

## Gas Furnace — Induced Draft — Upflow / Horizontal and Downflow / Horizontal — Single Stage Heat

### Models:

\* - First letter may be "A" or "T"

*UD1A040A9241A	*UD1B080A9361A	*UD1C100A9601A	*DD1A040A9241A	*DD1B100A9451A
*UD1A040A9301A	*UD1B080A9481A	*UD1D100A9721A	*DD1A060A9241A	*DD1C100A9481A
*UD1A060A9241A	*UD1C080A9601A	*UD1C120A9541A	*DD1A060A9361A	*DD1C100A9541A
*UD1A060A9361A	*UD1B100A9361A	*UD1D120A9601A	*DD1B060A9361A	*DD1C120A9541A
*UD1B060A9361A	*UD1B100A9451A	*UD1D140A9601A	*DD1B080A9361A	*DD1D120A9601A
*UD1B080A9241A	*UD1C100A9481A		*DD1B080A9451A	*DD1D140A9601A

**IMPORTANT** — This document contains a wiring diagram and service information. This is customer property and is to remain with this unit. Please return to service information pack upon completion of work.

WARNING
DISCONNECT POWER BEFORE SERVICING

### PRODUCT SPECIFICATIONS <sup>①</sup>

MODEL	*UD1A040A9241A	*UD1A040A9301A	*UD1A060A9241A
<b>TYPE</b>	Upflow / Horizontal	Upflow / Horizontal	Upflow / Horizontal
<b>RATINGS <sup>②</sup></b>			
Input BTUH <sup>③</sup>	40,000	40,000	60,000
Capacity BTUH (ICS) <sup>③</sup>	32,000	32,000	47,000
Temp. rise (Min.-Max.) °F.	30 - 60	30 - 60	35 - 65
<b>BLOWER DRIVE</b>	DIRECT	DIRECT	DIRECT
Diameter - Width (In.)	10 x 6	10 x 6	10 x 6
No. Used	1	1	1
Speeds (No.)	4	4	4
CFM vs. in. w.g.	See Fan Performance Table	See Fan Performance Table	See Fan Performance Table
Motor HP	1/5	1/3	1/5
R.P.M.	1080	1075	1080
Volts / Ph / Hz	115/1/60	115/1/60	115/1/60
<b>COMBUSTION FAN — Type</b>	Centrifugal	Centrifugal	Centrifugal
Drive - No. Speeds	Direct - 1	Direct - 1	Direct - 1
Motor HP - RPM	1/50 - 3180	1/50 - 3180	1/50 - 3180
Volts / Ph / Hz	115/1/60	115/1/60	115/1/60
FLA	1.09	1.09	1.09
<b>FILTER — Furnished?</b>	No	No	No
Type Recommended	High Velocity	High Velocity	High Velocity
Shipped (No.-Size-Thk.)	1 - 17x25 - 1in.	1 - 17x25 - 1in.	1 - 17x25 - 1in.
<b>VENT — Size (in.)</b>	4 Round	4 Round	4 Round
<b>HEAT EXCHANGER</b>			
Type - Fired	Alum. Steel	Alum. Steel	Alum. Steel
- Unfired			
Gauge (Fired)	20	20	20
<b>ORIFICES — Main</b>			
Nat. Gas Qty. — Drill Size	2 — 45	2 — 45	3 — 45
L.P. Gas Qty. — Drill Size	2 — 56	2 — 56	3 — 56
<b>GAS VALVE</b>	Redundant - Single Stage	Redundant - Single Stage	Redundant - Single Stage
<b>PILOT SAFETY DEVICE</b>			
Type	Hot Surface Ignition	Hot Surface Ignition	Hot Surface Ignition
<b>BURNERS — Type</b>	Multiport Inshot	Multiport Inshot	Multiport Inshot
Number	2	2	3
<b>POWER CONN. — V / Ph / Hz <sup>④</sup></b>	115/1/60	115/1/60	115/1/60
Ampacity (In Amps)	5.4	9.0	5.4
Max. Overcurrent Protection (Amps)	15	15	15
<b>PIPE CONN. SIZE (IN.)</b>	1/2	1/2	1/2
<b>DIMENSIONS</b>	H x W x D	H x W x D	H x W x D
Crated (In.)	41-3/4 x 16-1/2 x 30-1/2	41-3/4 x 16-1/2 x 30-1/2	41-3/4 x 16-1/2 x 30-1/2
<b>WEIGHT</b>			
Shipping (Lbs.) / Net (Lbs.)	119 / 110	122 / 113	124 / 115

① Central Furnace heating designs are certified to ANSI Z21.47 / CSA 2.3.

② For U.S. applications, above input ratings (BTUH) are up to 2,000 feet, derate 4% per 1,000 feet for elevations above 2,000 feet above sea level.

For Canadian applications, above input ratings (BTUH) are up to 4,500 feet, derate 4% per 1,000 feet for elevations above 4,500 feet above sea level.

③ Based on U.S. government standard tests.

④ The above wiring specifications are in accordance with National Electrical Code; however, installations must comply with local codes.

**NOTICE:** Since the manufacturer has a policy of continuous product and product data improvement, it reserves the right to change design and specifications without notice.

**UD1\_DD1-SF-1G**

# Service Facts

## PRODUCT SPECIFICATIONS ①

MODEL	*UD1A060A9361A	*UD1B060A9361A	*UD1B080A9241A	*UD1B080A9361A
<b>TYPE</b>	Upflow / Horizontal	Upflow / Horizontal	Upflow / Horizontal	Upflow / Horizontal
<b>RATINGS ②</b>				
Input BTUH ③	60,000	60,000	80,000	80,000
Capacity BTUH (ICS) ③	47,000	47,000	64,000	63,000
Temp. rise (Min.-Max.) °F.	30 - 60	30 - 60	50 - 80	30 - 60
<b>BLOWER DRIVE</b>	DIRECT	DIRECT	DIRECT	DIRECT
Diameter - Width (In.)	10 x 6**	10 x 7**	9 x 7	10 x 7
No. Used	1	1	1	1
Speeds (No.)	4	4	4	4
CFM vs. in. w.g.	See Fan Performance Table	See Fan Performance Table	See Fan Performance Table	See Fan Performance Table
Motor HP	1/3	1/3	1/5	1/3
R.P.M.	1075	1075	1080	1075
Volts / Ph / Hz	115/1/60	115/1/60	115/1/60	115/1/60
<b>COMBUSTION FAN — Type</b>	Centrifugal	Centrifugal	Centrifugal	Centrifugal
Drive - No. Speeds	Direct - 1	Direct - 1	Direct - 1	Direct - 1
Motor HP - RPM	1/50 - 3180	1/50 - 3180	1/50 - 3180	1/50 - 3180
Volts / Ph / Hz	115/1/60	115/1/60	115/1/60	115/1/60
FLA	1.09	1.09	1.00	1.09
<b>FILTER — Furnished?</b>	No	No	No	No
Type Recommended	High Velocity	High Velocity	High Velocity	High Velocity
Shipped (No.-Size-Thk.)	1 - 17x25 - 1in.	1 - 17x25 - 1in.	1 - 17x25 - 1in.	1 - 17x25 - 1in.
<b>VENT — Size (in.)</b>	4 Round	4 Round	4 Round	4 Round
<b>HEAT EXCHANGER</b>				
Type - Fired	Alum. Steel	Alum. Steel	Alum. Steel	Alum. Steel
- Unfired				
Gauge (Fired)	20	20	20	20
<b>ORIFICES — Main</b>				
Nat. Gas Qty. — Drill Size	3 — 45	3 — 45	4 — 45	4 — 45
L.P. Gas Qty. — Drill Size	3 — 56	3 — 56	4 — 56	4 — 56
<b>GAS VALVE</b>	Redundant - Single Stage	Redundant - Single Stage	Redundant - Single Stage	Redundant - Single Stage
<b>PILOT SAFETY DEVICE</b>				
Type	Hot Surface Ignition	Hot Surface Ignition	Hot Surface Ignition	Hot Surface Ignition
<b>BURNERS — Type</b>	Multiport Inshot	Multiport Inshot	Multiport Inshot	Multiport Inshot
Number	3	3	4	4
<b>POWER CONN. — V / Ph / Hz ④</b>	115/1/60	115/1/60	115/1/60	115/1/60
Ampacity (In Amps)	9.0	9.0	5.4	9.0
Max. Overcurrent Protection (Amps)	15	15	15	15
<b>PIPE CONN. SIZE (IN.)</b>	1/2	1/2	1/2	1/2
<b>DIMENSIONS</b>				
Crated (In.)	H x W x D 41-3/4 x 16-1/2 x 30-1/2	H x W x D 41-3/4 x 19-1/2 x 30-1/2	H x W x D 41-3/4 x 19-1/2 x 30-1/2	H x W x D 41-3/4 x 19-1/2 x 30-1/2
<b>WEIGHT</b>				
Shipping (Lbs.) / Net (Lbs.)	127 / 118	137 / 127	139 / 129	142 / 132
<p>** UD060C936K was built with a 10" x 7" blower housing, however the 10" x 7" and 10" x 6" have identical airflow in this model.</p> <p>① Central Furnace heating designs are certified to ANSI Z21.47 / CSA 2.3. For U.S. applications, above input ratings (BTUH) are up to 2,000 feet, derate 4% per 1,000 feet for elevations above 2,000 feet above sea level. For Canadian applications, above input ratings (BTUH) are up to 4,500 feet, derate 4% per 1,000 feet for elevations above 4,500 feet above sea level.</p> <p>③ Based on U.S. government standard tests. ④ The above wiring specifications are in accordance with National Electrical Code; however, installations must comply with local codes.</p>				
<b>MODEL</b>	*UD1B080A9481A	*UD1C080A9601A	*UD1B100A9361A	*UD1B100A9451A
<b>TYPE</b>	Upflow / Horizontal	Upflow / Horizontal	Upflow / Horizontal	Upflow / Horizontal
<b>RATINGS ②</b>				
Input BTUH ③	80,000	80,000	100,000	100,000
Capacity BTUH (ICS) ③	64,000	64,000	79,000	80,000
Temp. rise (Min.-Max.) °F.	30 - 60	25 - 55	40 - 70	35 - 65
<b>BLOWER DRIVE</b>	DIRECT	DIRECT	DIRECT	DIRECT
Diameter - Width (In.)	10 x 8	11 x 10	10 x 7	10 x 8
No. Used	1	1	1	1
Speeds (No.)	4	4	4	4
CFM vs. in. w.g.	See Fan Performance Table	See Fan Performance Table	See Fan Performance Table	See Fan Performance Table
Motor HP	1/3	3/4	1/3	1/3
R.P.M.	1075	1100	1075	1075
Volts / Ph / Hz	115/1/60	115/1/60	115/1/60	115/1/60
<b>COMBUSTION FAN — Type</b>	Centrifugal	Centrifugal	Centrifugal	Centrifugal
Drive - No. Speeds	Direct - 1	Direct - 1	Direct - 1	Direct - 1
Motor HP - RPM	1/50 - 3180	1/50 - 3180	1/50 - 3180	1/50 - 3180
Volts / Ph / Hz	115/1/60	115/1/60	115/1/60	115/1/60
FLA	1.09	1.09	1.09	1.09
<b>FILTER — Furnished?</b>	No	No	No	No
Type Recommended	High Velocity	High Velocity	High Velocity	High Velocity
Shipped (No.-Size-Thk.)	1 - 17x25 - 1in.	1 - 20x25 - 1in.	1 - 17x25 - 1in.	1 - 17x25 - 1in.
<b>VENT — Size (in.)</b>	4 Round	4 Round	4 Round	4 Round
<b>HEAT EXCHANGER</b>				
Type - Fired	Alum. Steel	Alum. Steel	Alum. Steel	Alum. Steel
- Unfired				
Gauge (Fired)	20	20	20	20
<b>ORIFICES — Main</b>				
Nat. Gas Qty. — Drill Size	4 — 45	4 — 45	5 — 45	5 — 45
L.P. Gas Qty. — Drill Size	4 — 56	4 — 56	5 — 56	5 — 56
<b>GAS VALVE</b>	Redundant - Single Stage	Redundant - Single Stage	Redundant - Single Stage	Redundant - Single Stage
<b>PILOT SAFETY DEVICE</b>				
Type	Hot Surface Ignition	Hot Surface Ignition	Hot Surface Ignition	Hot Surface Ignition
<b>BURNERS — Type</b>	Multiport Inshot	Multiport Inshot	Multiport Inshot	Multiport Inshot
Number	4	4	5	5
<b>POWER CONN. — V / Ph / Hz ④</b>	115/1/60	115/1/60	115/1/60	115/1/60
Ampacity (In Amps)	9.8	13.8	9.0	9.8
Max. Overcurrent Protection (Amps)	15	20	15	15
<b>PIPE CONN. SIZE (IN.)</b>	1/2	1/2	1/2	1/2
<b>DIMENSIONS</b>				
Crated (In.)	H x W x D 41-3/4 x 19-1/2 x 30-1/2	H x W x D 41-3/4 x 23 x 30-1/2	H x W x D 41-3/4 x 19-1/2 x 30-1/2	H x W x D 41-3/4 x 19-1/2 x 30-1/2
<b>WEIGHT</b>				
Shipping (Lbs.) / Net (Lbs.)	142 / 132	151 / 162	151 / 141	153 / 143

## PRODUCT SPECIFICATIONS <sup>①</sup>

MODEL	*UD1C100A9481A	*UD1C100A9601A	*UD1D100A9721A
<b>TYPE</b>	Upflow / Horizontal	Upflow / Horizontal	Upflow / Horizontal
<b>RATINGS</b> <sup>②</sup>			
Input BTUH <sup>③</sup>	100,000	100,000	100,000
Capacity BTUH (ICS) <sup>③</sup>	79,000	79,000	80,000
Temp. rise (Min.-Max.) °F.	35 - 65	30 - 60	30 - 60
<b>BLOWER DRIVE</b>	DIRECT	DIRECT	DIRECT
Diameter - Width (In.)	10 x 8	11 x 10	11 x 10
No. Used	1	1	1
Speeds (No.)	4	4	4
CFM vs. in. w.g.	See Fan Performance Table	See Fan Performance Table	See Fan Performance Table
Motor HP	1/2	1/2	3/4
RP.M.	1075	1075	1100
Volts / Ph / Hz	115/1/60	115/1/60	115/1/60
<b>COMBUSTION FAN — Type</b>	Centrifugal	Centrifugal	Centrifugal
Drive - No. Speeds	Direct - 1	Direct - 1	Direct - 1
Motor HP - RPM	1/50 - 3180	1/50 - 3180	1/50 - 3180
Volts / Ph / Hz	115/1/60	115/1/60	115/1/60
FLA	1.09	1.09	1.09
<b>FILTER — Furnished?</b>	No	No	No
Type Recommended	High Velocity	High Velocity	High Velocity
Shipped (No.-Size-Thk.)	1 - 20x25 - 1in.	1 - 20x25 - 1in.	1 - 24x25 - 1in.
<b>VENT — Size (in.)</b>	4 Round	4 Round	4 Round
<b>HEAT EXCHANGER</b>			
Type - Fired	Alum. Steel	Alum. Steel	Alum. Steel
- Unfired			
Gauge (Fired)	20	20	20
<b>ORIFICES — Main</b>			
Nat. Gas Qty. — Drill Size	5 — 45	5 — 45	5 — 45
L.P. Gas Qty. — Drill Size	5 — 56	5 — 56	5 — 56
<b>GAS VALVE</b>	Redundant - Single Stage	Redundant - Single Stage	Redundant - Single Stage
<b>PILOT SAFETY DEVICE</b>			
Type	Hot Surface Ignition	Hot Surface Ignition	Hot Surface Ignition
<b>BURNERS — Type</b>	Multiport Inshot	Multiport Inshot	Multiport Inshot
Number	5	5	5
<b>POWER CONN. — V / Ph / Hz</b> <sup>④</sup>	115/1/60	115/1/60	115/1/60
Ampacity (In Amps)	11.6	13.4	13.8
Max. Overcurrent Protection (Amps)	15	20	20
<b>PIPE CONN. SIZE (IN.)</b>	1/2	1/2	1/2
<b>DIMENSIONS</b>			
Crated (In.)	H x W x D 41-3/4 x 23 x 30-1/2	H x W x D 41-3/4 x 23 x 30-1/2	H x W x D 41-3/4 x 26-1/2 x 30-1/2
<b>WEIGHT</b>			
Shipping (Lbs.) / Net (Lbs.)	162 / 151	162 / 151	175 / 163

<sup>①</sup> Central Furnace heating designs are certified to ANSI Z21.47 / CSA 2.3.  
<sup>②</sup> For U.S. applications, above input ratings (BTUH) are up to 2,000 feet, derate 4% per 1,000 feet for elevations above 2,000 feet above sea level.  
 For Canadian applications, above input ratings (BTUH) are up to 4,500 feet, derate 4% per 1,000 feet for elevations above 4,500 feet above sea level.  
<sup>③</sup> Based on U.S. government standard tests.  
<sup>④</sup> The above wiring specifications are in accordance with National Electrical Code; however, installations must comply with local codes.

MODEL	*UD1C120A9541A	*UD1D120A9601A	*UD1D140A9601A
<b>TYPE</b>	Upflow / Horizontal	Upflow / Horizontal	Upflow / Horizontal
<b>RATINGS</b> <sup>②</sup>			
Input BTUH <sup>③</sup>	120,000	120,000	140,000
Capacity BTUH (ICS) <sup>③</sup>	96,000	96,000	111,000
Temp. rise (Min.-Max.) °F.	35 - 65	30 - 60	40 - 70
<b>BLOWER DRIVE</b>	DIRECT	DIRECT	DIRECT
Diameter - Width (In.)	11 x 10	11 x 10	11 x 10
No. Used	1	1	1
Speeds (No.)	4	4	4
CFM vs. in. w.g.	See Fan Performance Table	See Fan Performance Table	See Fan Performance Table
Motor HP	1/2	1/2	3/4
RP.M.	1075	1075	1075
Volts / Ph / Hz	115/1/60	115/1/60	115/1/60
<b>COMBUSTION FAN — Type</b>	Centrifugal	Centrifugal	Centrifugal
Drive - No. Speeds	Direct - 1	Direct - 1	Direct - 1
Motor HP - RPM	1/50 - 3180	1/50 - 3180	1/50 - 3180
Volts / Ph / Hz	115/1/60	115/1/60	115/1/60
FLA	1.09	1.09	1.09
<b>FILTER — Furnished?</b>	No	No	No
Type Recommended	High Velocity	High Velocity	High Velocity
Shipped (No.-Size-Thk.)	1 - 20x25 - 1in.	1 - 24x25 - 1in.	1 - 24x25 - 1in.
<b>VENT — Size (in.)</b>	4 Round	4 Round	4 Round
<b>HEAT EXCHANGER</b>			
Type - Fired	Alum. Steel	Alum. Steel	Alum. Steel
- Unfired			
Gauge (Fired)	20	20	20
<b>ORIFICES — Main</b>			
Nat. Gas Qty. — Drill Size	6 — 45	6 — 45	7 — 46
L.P. Gas Qty. — Drill Size	6 — 56	6 — 56	7 — 56
<b>GAS VALVE</b>	Redundant - Single Stage	Redundant - Single Stage	Redundant - Single Stage
<b>PILOT SAFETY DEVICE</b>			
Type	Hot Surface Ignition	Hot Surface Ignition	Hot Surface Ignition
<b>BURNERS — Type</b>	Multiport Inshot	Multiport Inshot	Multiport Inshot
Number	6	6	7
<b>POWER CONN. — V / Ph / Hz</b> <sup>④</sup>	115/1/60	115/1/60	115/1/60
Ampacity (In Amps)	13.4	13.4	13.8
Max. Overcurrent Protection (Amps)	20	20	20
<b>PIPE CONN. SIZE (IN.)</b>	1/2	1/2	1/2
<b>DIMENSIONS</b>			
Crated (In.)	H x W x D 41-3/4 x 23 x 30-1/2	H x W x D 41-3/4 x 26-1/2 x 30-1/2	H x W x D 41-3/4 x 26-1/2 x 30-1/2
<b>WEIGHT</b>			
Shipping (Lbs.) / Net (Lbs.)	176 / 164	186 / 174	193 / 181

# Service Facts

## PRODUCT SPECIFICATIONS ①

MODEL	*DD1A040A9241A	*DD1A060A9241A	*DD1A060A9361A
<b>TYPE</b>	Downflow / Horizontal	Downflow / Horizontal	Downflow / Horizontal
<b>RATINGS</b> ②			
Input BTUH ③	40,000	60,000	60,000
Capacity BTUH (ICS) ③	31,000	48,000	48,000
Temp. rise (Min.-Max.) °F.	30 - 60	35 - 65	30 - 60
<b>BLOWER DRIVE</b>	DIRECT	DIRECT	DIRECT
Diameter - Width (In.)	10 x 6	10 x 7	11 x 7
No. Used	1	1	1
Speeds (No.)	4	4	4
CFM vs. in. w.g.	See Fan Performance Table	See Fan Performance Table	See Fan Performance Table
Motor HP	1/5	1/5	1/2
R.P.M.	1075	1075	1075
Volts / Ph / Hz	115/1/60	115/1/60	115/1/60
<b>COMBUSTION FAN — Type</b>	Centrifugal	Centrifugal	Centrifugal
Drive - No. Speeds	Direct - 1	Direct - 1	Direct - 1
Motor HP - RPM	1/50 - 3180	1/50 - 3180	1/50 - 3180
Volts / Ph / Hz	115/1/60	115/1/60	115/1/60
FLA	1.09	1.09	1.09
<b>FILTER — Furnished?</b>	No	No	No
Type Recommended	High Velocity	High Velocity	High Velocity
Shipped (No.-Size-Thk.)	2 - 14x20 - 1in.	2 - 14x20 - 1in.	2 - 14x20 - 1in.
<b>VENT — Size (in.)</b>	4 Round	4 Round	4 Round
<b>HEAT EXCHANGER</b>			
Type - Fired	Alum. Steel	Alum. Steel	Alum. Steel
- Unfired			
Gauge (Fired)	20	20	20
<b>ORIFICES — Main</b>			
Nat. Gas. Qty. — Drill Size	2 — 45	3 — 45	3 — 45
L.P. Gas Qty. — Drill Size	2 — 56	3 — 56	3 — 56
<b>GAS VALVE</b>	Redundant - Single Stage	Redundant - Single Stage	Redundant - Single Stage
<b>PILOT SAFETY DEVICE</b>			
Type	Hot Surface Ignition	Hot Surface Ignition	Hot Surface Ignition
<b>BURNERS — Type</b>	Multiport Inshot	Multiport Inshot	Multiport Inshot
Number	2	3	3
<b>POWER CONN. — V / Ph / Hz</b> ④	115/1/60	115/1/60	115/1/60
Ampacity (In Amps)	5.4	5.5	11.6
Max. Overcurrent Protection (Amps)	15	15	15
<b>PIPE CONN. SIZE (IN.)</b>	1/2	1/2	1/2
<b>DIMENSIONS</b>			
Crated (In.)	H x W x D 41-3/4 x 16-1/2 x 30-1/2	H x W x D 41-3/4 x 16-1/2 x 30-1/2	H x W x D 41-3/4 x 16-1/2 x 30-1/2
<b>WEIGHT</b>			
Shipping (Lbs.) / Net (Lbs.)	119 / 109	129 / 119	129 / 119

① Central Furnace heating designs are certified to ANSI Z21.47 / CSA 2.3.

② For U.S. applications, above input ratings (BTUH) are up to 2,000 feet, derate 4% per 1,000 feet for elevations above 2,000 feet above sea level.

For Canadian applications, above input ratings (BTUH) are up to 4,500 feet, derate 4% per 1,000 feet for elevations above 4,500 feet above sea level.

③ Based on U.S. government standard tests.

④ The above wiring specifications are in accordance with National Electrical Code; however, installations must comply with local codes.

MODEL	*DD1B060A9361A	*DD1B080A9361A	*DD1B080A9451A
<b>TYPE</b>	Downflow / Horizontal	Downflow / Horizontal	Downflow / Horizontal
<b>RATINGS</b> ②			
Input BTUH ③	60,000	80,000	80,000
Capacity BTUH (ICS) ③	48,000	64,000	64,000
Temp. rise (Min.-Max.) °F.	30 - 60	35 - 65	35 - 65
<b>BLOWER DRIVE</b>	DIRECT	DIRECT	DIRECT
Diameter - Width (In.)	11 x 7	10 x 7	10 x 8
No. Used	1	1	1
Speeds (No.)	4	4	4
CFM vs. in. w.g.	See Fan Performance Table	See Fan Performance Table	See Fan Performance Table
Motor HP	1/2	1/3	1/3
R.P.M.	1075	1075	1075
Volts / Ph / Hz	115/1/60	115/1/60	115/1/60
<b>COMBUSTION FAN — Type</b>	Centrifugal	Centrifugal	Centrifugal
Drive - No. Speeds	Direct - 1	Direct - 1	Direct - 1
Motor HP - RPM	1/50 - 3180	1/50 - 3180	1/50 - 3180
Volts / Ph / Hz	115/1/60	115/1/60	115/1/60
FLA	1.09	1.09	1.09
<b>FILTER — Furnished?</b>	No	No	No
Type Recommended	High Velocity	High Velocity	High Velocity
Shipped (No.-Size-Thk.)	2 - 14x20 - 1in.	2 - 14x20 - 1in.	2 - 16x20 - 1in.
<b>VENT — Size (in.)</b>	4 Round	4 Round	4 Round
<b>HEAT EXCHANGER</b>			
Type - Fired	Alum. Steel	Alum. Steel	Alum. Steel
- Unfired			
Gauge (Fired)	20	20	20
<b>ORIFICES — Main</b>			
Nat. Gas. Qty. — Drill Size	3 — 45	4 — 45	4 — 45
L.P. Gas Qty. — Drill Size	3 — 56	4 — 56	4 — 56
<b>GAS VALVE</b>	Redundant - Single Stage	Redundant - Single Stage	Redundant - Single Stage
<b>PILOT SAFETY DEVICE</b>			
Type	Hot Surface Ignition	Hot Surface Ignition	Hot Surface Ignition
<b>BURNERS — Type</b>	Multiport Inshot	Multiport Inshot	Multiport Inshot
Number	3	4	4
<b>POWER CONN. — V / Ph / Hz</b> ④	115/1/60	115/1/60	115/1/60
Ampacity (In Amps)	11.6	9.0	9.8
Max. Overcurrent Protection (Amps)	15	15	15
<b>PIPE CONN. SIZE (IN.)</b>	1/2	1/2	1/2
<b>DIMENSIONS</b>			
Crated (In.)	H x W x D 41-3/4 x 19-1/2 x 30-1/2	H x W x D 41-3/4 x 19-1/2 x 30-1/2	H x W x D 41-3/4 x 19-1/2 x 30-1/2
<b>WEIGHT</b>			
Shipping (Lbs.) / Net (Lbs.)	135 / 125	146 / 135	146 / 135

## PRODUCT SPECIFICATIONS ①

MODEL	*DD1B100A9451A	*DD1C100A9481A	*DD1B100A9541A
<b>TYPE</b>	Downflow / Horizontal	Downflow / Horizontal	Downflow / Horizontal
<b>RATINGS ②</b>			
Input BTUH ③	100,000	100,000	100,000
Capacity BTUH (ICS) ③	80,000	80,000	81,000
Temp. rise (Min.-Max.) °F.	35 - 65	35 - 65	30 - 60
<b>BLOWER DRIVE</b>	DIRECT	DIRECT	DIRECT
Diameter - Width (In.)	10 x 8	10 x 8	11 x 10
No. Used	1	1	1
Speeds (No.)	4	4	4
CFM vs. in. w.g.	See Fan Performance Table	See Fan Performance Table	See Fan Performance Table
Motor HP	1/3	1/2	1/2
RP.M.	1075	1075	1075
Volts / Ph / Hz	115/1/60	115/1/60	115/1/60
<b>COMBUSTION FAN — Type</b>	Centrifugal	Centrifugal	Centrifugal
Drive - No. Speeds	Direct - 1	Direct - 1	Direct - 1
Motor HP - RPM	1/50 - 3180	1/50 - 3180	1/50 - 3180
Volts / Ph / Hz	115/1/60	115/1/60	115/1/60
FLA	1.09	1.09	1.09
<b>FILTER — Furnished?</b>	No	No	No
Type Recommended	High Velocity	High Velocity	High Velocity
Shipped (No.-Size-Thk.)	2 - 16x20 - 1in.	2 - 16x20 - 1in.	2 - 16x20 - 1in.
<b>VENT — Size (in.)</b>	4 Round	4 Round	4 Round
<b>HEAT EXCHANGER</b>			
Type - Fired	Alum. Steel	Alum. Steel	Alum. Steel
- Unfired			
Gauge (Fired)	20	20	20
<b>ORIFICES — Main</b>			
Nat. Gas Qty. — Drill Size	5 — 45	5 — 45	5 — 45
L.P. Gas Qty. — Drill Size	5 — 56	5 — 56	5 — 56
<b>GAS VALVE</b>	Redundant - Single Stage	Redundant - Single Stage	Redundant - Single Stage
<b>PILOT SAFETY DEVICE</b>			
Type	Hot Surface Ignition	Hot Surface Ignition	Hot Surface Ignition
<b>BURNERS — Type</b>	Multiport Inshot	Multiport Inshot	Multiport Inshot
Number	5	5	5
<b>POWER CONN. — V / Ph / Hz ④</b>	115/1/60	115/1/60	115/1/60
Ampacity (In Amps)	9.8	11.6	13.4
Max. Overcurrent Protection (Amps)	15	15	20
<b>PIPE CONN. SIZE (IN.)</b>	1/2	1/2	1/2
<b>DIMENSIONS</b>	H x W x D	H x W x D	H x W x D
Crated (In.)	41-3/4 x 19-1/2 x 30-1/2	41-3/4 x 23 x 30-1/2	41-3/4 x 23 x 30-1/2
<b>WEIGHT</b>			
Shipping (Lbs.) / Net (Lbs.)	156 / 145	166 / 154	167 / 155

① Central Furnace heating designs are certified to ANSI Z21.47 / CSA 2.3.

② For U.S. applications, above input ratings (BTUH) are up to 2,000 feet, derate 4% per 1,000 feet for elevations above 2,000 feet above sea level.

For Canadian applications, above input ratings (BTUH) are up to 4,500 feet, derate 4% per 1,000 feet for elevations above 4,500 feet above sea level.

③ Based on U.S. government standard tests.

④ The above wiring specifications are in accordance with National Electrical Code; however, installations must comply with local codes.

MODEL	*DD1C120A9541A	*DD1D120A9601A	*DD1D140A9601A
<b>TYPE</b>	Downflow / Horizontal	Downflow / Horizontal	Downflow / Horizontal
<b>RATINGS ②</b>			
Input BTUH ③	120,000	120,000	140,000
Capacity BTUH (ICS) ③	96,000	96,000	113,000
Temp. rise (Min.-Max.) °F.	35 - 65	35 - 65	45 - 75
<b>BLOWER DRIVE</b>	DIRECT	DIRECT	DIRECT
Diameter - Width (In.)	11 x 10	11 x 10	11 x 10
No. Used	1	1	1
Speeds (No.)	4	4	4
CFM vs. in. w.g.	See Fan Performance Table	See Fan Performance Table	See Fan Performance Table
Motor HP	1/2	1/2	3/4
RP.M.	1075	1075	1075
Volts / Ph / Hz	115/1/60	115/1/60	115/1/60
<b>COMBUSTION FAN — Type</b>	Centrifugal	Centrifugal	Centrifugal
Drive - No. Speeds	Direct - 1	Direct - 1	Direct - 1
Motor HP - RPM	1/50 - 3180	1/50 - 3180	1/50 - 3180
Volts / Ph / Hz	115/1/60	115/1/60	115/1/60
FLA	1.09	1.09	1.09
<b>FILTER — Furnished?</b>	No	No	No
Type Recommended	High Velocity	High Velocity	High Velocity
Shipped (No.-Size-Thk.)	2 - 16x20 - 1in.	2 - 16x20 - 1in.	2 - 16x20 - 1in.
<b>VENT — Size (in.)</b>	4 Round	4 Round	4 Round
<b>HEAT EXCHANGER</b>			
Type - Fired	Alum. Steel	Alum. Steel	Alum. Steel
- Unfired			
Gauge (Fired)	20	20	20
<b>ORIFICES — Main</b>			
Nat. Gas Qty. — Drill Size	6 — 45	6 — 45	7 — 45
L.P. Gas Qty. — Drill Size	6 — 56	6 — 56	7 — 56
<b>GAS VALVE</b>	Redundant - Single Stage	Redundant - Single Stage	Redundant - Single Stage
<b>PILOT SAFETY DEVICE</b>			
Type	Hot Surface Ignition	Hot Surface Ignition	Hot Surface Ignition
<b>BURNERS — Type</b>	Multiport Inshot	Multiport Inshot	Multiport Inshot
Number	6	6	7
<b>POWER CONN. — V / Ph / Hz ④</b>	115/1/60	115/1/60	115/1/60
Ampacity (In Amps)	13.4	13.4	13.8
Max. Overcurrent Protection (Amps)	20	20	20
<b>PIPE CONN. SIZE (IN.)</b>	1/2	1/2	1/2
<b>DIMENSIONS</b>	H x W x D	H x W x D	H x W x D
Crated (In.)	41-3/4 x 23 x 30-1/2	41-3/4 x 26-1/2 x 30-1/2	41-3/4 x 26-1/2 x 30-1/2
<b>WEIGHT</b>			
Shipping (Lbs.) / Net (Lbs.)	170 / 158	189 / 176	196 / 183

## SAFETY SECTION

### WARNING

#### **CARBON MONOXIDE POISONING HAZARD**

Failure to follow the steps outlined below for each appliance connected to the venting system being placed into operation could result in carbon monoxide poisoning or death.

The following steps shall be followed for each appliance connected to the venting system being placed into operation, while all other appliances connected to the venting system are not in operation:

1. Seal any unused openings in the venting system.
2. Inspect the venting system for proper size and horizontal pitch, as required in the National Fuel Gas Code, ANSI Z223.1/NFPA 54 or the CAN/CGA B149 Installation Codes and these instructions. Determine that there is no blockage or restriction, leakage, corrosion and other deficiencies which could cause an unsafe condition.
3. As far as practical, close all building doors and windows and all doors between the space in which the appliance(s) connected to the venting system are located and other deficiencies which could cause an unsafe condition.
4. Close fireplace dampers.
5. Turn on clothes dryers and any appliance not connected to the venting system. Turn on any exhaust fans, such as range hoods and bathroom exhausts, so they are operating at maximum speed. Do not operate a summer exhaust fan.
6. Follow the lighting instructions. Place the appliance being inspected into operation. Adjust the thermostat so appliance is operating continuously.
7. If improper venting is observed during any of the above tests, the venting system must be corrected in accordance with the National Fuel Gas Code, ANSI Z221.1/NFPA 54 and/or CAN/CGA B149 Installation Codes.
8. After it has been determined that each appliance connected to the venting system properly vents where tested as outlined above, return doors, windows, exhaust fans, fireplace dampers and any other gas-fired burning appliance to their previous conditions of use.

### WARNING

The cabinet must have an uninterrupted or unbroken ground according to National Electrical Code, ANSI/NFPA 70 - "latest edition" and Canadian Electrical Code, CSA C22.1 or local codes to minimize personal injury if an electrical fault should occur. A failure to follow this warning could result in an electrical shock, fire, injury, or death.

### CAUTION

The integrated furnace control is polarity sensitive. The hot leg of the 115 VAC power must be connected to the BLACK field lead.

### WARNING

#### **FIRE OR EXPLOSION HAZARD**

Failure to follow the safety warnings exactly could result in serious injury, death or property damage.

Never test for gas leaks with an open flame. Use a commercially available soap solution made specifically for the detection of leaks to check all connections. A fire or explosion may result causing property damage, personal injury, or loss of life.

### WARNING

#### **FIRE OR EXPLOSION HAZARD**

Failure to follow the safety warnings exactly could result in serious injury, death or property damage.

Improper servicing could result in dangerous operation, serious injury, death, or property damage.

## SEQUENCE OF OPERATION

### **Thermostat call for heat**

R and W thermostat contacts close signaling the control module to run its self-check routine. After the control module has verified that the pressure switch contacts are open and the limit switch(es) contacts are closed, the draft blower will be energized.

As the induced draft blower comes up to speed, the pressure switch contacts will close and the ignitor warm up period will begin. The ignitor will heat for approx. 17 seconds, then the gas valve is energized to permit gas flow to the burners. The flame sensor confirms that ignition has been achieved within the 4 second ignition trial period.

After the flame sensor confirms that ignition has been achieved, the delay to fan ON period begins timing and after approx. 45 seconds the indoor blower motor will be energized and will continue to run during the heating cycle.

When the thermostat is satisfied, R and W thermostat contacts open, the gas valve will close, the flames will extinguish, and the induced draft blower will be de-energized. The indoor blower motor will continue to run for the fan off period (Field selectable at 60, 100, 140 or 180 seconds), then will be de-energized by the control module.

## PERIODIC SERVICING REQUIREMENTS

1. GENERAL INSPECTION — Examine the furnace installation annually for the following items:
  - a. All flue product carrying areas external to the furnace (i.e. chimney, vent connector) are clear and free of obstruction. A vent screen in the end of the vent (flue) pipe must be inspected for blockage annually.
  - b. The vent connector is in place, slopes upward and is physically sound without holes or excessive corrosion.
  - c. The return air duct connection(s) is physically sound, is sealed to the furnace and terminates outside the space containing the furnace.
  - d. The physical support of the furnace should be sound without sagging, cracks, gaps, etc., around the base so as to provide a seal between the support and the base.
  - e. There are no obvious signs of deterioration of the furnace.
2. FILTERS — Filters should be cleaned or replaced (with high velocity filters only), monthly and more frequently during high use times of the year such as midsummer or midwinter.
3. BLOWERS — The blower size and speed determine the air volume delivered by the furnace. The blower motor bearings are factory lubricated and under normal operating conditions do not require servicing. If motor lubrication is required it should only be done by a qualified service technician. Annual cleaning of the blower wheel and housing is recommended for maximum air output, and this must be performed only by a qualified service technician or service agency.
4. IGNITER — This unit has a special hot surface direct ignition device that automatically lights the burners. Please note that it is very fragile and should be handled with care.

### WARNING

**Do not touch igniter. It is extremely hot. Failure to follow this warning could result in severe burns.**

5. BURNER — Gas burners do not normally require scheduled servicing, however, accumulation of foreign material may cause a yellowing flame or delayed ignition. Either condition indicates that a service call is required. For best operation, burners must be cleaned annually using brushes and vacuum cleaner.

Turn off gas and electric power supply. To clean burners, remove the top burner bracket. Lift burners from orifices.

**NOTE: Be careful not to break igniter when removing burners.**

Clean burners with brush and/or vacuum cleaner. Reassemble parts by reversal of the above procedure.

**NOTE: On LP (propane) units, some light yellow tipping of the outer mantle is normal. Inner mantle should be bright blue.**

**Natural gas units should not have any yellow tipped flames. This condition indicates that a service call is required. For best operation, burners must be cleaned annually using brushes and vacuum cleaner.**

**NOTE: On LP (propane) units, due to variations in BTU content and altitude, servicing may be required at shorter intervals.**

### WARNING

#### CARBON MONOXIDE POISONING HAZARD

**Failure to follow the installation instructions for the venting system being placed into operation could result in carbon monoxide poisoning or death.**

6. HEAT EXCHANGER/FLUE PIPE — These items must be inspected for signs of corrosion, and/or deterioration at the beginning of each heating season by a qualified service technician and cleaned annually for best operation. To clean flue gas passages, follow the steps below:
  - a. Turn off gas and electric power supply.
  - b. Inspect flue pipe exterior for cracks, leaks, holes or leaky joints.
  - c. Remove burner compartment door from furnace.
  - d. Inspect around insulation covering flue collector box. Inspect induced draft blower connections to the flue pipe connection.
  - e. Remove burners. (See 5.)
  - f. Use a mirror and flashlight to inspect interior of heat exchanger, be careful not to damage the igniter, flame sensor or other components.
  - g. If any corrosion is present, contact a service agency. Heat exchanger should be cleaned by a qualified service technician.
  - h. After inspection is complete replace burners and furnace door.
  - i. Restore gas supply. Check for leaks using a soap solution. Restore electrical supply. Check unit for normal operation.

### WARNING

#### FIRE OR EXPLOSION HAZARD

**Failure to follow the safety warnings exactly could result in serious injury, death or property damage.**

**Never test for gas leaks with an open flame. Use a commercially available soap solution made specifically for the detection of leaks to check all connections. A fire or explosion may result causing property damage, personal injury, or loss of life.**

7. COOLING COIL CONDENSATE DRAIN — If a cooling coil is installed with the furnace, condensate drains should be checked and cleaned periodically to assure that condensate can drain freely from coil to drain. If condensate cannot drain freely water damage could occur. (See Condensate Drain in Installer's Guide)

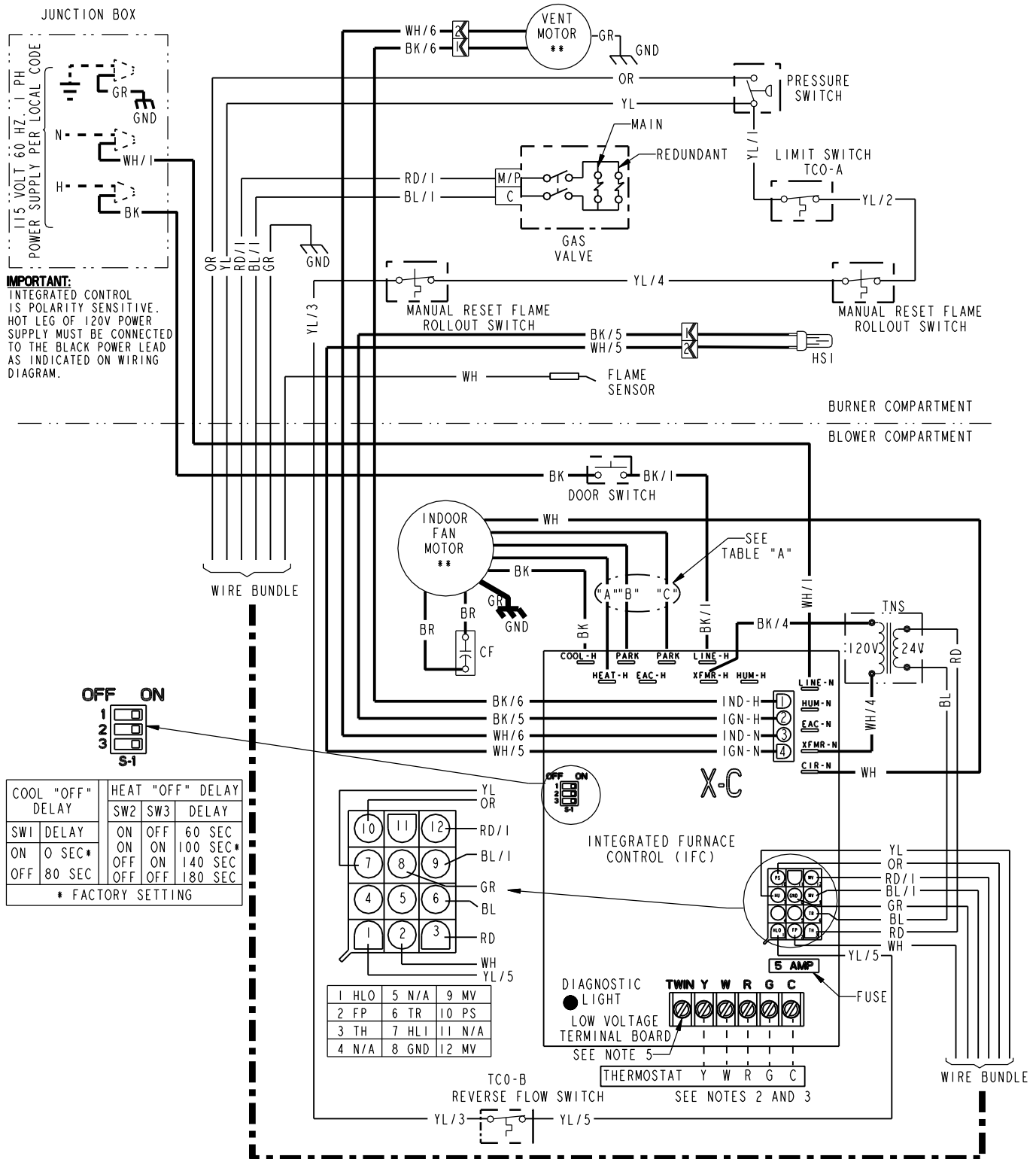
### CAUTION

**Label all wires prior to disconnection when servicing controls. Wiring errors can cause improper and dangerous operation.**

**Verify proper operation after servicing.**

# Service Facts

## WIRING DIAGRAM



COOL "OFF" DELAY		HEAT "OFF" DELAY		
SW1	DELAY	SW2	SW3	DELAY
ON	0 SEC*	ON	ON	60 SEC
OFF	80 SEC	ON	ON	100 SEC*
		OFF	ON	140 SEC
		OFF	OFF	180 SEC

\* FACTORY SETTING

1 HLO	5 N/A	9 MV
2 FP	6 TR	10 PS
3 TH	7 HLI	11 N/A
4 N/A	8 GND	12 MV

From Dwg. D342567P01 Rev. 1

(continued on next page)

## SCHEMATIC DIAGRAM

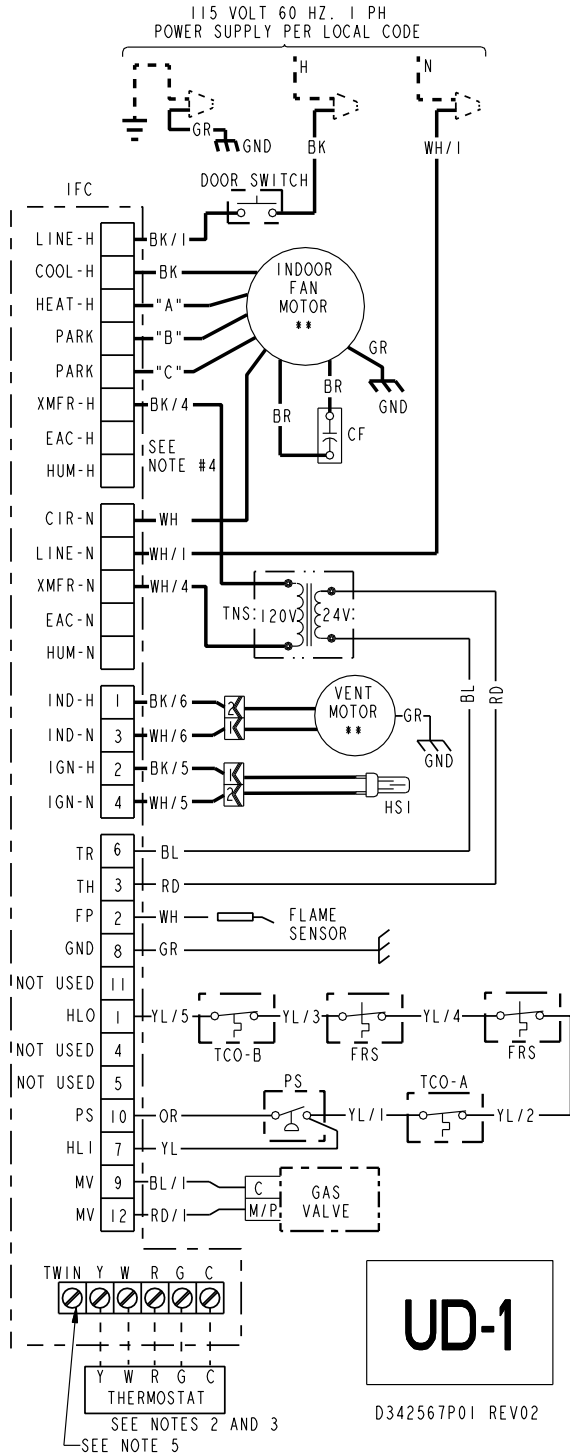


TABLE "A"			
SPEED TAPS FOR I.D. FAN MOTOR			
MODEL	HEAT "A"	PARK "B"	PARK "C"
*UD1A040A9241##	YL	RD	BL
*UD1A040A9301##	RD	BL	YL
*UD1A060A9241##	BL	RD	YL
*UD1A060A9361##	YL	RD	BL
*UD1B060A9361##	RD	BL	YL
*UD1B080A9241##	BL	RD	YL
*UD1B080A9361##	BL	RD	YL
*UD1B080A9481##	BL	RD	YL
*UD1C080A9601##	RD	BL	YL
*UD1B100A9361##	BL	RD	YL
*UD1B100A9451##	BL	RD	YL
*UD1C100A9481##	BL	RD	YL
*UD1C100A9601##	YL	BL	RD
*UD1D100A9721##	RD	YL	BK
*UD1C120A9541##	BL	RD	YL
*UD1D120A9601##	BL	RD	YL
*UD1D140A9601##	BL	RD	YL

\* PREFIX MAY BE "A" OR "T"  
# SUFFIX MAY BE "A" THROUGH "Z"  
RD = LOW                      BL = MED. HIGH  
YL = MED. LOW              BK = HIGH

**WARNING**

HAZARDOUS VOLTAGE:  
DISCONNECT ALL ELECTRICAL POWER INCLUDING REMOTE DISCONNECTS BEFORE SERVICING.  
FAILURE TO DISCONNECT POWER BEFORE SERVICING CAN CAUSE SEVERE PERSONAL INJURY OR DEATH.

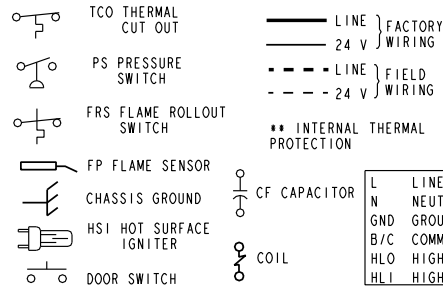
**CAUTION**

USE COPPER CONDUCTORS ONLY!  
UNIT TERMINALS ARE NOT DESIGNED TO ACCEPT OTHER TYPES OF CONDUCTORS.  
FAILURE TO DO SO MAY CAUSE DAMAGE TO THE EQUIPMENT.

**INTEGRATED FURNACE CONTROL**  
REPLACE WITH PART CNT03076 OR EQUIVALENT  
INPUT: 25 VAC, 60 HZ.  
XFMR SEC. CURRENT: 450 MA.  
MV OUTPUT: 1.5 A @ 24 VAC  
IND OUTPUT: 2.2 FLA, 3.5 LRA @ 120 VAC  
CIRC. BLOWER OUTPUT: 14.5 FLA, 26 LRA @ 120 VAC  
HUMIDIFIER & AIR CLEANER  
MAX. LOAD: 1.0 A @ 120 VAC  
IGNITER OUTPUT: 2.0 A @ 120 VAC

### DIAGNOSTIC CODES

FLASHING SLOW: NORMAL - NO CALL FOR HEAT  
FLASHING FAST: NORMAL - CALL FOR HEAT  
CONTINUOUS ON: REPLACE IFC  
CONTINUOUS OFF: CHECK POWER  
2 FLASHES: EXTERNAL LOCKOUT (RETRIES OR RECYCLES EXCEEDED)  
3 FLASHES: PRESSURE SWITCH ERROR  
4 FLASHES: OPEN LIMIT DEVICE  
5 FLASHES: FLAME SENSED WHEN NO FLAME SHOULD BE PRESENT  
6 FLASHES: 115 VAC POWER REVERSED POLARITY OR POOR GROUNDING  
7 FLASHES: GAS VALVE CIRCUIT ERROR  
8 FLASHES: LOW FLAME SENSE SIGNAL  
9 FLASHES: CHECK IGNITER



BK	BLACK	GR	GREEN
WH	WHITE	BR	BROWN
YL	YELLOW	RD	RED
OR	ORANGE	BL	BLUE

WIRE COLOR

BK/1 NUMBER ID (IF ANY)

L	LINE	TH	24 VAC (HOT)
N	NEUTRAL	TR	24 VAC (COMMON)
GND	GROUND	MV	MAIN GAS VALVE
B/C	COMMON	TNS	TRANSFORMER
HLO	HIGH LIMIT OUTPUT		
HLI	HIGH LIMIT INPUT		

### NOTES:

- IF ANY OF THE ORIGINAL WIRING AS SUPPLIED WITH THIS FURNACE MUST BE REPLACED, IT MUST BE WITH WIRE HAVING A TEMPERATURE RATING OF AT LEAST 105 C.
- THERMOSTAT HEAT ANTICIPATOR SETTING: .38 AMPS
- FOR PROPER OPERATION OF COOLING SPEED, "Y" TERMINAL MUST BE CONNECTED TO THE ROOM THERMOSTAT.
- THESE TERMINALS PROVIDE 120V POWER CONNECTIONS FOR ELECTRONIC AIR CLEANER (EAC) AND HUMIDIFIER (HUM). MAX. LOAD: 1.0 AMPS EACH.
- WHEN TWINNING TWO FURNACES, BOTH UNITS MUST BE CONNECTED TO THE SAME 115 VAC PHASE CONNECT THE TWO UNITS "TWIN" TERMINALS WITH 14 TO 22 AWG. WIRE.



## SCHEMATIC DIAGRAM

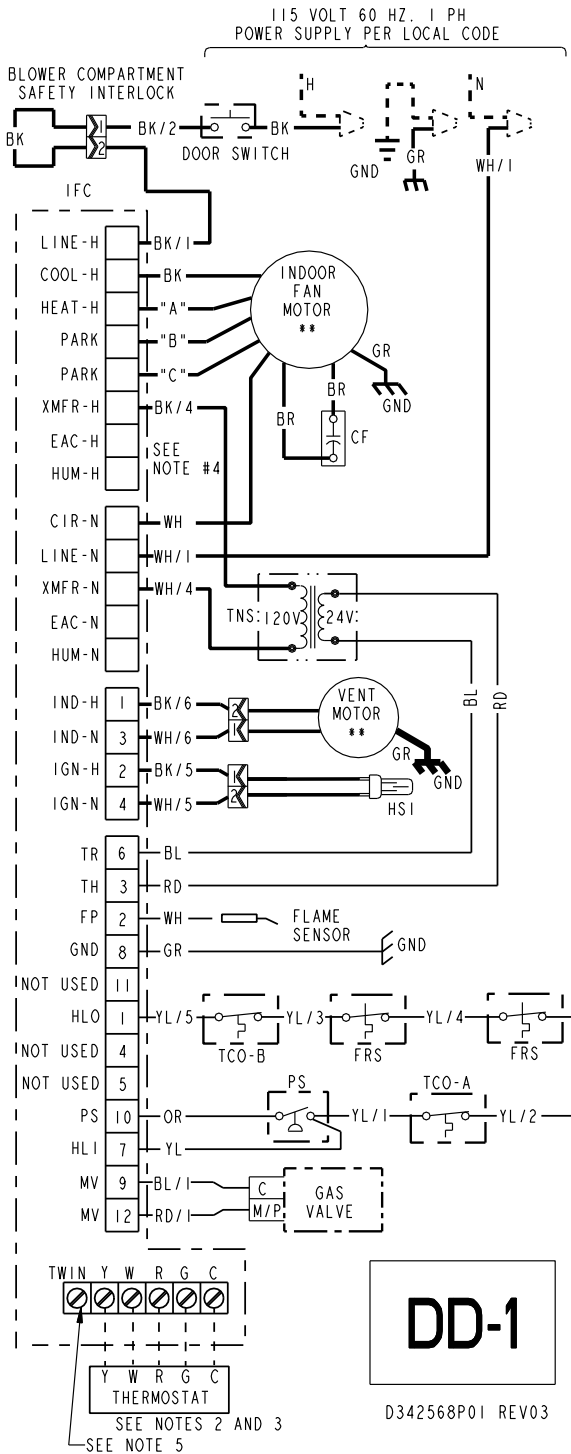


TABLE "A"			
SPEED TAPS FOR I.D. FAN MOTOR			
MODEL	HEAT "A"	PARK "B"	PARK "C"
*DDIA040A9241##	YL	RD	BL
*DDIA060A9241##	BL	RD	YL
*DDIA060A9361##	YL	RD	BL
*DDIB060A9361##	RD	BL	YL
*DDIB080A9361##	BL	RD	YL
*DDIB080A9451##	BL	RD	YL
*DDIB100A9451##	BL	RD	YL
*DDIC100A9481##	BL	RD	YL
*DDIC100A9541##	YL	RD	BL
*DDIC120A9541##	BL	RD	YL
*DDID120A9601##	BL	RD	YL
*DDID140A9601##	BL	RD	YL

\* PREFIX MAY BE "A" OR "T"  
# SUFFIX MAY BE "A" THROUGH "Z"

RD = LOW                      BL = MED. HIGH  
YL = MED. LOW              BK = HIGH

**WARNING**

HAZARDOUS VOLTAGE:  
DISCONNECT ALL ELECTRICAL POWER INCLUDING REMOTE DISCONNECTS BEFORE SERVICING.  
FAILURE TO DISCONNECT POWER BEFORE SERVICING CAN CAUSE SEVERE PERSONAL INJURY OR DEATH.

**CAUTION**

USE COPPER CONDUCTORS ONLY!  
UNIT TERMINALS ARE NOT DESIGNED TO ACCEPT OTHER TYPES OF CONDUCTORS.  
FAILURE TO DO SO MAY CAUSE DAMAGE TO THE EQUIPMENT.

**INTEGRATED FURNACE CONTROL**

REPLACE WITH PART CNT03076 OR EQUIVALENT

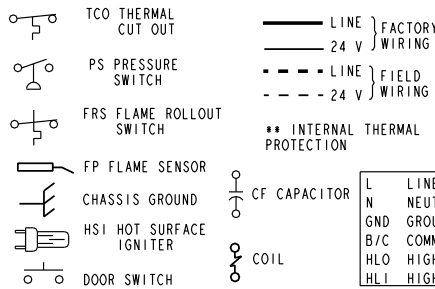
INPUT: 25 VAC, 60 HZ.  
XFMR SEC. CURRENT: 450 MA.  
MV OUTPUT: 1.5 A @ 24 VAC  
IND OUTPUT: 2.2 FLA, 3.5 LRA @ 120 VAC  
CIRC. BLOWER OUTPUT: 14.5 FLA, 26 LRA @ 120 VAC  
HUMIDIFIER & AIR CLEANER  
MAX. LOAD: 1.0 A @ 120 VAC  
IGNITER OUTPUT: 2.0 A @ 120 VAC

### DIAGNOSTIC CODES

FLASHING SLOW: NORMAL - NO CALL FOR HEAT  
FLASHING FAST: NORMAL - CALL FOR HEAT  
CONTINUOUS ON: REPLACE IFC  
CONTINUOUS OFF: CHECK POWER

2 FLASHES: EXTERNAL LOCKOUT (RETRIES OR RECYCLES EXCEEDED)  
3 FLASHES: PRESSURE SWITCH ERROR  
4 FLASHES: OPEN LIMIT DEVICE

5 FLASHES: FLAME SENSED WHEN NO FLAME SHOULD BE PRESENT  
6 FLASHES: 115 VAC POWER REVERSED POLARITY OR POOR GROUNDING  
7 FLASHES: GAS VALVE CIRCUIT ERROR  
8 FLASHES: LOW FLAME SENSE SIGNAL  
9 FLASHES: CHECK IGNITER



BK	BLACK	GR	GREEN
WH	WHITE	BR	BROWN
YL	YELLOW	RD	RED
OR	ORANGE	BL	BLUE

WIRE COLOR

BK/1  
NUMBER ID (IF ANY)

L	LINE	TH	24 VAC (HOT)
N	NEUTRAL	TR	24 VAC (COMMON)
GND	GROUND	MV	MAIN GAS VALVE
B/C	COMMON	TNS	TRANSFORMER
HLO	HIGH LIMIT OUTPUT		
HLI	HIGH LIMIT INPUT		

### NOTES:

- IF ANY OF THE ORIGINAL WIRING AS SUPPLIED WITH THIS FURNACE MUST BE REPLACED, IT MUST BE WITH WIRE HAVING A TEMPERATURE RATING OF AT LEAST 105 C.
- THERMOSTAT HEAT ANTICIPATOR SETTING: .38 AMPS
- FOR PROPER OPERATION OF COOLING SPEED, "Y" TERMINAL MUST BE CONNECTED TO THE ROOM THERMOSTAT.
- THESE TERMINALS PROVIDE 120V POWER CONNECTIONS FOR ELECTRONIC AIR CLEANER (EAC) AND HUMIDIFIER (HUM). MAX. LOAD: 1.0 AMPS EACH.
- WHEN TWINNING TWO FURNACES, BOTH UNITS MUST BE CONNECTED TO THE SAME 115 VAC PHASE CONNECT THE TWO UNITS 'TWIN' TERMINALS WITH 14 TO 22 AWG. WIRE.

# Service Facts

FURNACE AIRFLOW (CFM) VS. EXTERNAL STATIC PRESSURE (IN. W.C.)										
MODEL	SPEED TAP	0.10	0.20	0.30	0.40	0.50	0.60	0.70	0.80	0.90
*UD1A040A9241A	4 - HIGH - Black	1018	1004	982	950	910	860	802	763	660
	3 - MED - HIGH - Blue	847	832	809	779	742	697	644	585	517
	2 - MED - LOW - Yellow	716	701	678	648	610	585	512	452	384
	1 - LOW - Red	617	599	575	544	507	463	413	357	294
*UD1A040A9301A	4 - HIGH - Black	1307	1262	1211	1154	1092	1023	949	869	783
	3 - MED - HIGH - Blue	1172	1140	1100	1053	996	937	867	791	707
	2 - MED - LOW - Yellow	1030	1007	976	938	893	840	779	712	636
	1 - LOW - Red	892	876	856	827	789	744	691	630	561
*UD1A060A9241A	4 - HIGH - Black	1013	997	973	941	901	852	796	731	659
	3 - MED - HIGH - Blue	835	821	800	771	734	689	636	575	506
	2 - MED - LOW - Yellow	712	702	683	655	617	571	516	452	379
	1 - LOW - Red	611	596	573	543	505	459	406	345	277
*UD1A060A9361A	4 - HIGH - Black	1426	1389	1345	1298	1236	1171	1099	1020	934
	3 - MED - HIGH - Blue	1243	1225	1197	1160	1113	1057	991	916	831
*UD1B060A9361A	2 - MED - LOW - Yellow	1042	1039	1027	1005	973	931	879	817	745
	1 - LOW - Red	900	903	895	877	848	809	760	700	629
*UD1B080A9241A	4 - HIGH - Black	1115	1094	1060	1014	956	886	803	708	600
	3 - MED - HIGH - Blue	919	912	891	857	809	747	671	582	478
	2 - MED - LOW - Yellow	772	767	750	722	681	629	565	489	401
	1 - LOW - Red	643	655	648	622	577	512	428	325	203
*UD1B080A9361A	4 - HIGH - Black	1393	1384	1364	1335	1296	1247	1189	1120	1042
	3 - MED - HIGH - Blue	1210	1209	1198	1177	1147	1107	1058	999	930
	2 - MED - LOW - Yellow	1046	1052	1047	1033	1008	973	928	873	808
	1 - LOW - Red	900	903	895	888	869	842	808	766	717
*UD1B100A9361A	4 - HIGH - Black	1476	1464	1441	1408	1363	1307	1241	1163	1074
	3 - MED - HIGH - Blue	1249	1257	1252	1234	1203	1158	1101	1030	946
	2 - MED - LOW - Yellow	1020	1046	1058	1050	1028	990	936	866	780
	1 - LOW - Red	873	887	890	883	864	834	794	742	680
*UD1B080A9481A	4 - HIGH - Black	1839	1821	1796	1756	1710	1641	1573	1480	1392
	3 - MED - HIGH - Blue	1323	1325	1329	1319	1308	1275	1246	1201	1165
	2 - MED - LOW - Yellow	1092	1090	1091	1083	1076	1059	1040	1005	970
	1 - LOW - Red	788	783	780	768	758	737	719	674	630
*UD1C080A9601A	4 - HIGH - Black	2308	2281	2254	2209	2163	2095	2026	1950	1873
	3 - MED - HIGH - Blue	2006	1997	1987	1960	1933	1888	1842	1780	1718
	2 - MED - LOW - Yellow	1690	1691	1691	1683	1674	1651	1627	1556	1485
	1 - LOW - Red	1437	1437	1437	1434	1431	1418	1404	1369	1334
*UD1B100A9451A	4 - HIGH - Black	1771	1731	1682	1624	1556	1479	1392	1296	1191
	3 - MED - HIGH - Blue	1375	1371	1355	1328	1289	1238	1176	1102	1016
	2 - MED - LOW - Yellow	1127	1141	1140	1124	1094	1049	989	914	825
	1 - LOW - Red	780	815	829	822	796	749	681	593	485
*UD1C100A9481A	4 - HIGH - Black	1880	1846	1799	1740	1669	1595	1489	1381	1260
	3 - MED - HIGH - Blue	1662	1635	1598	1551	1493	1424	1345	1256	1157
	2 - MED - LOW - Yellow	1428	1421	1402	1370	1326	1269	1199	1117	1022
	1 - LOW - Red	1208	1215	1210	1193	1164	1124	1073	1009	935
*UD1C100A9601A	4 - HIGH - Black	2181	2143	2104	2053	2001	1929	1856	1766	1676
	3 - MED - HIGH - Blue	1908	1888	1868	1834	1800	1745	1690	1631	1572
	2 - MED - LOW - Yellow	1621	1609	1597	1582	1567	1533	1498	1438	1377
	1 - LOW - Red	1443	1419	1395	1381	1367	1335	1302	1256	1209
*UD1C120A9541A	4 - HIGH - Black	2162	2130	2097	2067	2037	1976	1914	1833	1752
	3 - MED - HIGH - Blue	1889	1881	1873	1839	1805	1776	1746	1670	1593
	2 - MED - LOW - Yellow	1654	1643	1631	1619	1606	1572	1538	1483	1428
	1 - LOW - Red	1427	1421	1414	1400	1386	1357	1327	1285	1243
*UD1D100A9721A SEE NOTE	4 - HIGH - Black SEE NOTE	2484	2458	2432	2387	2342	2275	2208	2125	2041
*UD1D100A9721A	4 - HIGH - Black	2447	2401	2356	2303	2249	2173	2097	1994	1892
	3 - MED - HIGH - Blue	2097	2088	2079	2053	2028	1970	1912	1831	1750
	2 - MED - LOW - Yellow	1753	1750	1748	1732	1716	1690	1665	1594	1523
	1 - LOW - Red	1459	1456	1453	1443	1434	1407	1380	1335	1289
*UD1D120A9601A	4 - HIGH - Black	2135	2101	2066	2036	2005	1923	1840	1750	1659
	3 - MED - HIGH - Blue	1906	1881	1856	1817	1777	1724	1671	1602	1533
	2 - MED - LOW - Yellow	1646	1632	1617	1596	1575	1535	1494	1427	1360
	1 - LOW - Red	1423	1415	1407	1391	1375	1338	1300	1246	1192
*UD1D140A9601A	4 - HIGH - Black	2462	2407	2351	2284	2216	2143	2069	1989	1908
	3 - MED - HIGH - Blue	2128	2112	2096	2054	2011	1949	1887	1797	1706
	2 - MED - LOW - Yellow	1755	1746	1736	1719	1702	1656	1609	1564	1518
	1 - LOW - Red	1450	1446	1442	1427	1411	1383	1354	1298	1241

NOTE: HIGH SPEED CFM IS BASED ON BOTTOM AND SIDE RETURN AIR OPTION for this model. Medium High, Medium Low, and Low speed taps for this model do not have improved airflow with the addition of side return. D341710 Rev. 02

\* May be "A" or "T"

FURNACE AIRFLOW (CFM) VS. STATIC PRESSURE (ins. w.g.)										
MODEL	SPEED TAP	0.10	0.20	0.30	0.40	0.50	0.60	0.70	0.80	0.90
*DD1A040A9241A	4 - HIGH - Black	1070	1033	1000	960	920	860	810	740	-
	3 - MED - HIGH - Blue	870	850	823	790	753	813	667	613	490
	2 - MED - LOW - Yellow	740	720	690	663	627	588	547	483	-
	1 - LOW - Red	633	600	577	543	507	463	420	360	-
*DD1A060A9241A	4 - HIGH - Black	1200	1155	1111	1056	1001	924	848	774	701
	3 - MED - HIGH - Blue	1025	988	951	905	859	797	735	646	558
	2 - MED - LOW - Yellow	838	808	779	742	704	646	588	502	415
	1 - LOW - Red	722	689	656	618	579	528	478	376	275
*DD1A060A9361A	4 - HIGH - Black	1480	1429	1375	1318	1282	1100	1112	1029	959
	3 - MED - HIGH - Blue	1302	1276	1229	1188	1141	1088	1024	953	882
*DD1B060A9361A	2 - MED - LOW - Yellow	1115	1100	1070	1035	1000	965	918	859	790
	1 - LOW - Red	956	947	918	888	859	824	788	741	682
*DD1B080A9361A	4 - HIGH - Black	1523	1496	1463	1420	1369	1310	1243	1172	1100
	3 - MED - HIGH - Blue	1317	1307	1261	1242	1223	1175	1122	1060	1000
	2 - MED - LOW - Yellow	1123	1119	1106	1082	1056	1016	976	930	880
	1 - LOW - Red	942	943	931	920	898	868	833	795	760
*DD1B080A9451A	4 - HIGH - Black	1798	1750	1692	1642	1575	1500	1425	1325	1225
	3 - MED - HIGH - Blue	1384	1367	1333	1300	1275	1233	1192	1142	1083
	2 - MED - LOW - Yellow	1210	1150	1108	1075	1042	1008	967	925	867
	1 - LOW - Red	1005	970	808	775	767	733	700	675	617
*DD1B100A9451A	4 - HIGH - Black	1767	1731	1669	1615	1546	1469	1392	1300	1146
	3 - MED - HIGH - Blue	1382	1354	1323	1292	1254	1207	1177	1108	1038
	2 - MED - LOW - Yellow	1130	1138	1115	1085	1054	1015	977	938	877
	1 - LOW - Red	840	831	815	792	762	731	700	654	625
*DD1C100A9481A	4 - HIGH - Black	1965	1915	1865	1805	1740	1670	1587	1500	1370
	3 - MED - HIGH - Blue	1645	1627	1605	1575	1535	1482	1421	1330	1220
	2 - MED - LOW - Yellow	1407	1398	1387	1375	1347	1318	1275	1190	1095
	1 - LOW - Red	1202	1208	1205	1195	1166	1140	1105	1045	970
*DD1B100A9541A	4 - HIGH - Black	2165	2113	2060	1995	1929	1842	1755	1674	1593
	3 - MED - HIGH - Blue	1962	1927	1891	1839	1786	1724	1662	1581	1500
	2 - MED - LOW - Yellow	1705	1688	1671	1636	1600	1547	1492	1435	1377
	1 - LOW - Red	1492	1467	1442	1414	1385	1346	1307	1243	1179
*DD1C120A9541A	4 - HIGH - Black	2100	2049	1997	1958	1918	1852	1785	1695	1604
	3 - MED - HIGH - Blue	1917	1887	1857	1842	1827	1751	1674	1594	1514
	2 - MED - LOW - Yellow	1672	1656	1639	1631	1623	1560	1496	1427	1358
	1 - LOW - Red	1485	1478	1470	1448	1426	1388	1349	1278	1207
*DD1D120A9601A	4 - HIGH - Black	2241	2202	2163	2106	2049	1979	1908	1804	1700
	3 - MED - HIGH - Blue	1981	1962	1942	1904	1866	1805	1743	1680	1617
	2 - MED - LOW - Yellow	1721	1705	1688	1671	1653	1611	1569	1515	1461
	1 - LOW - Red	1476	1466	1456	1440	1423	1392	1361	1302	1243
*DD1D140A9601A	4 - HIGH - Black	2377	2321	2265	2199	2133	2050	1967	1877	1786
	3 - MED - HIGH - Blue	2115	2081	2046	1992	1938	1872	1805	1727	1649
	2 - MED - LOW - Yellow	1806	1793	1779	1738	1696	1655	1614	1556	1497
	1 - LOW - Red	1527	1507	1486	1473	1459	1422	1384	1329	1273

\* May be "A" or "T"

## AIRFLOW ADJUSTMENT

Check inlet and outlet air temperatures to make sure they are within the ranges specified on the furnace rating nameplate. If the airflow needs to be increased or decreased, see the wiring diagram for information on changing the speed of the blower motor.

## WARNING

**Disconnect power to the unit before removing the blower door. Failure to follow this warning could result in personal injury from moving parts.**

This unit is equipped with a blower door switch which cuts power to the blower and gas valve causing shutdown when the door is removed. Operation with the door removed or ajar can permit the escape of dangerous fumes. All panels must be securely closed at all times for safe operation of the furnace.

# Service Facts

## INDOOR BLOWER TIMING

**Heating:** The control module controls the indoor blower. The blower start is fixed at 45 seconds after ignition. The FAN-OFF period is field selectable by dip switches at 60, 100, 140, or 180 seconds. The factory setting is 100 seconds (See wiring diagram).

**Cooling:** The fan delay off period is factory set at 0 seconds. The option for 80 second delay off is field selectable (See wiring diagram).

**NOTE:** Direct drive motors have bearings which are permanently lubricated and under normal use, lubrication is not recommended.

## WARNING

**Disconnect power to the unit before removing the blower door. Failure to follow this warning could result in personal injury from moving parts.**

CFM VS. TEMPERATURE RISE																				
MODEL	CFM (CUBIC FEET PER MINUTE)																			
	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	2400
*UD1A040A9241A	59	49	42	37	33	30														
*UD1A040A9301A	59	49	42	37	33															
*UD1A060A9241A			63	56	49	44														
*UD1A060A9361A				56	49	44	40	37	34	32										
*UD1B060A9361A				56	49	44	40	37	34	32										
*UD1B080A9241A				74	66	59	54													
*UD1B080A9361A						59	54	49	46	42										
*UD1B080A9481A						58	52	49	46	42	40	37	35	33						
*UD1C080A9601A							54	49	46	42	40	37	35	33	31	30	28	27	26	
*UD1B100A9361A							67	62	57	53	49									
*UD1B100A9451A								62	57	53	49	46	44	41						
*UD1C100A9481A							67	62	57	53	49	46	44	41	39	37				
*UD1C100A9601A								62	57	53	49	46	44	41	39	37	35	34	32	31
*UD1D100A9721A								62	57	53	49	46	44	41	39	37	35	34	32	31
*UD1D120A9541A										63	59	56	52	49	47	44	42	40		
*UD1D120A9601A											59	56	52	49	47	44	42	40		
*UD1D140CA9601A											69	65	61	58	55	52	49	47	45	

\* First letter may be "A" or "T"  
\* May be "A" or "T"

From C341711 Sh. 1 Rev3

CFM VS. TEMPERATURE RISE																				
MODEL	CFM (CUBIC FEET PER MINUTE)																			
	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	2400
*DD1A040A9241A	59	49	42	37	33															
*DD1A060A9241A			63	56	49	44	40													
*DD1A060A9361A				56	49	44	40	37	34	32										
*DD1B060A9361A				56	49	44	40	37	34	32										
*DD1B080A9361A						59	54	49	46	42										
*DD1B080A9451A						64	57	52	48	44	41									
*DD1B100A9451A								62	57	53	49	46	44	41						
*DD1C100A9481A								62	57	53	49	46	44	41	39	37				
*DD1C100A9541A								62	57	53	49	46	44	41	39	37	35	34	32	31
*DD1C120A9541A											59	56	52	49	47	44	42	40		
*DD1D120A9601A											59	56	52	49	47	44	42	40		
*DD1D140A9601A											69	65	61	58	55	52	49	47	45	

\* First letter may be "A" or "T"  
\* May be "A" or "T"

From C341712 Sh. 1 Rev. 03

INTEGRATED FURNACE CONTROL ERROR FLASH CODES	
Flashing Slow ---	Normal - No call for Heat
Flashing Fast ---	Normal - Call for Heat
Continuous ON ---	Replace IFC
Continuous OFF ---	Check Power
2 Flashes ---	System Lockout (Retries or Recycles exceeded)
3 Flashes ---	Draft Pressure Error - Possible problems: a) Venting problem b) Pressure switch problem c) Inducer problem
4 Flashes ---	Open Temperature Limit Circuit
5 Flashes ---	Flame sensed when no flame should be present
6 Flashes ---	115 volt AC power reversed, poor grounding or system voltage too low
7 Flashes ---	Gas valve circuit error
8 Flashes ---	Low flame sense signal
9 Flashes ---	Check Ignitor Circuit and Line "N" to 24VAC "Common" voltage ( $\leq 2$ volts) [possible grounding problem]

## ABNORMAL CONDITIONS

### 1. EXCESSIVE COMBUSTION VENT PRESSURE OR FLUE BLOCKAGE

If pressure against the induced draft blower outlet becomes excessive, the pressure switch will shut off the gas valve until acceptable combustion pressure is again available.

### 2. LOSS OF FLAME OR GAS SUPPLY FAILURE

If loss of flame occurs during a heating cycle (when flame is not present at the sensor), the control module will retry the ignition sequence up to two times after the sensor cools. If ignition is not achieved, it will lockout the furnace.

### 3. POWER FAILURE

If there is a power failure during a heating cycle, the system will restart the ignition sequence automatically when power is restored, if the thermostat still calls for heat.

### 4. INDUCED DRAFT BLOWER FAILURE

If pressure is not sensed by the pressure switch, it will not allow the gas valve to open, therefore the unit will not start. If failure occurs during a running cycle, the pressure switch will cause the gas valve to close and shut the unit down.

## ⚠ WARNING

Should overheating occur, or the gas supply fail to shut off, shut off the gas valve to the unit before shutting off the electrical supply. Failure to follow this warning could result in property damage, personal injury, or death.

## ⚠ WARNING

**BODILY INJURY CAN RESULT FROM HIGH VOLTAGE ELECTRICAL COMPONENTS, FAST MOVING FANS, AND COMBUSTIBLE GAS. FOR PROTECTION FROM THESE INHERENT HAZARDS DURING INSTALLATION AND SERVICING, THE ELECTRICAL SUPPLY MUST BE DISCONNECTED AND THE MAIN GAS VALVE MUST BE TURNED OFF. IF OPERATING CHECKS MUST BE PERFORMED WITH THE UNIT OPERATING, IT IS THE TECHNICIANS RESPONSIBILITY TO RECOGNIZE THESE HAZARDS AND PROCEED SAFELY.**

The following warning complies with State of California law, Proposition 65.

## ⚠ WARNING

### Hazardous Gases!

**Exposure to fuel substances or by-products of incomplete fuel combustion is believed by the state of California to cause cancer, birth defects, or other reproductive harm.**

The following warning complies with State of California law, Proposition 65.

## ⚠ WARNING

### This product contains fiberglass wool insulation!

**Fiberglass dust and ceramic fibers are believed by the State of California to cause cancer through inhalation. Glasswool fibers may also cause respiratory, skin, or eye irritation.**

### PRECAUTIONARY MEASURES

- Avoid breathing fiberglass dust.
- Use a NIOSH approved dust/mist respirator.
- Avoid contact with the skin or eyes. Wear long-sleeved, loose-fitting clothing, gloves, and eye protection.
- Wash clothes separately from other clothing: rinse washer thoroughly.
- Operations such as sawing, blowing, tear-out, and spraying may generate fiber concentrations requiring additional respiratory protection. Use the appropriate NIOSH approved respirator in these situations.

### FIRST AID MEASURES

- Eye Contact** – Flush eyes with water to remove dust. If symptoms persist, seek medical attention.
- Skin Contact** – Wash affected areas gently with soap and warm water after handling.

## Troubleshooting Flowchart Index

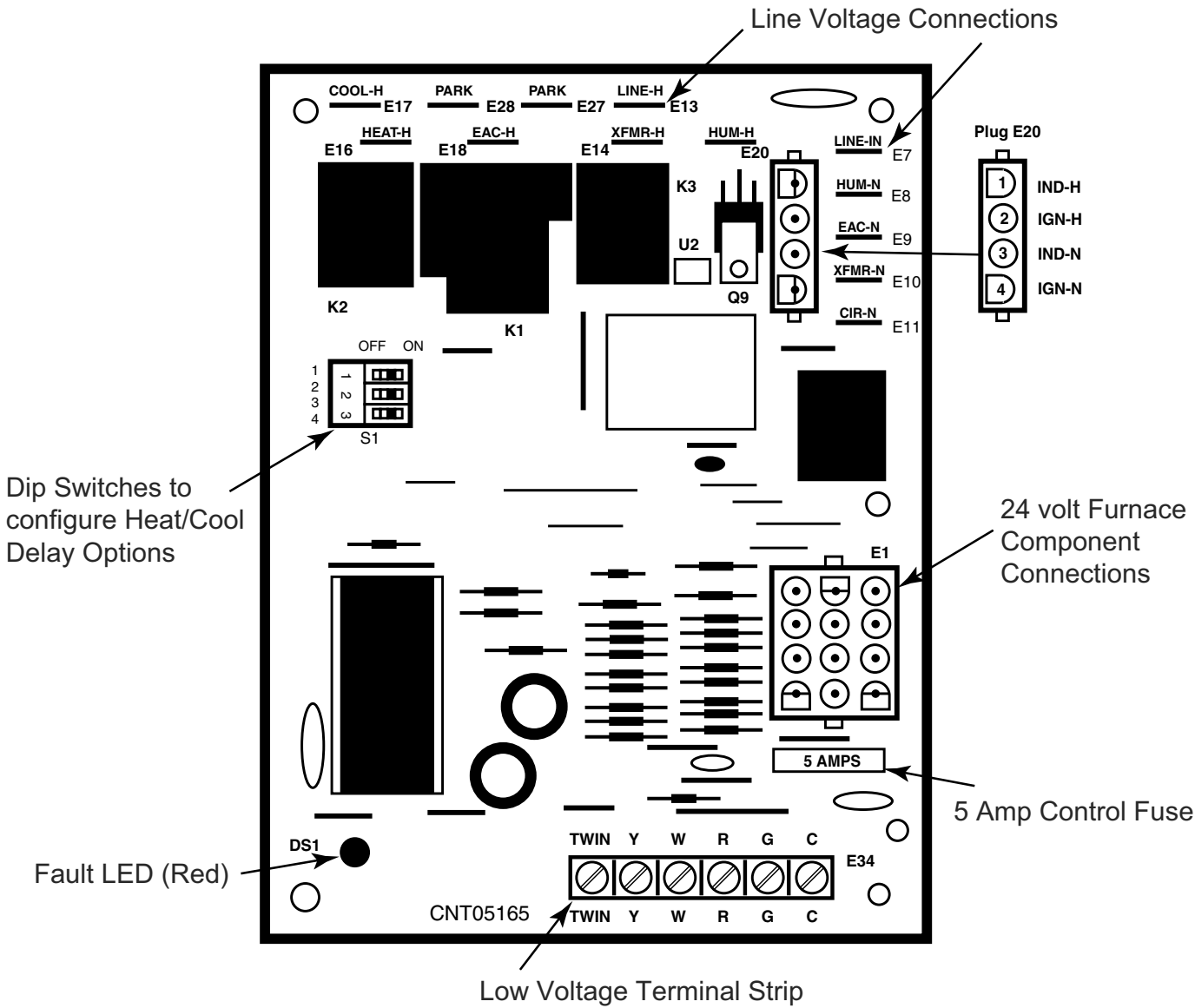
- 17) IFC Component Layout
- 18) LED Flash Codes
- 19) Getting started
- 20) 2 Flash Troubleshooting Retry and Recycle Lockout
- 22) 3 Flash Troubleshooting Pressure Switch Fault
- 23) 4 Flash Troubleshooting High Limit and Auxiliary Limit
- 24) 4 Flash Troubleshooting Roll Out Limit
- 25) 5 Flash Troubleshooting Flame Sensed Fault
- 26) 6 Flash Troubleshooting Polarity Reversed or Poor Ground Fault
- 27) 7 Flash Troubleshooting External Gas Valve Circuit Fault
- 28) 8 Flash Troubleshooting Low Flame Sense Fault
- 29) 9 Flash Troubleshooting Ignitor Faults
- 30) Furnace PSC fan motor – No Air Flow

The following pages include troubleshooting flowcharts in reference to the 80% Single Stage (\*UD1-\*DD1-A9) furnaces ONLY; using the FAULT LED as starting points.

The information contained is for reference only and does not cover all scenarios or problems that may be encountered by a qualified field technician.

Only qualified technicians should attempt to install, troubleshoot, or repair this appliance. Failure to follow all cautions and/or warnings could result in personal or property damage; including death.

## Integrated Furnace Control (IFC) Component Layout

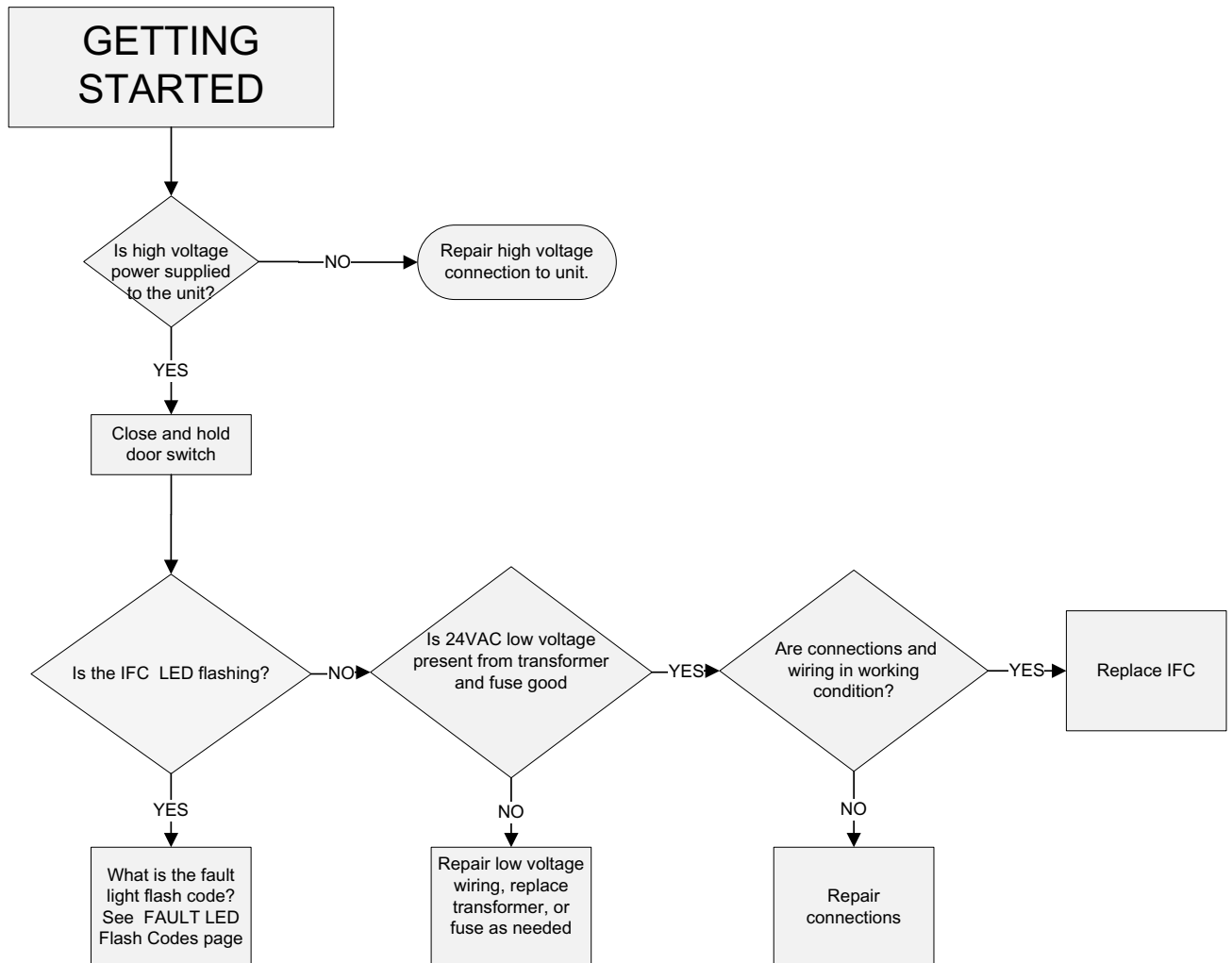


# Service Facts

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## Fault LED Flash Codes Definitions

<b>INTEGRATED FURNACE CONTROL ERROR FLASH CODES</b>	
Flashing Slow ---	Normal - No call for Heat
Flashing Fast ---	Normal - Call for Heat
Continuous ON ---	Replace IFC
Continuous OFF ---	Check Power
2 Flashes ---	System Lockout (Retries or Recycles exceeded)
3 Flashes ---	Pressure Switch Error
4 Flashes ---	Open High Limit Device
5 Flashes ---	Flame sensed when no flame should be present
6 Flashes ---	115 Volt AC power reversed or Poor Grounding
7 Flashes ---	Gas valve circuit error
8 Flashes ---	Low flame sense signal
9 Flashes ---	Check Ignitor



Refer to Gas Furnace Silicon Nitride Ignitor Models Service Manual to supplement this information.

Publication Number 34-3405-09

# Service Facts

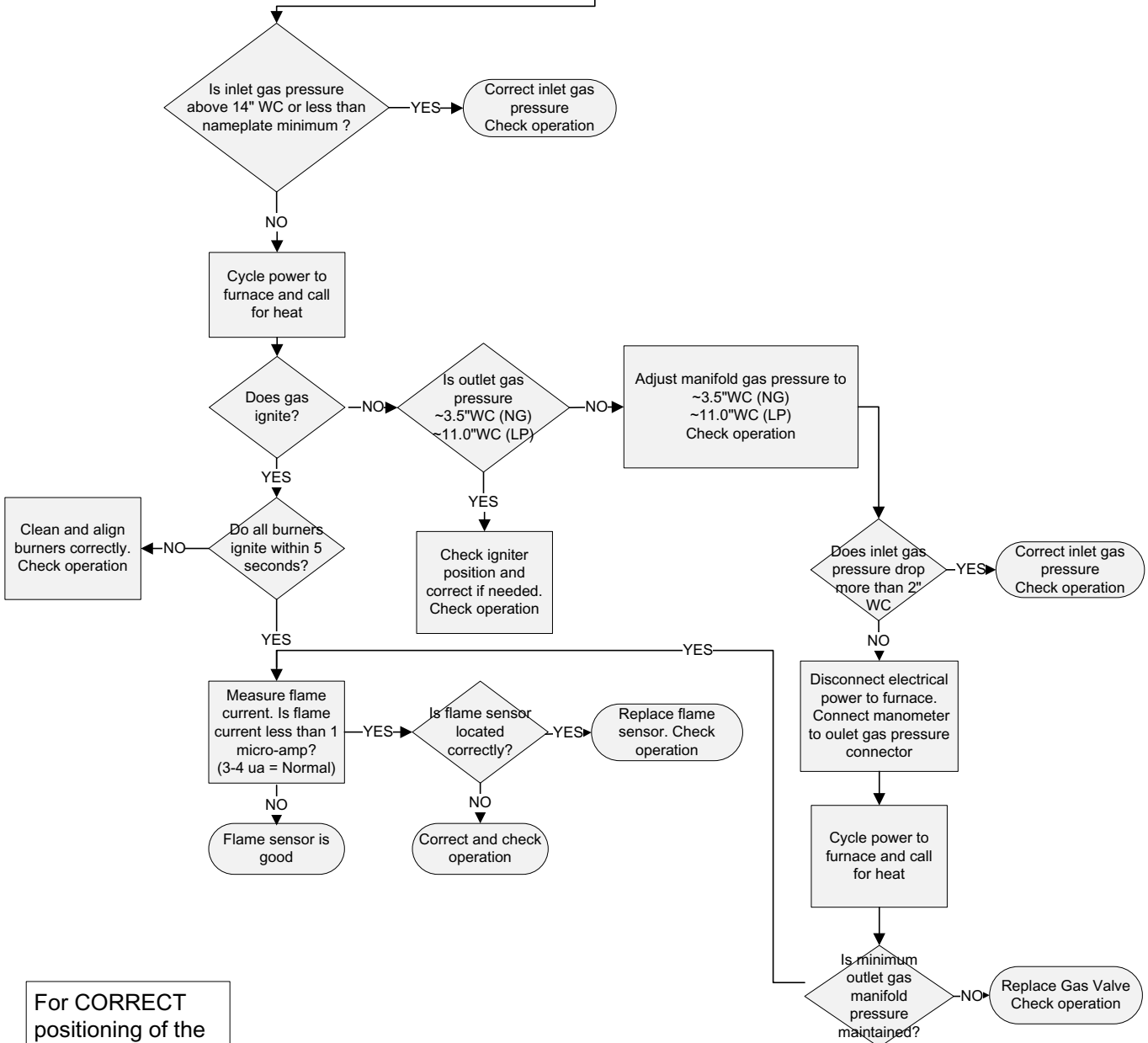
## DEFINITION

RETRY Lock Out = 3 unsuccessful tries for ignition within a single call for heat  
**Flame has never been sensed**

RECYCLE Lock Out = 10 recycles within a single call for heat.  
**Flame is sensed & then lost**

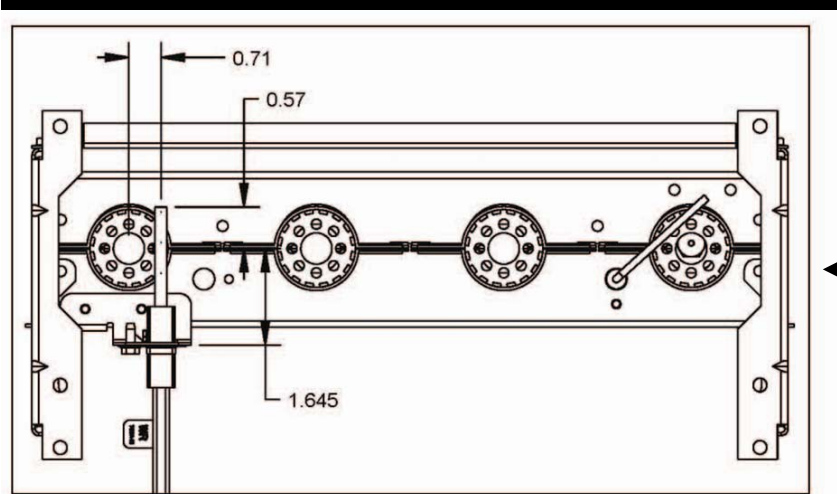
## 2 Flash Fault LED

Disconnect electrical power to furnace.  
 Connect manometer to inlet gas pressure connector

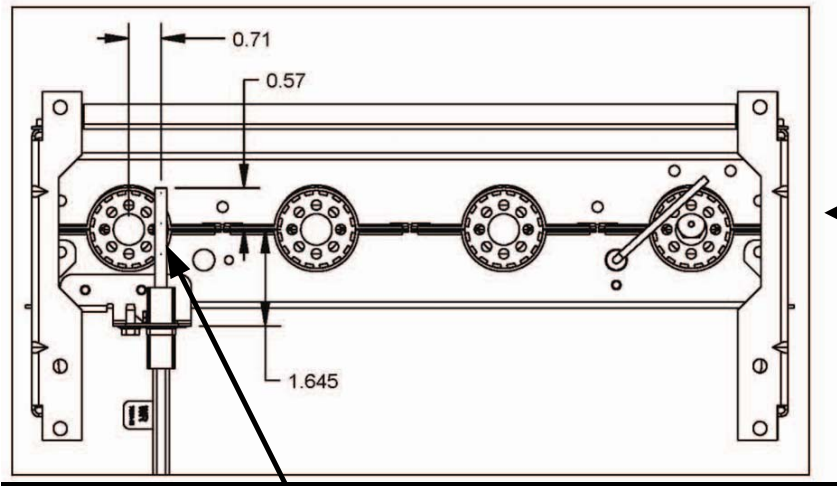


For CORRECT positioning of the igniter and flame sensor, see figure on next page

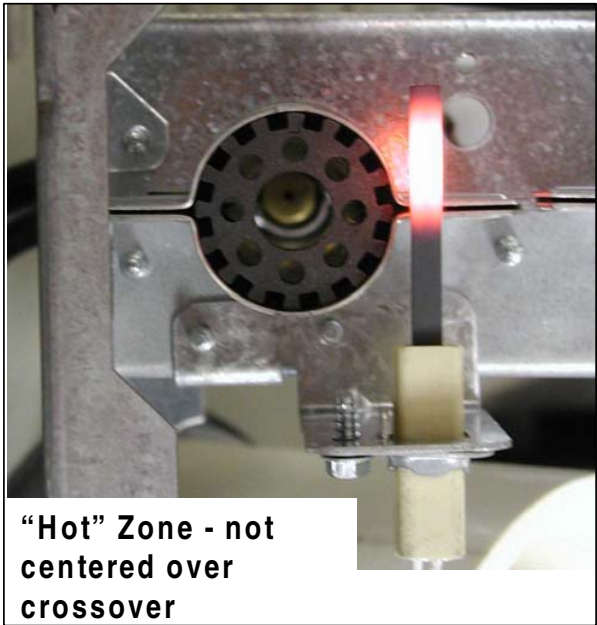
# Service Facts



Correct positioning of ignitor and flame sensor.  
NOTE the slight overlap of the ignitor and the burner



Igniter slightly overlapping OD of burner



**"Hot" Zone - not centered over crossover**

INCORRECT positioning of ignitor.

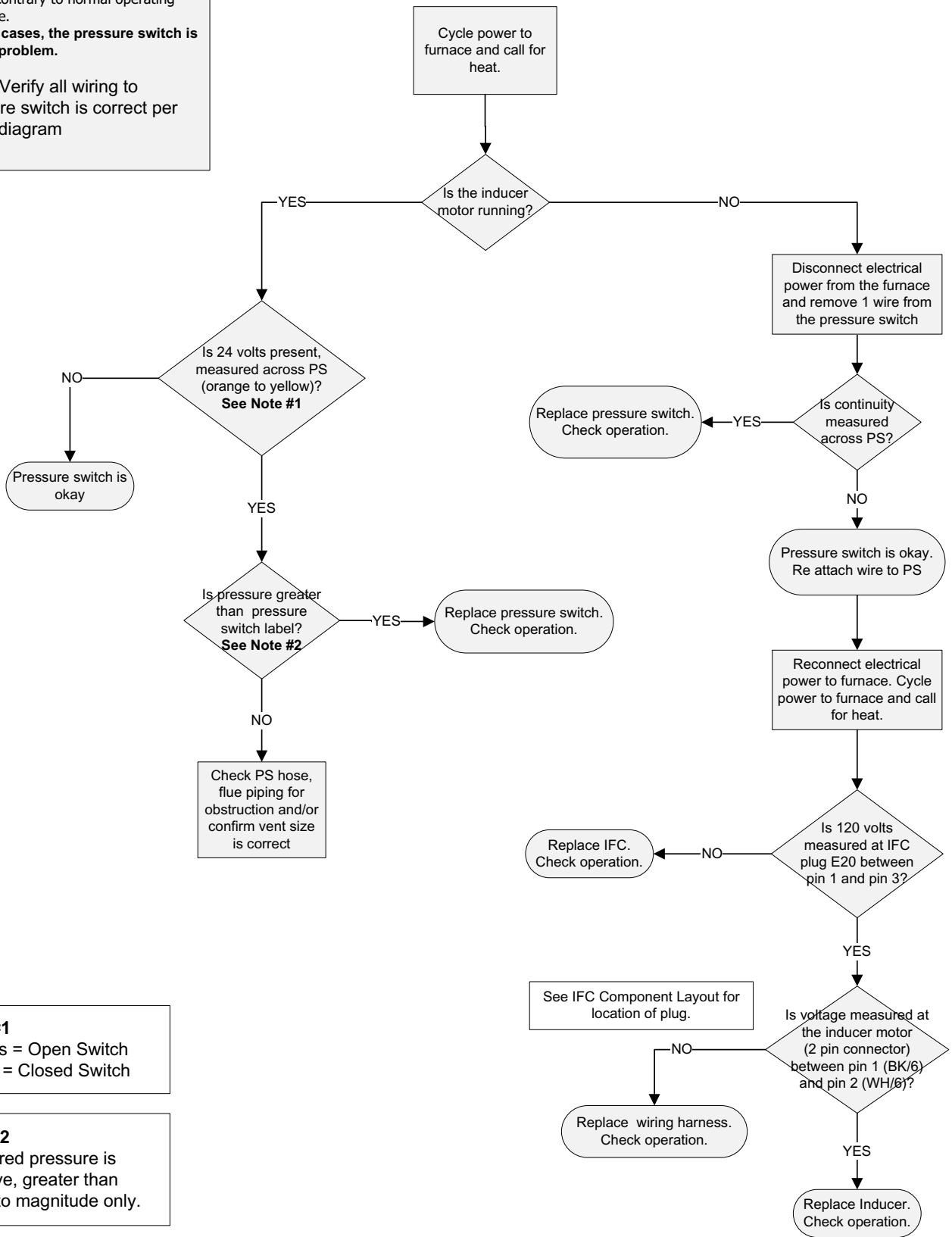
HOT ZONE must be centered over the cross-over

Ignitor not overlapping burner (see above)

# Service Facts

**DEFINITION**  
 An error has occurred with the P.S.  
 The error will be reported, indicating that  
 the pressure switch is either opened or  
 closed, contrary to normal operating  
 sequence.  
**In most cases, the pressure switch is  
 not the problem.**  
 Note: Verify all wiring to  
 pressure switch is correct per  
 wiring diagram

## 3 Flash Fault LED



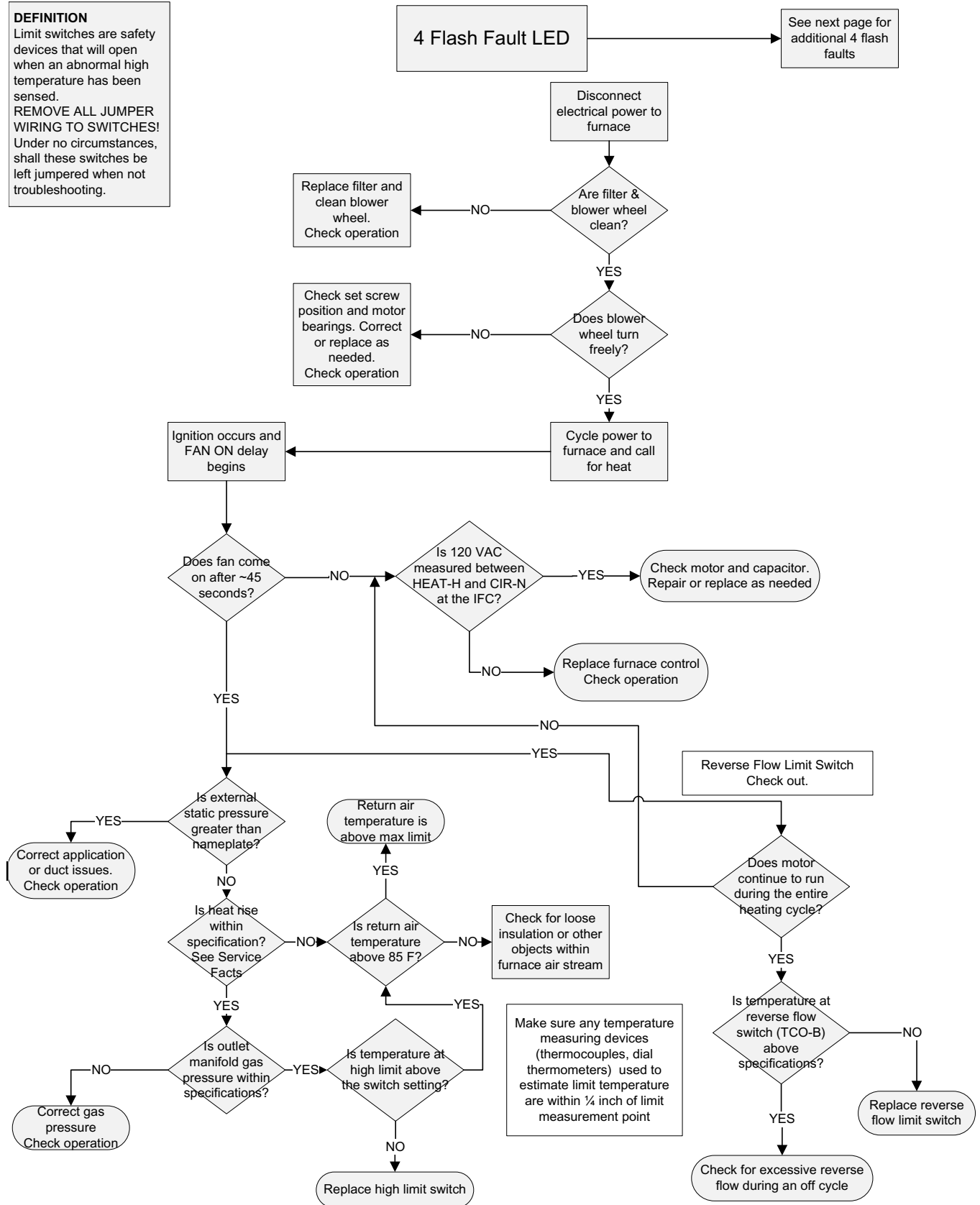
**Note #1**  
 24 volts = Open Switch  
 0 volts = Closed Switch

**Note #2**  
 Measured pressure is negative, greater than refers to magnitude only.

See IFC Component Layout for location of plug.

**DEFINITION**

Limit switches are safety devices that will open when an abnormal high temperature has been sensed.  
**REMOVE ALL JUMPER WIRING TO SWITCHES!**  
 Under no circumstances, shall these switches be left jumpered when not troubleshooting.



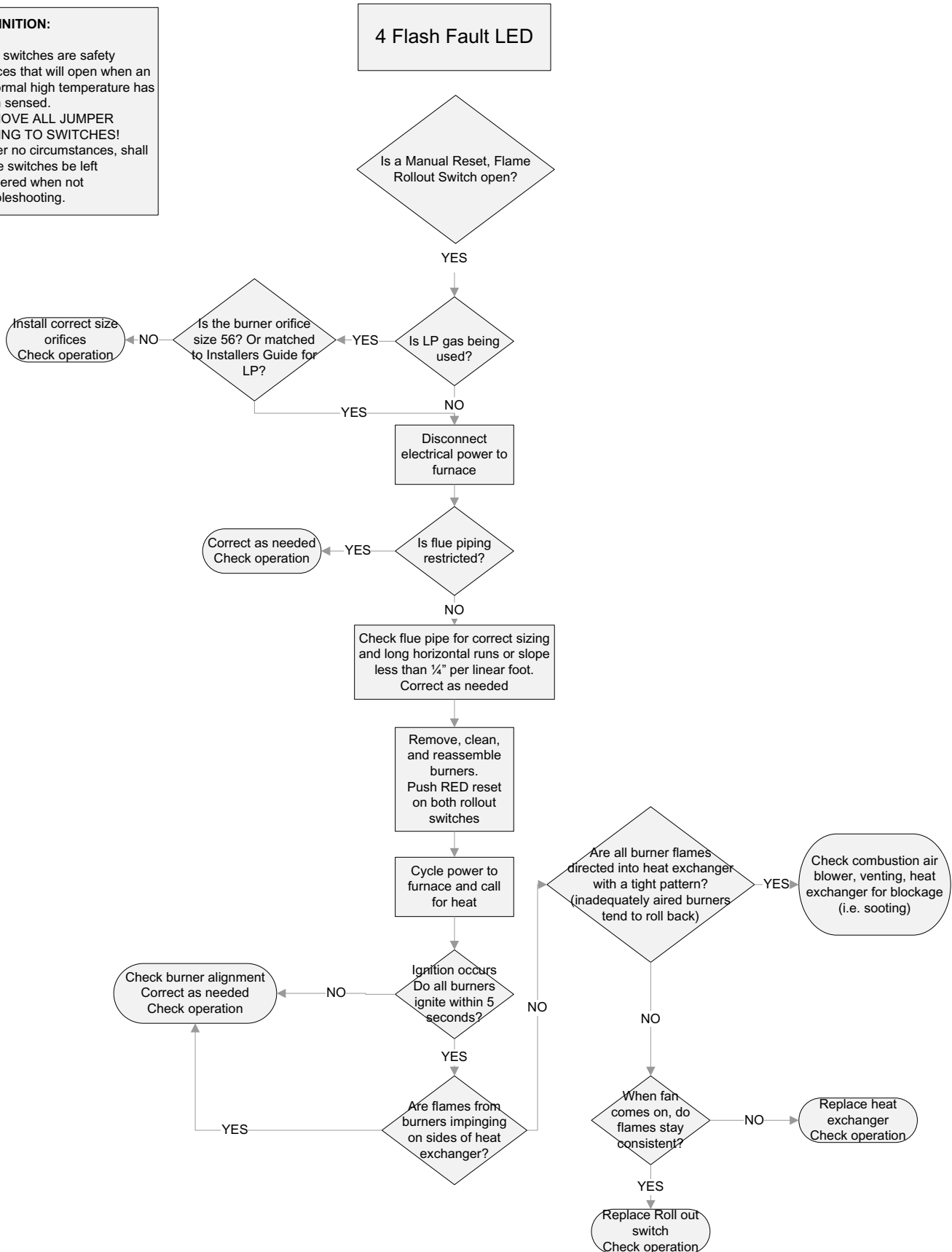
# Service Facts

**DEFINITION:**

Limit switches are safety devices that will open when an abnormal high temperature has been sensed.

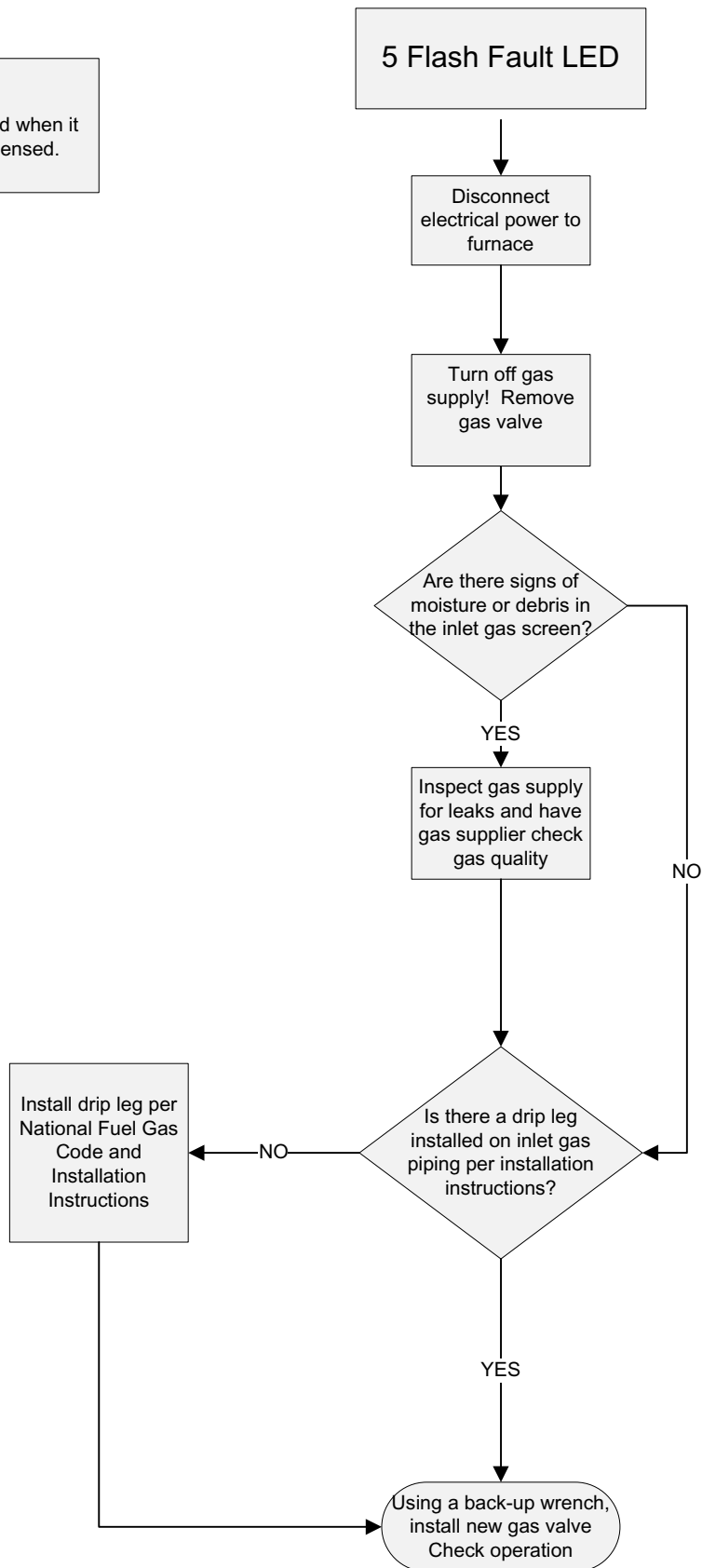
**REMOVE ALL JUMPER WIRING TO SWITCHES!**

Under no circumstances, shall these switches be left jumpered when not troubleshooting.



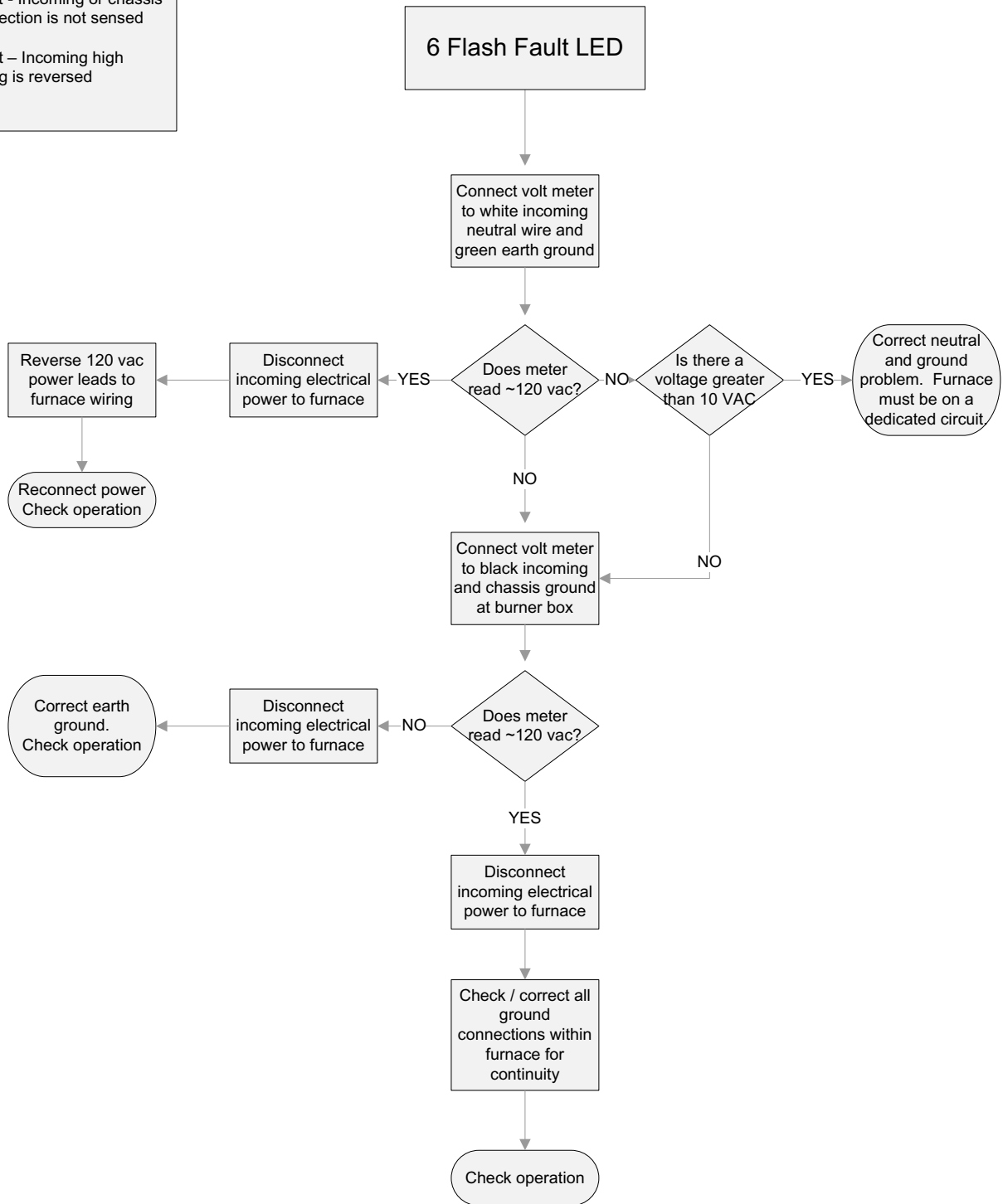
**DEFINITION:**

Flame is sensed when it should not be sensed.

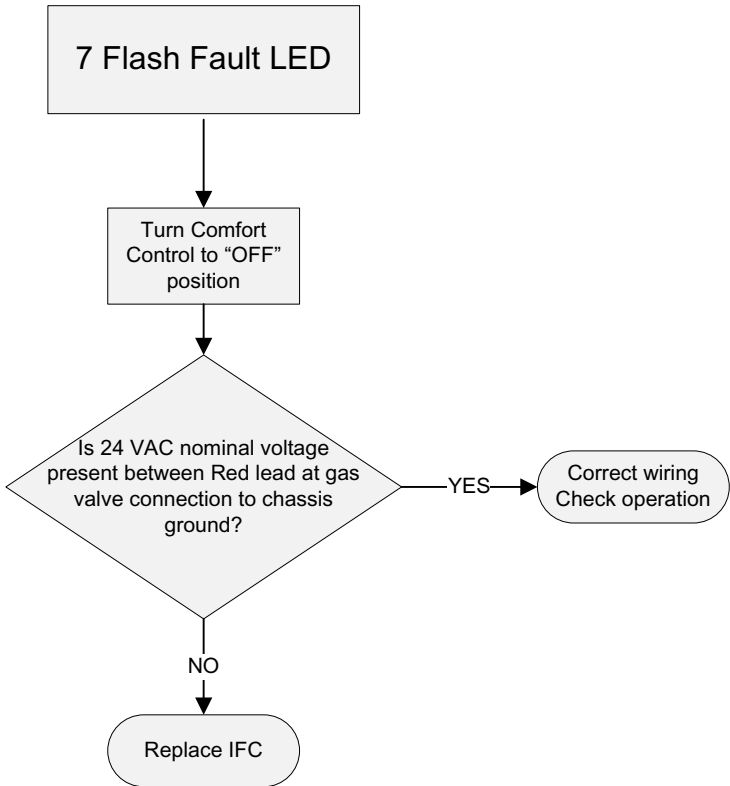


# Service Facts

**DEFINITION:**  
 Ground Fault - Incoming or chassis ground connection is not sensed  
 Polarity Fault – Incoming high voltage wiring is reversed

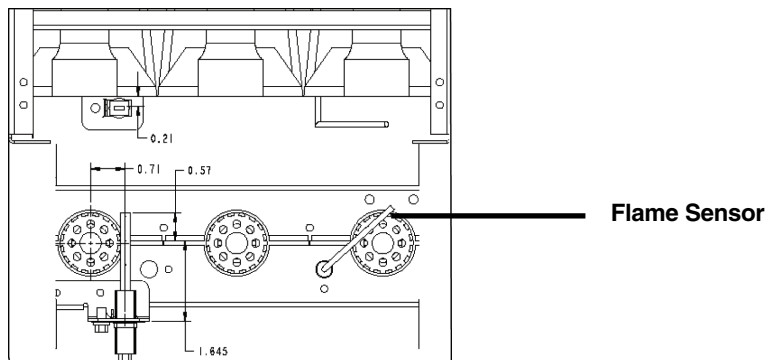
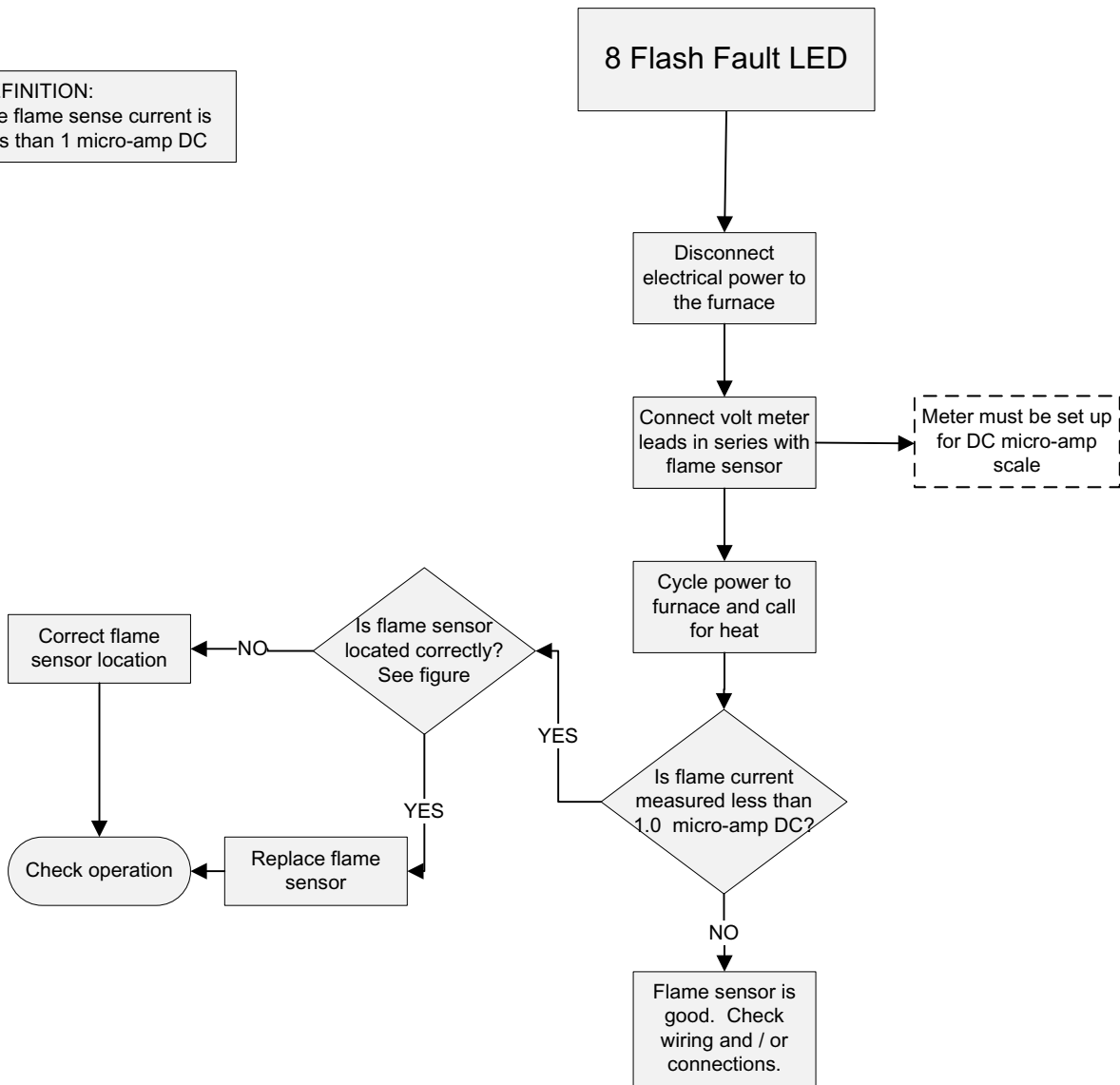


DEFINITION: External Gas Valve Circuit Error (24 volts is present when it should not be present)



# Service Facts

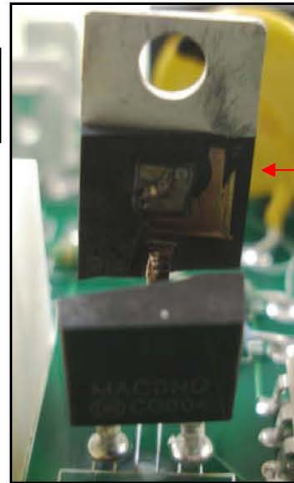
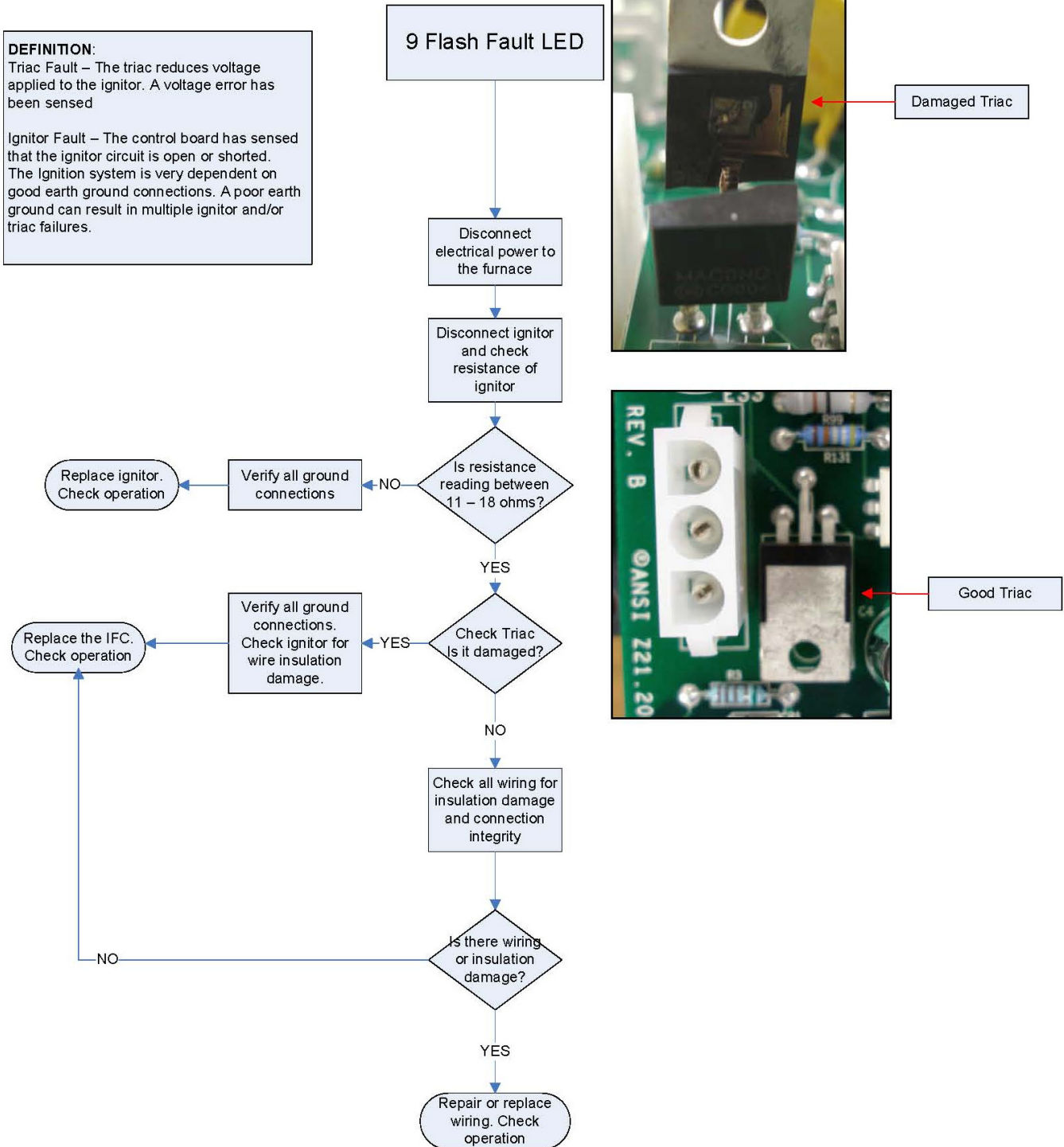
DEFINITION:  
The flame sense current is less than 1 micro-amp DC



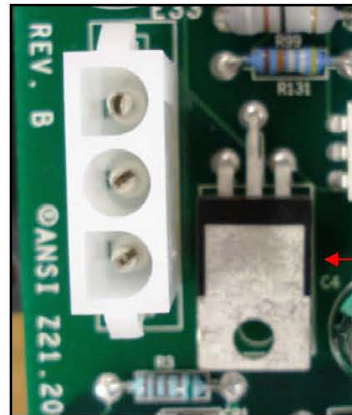
**DEFINITION:**

**Triac Fault** – The triac reduces voltage applied to the ignitor. A voltage error has been sensed

**Ignitor Fault** – The control board has sensed that the ignitor circuit is open or shorted. The Ignition system is very dependent on good earth ground connections. A poor earth ground can result in multiple ignitor and/or triac failures.



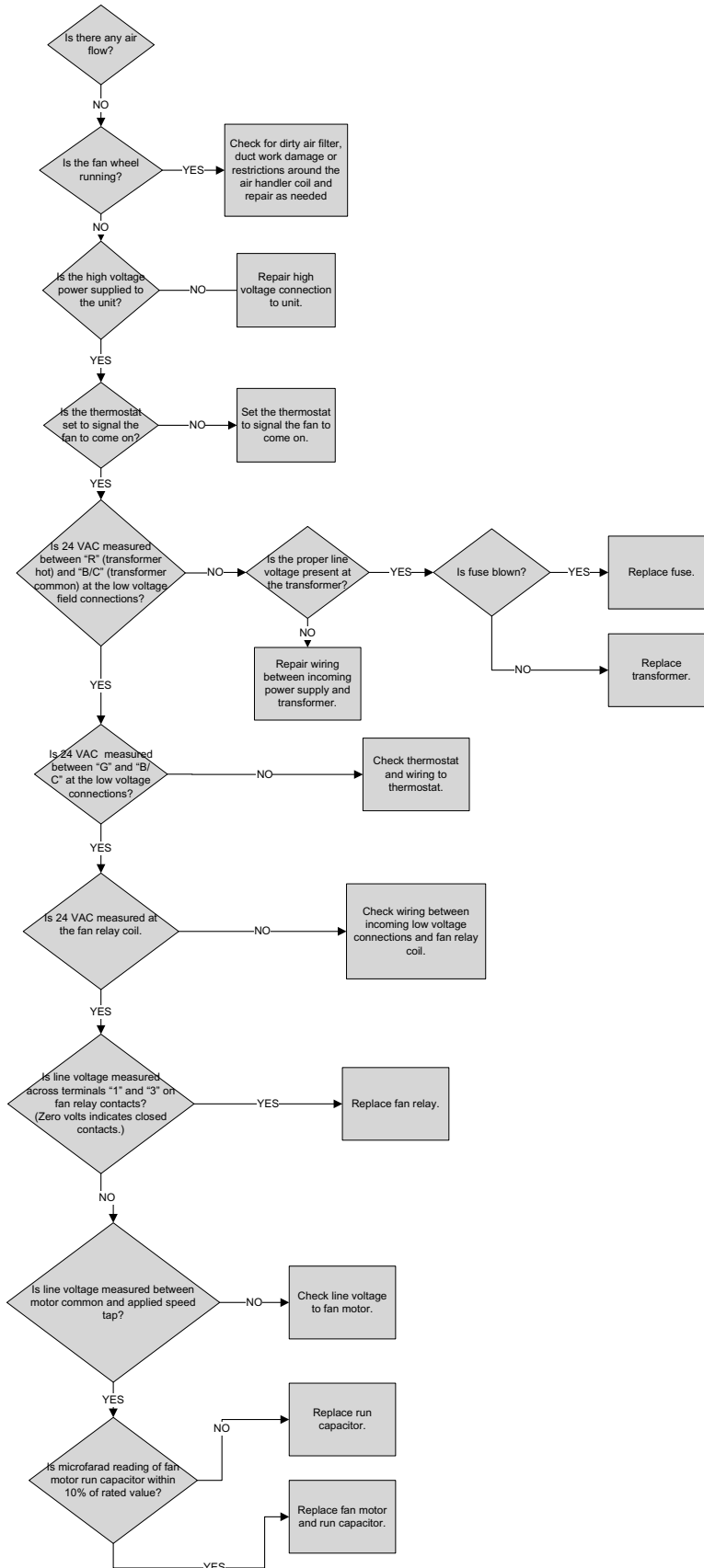
Damaged Triac



Good Triac

# Service Facts

## PSC - No Air Flow



Trane  
6200 Troup Highway  
Tyler, TX 75707

For more information contact your local dealer (distributor)

Since the manufacturer has a policy of continuous product and product data improvement, it reserves the right to change design and specifications without notice.