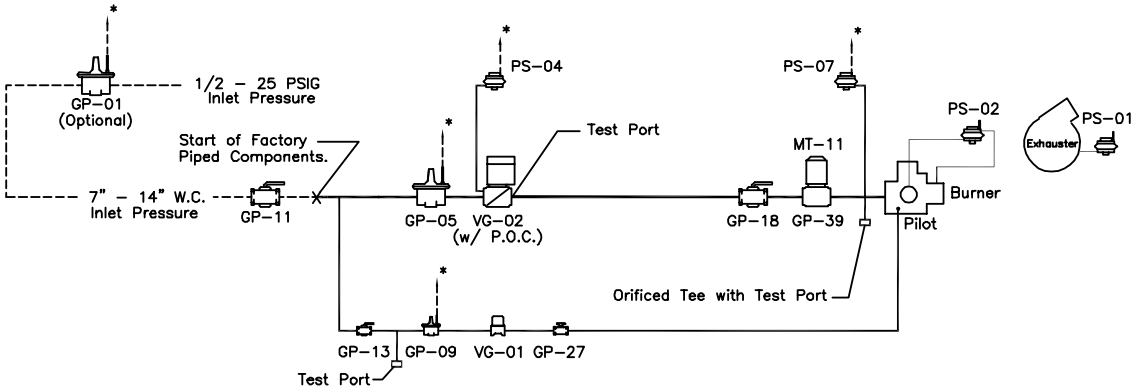
Schematic Component Diagrams

C000528

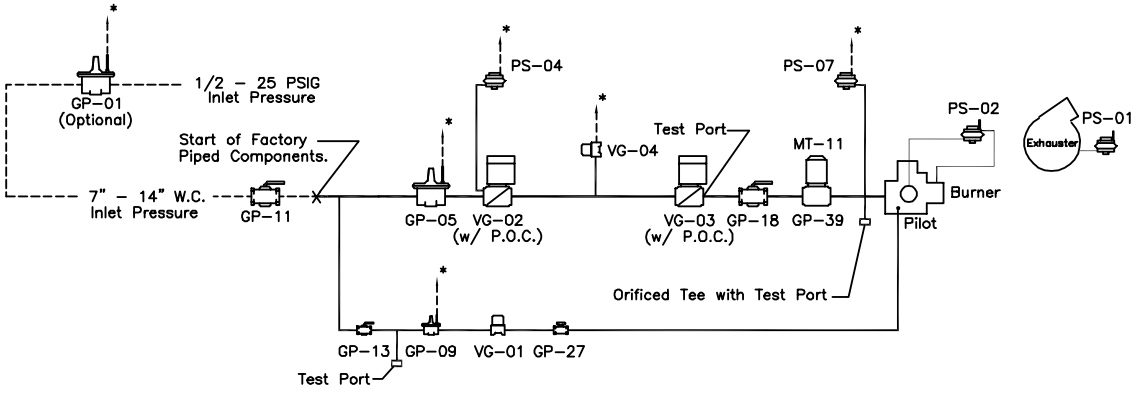
SCHEMATIC COMPONENT DIAGRAMS



STANDARD & FM & IRI SIZES 25 UP TO 200



STANDARD & FM & IRI SIZES 250 UP TO 600



"BLOCK & BLEED" OPTION FOR ALL SIZES

COMPONENT IDENTIFICATION

GP-01 HIGH GAS PRESSURE REGULATOR
GP-05 MAIN GAS PRESSURE REGULATOR
GP-09 PILOT PRESSURE REGULATOR
GP-11 MAIN GAS SHUT-OFF VALVE (SHIP LOOSE)
GP-13 PILOT GAS SHUT-OFF VALVE
GP-18 AUXILIARY GAS SHUT-OFF VALVE
GP-27 ORIFICED NEEDLE VALVE
GP-39 BUTTERFLY VALVE
MT-11 BUTTERFLY VALVE OPERATOR (MODULATING BURNERS ONLY)
PS-01 DRAFT PROVING SWITCH
PS-02 BURNER AIR FLOW SWITCH
PS-04 LOW GAS PRESSURE SWITCH
PS-07 HIGH GAS PRESSURE SWITCH
VG-01 PILOT GAS VALVE
VG-02 MAIN GAS VALVE
VG-03 AUXILIARY GAS VALVE
VG-04 N/O VENT VALVE

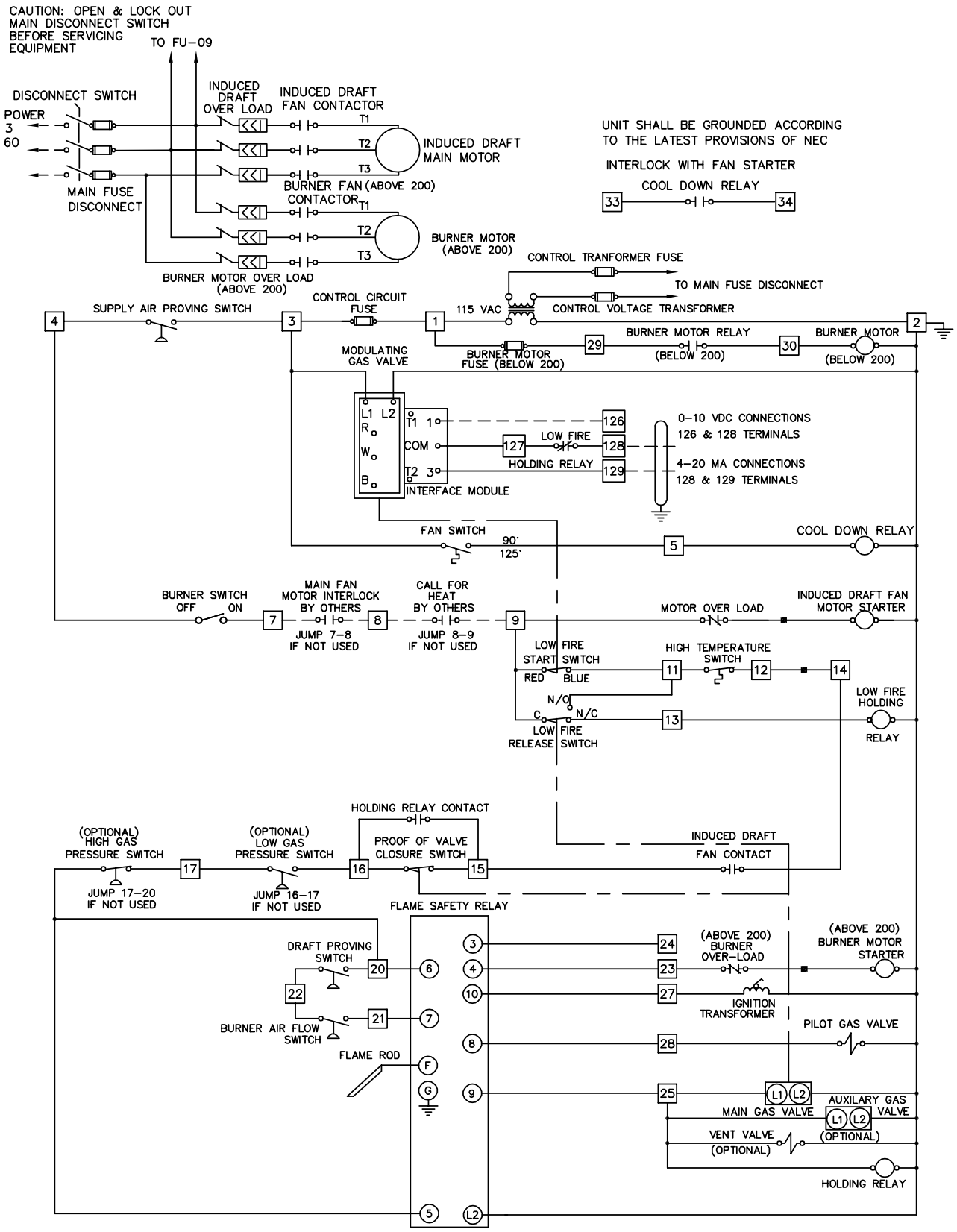
NOTES:

1. *Vent limiting devices provided wherever possible, when venting is required the venting to outside is by others on indoor units and furnished by factory on outdoor units.
2. All models require 7" W.C. minimum inlet pressure. Contact factory for inlet pressures below this minimum.

Wiring Diagram

Typical Wiring Diagram – GTDM

C000565



Guide Specification – GTDM Series

Base Bid Temprite Model GTDM _____ Indirect Fired Duct Furnace. The unit shall be factory fabricated, assembled, wired and tested prior to shipment in accordance with the specification and equipment schedule. The unit will include all components herein and as shown on the drawings. Alternate equipment, equal in design, construction, performance and capacity to unit(s) specified, must be shown with price deduct/add, if any. Approval of alternate equipment will be subject to review of shop drawings. The unit shall be capable of handling_____SCFM. The unit shall be ETL listed.

CASING

The unit casing is to be panel construction from 16 gauge galvanized steel, suitably reinforced to ensure rigidity. All panels shall be factory sealed with caulking between mating panels. The casing enclosing the heat exchanger shall be of double wall construction with a galvanized steel inner wall serving as a radiation shield. Radiation and transmission losses shall not exceed $1^1/_2$% of the rated output. This section shall be insulated with 1", $1^1/_2$ lb. density insulation.

The unit shall have an integral milled channel base complete with lifting lugs.

INDIRECT GAS FIRED SECTION

The entire primary heat transfer surface and header shall be of 400 series stainless steel; the secondary heat transfer surface shall be (mild steel) (400 series stainless steel). The heat exchanger design shall permit unrestricted lateral and peripheral expansion during the heating and cooling cycle. The flue gas travel shall be of four-pass design, with no internal baffles. The surface temperature of the heat exchanger shall not exceed 75% of its scaling temperature when operating at rated capacity. The heat exchanger shall be rated at a minimum of 80% efficiency at rated output. A pressure relief door complete with an observation window to view the complete flame and pilot shall be provided.

DIRECT DRIVE INDUCED DRAFT FAN

An integrally mounted, heavy duty, non-clogging radial blade induced draft fan complete with direct drive motor shall be provided. The induced draft fan shall be adequately sized to insure proper draft conditions when operating at rated capacity and equipped with a manual damper complete with locking quadrant to ensure proper draft and extended heat exchanger performance.

BURNER

The gas burner shall be of the power type, complete with integral combustion air blower and motor, combustion air proving switch, and removable pilot assembly. The combustion air damper shall be interlocked with the gas control valve to insure a proper gas/air mixture throughout the complete range of operation. Burner and controls shall be capable of delivering _____MBH output firing on (natural gas) (propane) at an inlet pressure of _____ (inches water column) (PSIG) and in accordance with (manufacturer's standard) (FM) (IRI) requirements. Burner and controls shall be arranged for ((High/Low/Off) (Full Modulation with low fire start and up to a 10:1 turndown ratio). The factory wired and piped valve train shall be mounted inside the unit weatherproof enclosure and be complete with:

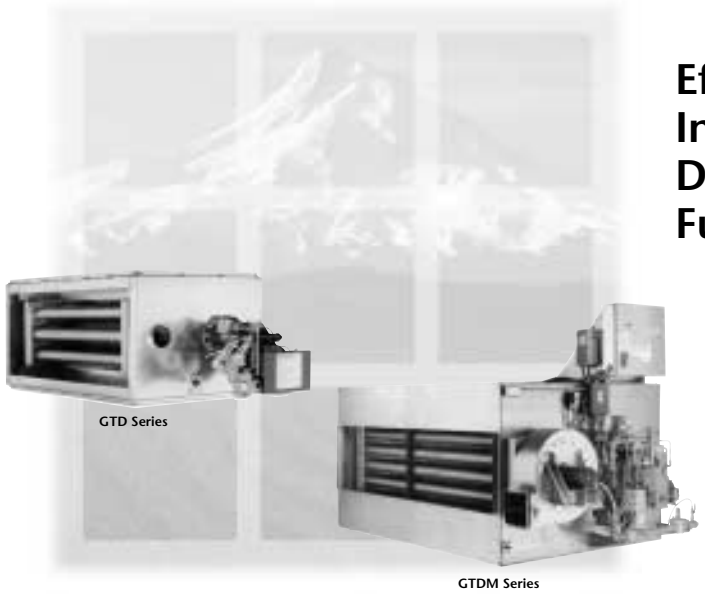
- low pressure appliance regulator
- motorized gas control valve
- main manual test firing shut-off valve
- pilot manual shut-off valve
- pilot pressure regulator
- pilot automatic shut-off valve
- pilot manual test firing shut-off valve

ELECTRICAL CONTROLS

A NEMA 1 control panel complete with hinged access door shall be provided. All control components are to be labeled and individually wired to a numbered terminal strip to aid in servicing. All wiring shall be color coded and number tagged at each end to match the control diagram supplied. Full operating and maintenance instructions shall accompany each unit. All wiring between the controls and valves shall be run in flexible conduit. All electrical components shall bear the U.L. label. The control system shall include but not be limited to the following components required for automatic operation:

- control circuit transformer
- control circuit fuses
- control relays
- electronic flame relay complete with alarm contacts
- induced draft fan air proving differential switch
- high limit switch
- automatic/manual fan switch
- heavy duty ignition transformer

TEMPRITE®
INDUSTRIES



Efficient Indirect Fired Duct Furnaces

Choose Temprite Indirect Gas Duct Furnaces

- Provide space heating or make-up air without products of combustion in the supply air
- Low operating and maintenance costs
- Simple, inexpensive installation
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