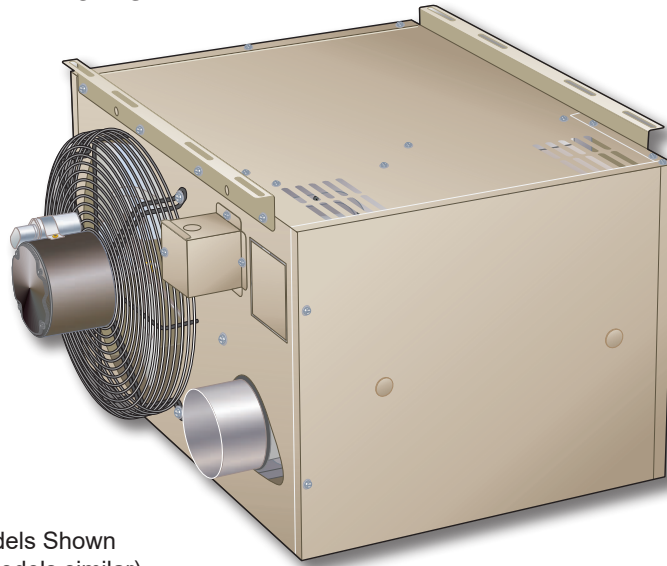


**RESIDENTIAL / COMMERCIAL  
 PRODUCT SPECIFICATIONS**

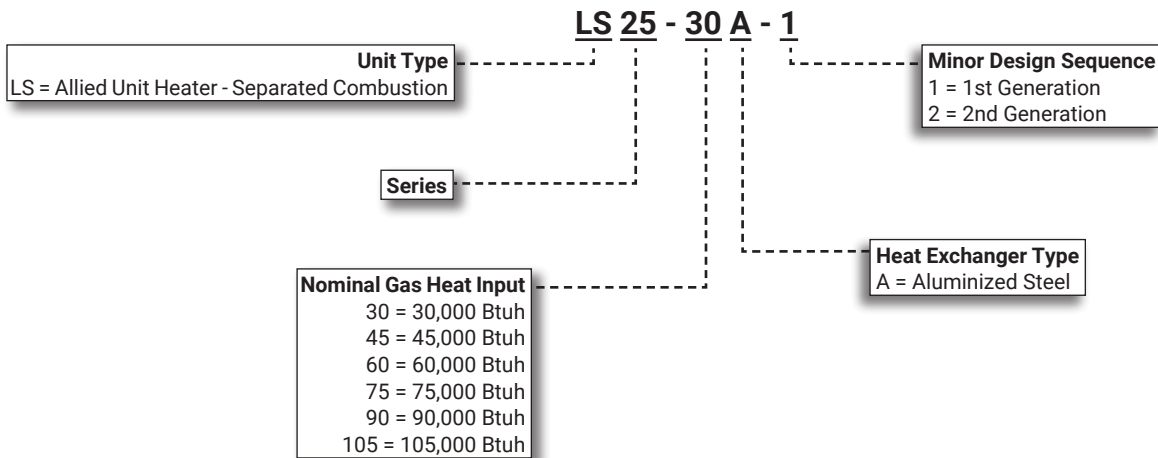
Bulletin No. 310966  
 June 2022  
 October 2021



LS25-30-45 Models Shown  
 (LS25-60-105 models similar)

**Steady-State Efficiency - 82%**  
**Input - 30,000 to 105,000 Btuh**

**MODEL NUMBER IDENTIFICATION**



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**APPROVALS AND WARRANTY**

**WARRANTY**

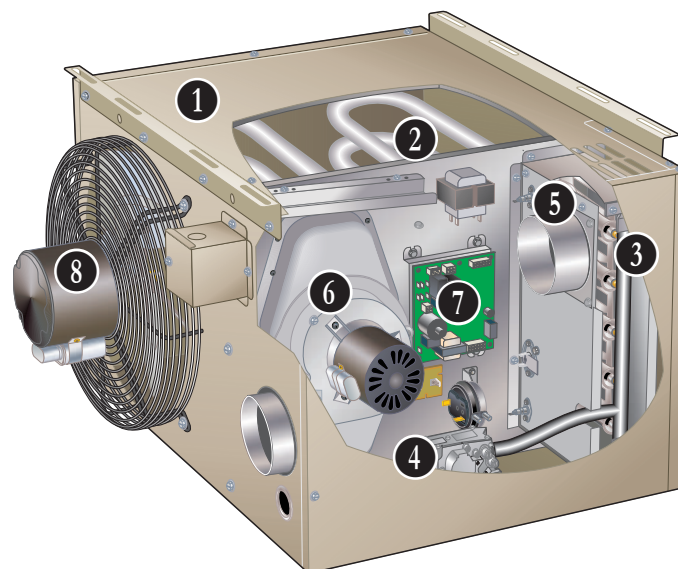
- Heat Exchanger - Aluminized steel - ten year limited
- All other covered components:
  - Five year limited - Residential installations
  - One year limited - Non-residential installations

**APPROVALS**

- CSA International certified
- Certified for natural or LPG/Propane gas
- Units are approved for vertical or horizontal venting

## FEATURE HIGHLIGHTS

1. Heavy Gauge Steel Cabinet
2. Tubular Heat Exchanger
3. Inshot Burner Assembly
4. Gas Control Valve
5. Separated Combustion
6. Combustion Air Inducer
7. Combination Ignition/Fan Timer Control
8. Direct Drive Fan



## FEATURES AND BENEFITS

### APPLICATIONS

- Horizontal unit heaters are low profile, compact in design and easy to install
- Steady State Efficiencies - 82%
- Ideal for economical heating systems in garages and non-confined living spaces
- Shipped completely assembled with controls factory installed and wired
- Hanging brackets are shipped loose for field installation
- Test operated at the factory to ensure proper operation and dependability

**NOTE** - Installer must locate unit, make unit gas supply, combustion air, flue, electrical connections and mount thermostat to complete job.

### CABINET

- 1 • Constructed of pre-painted heavy gauge cold rolled steel
- Hinged, reversible door for easy access
- Adjustable louvers are furnished on cabinet for control of air flow direction
- Wiring junction box is conveniently located outside unit cabinet for easy field wiring connections
- Hanging brackets for suspending unit are furnished for field installation
- Unit may be rotated 180 degrees (top for bottom) for ease of installation of gas, electrical and flue locations

### HEATING SYSTEM

- 2 **Tubular Aluminized Steel Heat Exchanger**
  - Tubular heat exchanger is constructed of aluminized steel for superior resistance to corrosion and oxidation
  - Curving design of heat exchanger allows complete exposure of heating surfaces to supply air stream
  - Dimpled tubes with wrinkle bends allow for maximum heat transfer
  - Compact design reduces space requirements in unit cabinet
  - Heat exchanger has been laboratory life cycle tested
- 3 **Inshot Burner Assembly**
  - Aluminized steel inshot burners provide efficient trouble free operation
  - Burner venturi mixes air and gas in correct proportion for proper combustion
  - Burner assembly is removable from the unit as a single component for ease of service
- 4 **Gas Control Valve**
  - 24 volt redundant combination gas control valve combines manual shut off switch (On-Off), automatic electric valve (dual) and gas pressure regulation into a compact combination control
- 5 **Separated Combustion**
  - Combustion air is separate from the air in the heated space
  - Using outside air for combustion prevents dirt, lint, dust and other contaminants in the heated space from entering the combustion area of the unit heater
  - Sealed combustion air and burner compartments for optimum performance and reliability
  - Combustion air intake box may be rotated 180 degrees to facilitate top or bottom combustion air piping installations

## FEATURES AND BENEFITS

### HEATING SYSTEM (continued)

- 6** **Combustion Air Inducer**
- Prepurges heat exchanger and safely vents combustion products
  - Operates only during heating cycle
  - Blower motor has ball bearings and is thermally protected

#### **Pressure Switch**

- Pressure switch prevents unit operation in case of blocked inlet or flue outlet

#### **Limit Control(s)**

- Factory installed and accurately located
- Limit control has fixed temperature setting and protects heating system from abnormal operating conditions

#### **Flame Rollout Switch**

- Automatic reset switch is factory installed on the top of the burner box

### **Optional Accessories**

#### **Natural Gas to LPG/Propane Conversion Kit**

- Required for field changeover from natural gas to LPG/Propane

**NOTE** - See Optional Accessories - Gas Heat for proper kit selection at different elevations.

#### **High Altitude Conversion Kit - Natural Gas**

- Required on all units for proper unit operation at altitudes from 5001 to 10,000 ft. (US) and 7501 to 10,000 ft. (Canada)

#### **High Altitude Pressure Switch Kit**

- Required for proper unit operation at various elevations

### CONTROLS

- 7** **Combination Ignition/Fan Timer Control**
- Electronic direct spark ignition control provides positive and safe main burner ignition
  - Spark is intermittent and occurs only when required
  - Separate electronic flame sensor control assures safe and reliable operation
  - Should loss of flame occur, flame sensor controls will initiate 5 attempts at re-ignition before locking out unit operation
  - Control board contains all necessary controls and relays to operate unit
  - Includes: Fan timer control - fan on 30 seconds (fixed), fan off 150 seconds (fixed), terminal strip plug for thermostat connections, diagnostic LED for troubleshooting
  - Direct plug-in wiring harness

#### **Transformer**

- 120V/24V transformer furnished as standard

### **Optional Accessories**

#### **Remote Diagnostic LED Kit**

- Allows for remote status updates and diagnosis of the unit

### VENTING

- Units may be vented horizontally or vertically
  - **Residential Vertical Venting** - Units are approved for installation when vented in compliance with the latest edition of the National Fuel Gas Code (NFPA 54 / ANSI Z223.1) in the USA and with CSA-B149.1 codes in Canada
  - **Residential Horizontal Venting** - Units are approved for residential installation only with UL listed, Cat III stainless steel vent kits
  - **Commercial Vertical Venting** - Units are approved for installation with single wall metal vent pipe
  - **Commercial Horizontal Venting** - Units are approved for single-wall metal vent pipe or optional UL listed, Cat III stainless steel vent kits

**NOTE** - See installation instructions for detailed venting requirements.

### **Optional Accessories**

#### **Horizontal Vent Kits**

- UL listed, Cat III stainless steel vent kits are required for horizontal venting
- Available for upward or downward slope
- Vent kits snap together
- Kits include unit transition, vent termination and wall thimble
- Upward slope vent kits have a drain connection
- Provisions for hanging must be field supplied
- Optional 45° or 90° elbow available for ease of vent connection
- Straight pipe sections in various lengths are available

**NOTE** - See Horizontal Vent Kits / Elbow table for Horizontal Vent Kits and accessories on Page 5.

**NOTE** - See drawings for additional information.

#### **Vent Adaptor Kits**

- Vent Adaptor Kits (Upslope and Downslope) for 4 inch unit flue pipe to 3 inch Category III vent pipe

### DIRECT DRIVE FAN

- 8**
- Efficient and quiet operating direct drive propeller type fan
  - Permanently lubricated fan motor

## SPECIFICATIONS

Gas Heating Performance		Model No.	LS25-30A	LS25-45A	LS25-60A	LS25-75A	LS25-90A	LS25-105A
Heating Capacity Input Btuh			30,000	45,000	60,000	75,000	90,000	105,000
Heating Capacity Output Btuh - Natural			24,600	36,900	49,200	61,500	73,800	86,100
Steady State Efficiency - Natural			82%	82%	82%	82%	82%	82%
Temperature rise - °F			37	52	47	65	43	59
Connections in.	Flue size (round)		1 1/4	1 1/4	4	4	4	4
	Combustion Air Size (round)		3	3	4	4	4	4
	Gas Piping Size - in.		1/2	1/2	1/2	1/2	1/2	1/2
Fan Data	Number of fans		1	1	1	1	1	1
	Fan Diameter - in.		10	10	14	14	16	16
	Number of blades		4	4	4	4	4	4
	Motor Output - hp		1/25	1/25	1/15	1/15	1/10	1/10
	rpm		1550	1550	1075	1075	1075	1075
	Air Volume - cfm		625	665	1000	1200	1600	1500
Air throw at 8 ft. mounting height - ft.			27	29	34	41	46	43
Weight Data	Net Weight - lbs. (kg)		55 (25)	60 (27)	85 (39)	90 (41)	115 (52)	120 (54)
	Shipping Weight - lbs. (kg)		60 (27)	65 (29)	90 (41)	95 (43)	120 (54)	125 (57)

## ELECTRICAL DATA

Voltage		115 volts - 60 hertz - 1 phase					
Fan motor full load amps		2.0	2.0	2.0	2.0	3.0	3.0
Maximum overcurrent protection (MOCP)		15	15	15	15	15	15

## OPTIONAL ACCESSORIES - MUST BE ORDERED SEPARATELY

Remote Diagnostic LED Kit	<b>22C99</b>	<b>22C99</b>	<b>22C99</b>	<b>22C99</b>	<b>22C99</b>	<b>22C99</b>
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<sup>1</sup> Unit flue connection is 4 in. diameter. 30 and 45 size units are approved for use with 3 in. venting. A 4 in. x 3 in. diameter transition must be field provided for 3 in. venting.

## OPTIONAL ACCESSORIES - GAS HEAT

### NATURAL GAS TO LPG/PROPANE CONVERSION KITS

US		CANADA	
0 - 5000 ft.	<b>18L11</b>	0 - 7500 ft.	<b>18L11</b>
5001- 8000 ft.	<b>19A10</b>	7501- 9500 ft.	<b>19A12</b>
8001 - 10,000 ft.	<b>19A11</b>		

### HIGH ALTITUDE CONVERSION KITS - NATURAL GAS

US		CANADA	
5001 - 7000 ft.	<b>19A17</b>	7501 - 9500 ft.	<b>19A17</b>
7001 - 10,000 ft.	<b>19A18</b>		

## HIGH ALTITUDE PRESSURE SWITCH KITS

Model No.	LS25-30A	LS25-45A	LS25-60A	LS25-75A	LS25-90A	LS25-105A
0 - 2,000 ft.	Factory	Factory	Factory	Factory	Factory	Factory
2,001 - 3,000 ft.	Factory	Factory	Factory	<b>22J46</b>	Factory	<b>22J45</b>
3,001 - 4,000 ft.	Factory	<b>22J46</b>	<b>22L29</b>	<b>22L29</b>	<b>22L29</b>	<b>22L29</b>
4,001 - 5,000 ft.	<b>22L29</b>	<b>22L30</b>	<b>22L29</b>	<b>22L29</b>	<b>22L29</b>	<b>22L29</b>
5,001 - 6,000 ft.	<b>22L29</b>	<b>22L30</b>	<b>22L29</b>	<b>22L32</b>	<b>22L32</b>	<b>22L29</b>
6,001 - 7,000 ft.	<b>22L29</b>	<b>22L30</b>	<b>22L31</b>	<b>22L32</b>	<b>22L32</b>	<b>22L31</b>
7,001 - 9,000 ft.	<b>22L32</b>	<b>22L32</b>	<b>22L31</b>	<b>22L32</b>	<b>22L32</b>	<b>22L31</b>
9,001 - 10,000 ft.	<b>22L32</b>	<b>22L32</b>	<b>22L31</b>	<b>22L33</b>	<b>22L33</b>	<b>22L31</b>

## HORIZONTAL VENT KITS AND ELBOWS

REQUIRED FOR RESIDENTIAL HORIZONTAL VENTING APPLICATIONS

Unit Heater Model No.	Vent Diameter (in.)	Upslope Vent Kit Catalog No.	Downslope Vent Kit Catalog No.	45° Elbow Catalog No.	90° Elbow Catalog No.	<sup>1</sup> Minimum Vent Length (ft.)
LS25-30A, LS25-45A	3	75W62	75W66	87W79 (Optional)	75W70 (Optional)	5
LS25-60A, LS25-75A LS25-90A, LS25-105A	4	75W63	75W67	87W80 (Optional)	75W71 (Optional)	5

<sup>1</sup> Length does not include termination (or elbow if used).

## STRAIGHT VENT PIPE - FOR HORIZONTAL VENTING

Unit Heater	Vent Diameter (in.)	Length (in.)	Catalog No.
LS25-30A, LS25-45A	3	6	75W74
	3	12	75W75
	3	36	75W76
LS25-60A, LS25-75A LS25-90A, LS25-105A	4	6	75W77
	4	12	75W78
	4	36	75W79

## VENT ADAPTOR KITS (FOR RETRO-FIT INSTALLATIONS)

Unit Heater	Description	Catalog No.
LS25-30A	Vent Adaptor Kit (Upslope) - 4 inch unit flue pipe to 3 inch Category III vent pipe	19V95
LS25-45A	Vent Adaptor Kit (Downslope) - 4 inch unit flue pipe to 3 inch Category III vent pipe	19V96

## INSTALLATION CLEARANCES

	in.	mm
Top	1	25
Side opposite control box/access panel	1	25
Control Box/Access Panel Side	24	610
Back	18	457
Bottom	1	1
<sup>1</sup> Flue	6	152

See Installation Instructions for further installation considerations.

<sup>1</sup> Single-Wall vent clearance. Type B Double-Wall vent clearance is in accordance with the manufacturer's listing.

## MAXIMUM MOUNTING HEIGHT

LS25-30-45-60-75	10 ft.	3 m
LS25-90-105	12 ft.	3.7 m

## MAXIMUM HORIZONTAL VENT LENGTHS

No. of Elbows	Maximum Length (feet) of Straight Vent Pipe
1	25
2	20
3	15
4	10
5	5

NOTES - Minimum horizontal vent length is 5 ft.

Horizontal venting requires the use of a UL listed, Cat III Horizontal Vent Kit and Vent Pipe.

Horizontal venting must terminate in a tee.

Maximum total length of vent pipe must not exceed 30 ft.

One elbow is equivalent to 5 ft. of vent pipe.

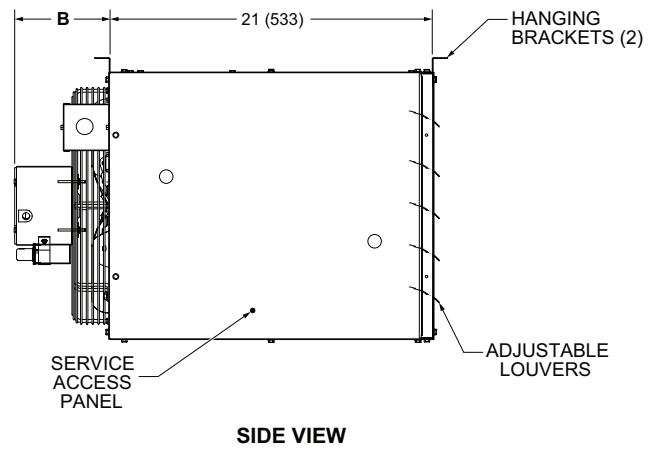
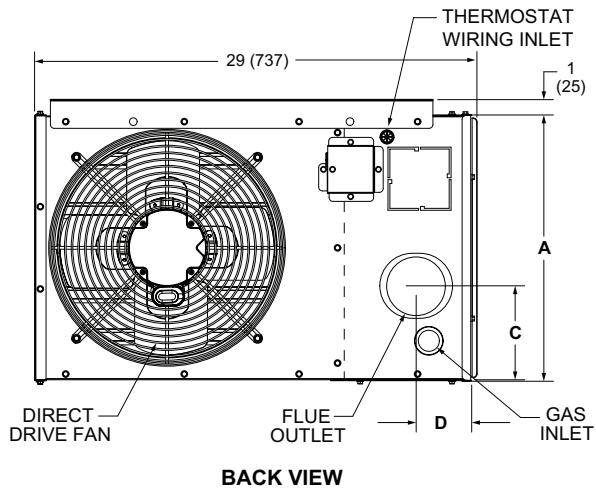
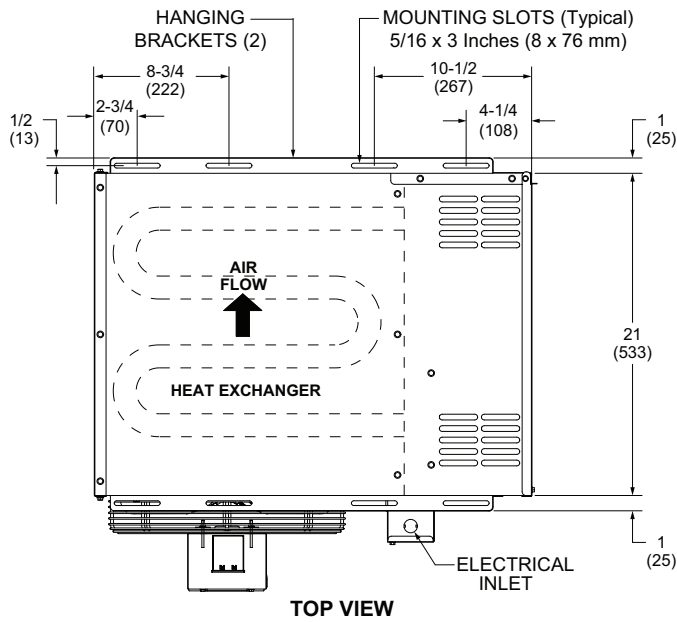
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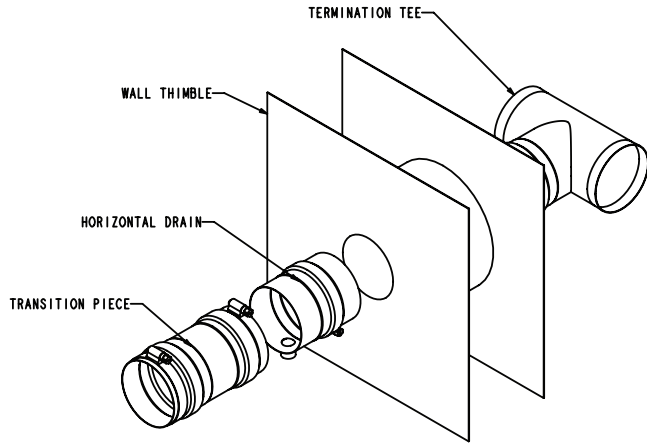
## DIMENSIONS - UNIT



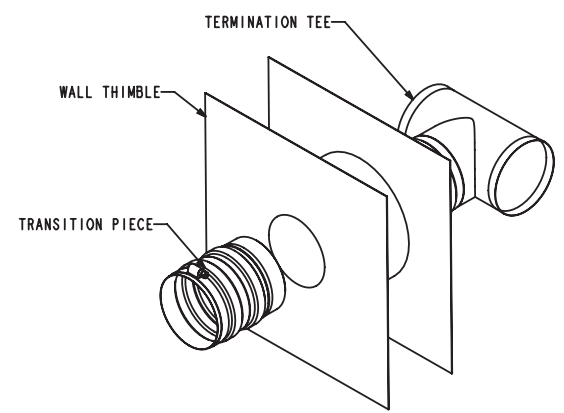
Model No.	A		B		C		D	
	in.	mm	in.	mm	in.	mm	in.	mm
LS25-30A LS25-45A	12-3/8	314	6-1/2	165	4	102	6	152
LS25-60A LS25-75A	17-1/2	445	6-1/4	159	6-1/8	156	3-5/8	92
LS25-90A LS25-105A	23	584	7-7/8	200	9-1/8	232	3-5/8	92

**VENT KITS AND ACCESSORY DRAWINGS**

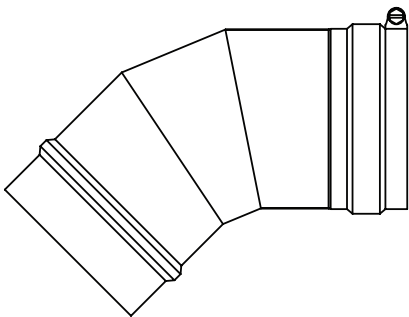
HORIZONTAL VENT KITS (UPSLOPE)



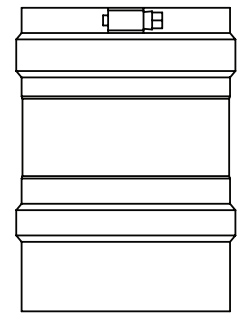
HORIZONTAL VENT KITS (DOWNSLOPE)



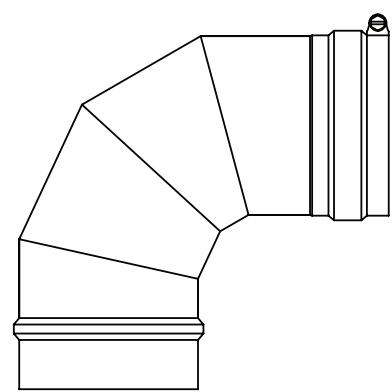
45° ELBOW (Typical)



STRAIGHT PIPE (Typical)



90° ELBOW (Typical)









## REVISIONS

Sections	Description of Change
Specifications	Input updated for LS25-105A.



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