

# **TECHNICAL BOOK**



# GASBOYLER

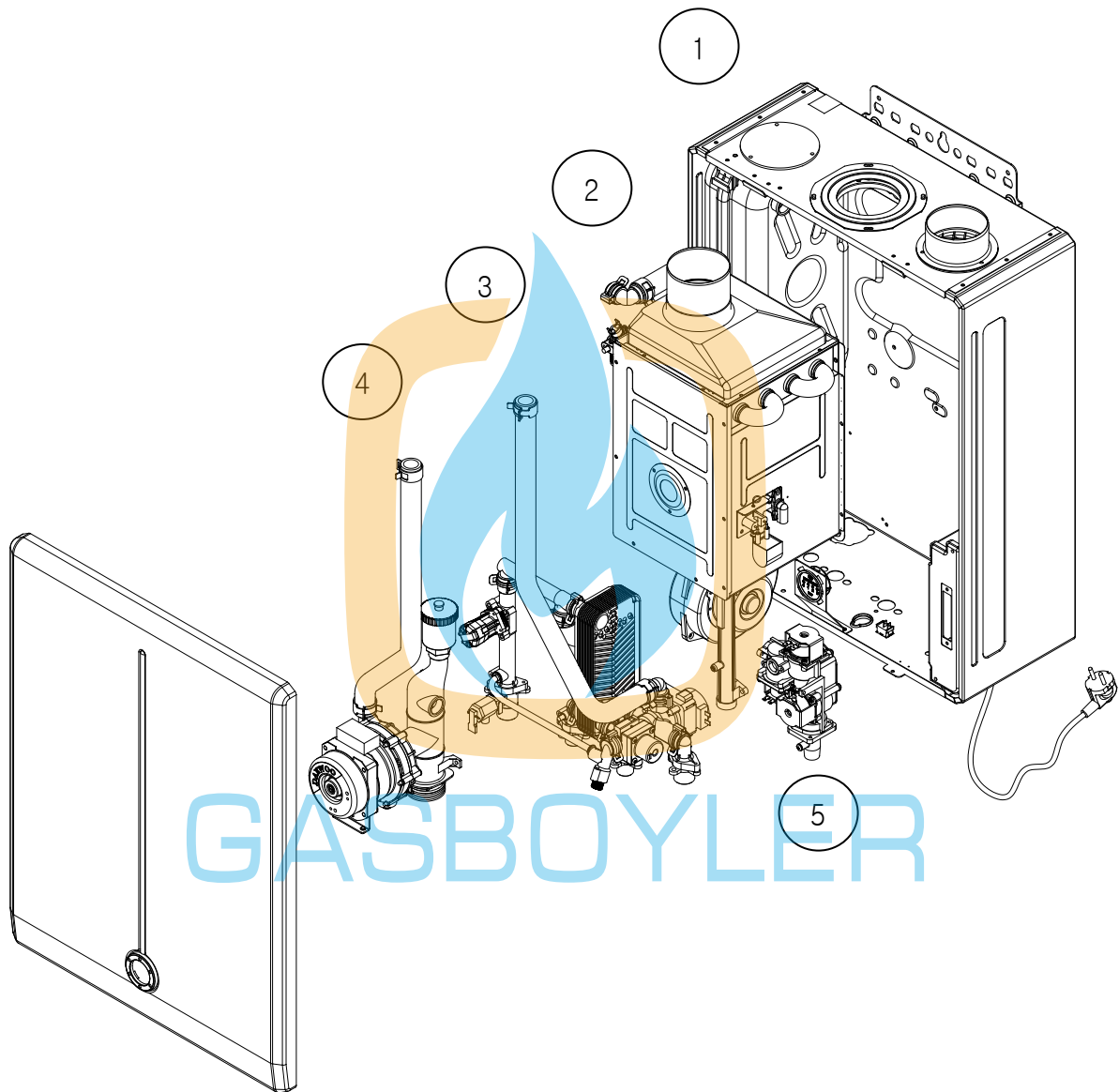


**DAEWOO GASBOILER**

DAEWOO GASBOILER CO., LTD.

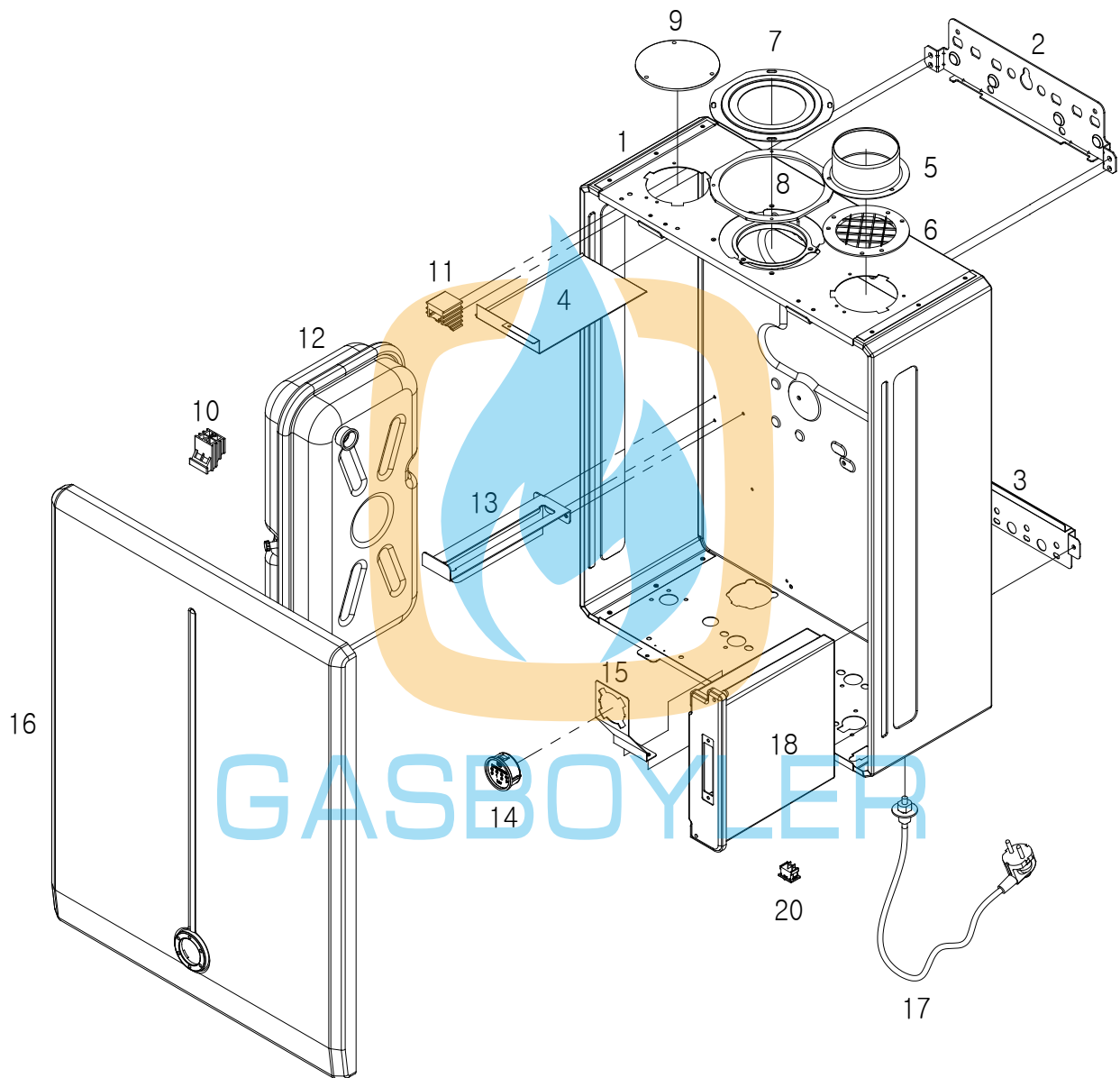
## DAEWOO GAS BOILER

(Model No. DGB-100MSC/130MSC/160MSC/200MSC)



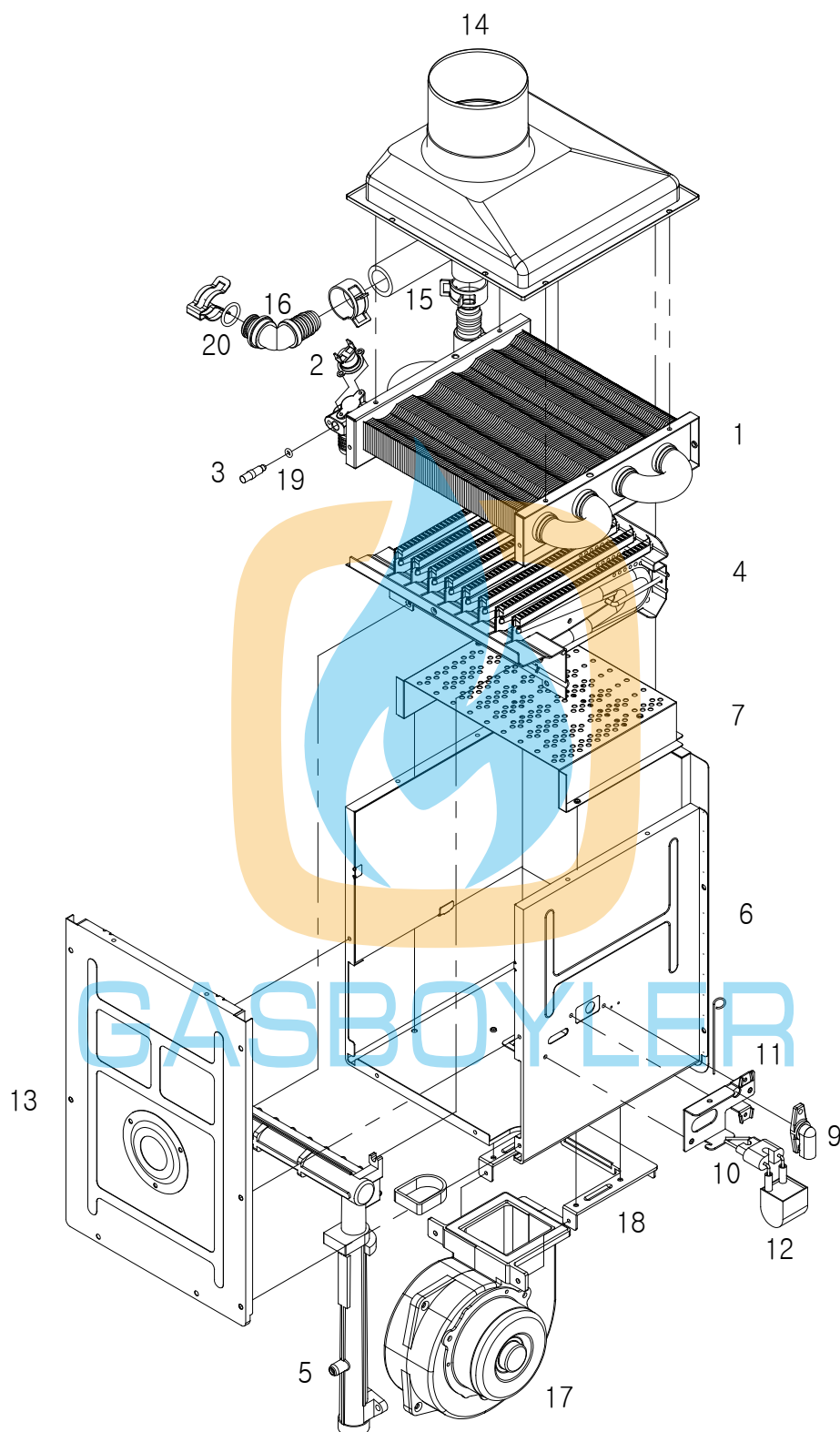


## 1. BODY PART



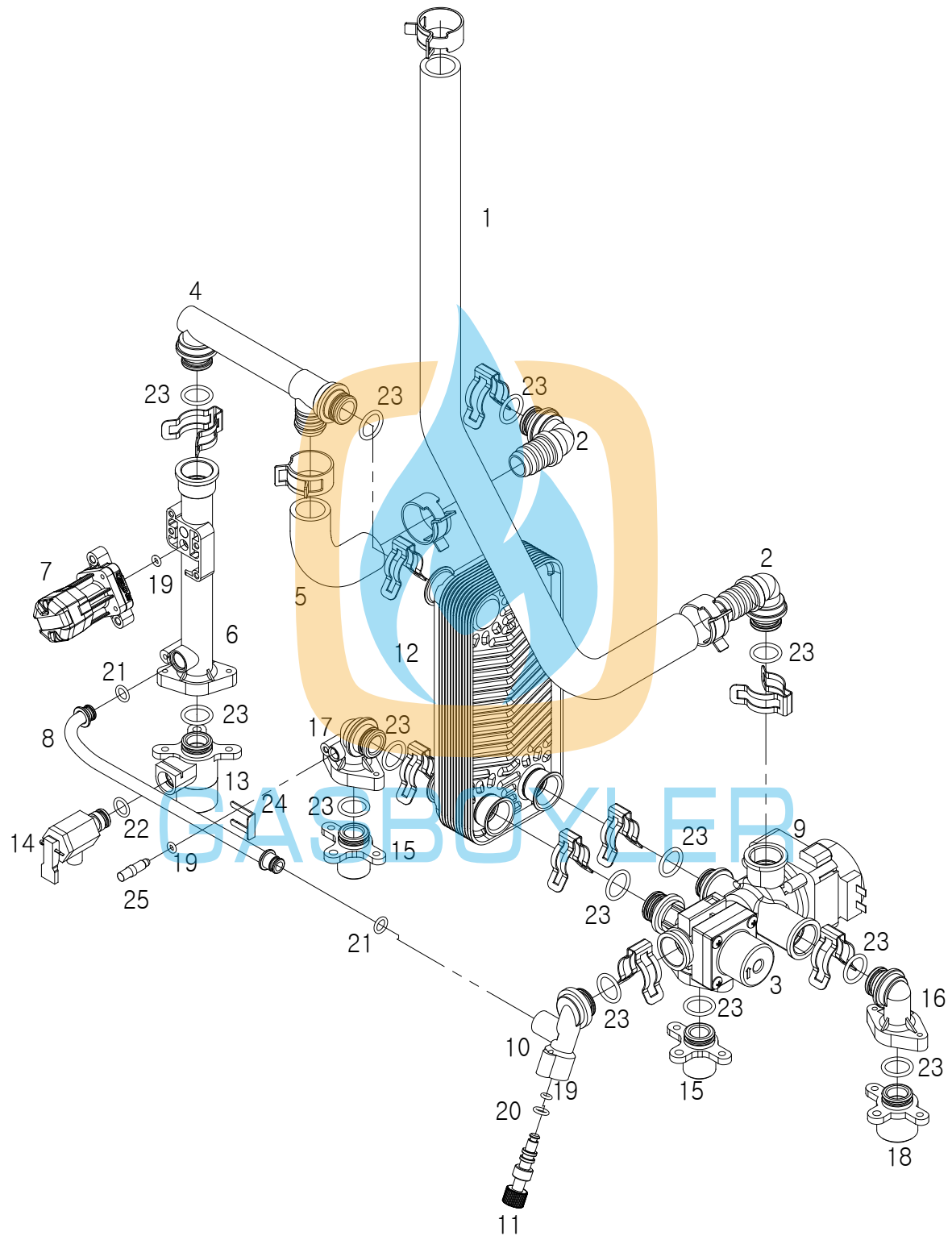
| No |    | PART NAME                       | PART CODE  | PCS | APPLIED MODEL |     |     |     | REMARK  |
|----|----|---------------------------------|------------|-----|---------------|-----|-----|-----|---------|
|    |    |                                 |            |     | 10K           | 13K | 16K | 20K |         |
| 1  | 1  | FRAME ASS'Y                     | 3312214310 | 1   | ■             | ■   | ■   | ■   |         |
| 1  | 2  | FRAME INSTALL                   | 3312200840 | 1   | ■             | ■   | ■   | ■   |         |
| 1  | 3  | FRAME BRACKET                   | 3312203100 | 1   | ■             | ■   | ■   | ■   |         |
| 1  | 4  | AIR GUIDE PLATE                 | 3314508000 | 1   | ■             | ■   | ■   | ■   |         |
| 1  | 5  | DUCT IN FLUE                    | 3316600600 | 1   | ■             | ■   | ■   | ■   |         |
| 1  | 6  | GRILL                           | 3312400200 |     | ■             | ■   | ■   | ■   |         |
| 1  | 7  | COVER IN FLUE                   | 3311409600 | 1   | ■             | ■   | ■   | ■   |         |
| 1  | 8  | PACKING DUCT IN                 | 3314005700 | 1   | ■             | ■   | ■   | ■   |         |
| 1  | 9  | DUCT IN COVER                   | 3311406600 | 1   | ■             | ■   | ■   | ■   |         |
| 1  | 10 | EXPANSION TANK<br>HOLDER(FRONT) | 3313002500 | 1   | ■             | ■   | ■   | ■   |         |
| 1  | 11 | EXPANSION TANK<br>HOLDER(REAR)  | 3313002600 | 1   | ■             | ■   | ■   | ■   |         |
| 1  | 12 | EXPANSION TANK                  | 3317502900 | 1   | ■             | ■   | ■   | ■   | 6L      |
| 1  | 13 | EXPANSION TANK<br>BRACKET       | 3310603900 | 1   | ■             | ■   | ■   | ■   |         |
| 1  | 14 | DISPLAY PRESSURE<br>ASSY        | 3317732500 | 1   | ■             | ■   | ■   | ■   |         |
| 1  | 15 | BRACKET PRESSURE                | 3310605600 | 1   | ■             | ■   | ■   | ■   |         |
| 1  | 16 | CABINET ASS'Y                   | 3310815300 | 1   | ■             | ■   | ■   | ■   |         |
| 1  | 17 | POWER CORD                      | WUK43K7356 | 1   | ■             | ■   | ■   | ■   |         |
| 1  | 18 | M-PCB WHOLE AS                  | 331439D500 | 1   | ■             | ■   | ■   | ■   | DCSC-G  |
| 1  | 19 | ROOMCON WHOLE<br>ASS'Y          | 3317616B00 | 1   | ■             | ■   | ■   | ■   | DBR-W31 |
| 1  | 20 | EMERGENCY SWITCH                |            | 1   | ■             | ■   | ■   | ■   |         |

## 2. HEATING PART



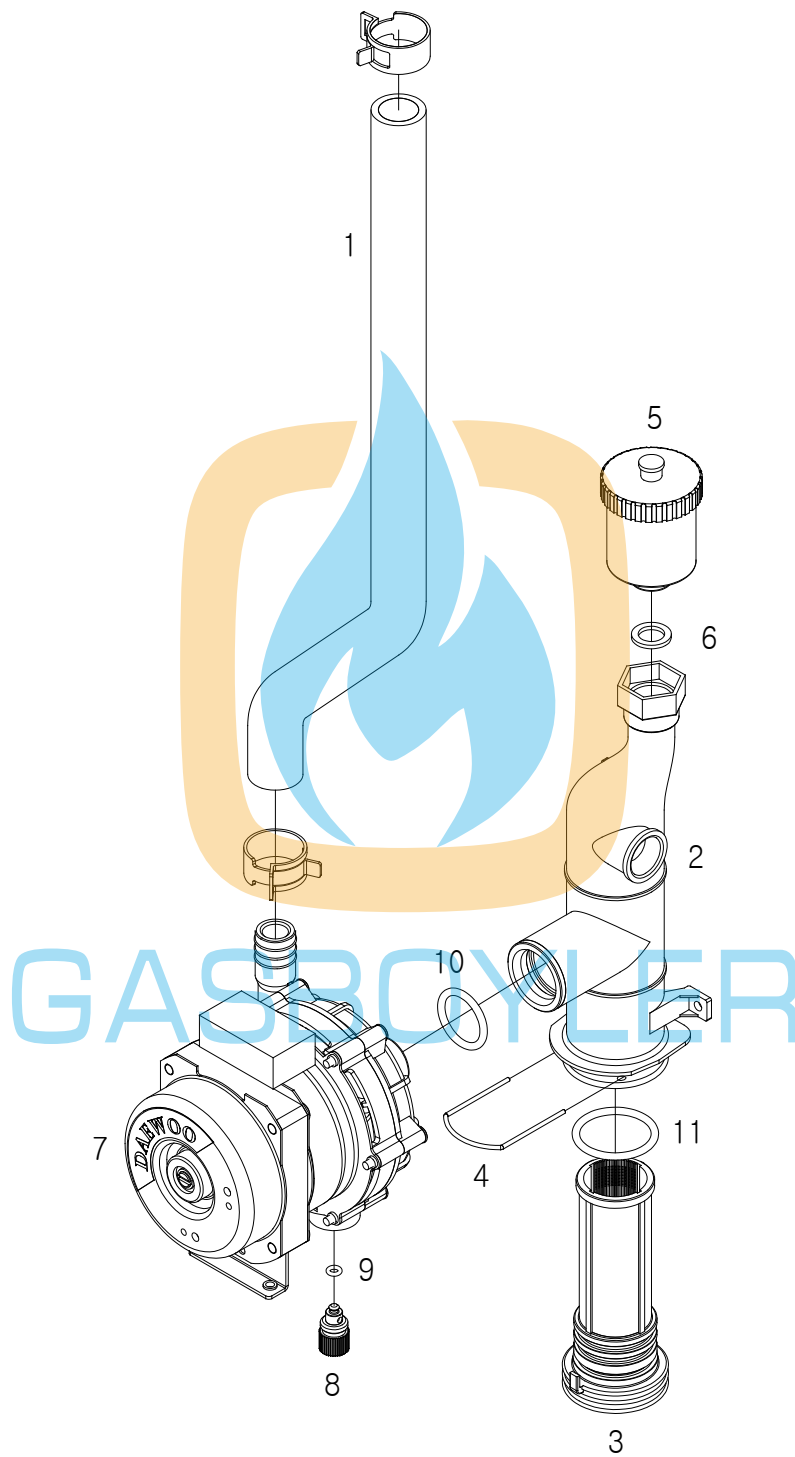
| No |     | PART NAME                         | PART CODE  | PCS | APPLIED MODEL |     |     |     | REMARK        |
|----|-----|-----------------------------------|------------|-----|---------------|-----|-----|-----|---------------|
|    |     |                                   |            |     | 10K           | 13K | 16K | 20K |               |
| 2  | 1   | MAIN HEAT EXCHANER<br>WHOLE ASS'Y | 3318111120 | 1   | ■             |     |     |     | 67FIN         |
| 2  | 1   | MAIN HEAT EXCHANER<br>WHOLE ASS'Y | 3318108640 | 1   |               | ■   | ■   | ■   | 85FIN         |
| 2  | 2   | THERMOSTAT                        | 3317904500 | 1   | ■             | ■   | ■   | ■   | AUTO 95°C     |
| 2  | 3   | SENSOR TEMP HEAT-<br>HOT-OUT      | 3314805A00 | 1   | ■             | ■   | ■   | ■   |               |
| 2  | 4   | BURNER ASS'Y                      | 3316124300 | 1   | ■             |     |     |     | 6FIN          |
| 2  | 4   | BURNER ASS'Y                      | 3316110100 | 1   |               | ■   | ■   | ■   | 8FIN          |
| 2  | 5   | BURNER MANIFOLD<br>ASS'Y          | 3316124300 | 1   | ■             |     |     |     | NOZZLE<br>6EA |
| 2  | 5   | BURNER MANIFOLD<br>ASS'Y          | 3316112100 | 1   |               | ■   | ■   | ■   | NOZZLE<br>8EA |
| 2  | 5-1 | NOZZLE                            | 3317301200 | 6   | ■             | ■   | ■   | ■   | Φ1.76(LNG)    |
| 2  | 5-2 | NOZZLE                            | 3317300700 | 8   | ■             | ■   | ■   | ■   | Φ1.12(LPG)    |
| 2  | 6   | CHAMBER SIDE ASS'Y                | 3316316300 | 1   | ■             |     |     |     |               |
| 2  | 6   | CHAMBER SIDE ASS'Y                | 3316308700 | 1   |               | ■   | ■   | ■   |               |
| 2  | 7   | DISTRIBUTE UP                     | 3318006900 | 1   | ■             | ■   | ■   | ■   |               |
| 2  | 8   | DISTRIBUTE LOW                    | 3311806100 | 1   | ■             | ■   | ■   | ■   |               |
| 2  | 9   | FLAME SENSOR                      | 3314805100 | 1   | ■             | ■   | ■   | ■   |               |
| 2  | 10  | IGNITOR PLUG                      | 3317101000 | 1   | ■             | ■   | ■   | ■   |               |
| 2  | 11  | SPARK HOLDER                      | 3313001900 | 1   | ■             | ■   | ■   | ■   |               |
| 2  | 12  | IGNITOR TRANS                     | 3317102000 | 1   | ■             | ■   | ■   | ■   |               |
| 2  | 13  | CHAMBER FRONT<br>ASS'Y            | 3316316400 | 1   | ■             |     |     |     |               |
| 2  | 13  | CHAMBER FRONT<br>ASS'Y            | 3316309300 | 1   |               | ■   | ■   | ■   |               |
| 2  | 14  | HOOD ASSY                         | 3310059810 | 1   | ■             |     |     |     |               |
| 2  | 14  | HOOD ASS'Y                        | 3310059800 | 1   |               | ■   | ■   | ■   |               |
| 2  | 15  | EXPANSION TANK<br>HOSE            | 3313204200 | 1   | ■             | ■   | ■   | ■   |               |
| 2  | 16  | HOSE NIPPLE                       | 3318400800 | 1   | ■             | ■   | ■   | ■   |               |
| 2  | 17  | FAN ASS'Y                         | 3311852200 | 1   | ■             | ■   | ■   | ■   |               |
| 2  | 18  | FAN BRACKET                       | 3310601500 | 1   | ■             | ■   | ■   | ■   |               |
| 2  | 19  | O-RING(P-4)                       | 3314600300 | 1   | ■             | ■   | ■   | ■   | SILICONE      |
| 2  | 20  | O-RING(P-16)                      | 3314601500 | 1   | ■             | ■   | ■   | ■   | SILICONE      |

### 3. HOT WATER HEATING PART



| No |    | PART NAME                         | PART CODE  | PCS | APPLIED MODEL |     |     |     | REMARK   |
|----|----|-----------------------------------|------------|-----|---------------|-----|-----|-----|----------|
|    |    |                                   |            |     | 10K           | 13K | 16K | 20K |          |
| 3  | 1  | SUPPLY HOSE                       | 3313205400 | 1   | ■             | ■   | ■   | ■   |          |
| 3  | 2  | HOSE NIPPLE                       | 3318400800 | 2   | ■             | ■   | ■   | ■   |          |
| 3  | 3  | FLOW SWITCH                       | 3317904600 | 1   | ■             | ■   | ■   | ■   |          |
| 3  | 4  | RETURN PIPE UP                    | 3314425800 | 1   | ■             | ■   | ■   | ■   |          |
| 3  | 5  | CLOSED HOSE                       | 3313205800 | 1   | ■             | ■   | ■   | ■   |          |
| 3  | 6  | RETURN PIPE LOW                   | 3314429000 | 1   | ■             | ■   | ■   | ■   |          |
| 3  | 7  | SENSOR PRESSURE                   | 3314806000 | 1   | ■             | ■   | ■   | ■   | 0~3.5bar |
| 3  | 8  | REPLENISH PIPE ASS'Y              | 3314425900 | 1   | ■             | ■   | ■   | ■   |          |
| 3  | 9  | 3-WAY VALVE                       | 3315434900 | 1   | ■             | ■   | ■   | ■   |          |
| 3  | 10 | REPLENISH VALVE<br>BODY           | 3315433300 | 1   | ■             | ■   | ■   | ■   |          |
| 3  | 11 | REPLENISH VALVE<br>COCK           | 3312600100 | 1   | ■             | ■   | ■   | ■   |          |
| 3  | 12 | HOT WATER HEAT<br>EXCHANGER ASS'Y | 3318112300 | 1   | ■             | ■   | ■   | ■   | 12FIN    |
| 3  | 13 | RETURN UNION                      | 3318504700 | 1   | ■             | ■   | ■   | ■   |          |
| 3  | 14 | PRESSURE RELIEF<br>VALVE          | 3315404400 | 1   | ■             | ■   | ■   | ■   |          |
| 3  | 15 | WATER IN UNION                    | 3318505000 | 2   | ■             | ■   | ■   | ■   |          |
|    |    | HOT WATER OUT<br>UNION            |            |     |               |     |     |     |          |
| 3  | 16 | SUPPLY NIPPLE                     | 3319000800 | 1   | ■             | ■   | ■   | ■   |          |
| 3  | 17 | HOT WATER NIPPLE                  | 3319001800 | 1   | ■             | ■   | ■   | ■   |          |
| 3  | 18 | SUPPLY UNION                      | 3318504900 | 1   | ■             | ■   | ■   | ■   |          |
| 3  | 19 | O-RING(P-4)                       | 3314600300 | 3   | ■             | ■   | ■   | ■   | SILICONE |
| 3  | 20 | O-RING(P-7)                       | 3314603600 | 1   | ■             | ■   | ■   | ■   | SILICONE |
| 3  | 21 | O-RING(P-8)                       | 3314602000 | 2   | ■             | ■   | ■   | ■   | SILICONE |
| 3  | 22 | O-RING(P-10)                      | 3314602300 | 1   | ■             | ■   | ■   | ■   | SILICONE |
| 3  | 23 | O-RING(P-16)                      | 3314601500 | 13  | ■             | ■   | ■   | ■   | SILICONE |
| 3  | 24 | EXPASION PIPE<br>SPRING           | 3315101200 | 1   | ■             | ■   | ■   | ■   |          |
| 3  | 25 | SENSOR TEMP HEAT-<br>HOT-OUT      | 3314805A00 | 1   | ■             | ■   | ■   | ■   |          |

## 4. CIRCULATION PART



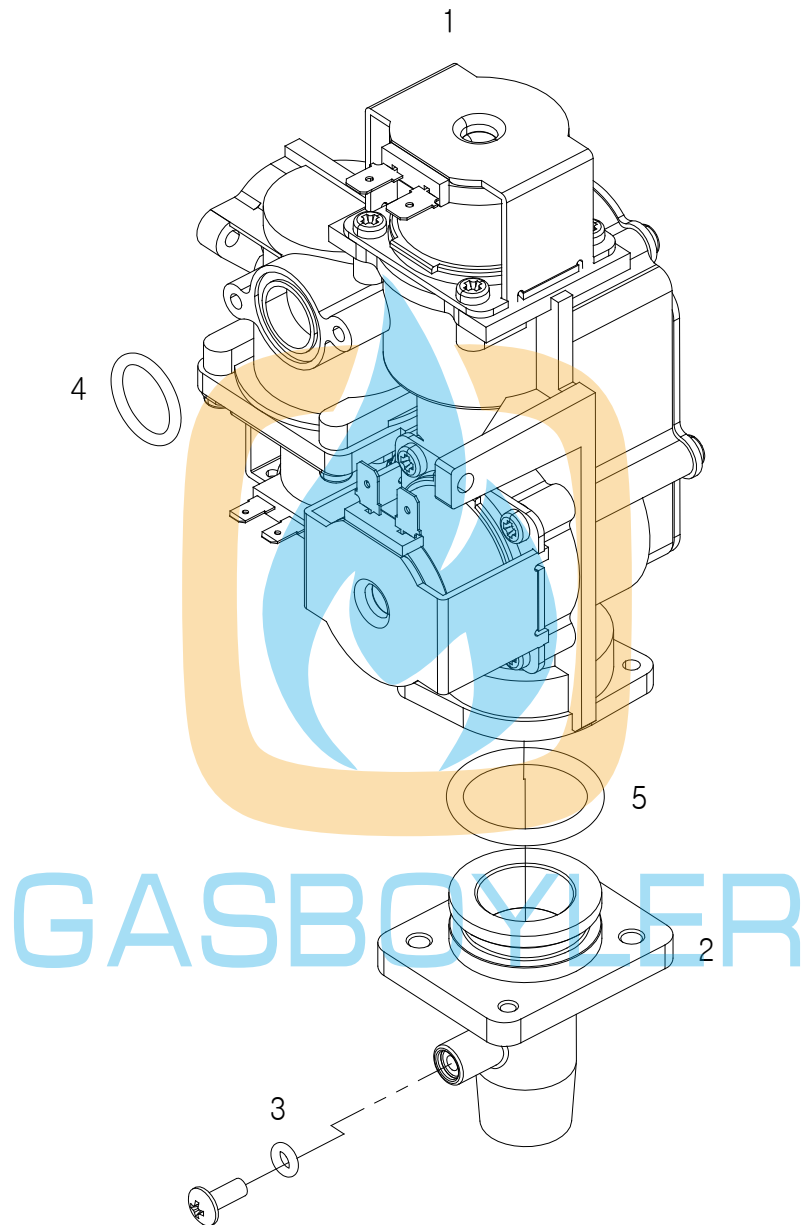
| No |    | PART NAME        | PART CODE  | PCS | APPLIED MODEL |     |     |     | REMARK   |
|----|----|------------------|------------|-----|---------------|-----|-----|-----|----------|
|    |    |                  |            |     | 10K           | 13K | 16K | 20K |          |
| 4  | 1  | RETURN HOSE      | 3313207000 | 1   | ■             | ■   | ■   | ■   |          |
| 4  | 2  | STRAINER BODY    | 3318002200 | 1   | ■             | ■   | ■   | ■   |          |
| 4  | 3  | STRAINER HOLDER  | 3313002300 | 1   | ■             | ■   | ■   | ■   |          |
| 4  | 4  | STRAINER PIN     | 3318001800 | 1   | ■             | ■   | ■   | ■   |          |
| 4  | 5  | AIR VENT ASS'Y   | 3310061200 | 1   | ■             | ■   | ■   | ■   |          |
| 4  | 6  | AIR VENT PACKING | 3314005900 | 1   | ■             | ■   | ■   | ■   |          |
| 4  | 7  | PUMP ASS'Y       | 3317418800 | 1   | ■             | ■   | ■   | ■   |          |
| 4  | 8  | DRAIN COCK       | 3316500100 | 1   | ■             | ■   | ■   | ■   |          |
| 4  | 9  | O-RING(P-4)      | 3314600300 | 1   | ■             | ■   | ■   | ■   | SILICONE |
| 4  | 10 | O-RING(P-25)     | 3314602500 | 1   | ■             | ■   | ■   | ■   | SILICONE |
| 4  | 11 | O-RING(P-34)     | 3314602400 | 1   | ■             | ■   | ■   | ■   | SILICONE |



# GASBOYLER



## 5. GAS SUPPLY PART



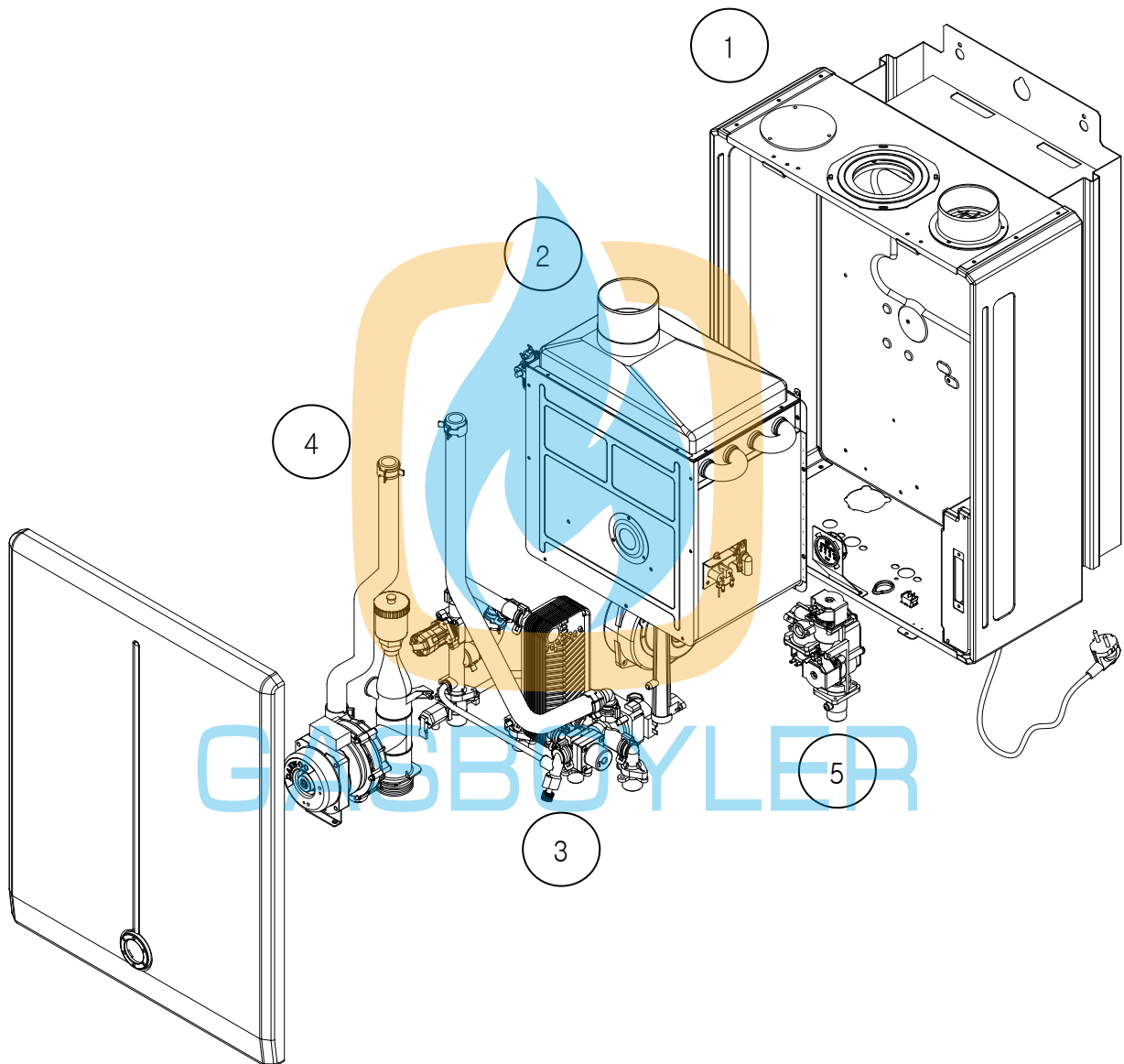
| No |   | PART NAME       | PART CODE  | PCS | APPLIED MODEL |     |     |     | REMARK   |
|----|---|-----------------|------------|-----|---------------|-----|-----|-----|----------|
|    |   |                 |            |     | 10K           | 13K | 16K | 20K |          |
| 5  | 1 | GAS VALVE       | 3315404700 | 1   | ■             | ■   | ■   | ■   |          |
| 5  | 2 | GAS VALVE UNION | 3318504400 | 1   | ■             | ■   | ■   | ■   |          |
| 5  | 3 | O-RING(P-4)     | 3314600300 | 1   | ■             | ■   | ■   | ■   | SILICONE |
| 5  | 4 | O-RING(P-16)    | 3314601500 | 1   | ■             | ■   | ■   | ■   | NBR      |
| 5  | 5 | O-RING(P-26)    | 3314000500 | 1   | ■             | ■   | ■   | ■   | NBR      |



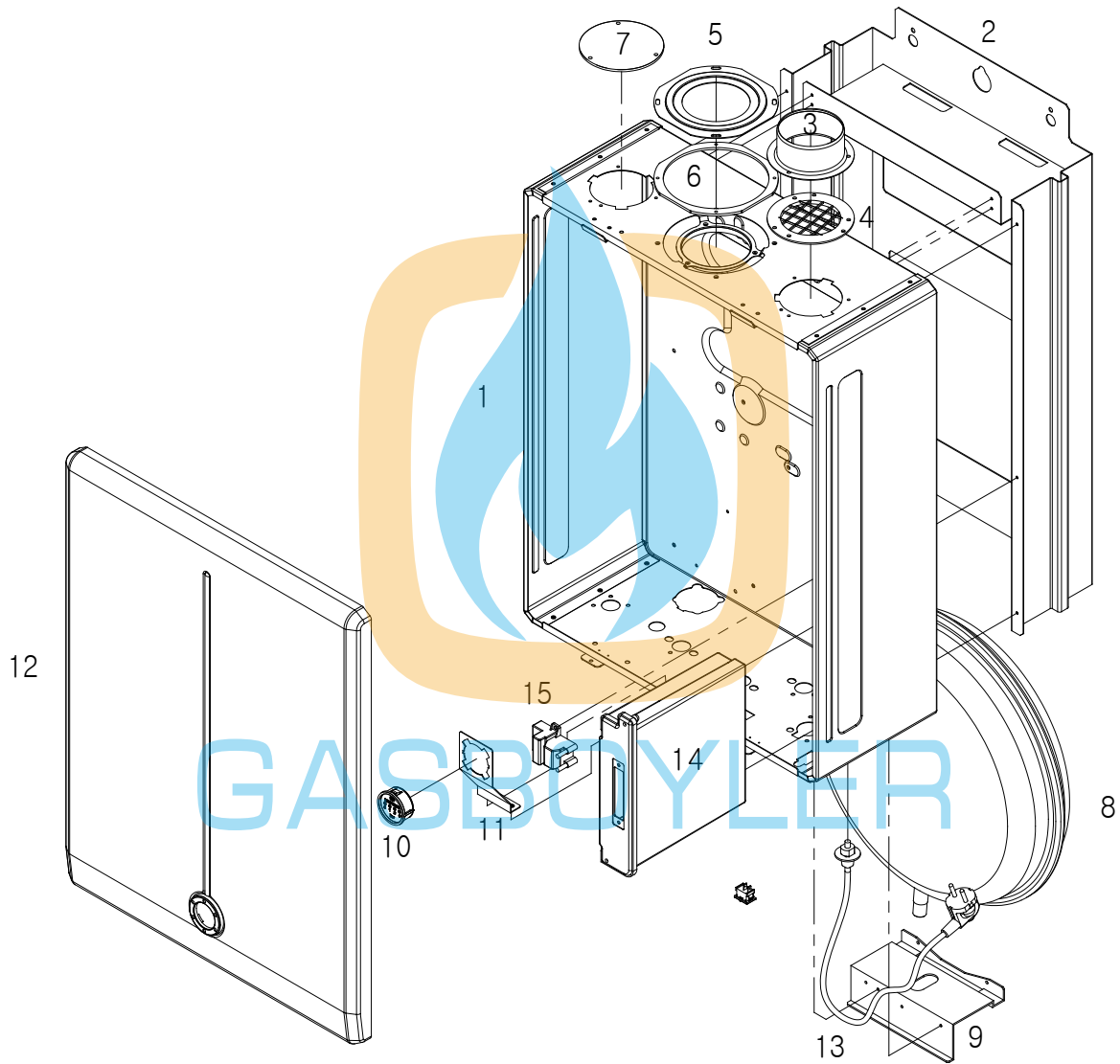
**GASBOYLER**

## DAEWOO GAS BOILER

(Model No. DGB-250MSC/300MSC)



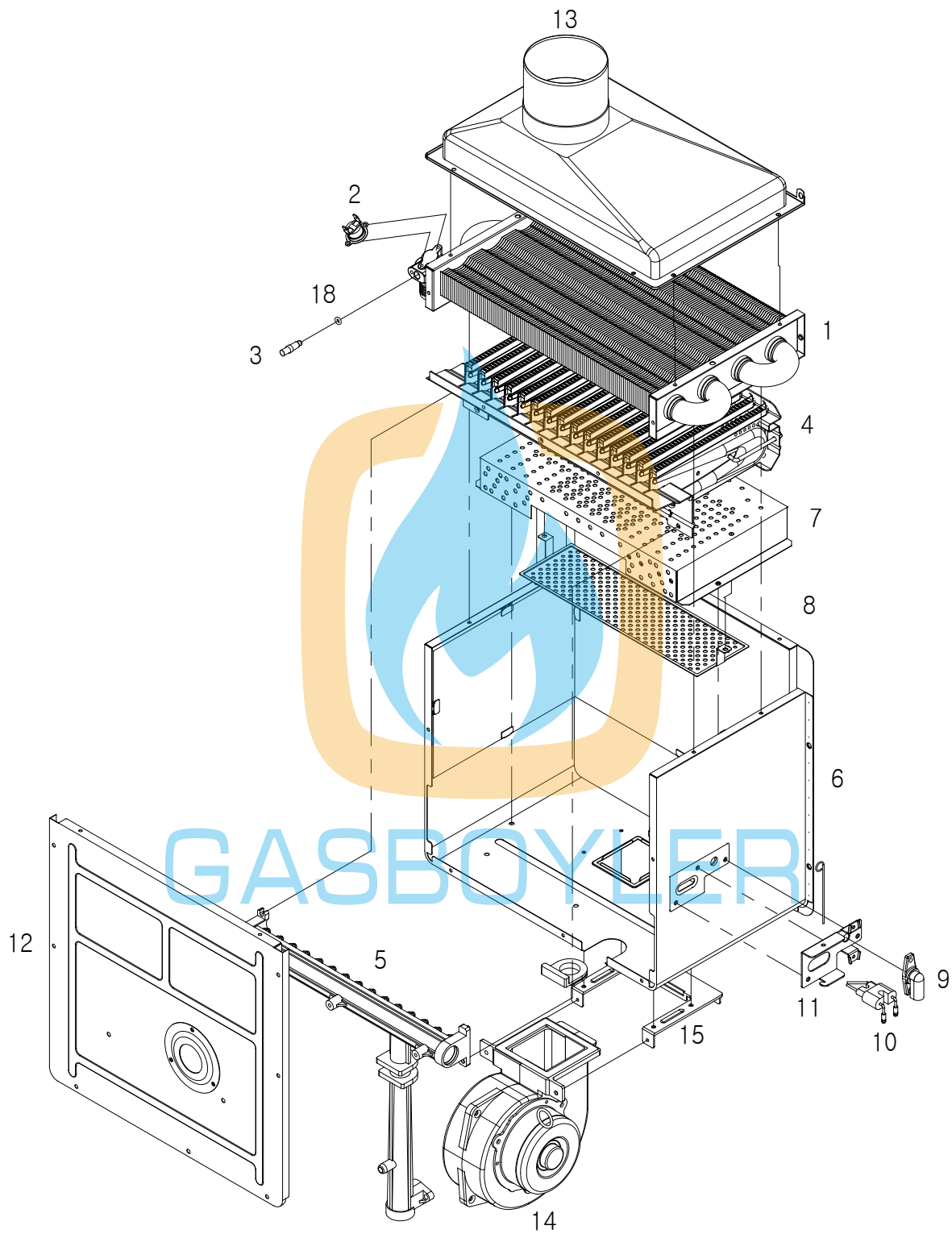
## 1. BODY PART



| No |    | PART NAME                 | PART CODE  | PCS | APPLIED MODEL |     | REMARK  |
|----|----|---------------------------|------------|-----|---------------|-----|---------|
|    |    |                           |            |     | 25K           | 30K |         |
| 1  | 1  | FRAME ASS'Y               | 3312214110 | 1   | ■             | ■   |         |
| 1  | 2  | FRAME REAR                | 3312203500 | 1   | ■             | ■   |         |
| 1  | 3  | DUCT IN FLUE              | 3316600600 | 1   | ■             | ■   |         |
| 1  | 4  | GRILL                     | 3312400200 | 1   | ■             | ■   |         |
| 1  | 5  | COVER IN FLUE             | 3311409600 | 1   | ■             | ■   |         |
| 1  | 6  | PACKING DUCT IN           | 3314005700 | 1   | ■             | ■   |         |
| 1  | 7  | DUCT IN COVER             | 3311406600 | 1   | ■             | ■   |         |
| 1  | 8  | EXPANSION TANK            | 4448F52002 | 1   | ■             | ■   | 8L      |
| 1  | 9  | EXPANSION TANK<br>BRACKET | 3310603300 | 1   | ■             | ■   |         |
| 1  | 10 | DISPLAY PRESSURE<br>ASSY  | 3317732500 | 1   | ■             | ■   |         |
| 1  | 11 | BRACKET PRESSURE          | 3310605600 | 1   | ■             | ■   |         |
| 1  | 12 | CABINET ASS'Y             | 3310815300 | 1   | ■             | ■   |         |
| 1  | 13 | POWER CORD                | WUK43K7356 | 1   | ■             | ■   |         |
| 1  | 14 | M-PCB WHOLE AS            | 331439D500 | 1   | ■             | ■   | DCSC-G  |
| 1  | 15 | IGNITOR TRANS             | 3317102100 | 1   | ■             | ■   |         |
| 1  | 16 | ROOMCON WHOLE<br>ASS'Y    | 3317616B00 | 1   | ■             | ■   | DBR-W31 |
| 1  | 17 | EMERGENCY SWITCH          |            | 1   | ■             | ■   |         |

# GASBOILER

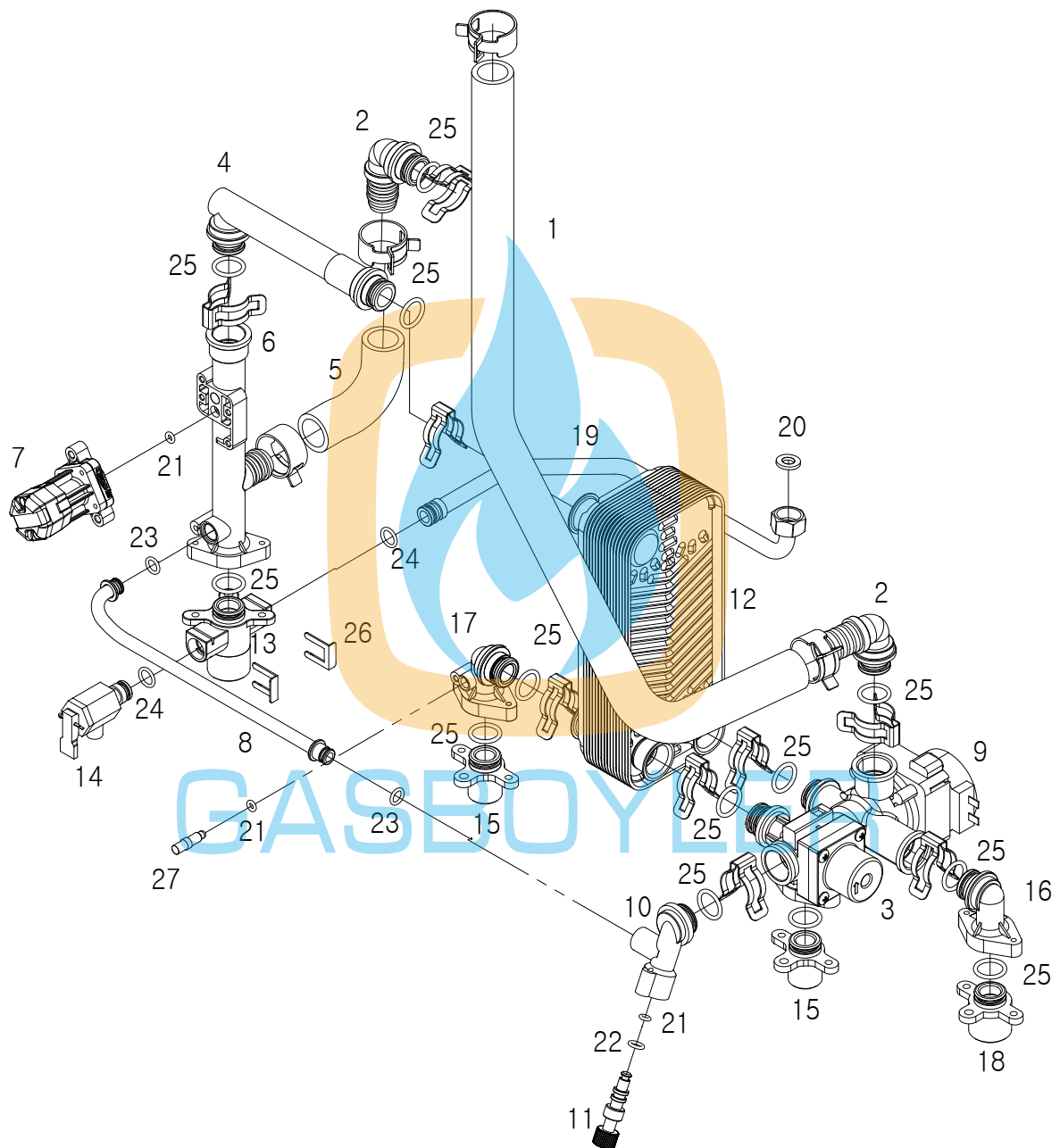
## 2. HEATING PART



| No |     | PART NAME                         | PART CODE  | PCS | APPLIED MODEL |     | REMARK     |
|----|-----|-----------------------------------|------------|-----|---------------|-----|------------|
|    |     |                                   |            |     | 25K           | 30K |            |
| 2  | 1   | MAIN HEAT EXCHANER<br>WHOLE ASS'Y | 3318114930 | 1   | ■             | ■   | 122FIN     |
| 2  | 2   | THERMOSTAT                        | 3317904500 | 1   | ■             | ■   | AUTO 95°C  |
| 2  | 3   | SENSOR TEMP HEAT-<br>HOT-OUT      | 3314805A00 | 1   | ■             | ■   |            |
| 2  | 4   | BURNER ASS'Y                      | 3316123700 | 1   | ■             | ■   | 15FIN      |
| 2  | 5   | BURNER MANIFOLD<br>ASS'Y          | 3316123600 | 1   | ■             | ■   |            |
| 2  | 5-1 | NOZZLE                            | 3317303200 | 15  | ■             | ■   | Φ1.55(LNG) |
| 2  | 5-2 | NOZZLE                            | 3317303000 | 15  | ■             | ■   | Φ1.1(LPG)  |
| 2  | 6   | CHAMBER SIDE ASS'Y                | 3316315700 | 1   | ■             | ■   |            |
| 2  | 7   | DISTRIBUTE UP                     | 3318402900 | 1   | ■             | ■   |            |
| 2  | 8   | DISTRIBUTE LOW                    | 3314506300 | 1   | ■             | ■   |            |
| 2  | 9   | FLAME SENSOR                      | 3314805200 | 1   | ■             | ■   |            |
| 2  | 10  | IGNITOR PLUG                      | 3317100700 | 1   | ■             | ■   |            |
| 2  | 11  | SPARK HOLDER                      | 3313001900 | 1   | ■             | ■   |            |
| 2  | 12  | CHAMBER FRONT<br>ASS'Y            | 3316303900 | 1   | ■             | ■   |            |
| 2  | 13  | HOOD ASS'Y                        | 3310059900 | 1   | ■             | ■   |            |
| 2  | 14  | FAN ASS'Y                         | 3311850800 | 1   | ■             | ■   |            |
| 2  | 15  | FAN BRACKET                       | 3310601500 | 1   | ■             | ■   |            |
| 2  | 18  | O-RING(P-4)                       | 3314600300 | 1   | ■             | ■   | SILICONE   |

# GASBOYLER

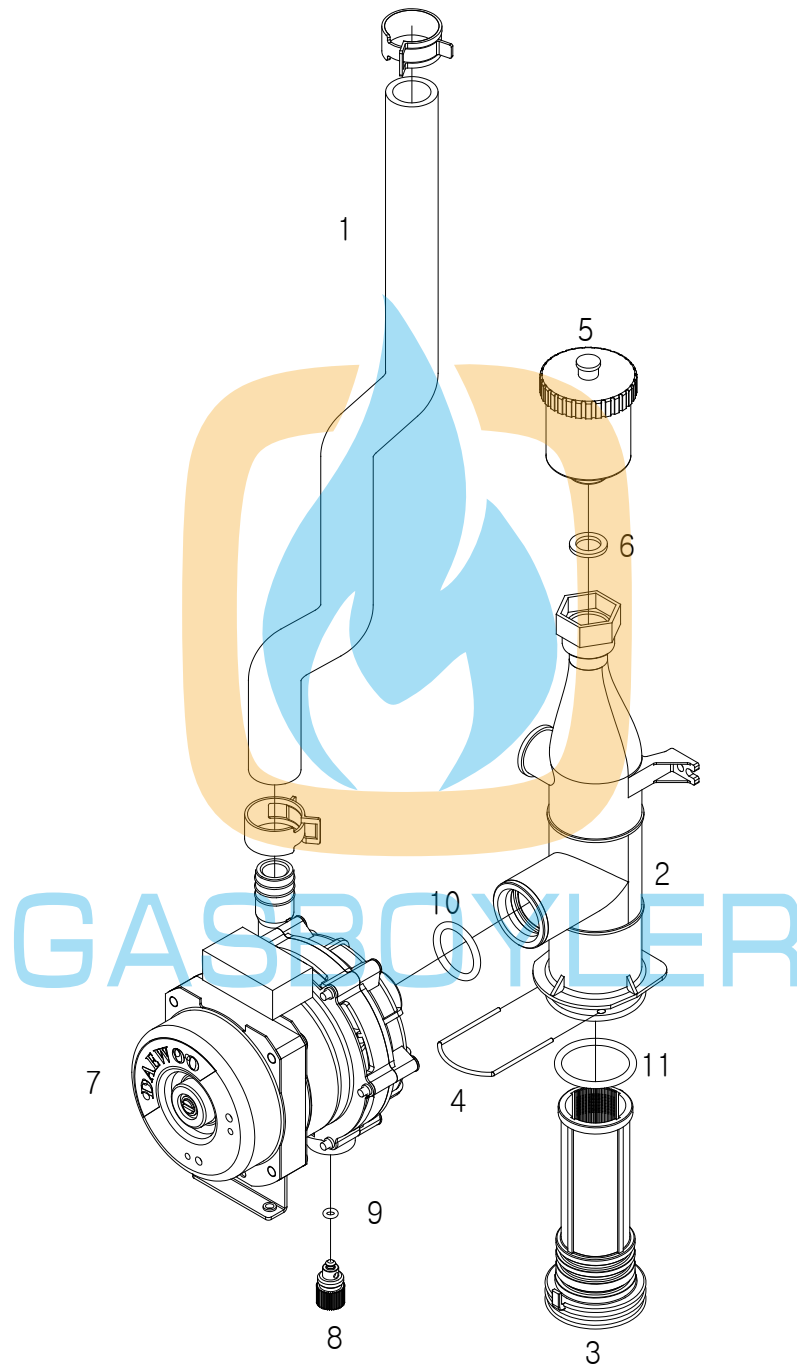
### 3. HOT WATER HEATING PART





| No |    | PART NAME                         | PART CODE  | PCS | APPLIED MODEL |     | REMARK   |
|----|----|-----------------------------------|------------|-----|---------------|-----|----------|
|    |    |                                   |            |     | 25K           | 30K |          |
| 3  | 1  | SUPPLY HOSE                       | 3313205500 | 1   | ■             | ■   |          |
| 3  | 2  | HOSE NIPPLE                       | 3318400800 | 2   | ■             | ■   |          |
| 3  | 3  | FLOW SWITCH                       | 3317904600 | 1   | ■             | ■   |          |
| 3  | 4  | RETURN PIPE UP                    | 3314426500 | 1   | ■             | ■   |          |
| 3  | 5  | CLOSED HOSE                       | 3313205800 | 1   | ■             | ■   |          |
| 3  | 6  | RETURN PIPE LOW                   | 3314429100 | 1   | ■             | ■   |          |
| 3  | 7  | SENSOR PRESSURE                   | 3314806000 | 1   | ■             | ■   | 0~3.5bar |
| 3  | 8  | REPLENISH PIPE ASS'Y              | 3314426000 | 1   | ■             | ■   |          |
| 3  | 9  | 3-WAY VALVE                       | 3315434900 | 1   | ■             | ■   |          |
| 3  | 10 | REPLENISH VALVE<br>BODY           | 3315433300 | 1   | ■             | ■   |          |
| 3  | 11 | REPLENISH VALVE<br>COCK           | 3312600100 | 1   | ■             | ■   |          |
| 3  | 12 | HOT WATER HEAT<br>EXCHANGER ASS'Y | 3318112400 | 1   | ■             | ■   | 16FIN    |
| 3  | 13 | RETURN UNION                      | 3318504800 | 1   | ■             | ■   |          |
| 3  | 14 | PRESSURE RELIEF<br>VALVE          | 3315404400 | 1   | ■             | ■   |          |
| 3  | 15 | WATER IN UNION                    | 3318505000 | 2   | ■             | ■   |          |
|    |    | HOT WATER OUT UNION               |            |     |               |     |          |
| 3  | 16 | SUPPLY NIPPLE                     | 3319000800 | 1   | ■             | ■   |          |
| 3  | 17 | HOT WATER NIPPLE                  | 3319001800 | 1   | ■             | ■   |          |
| 3  | 18 | SUPPLY UNION                      | 3318504900 | 1   | ■             | ■   |          |
| 3  | 19 | EXPANSION TANK<br>PIPE ASS'Y      | 3314426100 | 1   | ■             | ■   |          |
| 3  | 20 | EXPANSION TANK<br>PIPE PACKING    | 3314003600 | 1   | ■             | ■   |          |
| 3  | 21 | O-RING(P-4)                       | 3314600300 | 3   | ■             | ■   | SILICONE |
| 3  | 22 | O-RING(P-7)                       | 3314603600 | 1   | ■             | ■   | SILICONE |
| 3  | 23 | O-RING(P-8)                       | 3314602000 | 2   | ■             | ■   | SILICONE |
| 3  | 24 | O-RING(P-10)                      | 3314602300 | 2   | ■             | ■   | SILICONE |
| 3  | 25 | O-RING(P-16)                      | 3314601500 | 13  | ■             | ■   | SILICONE |
| 3  | 26 | EXPANSION PIPE<br>SPRING          | 3315101200 | 2   | ■             | ■   |          |
| 3  | 27 | SENSOR TEMP HEAT-<br>HOT-OUT      | 3314805A00 | 1   | ■             | ■   |          |

## 4. CIRCULATION PART

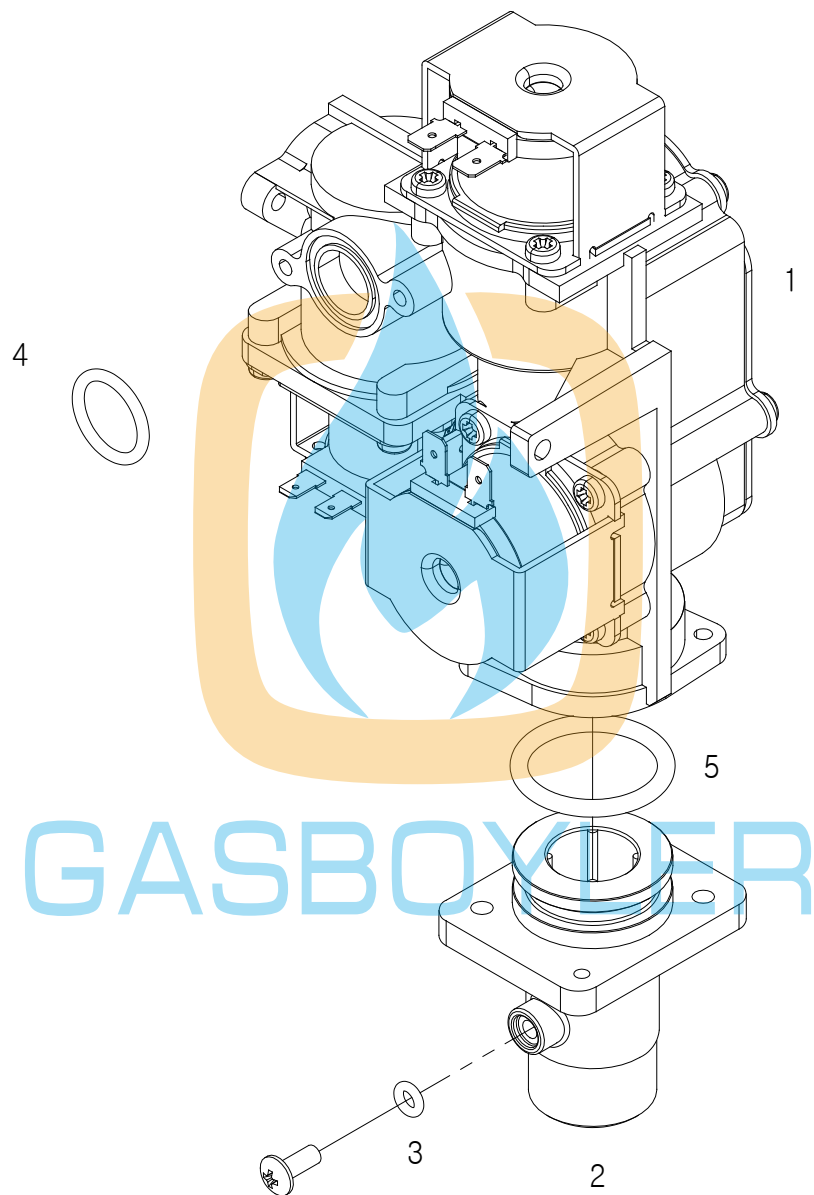


| No |    | PART NAME        | PART CODE  | PCS | APPLIED MODEL |     | REMARK   |
|----|----|------------------|------------|-----|---------------|-----|----------|
|    |    |                  |            |     | 25K           | 30K |          |
| 4  | 1  | RETURN HOSE      | 3313206900 | 1   | ■             | ■   |          |
| 4  | 2  | STRAINER BODY    | 3318002200 | 1   | ■             | ■   |          |
| 4  | 3  | STRAINER HOLDER  | 3313002300 | 1   | ■             | ■   |          |
| 4  | 4  | STRAINER PIN     | 3318001800 | 1   | ■             | ■   |          |
| 4  | 5  | AIR VENT ASS'Y   | 3310061200 | 1   | ■             | ■   |          |
| 4  | 6  | AIR VENT PACKING | 3314005900 | 1   | ■             | ■   |          |
| 4  | 7  | PUMP ASS'Y       | 3317418800 | 1   | ■             | ■   |          |
| 4  | 8  | DRAIN COCK       | 3316500100 | 1   | ■             | ■   |          |
| 4  | 9  | O-RING(P-4)      | 3314600300 | 1   | ■             | ■   | SILICONE |
| 4  | 10 | O-RING(P-25)     | 3314602500 | 1   | ■             | ■   | SILICONE |
| 4  | 11 | O-RING(P-34)     | 3314602400 | 1   | ■             | ■   | SILICONE |



# GASBOYLER

## 5. GAS SUPPLY PART



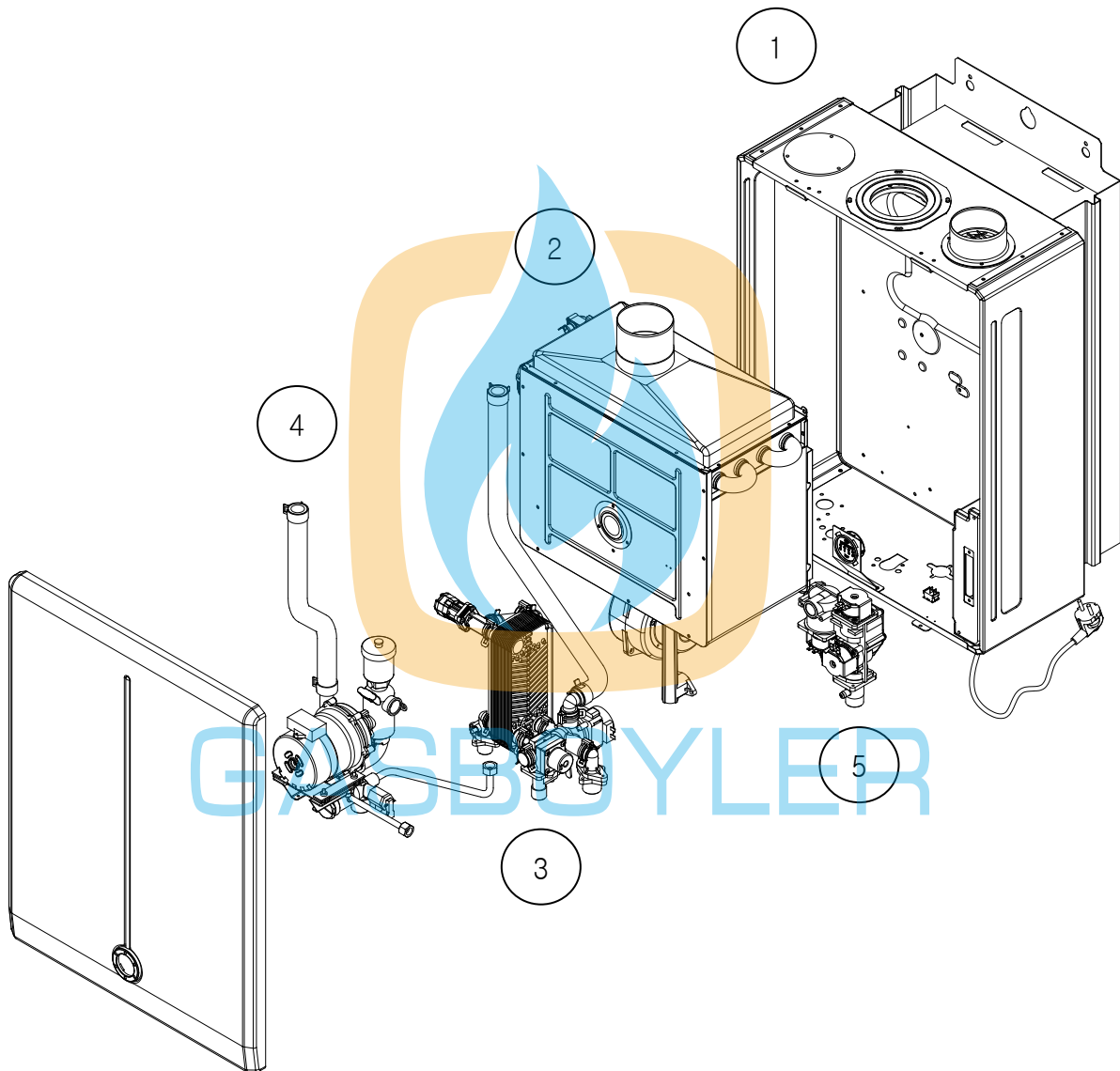
| No |   | PART NAME       | PART CODE  | PCS | APPLIED MODEL |     | REMARK   |
|----|---|-----------------|------------|-----|---------------|-----|----------|
|    |   |                 |            |     | 25K           | 30K |          |
| 5  | 1 | GAS VALVE       | 3315404700 | 1   | ■             | ■   |          |
| 5  | 2 | GAS VALVE UNION | 3318504300 | 1   | ■             | ■   |          |
| 5  | 3 | O-RING(P-4)     | 3314600300 | 1   | ■             | ■   | SILICONE |
| 5  | 4 | O-RING(P-16)    | 3314600600 | 1   | ■             | ■   | NBR      |
| 5  | 5 | O-RING(P-26)    | 3314000500 | 1   | ■             | ■   | NBR      |



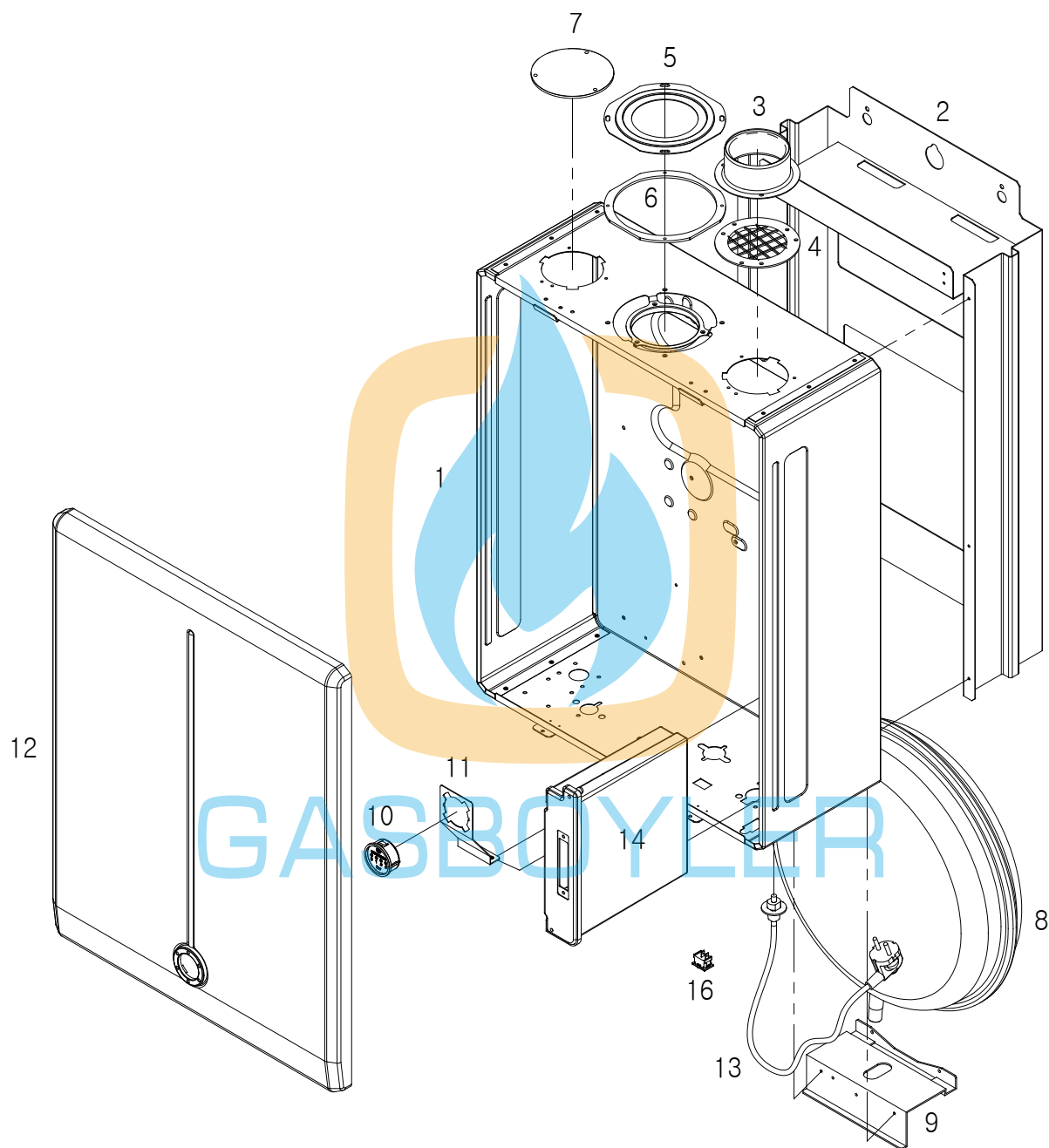
**GASBOYLER**

## DAEWOO GAS BOILER

(Model No. DGB-350MSC/400MSC)



## 1. BODY PART

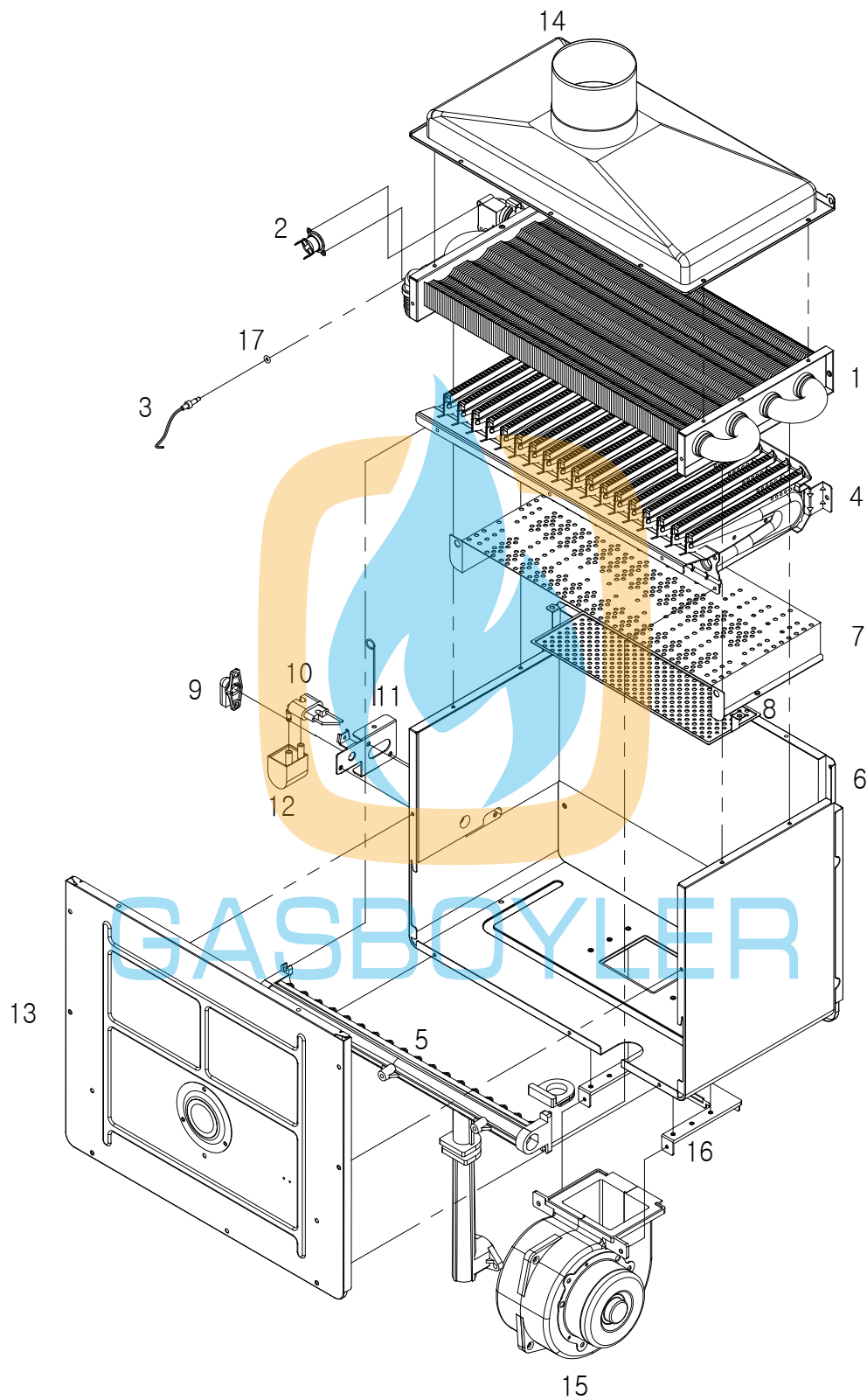


| No |    | PART NAME                 | PART CODE  | PCS | APPLIED MODEL |     | REMARK  |
|----|----|---------------------------|------------|-----|---------------|-----|---------|
|    |    |                           |            |     | 35K           | 40K |         |
| 1  | 1  | FRAME ASS'Y               | 3312214320 | 1   | ■             | ■   |         |
| 1  | 2  | FRAME REAR                | 3312203500 | 1   | ■             | ■   |         |
| 1  | 3  | DUCT IN FLUE              | 3316600600 | 1   | ■             | ■   |         |
| 1  | 4  | GRILL                     | 3312400200 | 1   | ■             | ■   |         |
| 1  | 5  | COVER IN FLUE             | 3311409600 | 1   | ■             | ■   |         |
| 1  | 6  | PACKING DUCT IN           | 3314005700 | 1   | ■             | ■   |         |
| 1  | 7  | DUCT IN COVER             | 3311406600 | 1   | ■             | ■   |         |
| 1  | 8  | EXPANSION TANK            | 4448F52002 | 1   | ■             | ■   | 8L      |
| 1  | 9  | EXPANSION TANK<br>BRACKET | 3310603300 | 1   | ■             | ■   |         |
| 1  | 10 | DISPLAY PRESSURE<br>ASSY  | 3317732500 | 1   | ■             | ■   |         |
| 1  | 11 | BRACKET PRESSURE          | 3310605600 | 1   | ■             | ■   |         |
| 1  | 12 | CABINET ASS'Y             | 3310815300 | 1   | ■             | ■   |         |
| 1  | 13 | POWER CORD                | WUK43K7356 | 1   | ■             | ■   |         |
| 1  | 14 | M-PCB WHOLE AS            | 331439D500 | 1   | ■             | ■   | DCSC-G  |
| 1  | 15 | ROOMCON WHOLE<br>ASS'Y    | 3317616B00 | 1   | ■             | ■   | DBR-W31 |
| 1  | 16 | EMERGENCY SWITCH          |            | 1   | ■             | ■   |         |

# GASBOILER



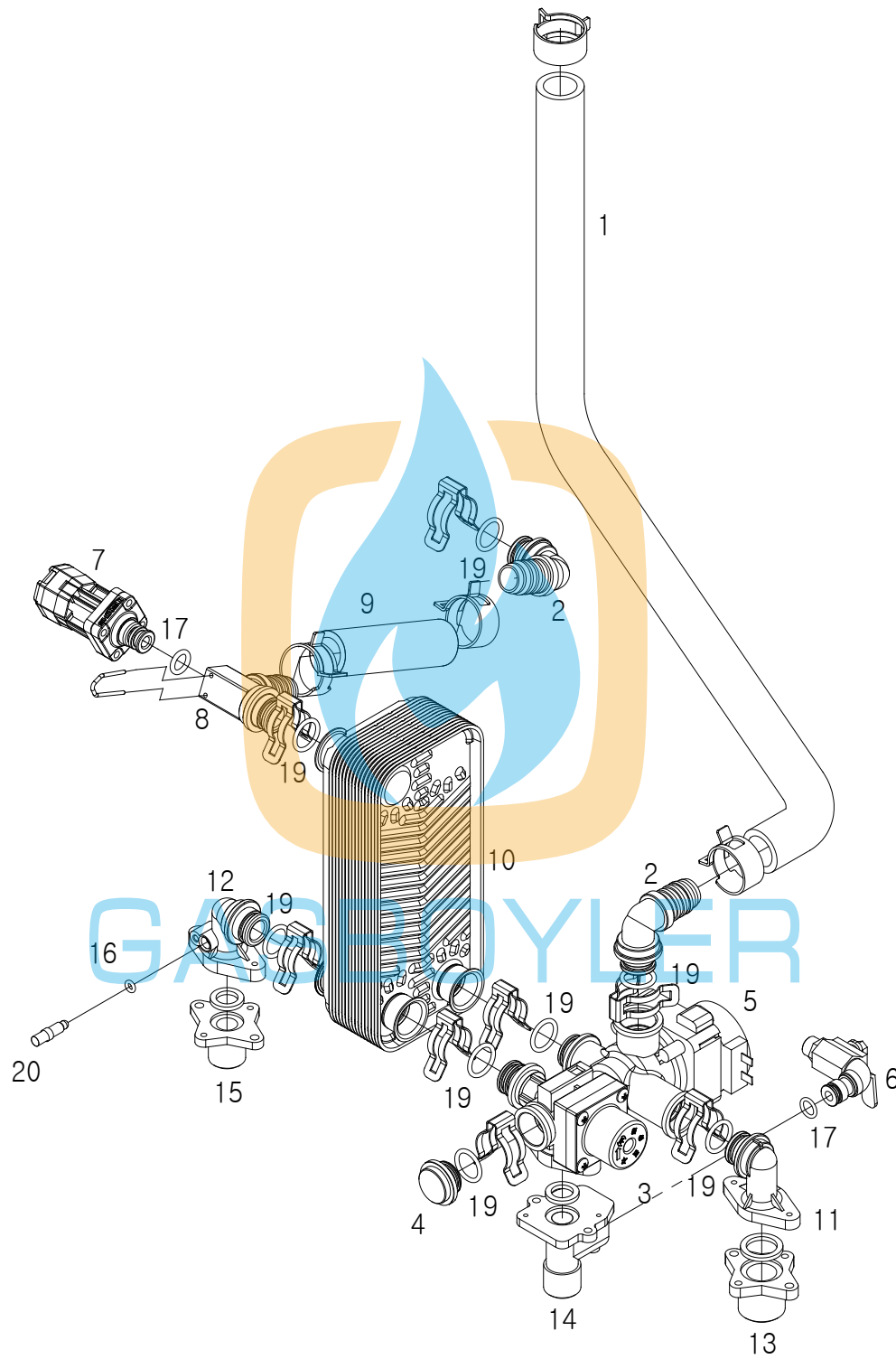
## 2. HEATING PART



| No |     | PART NAME                         | PART CODE  | PCS | APPLIED MODEL |     | REMARK     |
|----|-----|-----------------------------------|------------|-----|---------------|-----|------------|
|    |     |                                   |            |     | 35K           | 40K |            |
| 2  | 1   | MAIN HEAT EXCHANER<br>WHOLE ASS'Y | 3318113020 | 1   | ■             | ■   |            |
| 2  | 2   | THERMOSTAT                        | 3317904500 | 1   | ■             | ■   | AUTO 95°C  |
| 2  | 3   | SENSOR TEMP HEAT-<br>HOT-OUT      | 3314805A00 | 1   | ■             | ■   |            |
| 2  | 4   | BURNER ASS'Y                      | 3316124600 | 1   | ■             | ■   |            |
| 2  | 5   | BURNER MANIFOLD<br>ASS'Y          | 3316124700 | 1   | ■             | ■   |            |
| 2  | 5-1 | NOZZLE                            | 3317303200 | 18  | ■             | ■   | Φ1.55(LNG) |
| 2  | 6   | CHAMBER SIDE ASS'Y                | 3310064000 | 1   | ■             | ■   |            |
| 2  | 7   | DISTRIBUTE UP                     | 3318402400 | 1   | ■             | ■   |            |
| 2  | 8   | DISTRIBUTE LOW                    | 3314600300 | 1   | ■             | ■   |            |
| 2  | 9   | FLAME SENSOR                      | 3314805500 | 1   | ■             | ■   |            |
| 2  | 10  | IGNITOR PLUG                      | 3317101100 | 1   | ■             | ■   |            |
| 2  | 11  | SPARK HOLDER                      | 3313001900 | 1   | ■             | ■   |            |
| 2  | 12  | IGNITOR TRANS                     | 3317102200 | 1   | ■             | ■   |            |
| 2  | 13  | CHAMBER FRONT<br>ASS'Y            | 3316315000 | 1   | ■             | ■   |            |
| 2  | 14  | HOOD ASS'Y                        | 3310059910 | 1   | ■             | ■   |            |
| 2  | 15  | FAN ASS'Y                         | 3311852300 | 1   | ■             | ■   |            |
| 2  | 16  | FAN BRACKET                       | 3310605100 | 1   | ■             | ■   |            |
| 2  | 17  | O-RING(P-4)                       | 3314600300 | 1   | ■             | ■   | SILICONE   |

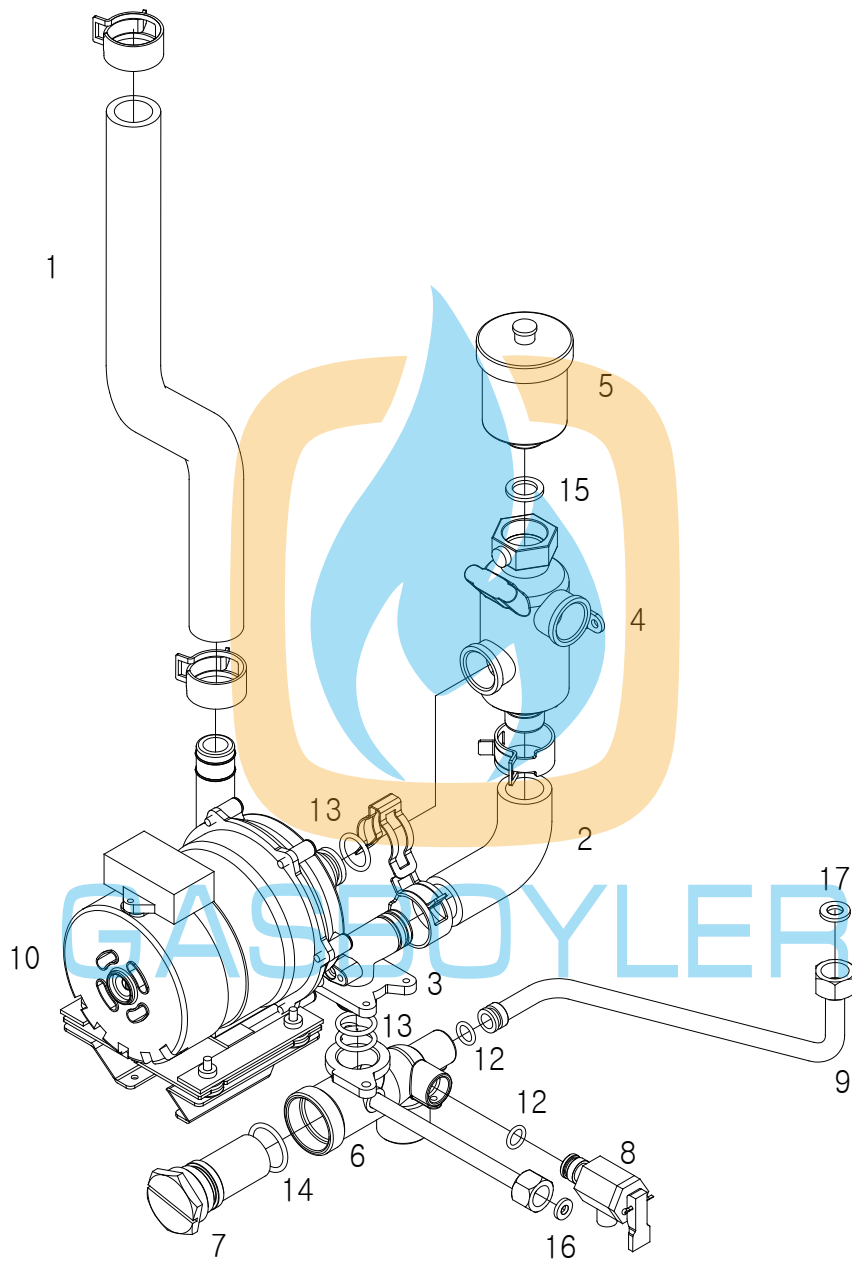
# GASBOYLER

### 3. HOT WATER HEATING PART



| No |    | PART NAME                         | PART CODE  | PCS | APPLIED MODEL |     | REMARK   |
|----|----|-----------------------------------|------------|-----|---------------|-----|----------|
|    |    |                                   |            |     | 35K           | 40K |          |
| 3  | 1  | SUPPLY HOSE                       | 3313204500 | 1   | ■             | ■   |          |
| 3  | 2  | HOSE NIPPLE                       | 3318400800 | 2   | ■             | ■   |          |
| 3  | 3  | FLOW SWITCH                       | 3317904600 | 1   | ■             | ■   |          |
| 3  | 4  | FLOW SWITCH CAP                   | 3310901000 | 1   | ■             | ■   |          |
| 3  | 5  | 3-WAY VALVE                       | 3315434900 | 1   | ■             | ■   |          |
| 3  | 6  | REPLENISH VALVE<br>ASSY           | 3315433200 | 1   | ■             | ■   |          |
| 3  | 7  | SENSOR PRESSURE                   | 3314806100 | 1   | ■             | ■   | 0~3.5bar |
| 3  | 8  | NIPPLE SAFETY FLOW                | 3319001310 | 1   | ■             | ■   |          |
| 3  | 9  | CONNECT HOSE                      | 3313206000 | 1   | ■             | ■   |          |
| 3  | 10 | HOT WATER HEAT<br>EXCHANGER ASS'Y | 3318112100 | 1   | ■             | ■   | 18FIN    |
| 3  | 11 | SUPPLY NIPPLE                     | 3318401400 | 1   | ■             | ■   |          |
| 3  | 12 | HOT WATER NIPPLE                  | 3319001900 | 1   | ■             | ■   |          |
| 3  | 13 | SUPPLY UNION                      | 3318503800 | 1   | ■             | ■   |          |
| 3  | 14 | WATER IN UNION                    | 3318503500 | 1   | ■             | ■   |          |
| 3  | 15 | HOT WATER OUT<br>UNION            | 3318501900 | 1   | ■             | ■   |          |
| 3  | 16 | O-RING(P-4)                       | 3314600300 | 1   | ■             | ■   | SILICONE |
| 3  | 17 | O-RING(P-10)                      | 3314602300 | 1   | ■             | ■   | SILICONE |
| 3  | 18 | O-RING(P-10A)                     |            | 1   | ■             | ■   | SILICONE |
| 3  | 19 | O-RING(P-16)                      | 3314601500 | 8   | ■             | ■   | SILICONE |
| 3  | 20 | SENSOR TEMP HEAT-<br>HOT-OUT      | 3314805A00 | 1   | ■             | ■   |          |

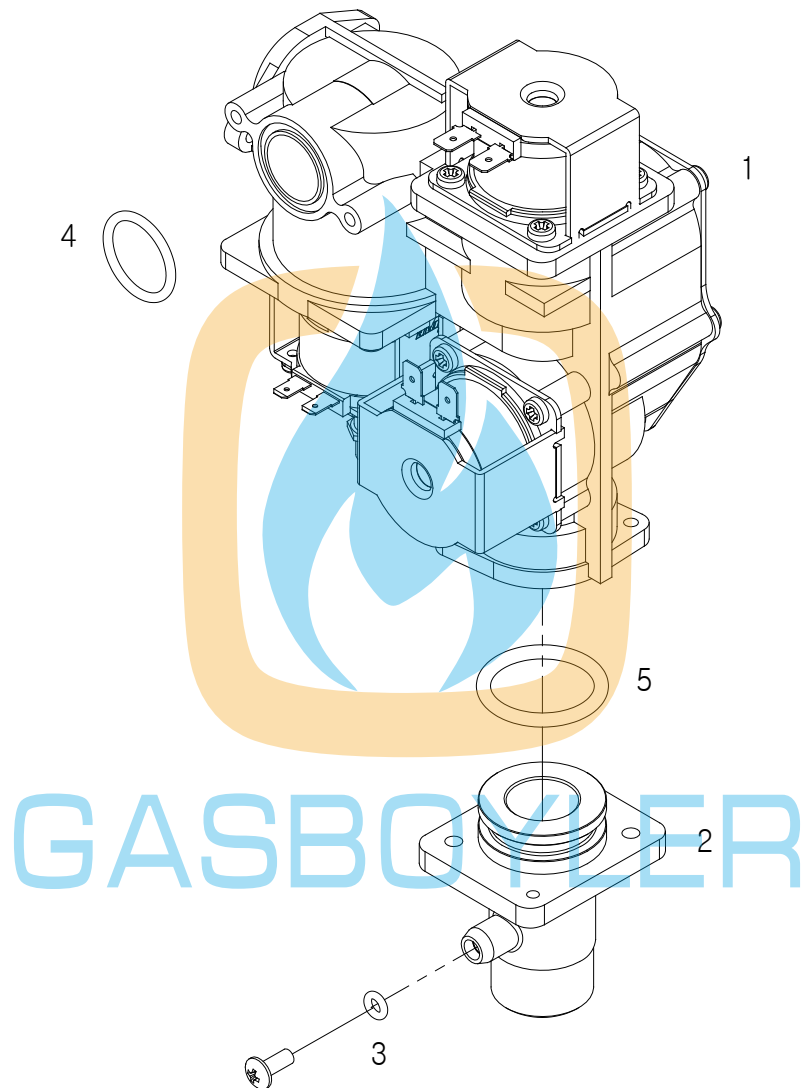
## 4. CIRCULATION PART



| No |    | PART NAME               | PART CODE  | PCS | APPLIED MODEL |     | REMARK   |
|----|----|-------------------------|------------|-----|---------------|-----|----------|
|    |    |                         |            |     | 35K           | 40K |          |
| 4  | 1  | RETURN HOSE             | 3313204400 | 1   | ■             | ■   |          |
| 4  | 2  | PUMP IN HOSE            | 3313204700 | 1   | ■             | ■   |          |
| 4  | 3  | RETURN UNION            | 3318503610 | 1   | ■             | ■   |          |
| 4  | 4  | AIR VENT BODY ASS'Y     | 3310401000 | 1   | ■             | ■   |          |
| 4  | 5  | AIR VENT ASS'Y          | 3310061200 | 1   | ■             | ■   |          |
| 4  | 6  | STRAINER BODY           | 3310401450 | 1   | ■             | ■   |          |
| 4  | 7  | STRAINER CAP            | 3318007000 | 1   | ■             | ■   |          |
| 4  | 8  | PRESSURE RELIEF VALVE   | 3315404400 | 1   | ■             | ■   |          |
| 4  | 9  | EXPANSION TANK PIPE     | 3314424400 | 1   | ■             | ■   |          |
| 4  | 10 | PUMP ASS'Y              | 3317413700 | 1   | ■             | ■   |          |
| 4  | 11 | O-RING(P-4)             | 3314600300 | 1   | ■             | ■   | SILICONE |
| 4  | 12 | O-RING(P-10)            | 3314602300 | 2   | ■             | ■   | SILICONE |
| 4  | 13 | O-RING(P-16)            | 3314601500 | 3   | ■             | ■   | SILICONE |
| 4  | 14 | O-RING(P-22)            | 3314601000 | 1   | ■             | ■   | SILICONE |
| 4  | 15 | AIR VENT PACKING        | 3314005900 | 1   | ■             | ■   |          |
| 4  | 16 | REPLENISH VALVE PACKING | 3314005600 | 1   | ■             | ■   |          |
| 4  | 17 | EXPANSION TANK PACKING  | 3314003600 | 1   | ■             | ■   |          |

# GASBOYLER

## 5. GAS SUPPLY PART



| No |   | PART NAME       | PART CODE  | PCS | APPLIED MODEL |     | REMARK   |
|----|---|-----------------|------------|-----|---------------|-----|----------|
|    |   |                 |            |     | 35K           | 40K |          |
| 5  | 1 | GAS VALVE       | 3315431500 | 1   | ■             | ■   |          |
| 5  | 2 | GAS VALVE UNION | 3318504300 | 1   | ■             | ■   |          |
| 5  | 3 | O-RING(P-4)     | 3314600300 | 1   | ■             | ■   | SILICONE |
| 5  | 4 | O-RING(P-20)    | 3314602700 | 1   | ■             | ■   | NBR      |
| 5  | 5 | O-RING(P-26)    | 3314000500 | 1   | ■             | ■   | NBR      |



**GASBOYLER**



## **Content**

1. Gas Boiler(Specifications)
2. General Description
3. Appearance of boiler
  - 3.1 DGB-100MSC/130MSC/160MSC/200MSC
  - 3.2 DGB-250MSC/300MSC/350MSC/400MSC
  - 3.3 Installation
4. Heating & Hot Water System
  - 4.1 Heating System(DGB-100MSC/130MSC/160MSC/200MSC)
  - 4.2 Hot Water System(DGB-100MSC/130MSC/160MSC/200MSC)
  - 4.3 Heating System(DGB-250MSC/300MSC/350MSC/400MSC)
  - 4.4 Hot Water System(DGB-250MSC/300MSC/350MSC/400MSC)



**GASBOYLER**

## 1. Gas Boiler(Specifications)

Table 1.1

| Model No.                        |                                        |                | Standard Type                                         |                      |
|----------------------------------|----------------------------------------|----------------|-------------------------------------------------------|----------------------|
|                                  |                                        |                | DGB-100MSC                                            | DGB-130MSC           |
| Type                             |                                        |                | Instantaneous Gas fired boiler                        |                      |
| Use                              |                                        |                | Central heating/ Domestic hot water                   |                      |
| Gas control type                 |                                        |                | Proportional gas control system                       |                      |
| Heating circulation type         |                                        |                | Hermetic tank type(Using for radiator heating system) |                      |
| Heating output(max.)             |                                        |                | 11.6kW(10,000kcal/h)                                  | 15.1kW(13,000kcal/h) |
| Range of Heating output          |                                        |                | 7.0kW~11.6kW                                          | 10.5kW~15.1kW        |
| Hot water output(max.)           |                                        |                | 18.6kW(16,000kcal/h)                                  | 18.6kW(16,000kcal/h) |
| Range of Hot water output        |                                        |                | 7.0kW~18.6kW                                          | 10.5kW~18.6kW        |
| Hot water supply                 |                                        | Increased dT75 | 10.7L/min                                             |                      |
|                                  |                                        | Increased dT40 | 6.7L/min                                              |                      |
| Min. water pressure on hot water |                                        |                | 20kPa(0.2bar)                                         |                      |
| Range of gas pressure            |                                        |                | 1~2.5kPa(10~25mbar)                                   |                      |
| Gas input(max.)                  | Heating                                | LPG            | 12.7kW(1.0kg/h)                                       | 16.8kW(1.33kg/h)     |
|                                  |                                        | LNG            | 12.7kW(1.14m³/h)                                      | 16.8kW(1.52m³/h)     |
|                                  | Hot water                              | LPG            | 21.1kW(1.67kg/h)                                      |                      |
|                                  |                                        | LNG            | 21.1kW(1.9m³/h)                                       |                      |
| Heating efficiency               |                                        |                | 91%                                                   | 91%                  |
| Power supply                     |                                        |                | AC 220V 50Hz                                          |                      |
| Electrical input                 |                                        |                | 110W                                                  | 100W                 |
| Size(WxHxD)                      |                                        |                | 490 x 626 x 242mm                                     |                      |
| Weight                           |                                        |                | 26Kg                                                  | 27Kg                 |
| Duct diameter                    |                                        |                | Air inlet 110mm/Gas flue 80mm                         |                      |
| Piping                           | Gas                                    |                | 15mm(1/2")                                            |                      |
|                                  | Water in/<br>Hot water out             |                | 15mm(1/2")                                            |                      |
|                                  | Heating water in/<br>Heating water out |                | 20mm(3/4")                                            |                      |

Table 1.2

| Model No.                        |                                        |                | Standard Type                                         |                      |
|----------------------------------|----------------------------------------|----------------|-------------------------------------------------------|----------------------|
|                                  |                                        |                | DGB-160MSC                                            | DGB-200MSC           |
| Type                             |                                        |                | Instantaneous Gas fired boiler                        |                      |
| Use                              |                                        |                | Central heating/ Domestic hot water                   |                      |
| Gas control type                 |                                        |                | Proportional gas control system                       |                      |
| Heating circulation type         |                                        |                | Hermetic tank type(Using for radiator heating system) |                      |
| Heating output(max.)             |                                        |                | 18.6kW(16,000kcal/h)                                  | 23.3kW(20,000kcal/h) |
| Range of Heating output          |                                        |                | 10.5kW~18.6kW                                         | 10.5kW~23.3kW        |
| Hot water output(max.)           |                                        |                | 23.3kW(20,000kcal/h)                                  |                      |
| Range of Hot water output        |                                        |                | 10.5kW~23.3kW                                         |                      |
| Hot water supply                 |                                        | Increased dT75 | 13.3L/min                                             |                      |
|                                  |                                        | Increased dT40 | 8.3L/min                                              |                      |
| Min. water pressure on hot water |                                        |                | 20kPa(0.2bar)                                         |                      |
| Range of gas pressure            |                                        |                | 1~2.5kPa(10~25mbar)                                   |                      |
| Gas input(max.)                  | Heating                                | LPG            | 21.1kW(1.67kg/h)                                      | 26.5kW(2.1kg/h)      |
|                                  |                                        | LNG            | 21.1kW(1.9m³/h)                                       | 26.5kW(2.4m³/h)      |
|                                  | Hot water                              | LPG            | 26.5kW(2.1kg/h)                                       |                      |
|                                  |                                        | LNG            | 26.5kW(2.4m³/h)                                       |                      |
| Heating efficiency               |                                        |                | 91%                                                   | 91%                  |
| Power supply                     |                                        |                | AC 220V 50Hz                                          |                      |
| Electrical input                 |                                        |                | 105W                                                  |                      |
| Size(WxHxD)                      |                                        |                | 490 x 626 x 242mm                                     |                      |
| Weight                           |                                        |                | 27Kg                                                  |                      |
| Duct diameter                    |                                        |                | Air inlet 110mm / Gas flue 80mm                       |                      |
| Piping                           | Gas                                    |                | 15mm(1/2")                                            |                      |
|                                  | Water in/<br>Hot water out             |                | 15mm(1/2")                                            |                      |
|                                  | Heating water in/<br>Heating water out |                | 20mm(3/4")                                            |                      |

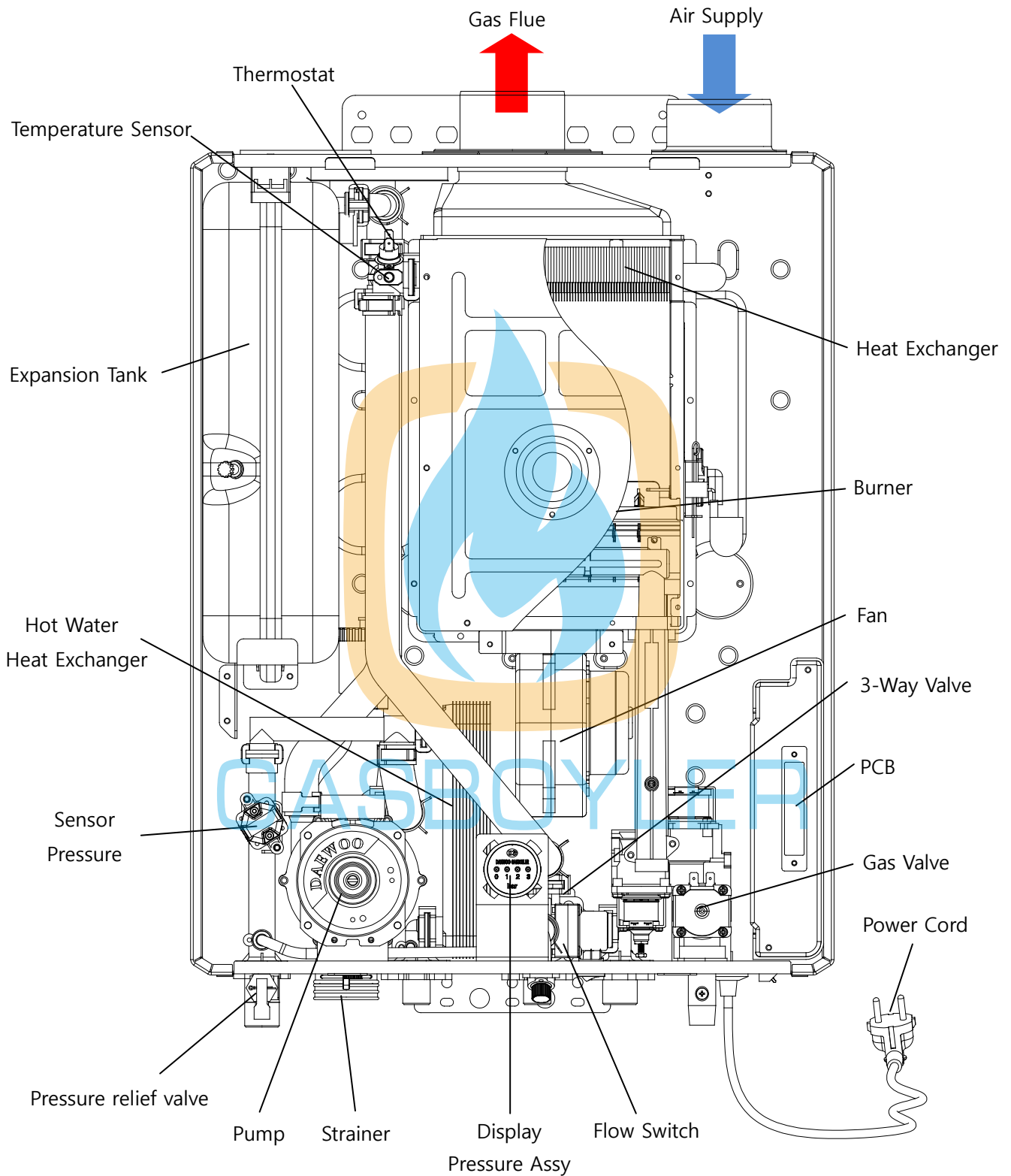
Table 1.3

| Model No.                        |                                        |                | Standard Type                                         |                      |
|----------------------------------|----------------------------------------|----------------|-------------------------------------------------------|----------------------|
|                                  |                                        |                | DGB-250MSC                                            | DGB-300MSC           |
| Type                             |                                        |                | Instantaneous Gas fired boiler                        |                      |
| Use                              |                                        |                | Central heating/ Domestic hot water                   |                      |
| Gas control type                 |                                        |                | Proportional gas control system                       |                      |
| Heating circulation type         |                                        |                | Hermetic tank type(Using for radiator heating system) |                      |
| Heating output(max.)             |                                        |                | 29.1kW(25,000kcal/h)                                  | 34.9kW(30,000kcal/h) |
| Range of Heating output          |                                        |                | 15.1kW~29.1kW                                         | 15.1kW~34.9kW        |
| Hot water output(max.)           |                                        |                | 29.1kW(25,000kcal/h)                                  | 34.9kW(30,000kcal/h) |
| Range of Hot water output        |                                        |                | 15.1kW~29.1kW                                         | 15.1kW~34.9kW        |
| Hot water supply                 |                                        | Increased dT75 | 16.7L/min                                             | 20.0L/min            |
|                                  |                                        | Increased dT40 | 10.4L/min                                             | 12.5L/min            |
| Min. water pressure on hot water |                                        |                | 20kPa(0.2bar)                                         |                      |
| Range of gas pressure            |                                        |                | 1~2.5kPa(10~25mbar)                                   |                      |
| Gas input(max.)                  | Heating                                | LPG            | 32.8kW(2.6kg/h)                                       | 37.8kW(3.0kg/h)      |
|                                  |                                        | LNG            | 32.8kW(2.97m³/h)                                      | 37.8kW(3.43m³/h)     |
|                                  | Hot water                              | LPG            | 32.8kW(2.6kg/h)                                       | 37.8kW(3.0kg/h)      |
|                                  |                                        | LNG            | 32.8kW(2.97m³/h)                                      | 37.8kW(3.43m³/h)     |
| Heating efficiency               |                                        |                | 91%                                                   | 91%                  |
| Power supply                     |                                        |                | AC 220V 50Hz                                          |                      |
| Electrical input                 |                                        |                | 105W                                                  | 110W                 |
| Size(WxHxD)                      |                                        |                | 490 x 626 x 369mm                                     |                      |
| Weight                           |                                        |                | 33Kg                                                  |                      |
| Duct diameter                    |                                        |                | Air inlet 110mm / Gas flue 80mm                       |                      |
| Piping                           | Gas                                    |                | 20mm(3/4")                                            |                      |
|                                  | Water in/<br>Hot water out             |                | 15mm(1/2")                                            |                      |
|                                  | Heating water in/<br>Heating water out |                | 20mm(3/4")                                            |                      |

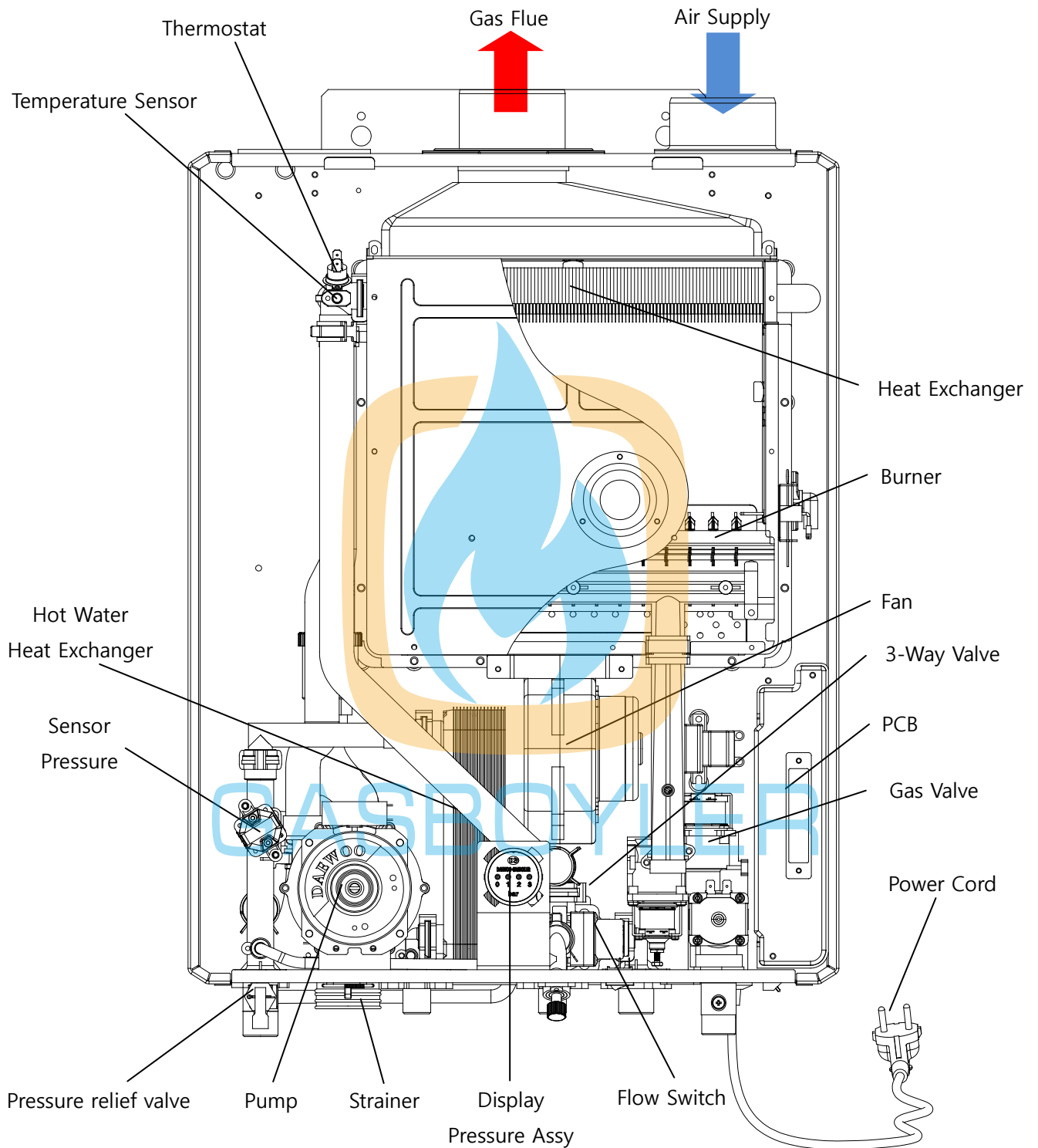
Table 1.4

| Model No.                        |                                        |                | Standard Type                                         |                      |
|----------------------------------|----------------------------------------|----------------|-------------------------------------------------------|----------------------|
|                                  |                                        |                | DGB-350MSC                                            | DGB-400MSC           |
| Type                             |                                        |                | Instantaneous Gas fired boiler                        |                      |
| Use                              |                                        |                | Central heating/ Domestic hot water                   |                      |
| Gas control type                 |                                        |                | Proportional gas control system                       |                      |
| Heating circulation type         |                                        |                | Hermetic tank type(Using for radiator heating system) |                      |
| Heating output(max.)             |                                        |                | 40.7kW(35,000kcal/h)                                  | 46.5kW(40,000kcal/h) |
| Range of Heating output          |                                        |                | 16.9kW~40.7kW                                         | 16.9kW~46.5kW        |
| Hot water output(max.)           |                                        |                | 40.7kW(35,000kcal/h)                                  | 46.5kW(40,000kcal/h) |
| Range of Hot water output        |                                        |                | 16.9kW~40.7kW                                         | 16.9kW~46.5kW        |
| Hot water supply                 |                                        | Increased dT75 | 23.3L/min                                             | 26.7L/min            |
|                                  |                                        | Increased dT40 | 14.6L/min                                             | 16.7L/min            |
| Min. water pressure on hot water |                                        |                | 20kPa(0.2bar)                                         |                      |
| Range of gas pressure            |                                        |                | 1~2.5kPa(10~25mbar)                                   |                      |
| Gas input(max.)                  | Heating                                | LPG            | 41.8kW(3.3kg/h)                                       | 46.7kW(3.7kg/h)      |
|                                  |                                        | LNG            | 42.0kW(3.76m³/h)                                      | 46.7kW(4.23m³/h)     |
|                                  | Hot water                              | LPG            | 41.8kW(3.3kg/h)                                       | 46.7kW(3.7kg/h)      |
|                                  |                                        | LNG            | 42.0kW(3.76m³/h)                                      | 46.7kW(4.23m³/h)     |
| Heating efficiency               |                                        |                | 91%                                                   | 91%                  |
| Power supply                     |                                        |                | AC 220V 50Hz                                          |                      |
| Electrical input                 |                                        |                | 130W                                                  | 140W                 |
| Size(WxHxD)                      |                                        |                | 490 x 626 x 369mm                                     |                      |
| Weight                           |                                        |                | 35Kg                                                  |                      |
| Duct diameter                    |                                        |                | Air inlet 110mm / Gas flue 80mm                       |                      |
| Piping                           | Gas                                    |                | 20mm(3/4")                                            |                      |
|                                  | Water in/<br>Hot water out             |                | 15mm(1/2")                                            |                      |
|                                  | Heating water in/<br>Heating water out |                | 20mm(3/4")                                            |                      |

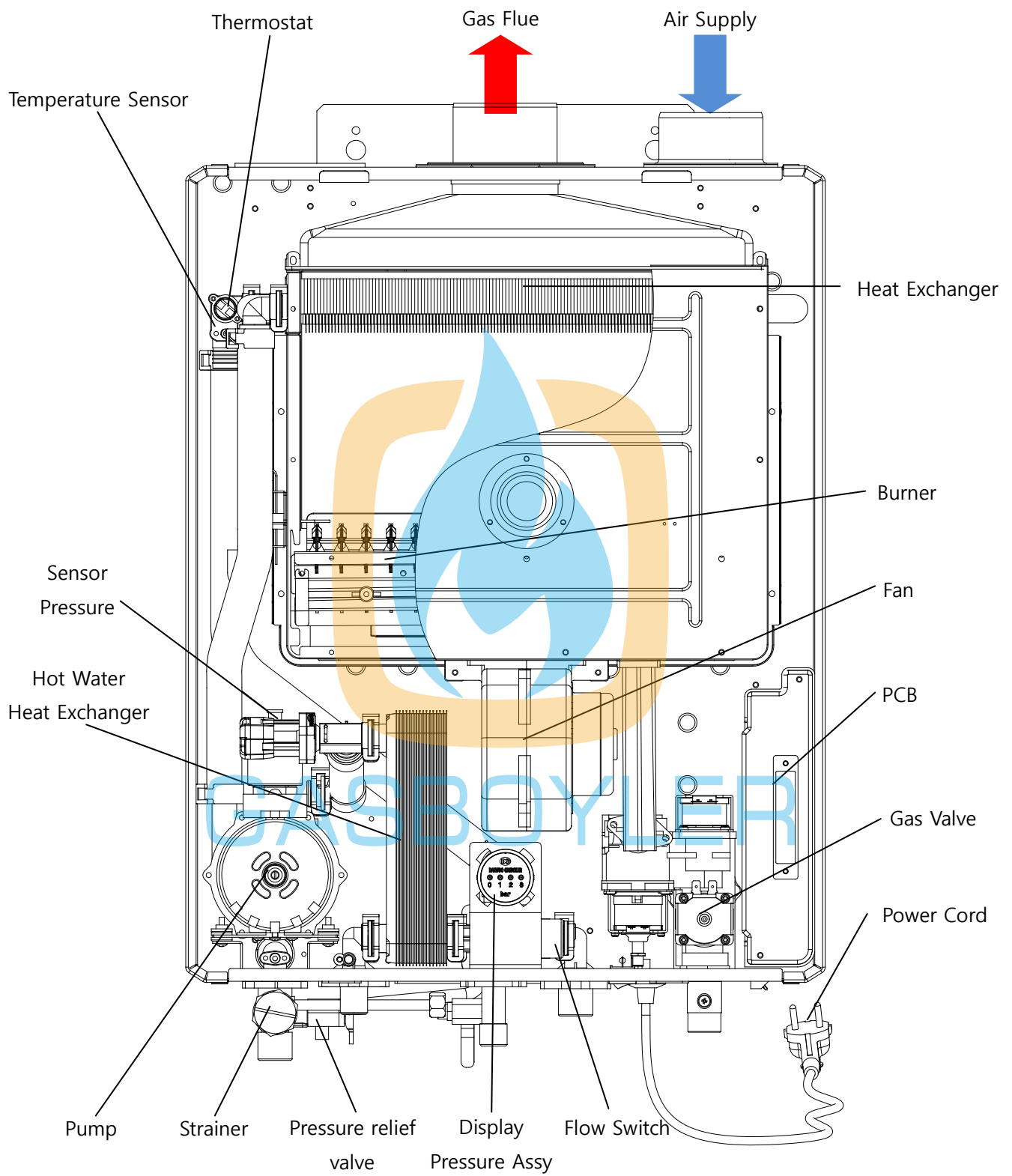
## 2. General Description



Pic. 2.1 DGB-100MSC/130MSC/160MSC/200MSC



Pic. 2.2 DGB-250MSC/300MSC

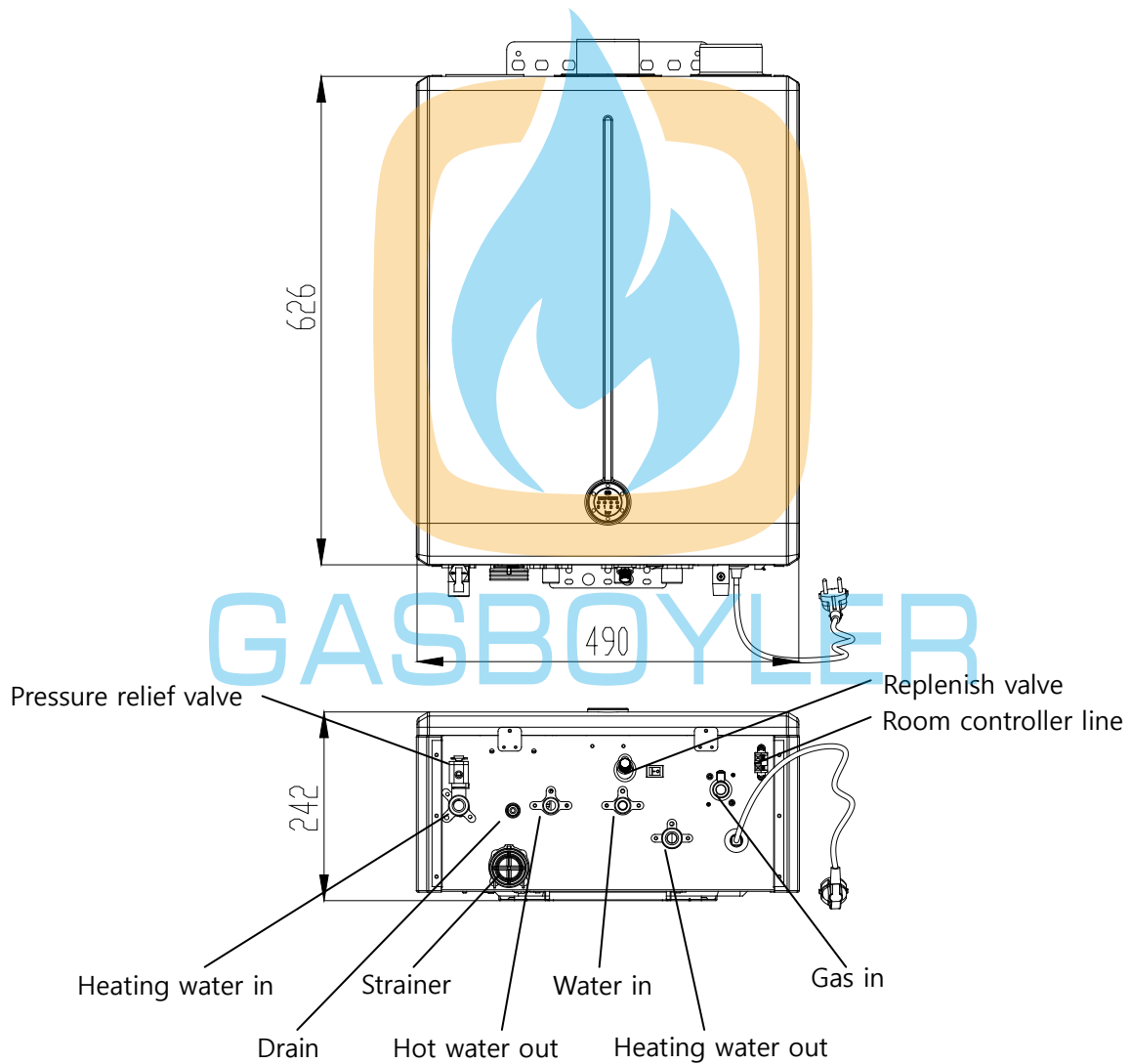
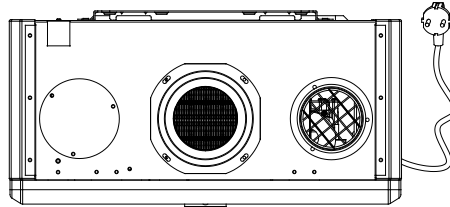


Pic. 2.3 DGB-350MSC/400MSC

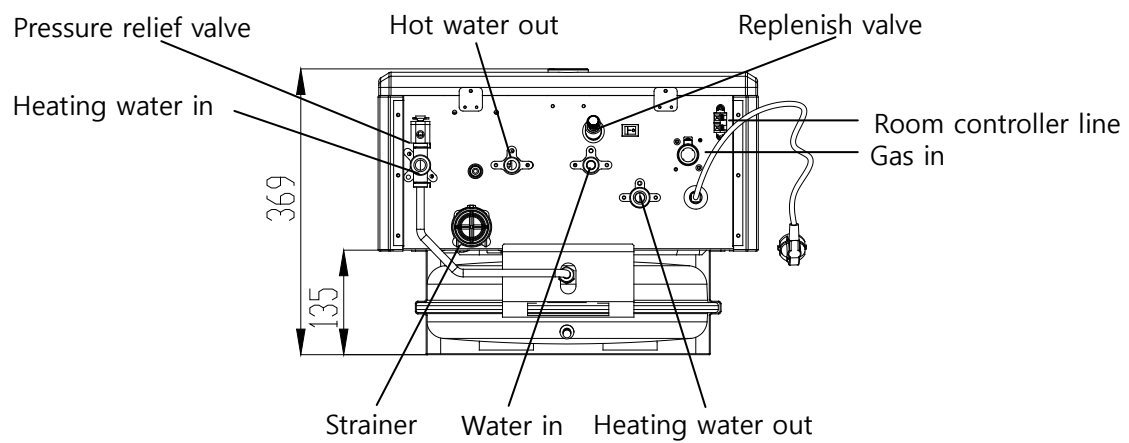
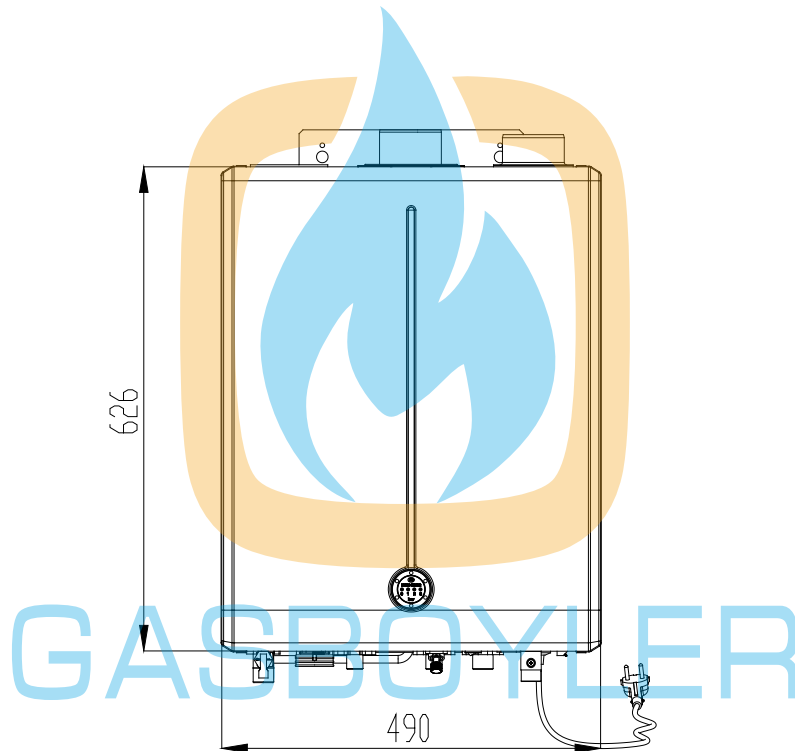
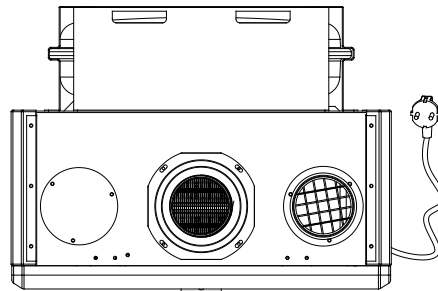


### 3. Appearance of boiler

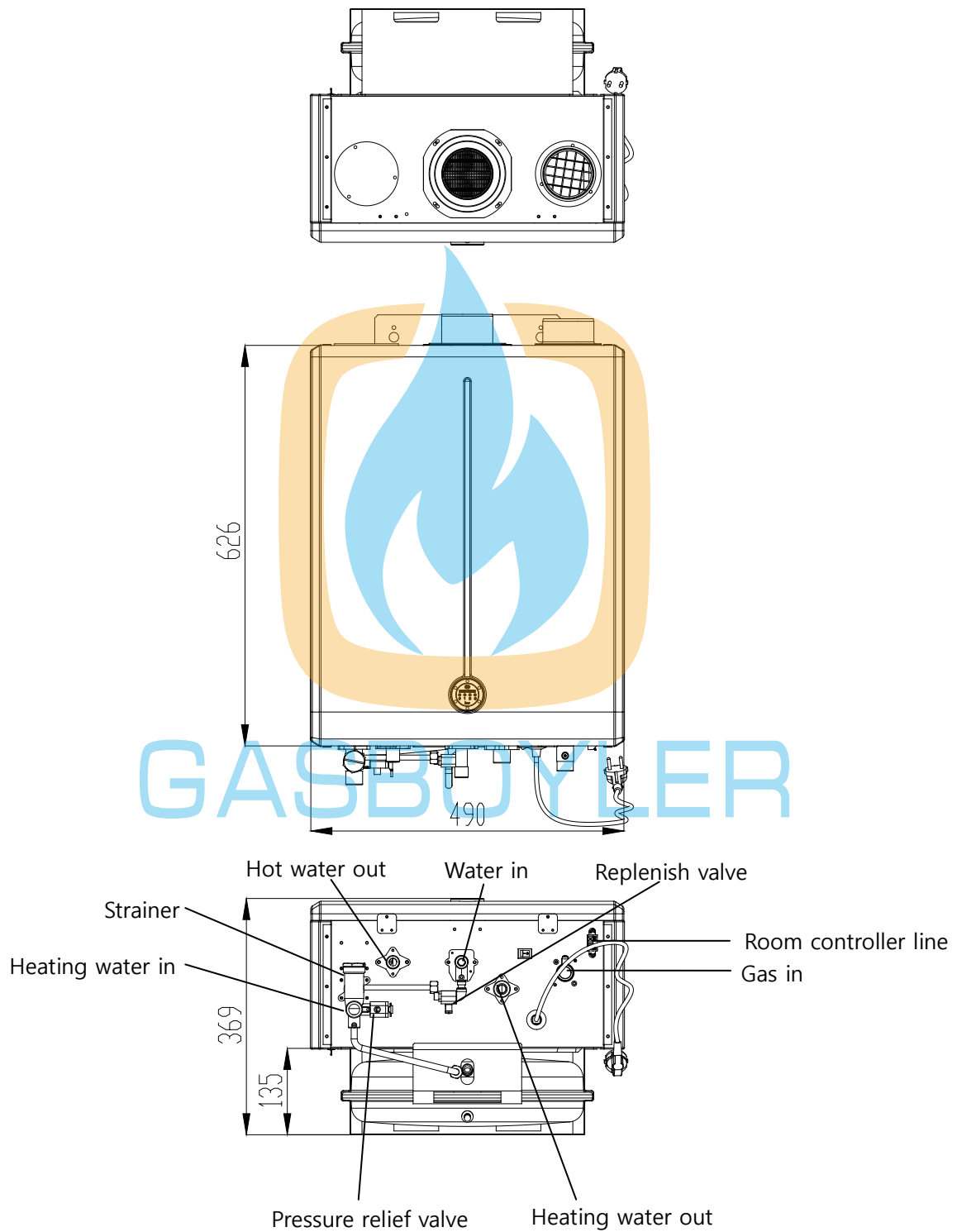
3.1. Model : DGB-100MSC/130MSC/160MSC/200MSC



### 3.2. Model : DGB-250MSC/300MSC



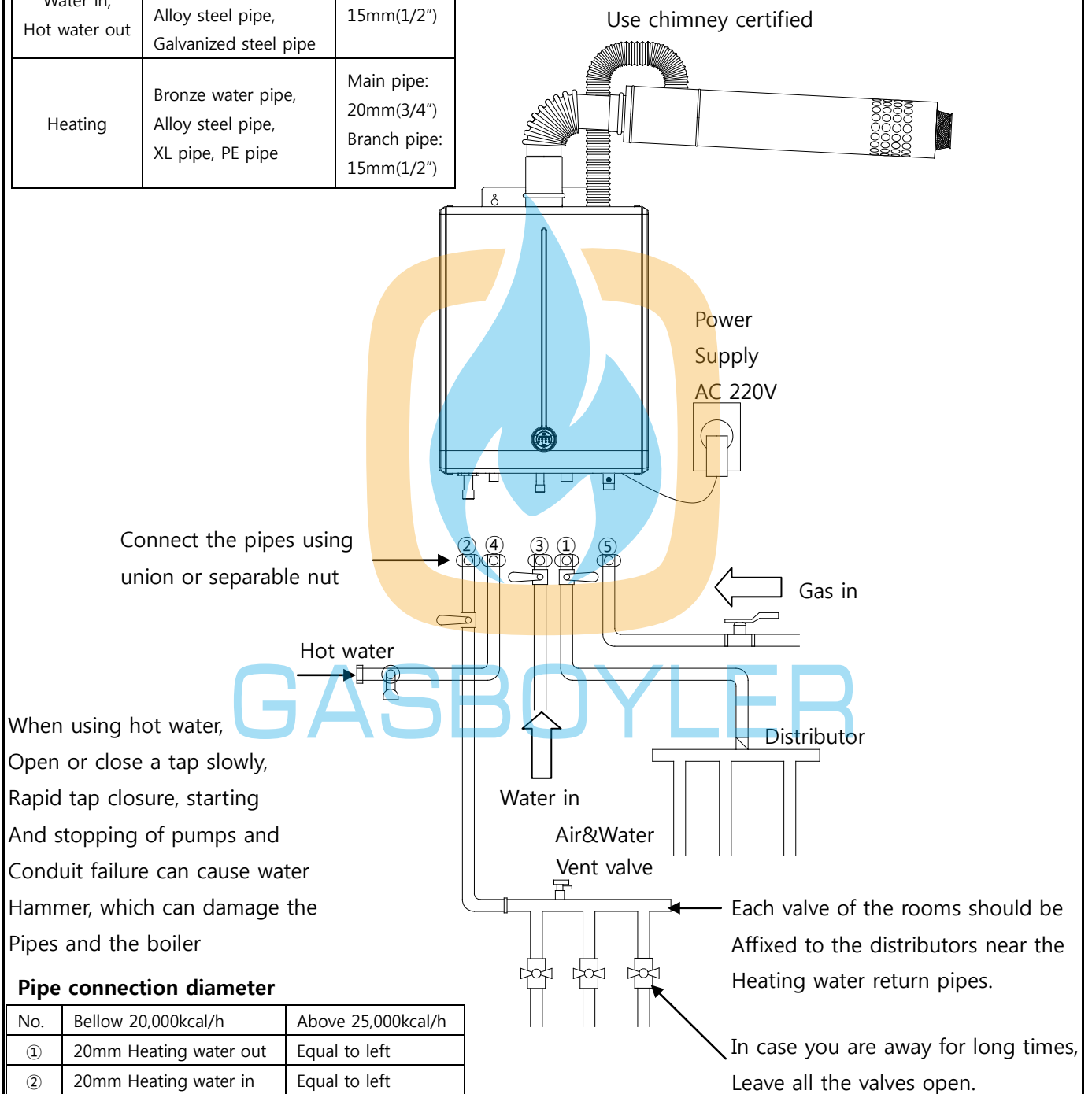
### 3.3. Model : DGB-350MSC/400MSC



### 3.4 Installation

#### Components & Size

| Sort                       | Components                                                         | Size                                                   |
|----------------------------|--------------------------------------------------------------------|--------------------------------------------------------|
| Gas                        | Metal pipes, Gasware,<br>Metal flexible hose<br>tested & certified | 15mm(1/2"),<br>20mm(3/4")                              |
| Water in,<br>Hot water out | Bronze water pipe,<br>Alloy steel pipe,<br>Galvanized steel pipe   | 15mm(1/2")                                             |
| Heating                    | Bronze water pipe,<br>Alloy steel pipe,<br>XL pipe, PE pipe        | Main pipe:<br>20mm(3/4")<br>Branch pipe:<br>15mm(1/2") |



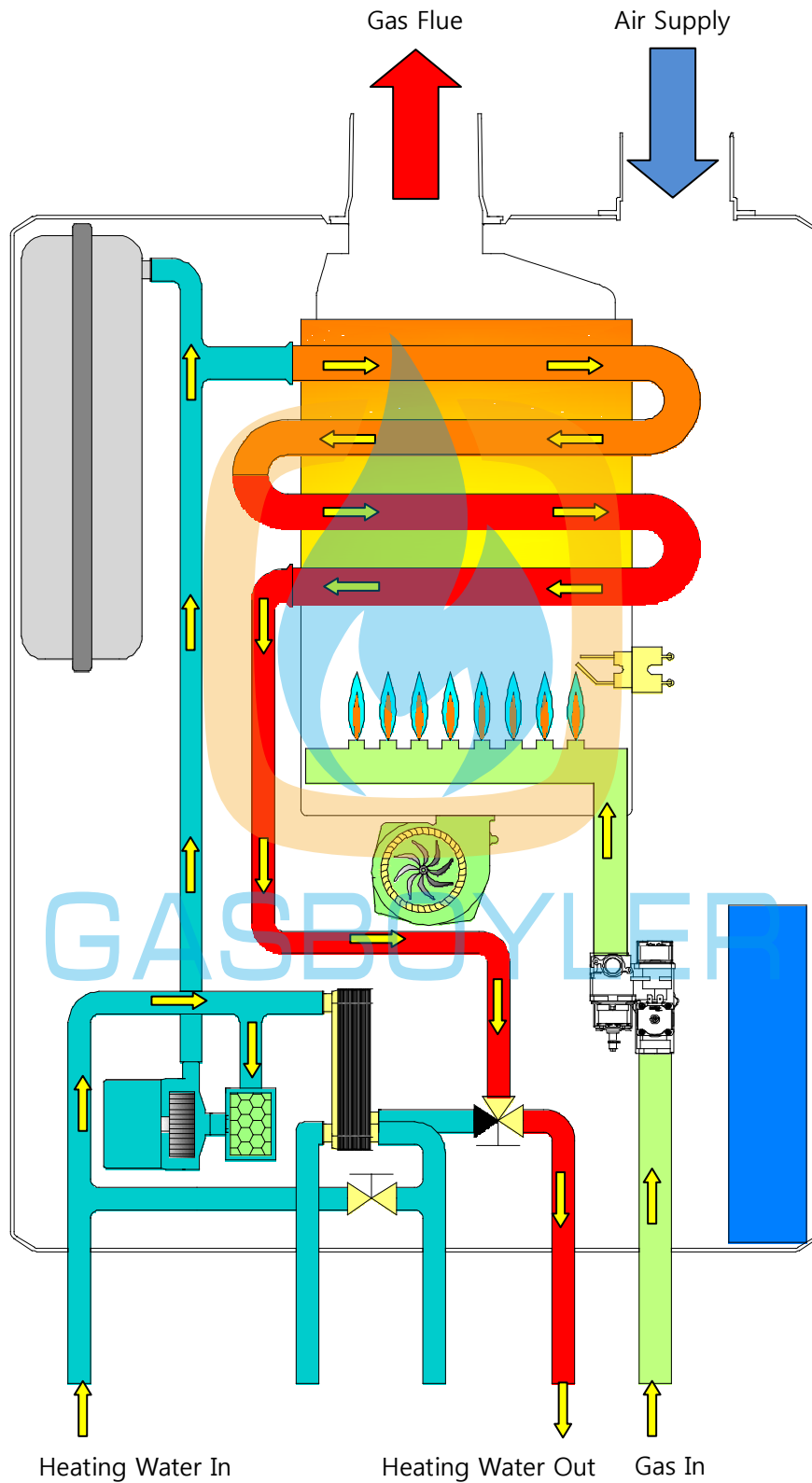
When using hot water,  
Open or close a tap slowly,  
Rapid tap closure, starting  
And stopping of pumps and  
Conduit failure can cause water  
Hammer, which can damage the  
Pipes and the boiler

#### Pipe connection diameter

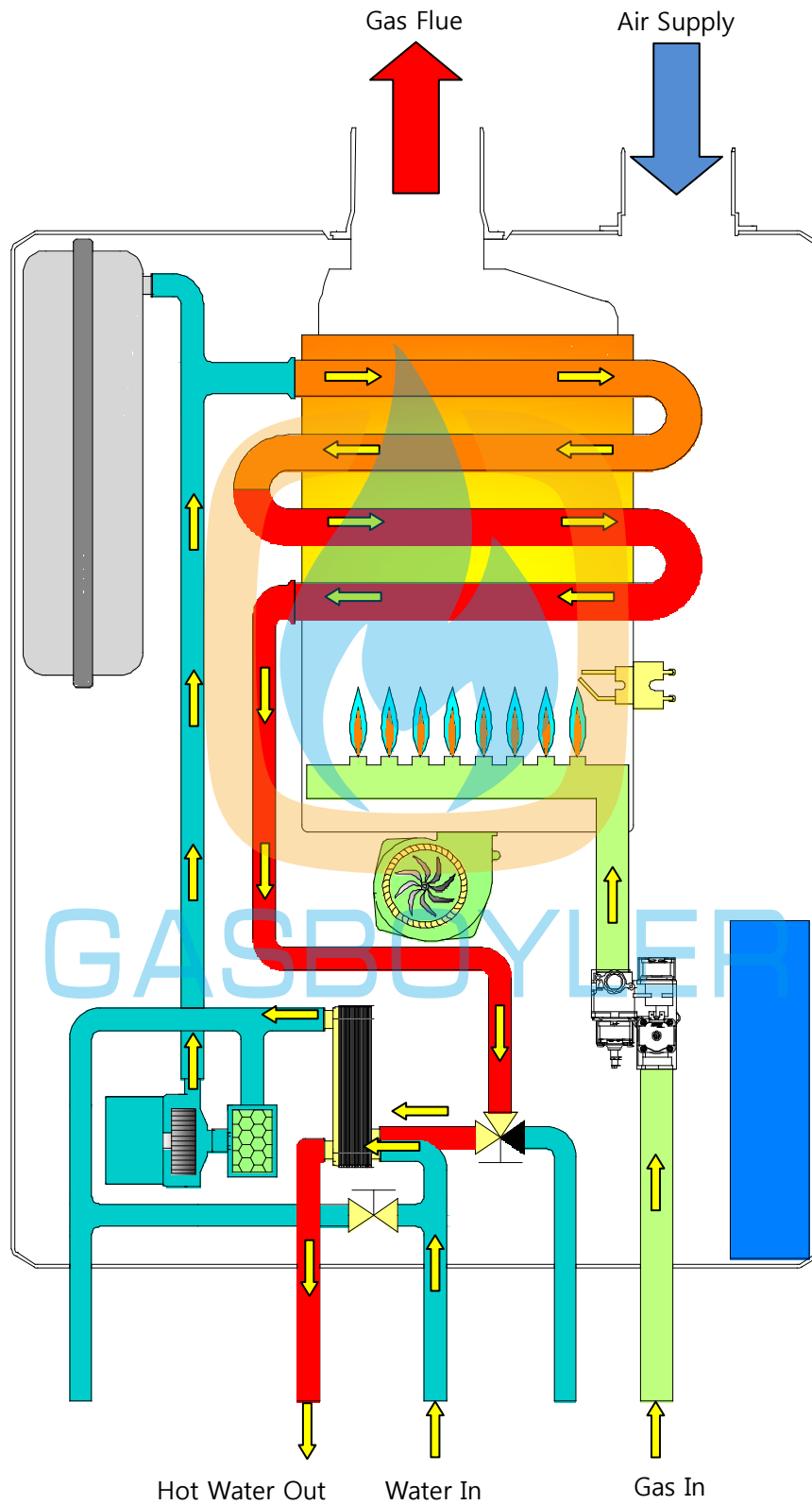
| No. | Bellow 20,000kcal/h    | Above 25,000kcal/h |
|-----|------------------------|--------------------|
| ①   | 20mm Heating water out | Equal to left      |
| ②   | 20mm Heating water in  | Equal to left      |
| ③   | 15mm Water in          | Equal to left      |
| ④   | 15mm Hot water out     | Equal to left      |
| ⑤   | 15mm Gas in            | 20A Gas in         |

## 4. Heating & Hot Water System

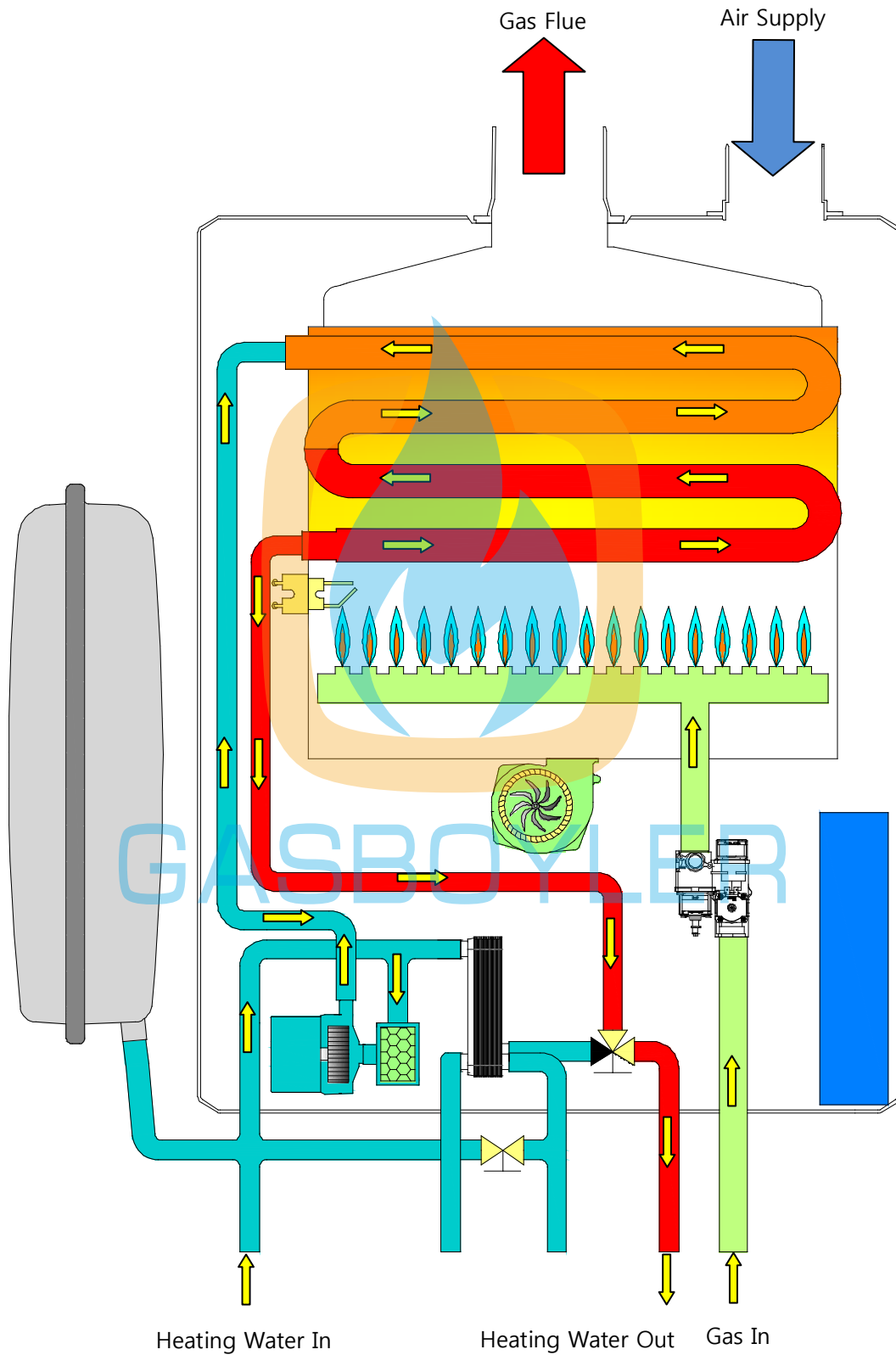
### 4.1. Heating System(Model : DGB-100MSC/130MSC/160MSC/200MSC)



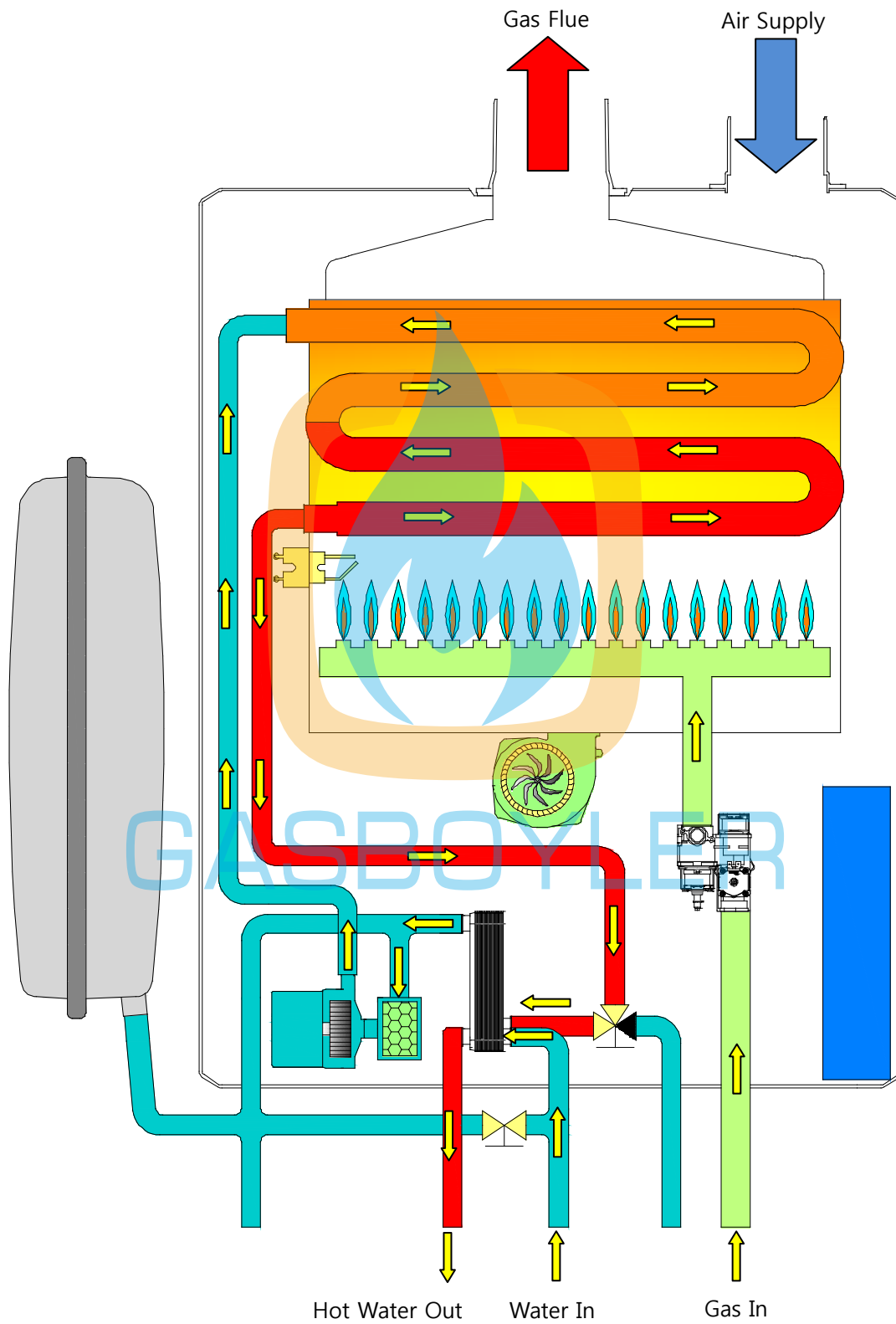
#### 4.2. Hot Water System(Model : DGB-100MSC/130MSC/160MSC/200MSC)



#### 4.3. Heating System(Model : DGB-250MSC/300MSC/350MSC/400MSC)



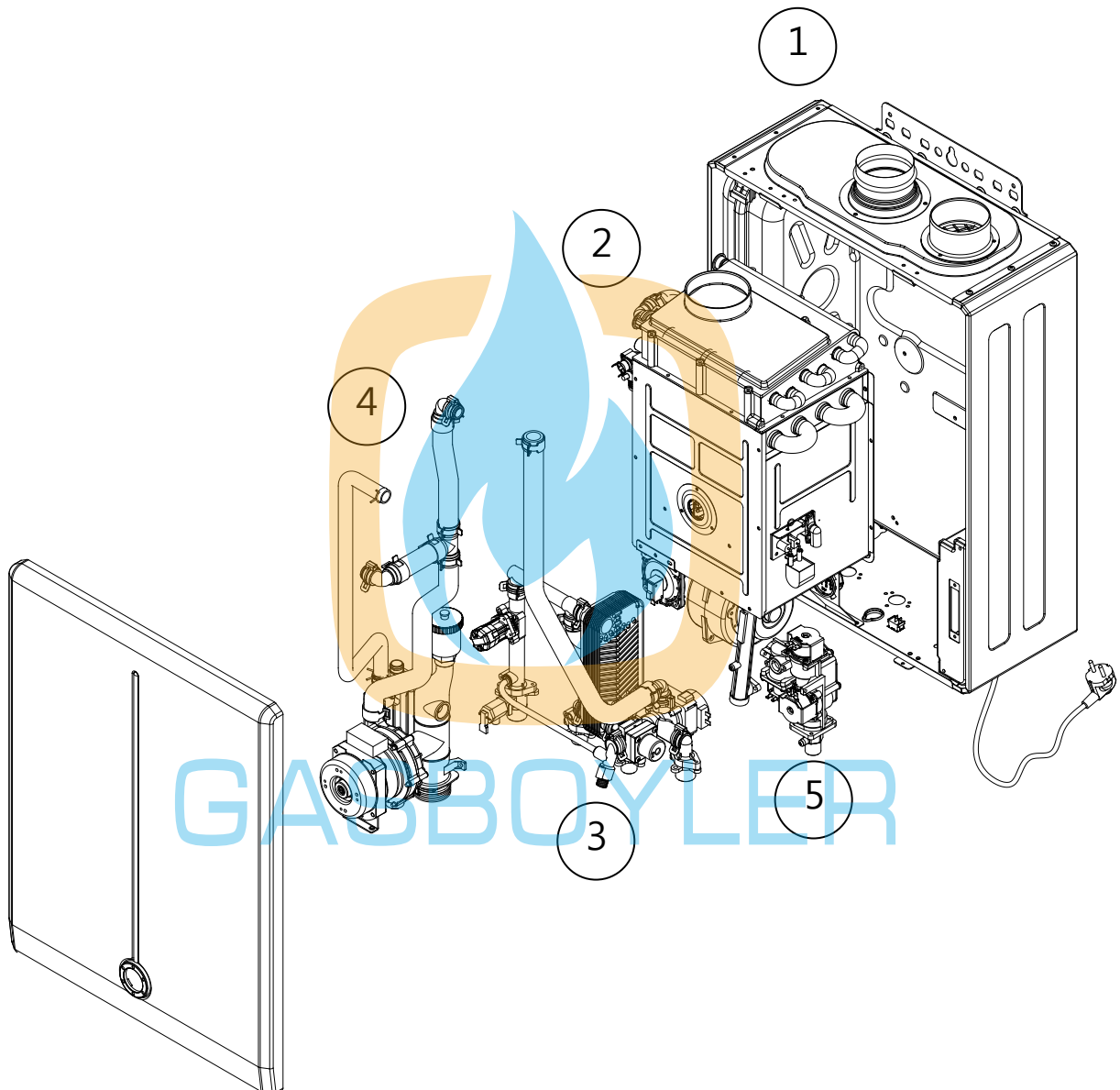
#### 4.4. Hot Water System(Model : DGB-250MSC/300MSC/350MSC/400MSC)



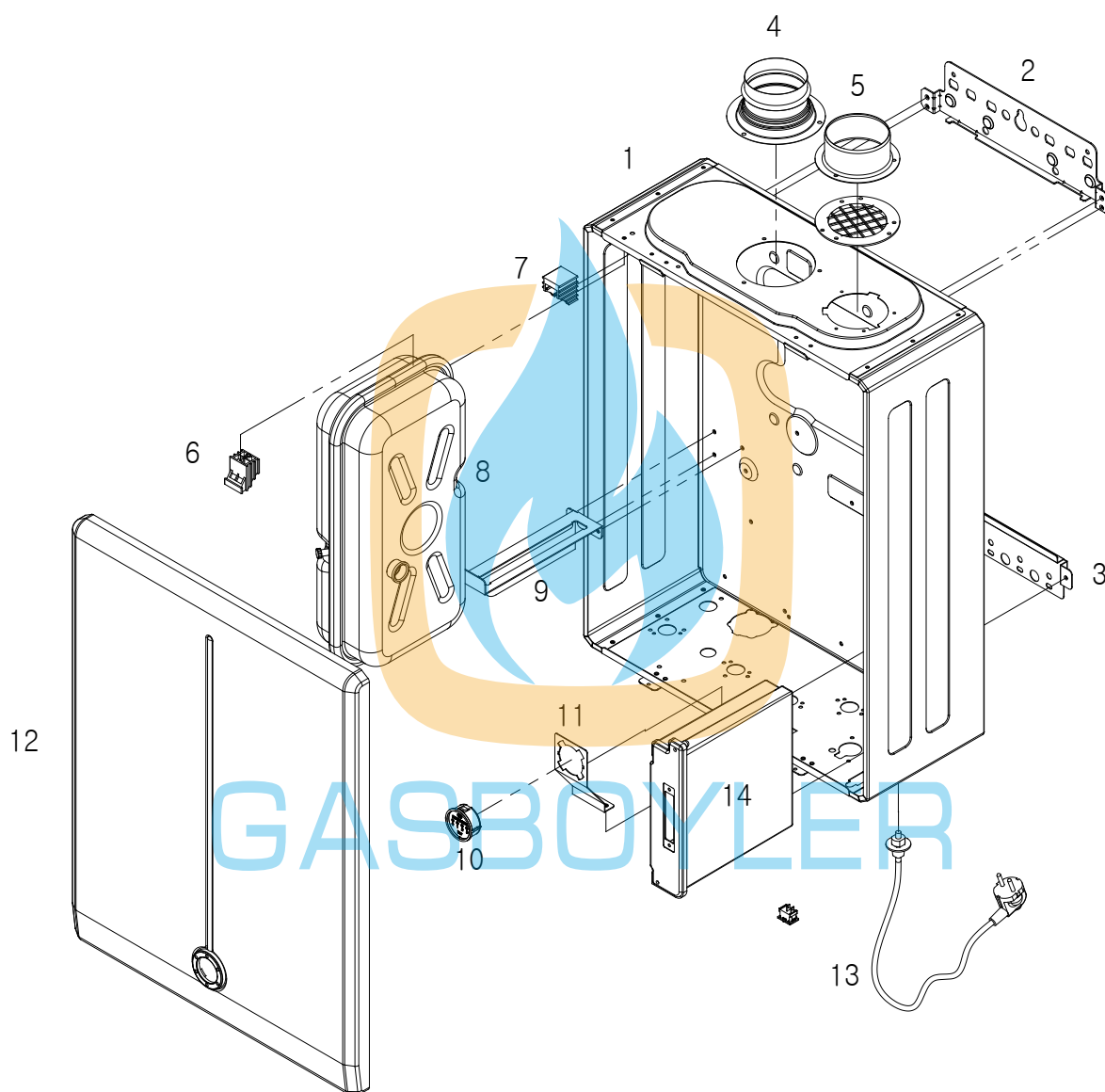


## DAEWOO GAS BOILER

(Model No. DGB-160MES/200MES)



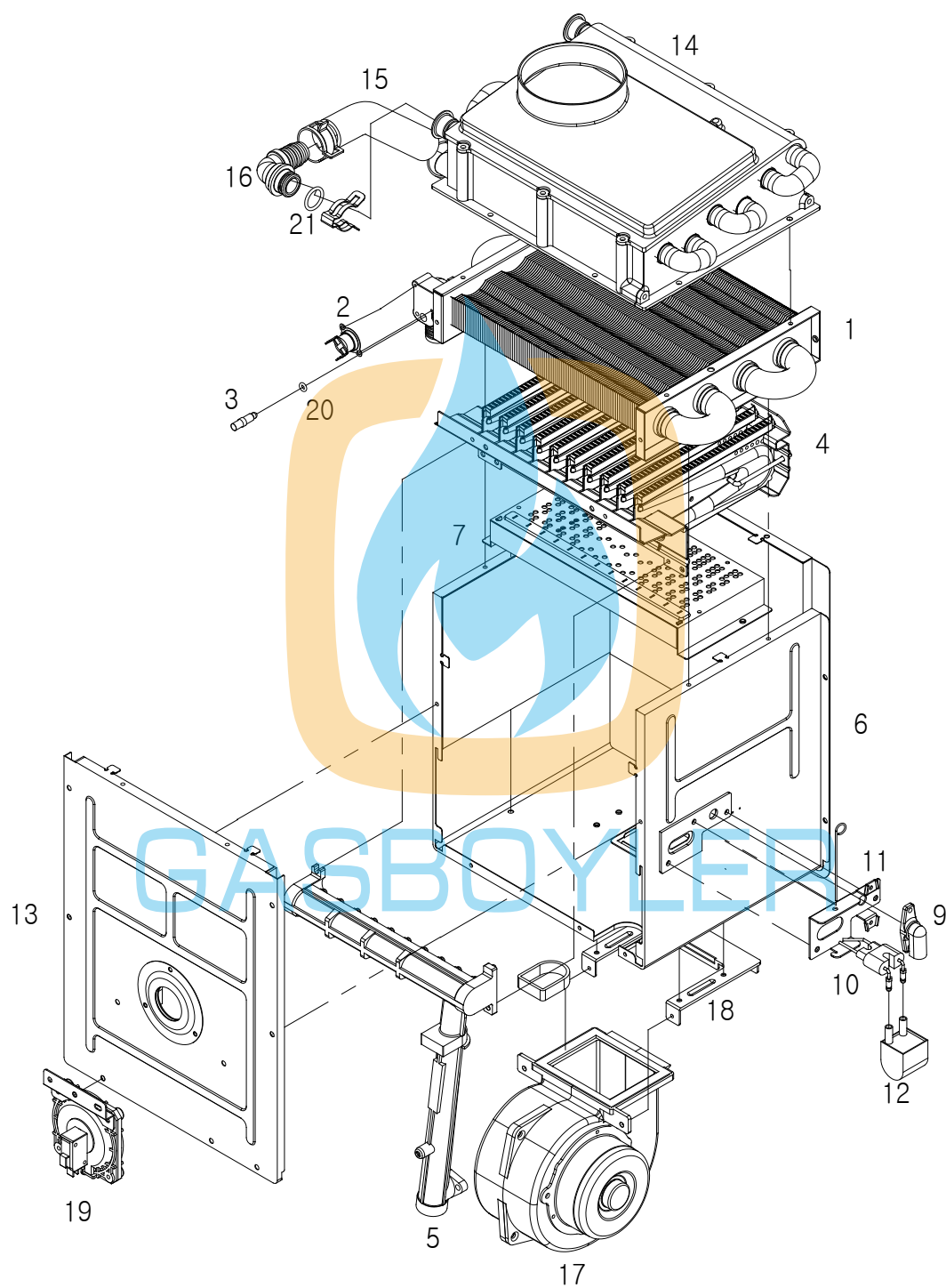
## 1. BODY PART



| No |    | PART NAME                       | PART CODE   | PCS | APPLIED MODEL |     | REMARK  |
|----|----|---------------------------------|-------------|-----|---------------|-----|---------|
|    |    |                                 |             |     | 16K           | 20K |         |
| 1  | 1  | FRAME ASS'Y                     | 3312221400  | 1   | ■             | ■   |         |
| 1  | 2  | FRAME INSTALL                   | 3312200840  | 1   | ■             | ■   |         |
| 1  | 3  | FRAME BRACKET                   | 3312203100  | 1   | ■             | ■   |         |
| 1  | 4  | DUCT OUT FLUE                   | 3316633700  | 1   | ■             | ■   |         |
| 1  | 5  | DUCT IN FLUE                    | 3316600600  | 1   | ■             | ■   |         |
| 1  | 6  | EXPANSION TANK<br>HOLDER(FRONT) | 3313002500  | 1   | ■             | ■   |         |
| 1  | 7  | EXPANSION TANK<br>HOLDER(REAR)  | 3313002600  | 1   | ■             | ■   |         |
| 1  | 8  | EXPANSION TANK                  | 3317505200  | 1   | ■             | ■   | 6L      |
| 1  | 9  | EXPANSION TANK<br>BRACKET       | 3310603900  | 1   | ■             | ■   |         |
| 1  | 10 | DISPLAY PRESSURE<br>ASSY        | 3317732500  | 1   | ■             | ■   |         |
| 1  | 11 | BRACKET PRESSURE                | 3310605600  | 1   | ■             | ■   |         |
| 1  | 12 | CABINET ASS'Y                   | 3310815600  | 1   | ■             | ■   |         |
| 1  | 13 | POWER CORD                      | WUK43K7356  | 1   | ■             | ■   |         |
| 1  | 14 | M-PCB WHOLE AS                  | 331439D500  | 1   | ■             | ■   | DCSC-G  |
| 1  | 15 | ROOMCON WHOLE<br>ASS'Y          | 3317616B000 | 1   | ■             | ■   | DRB-W31 |

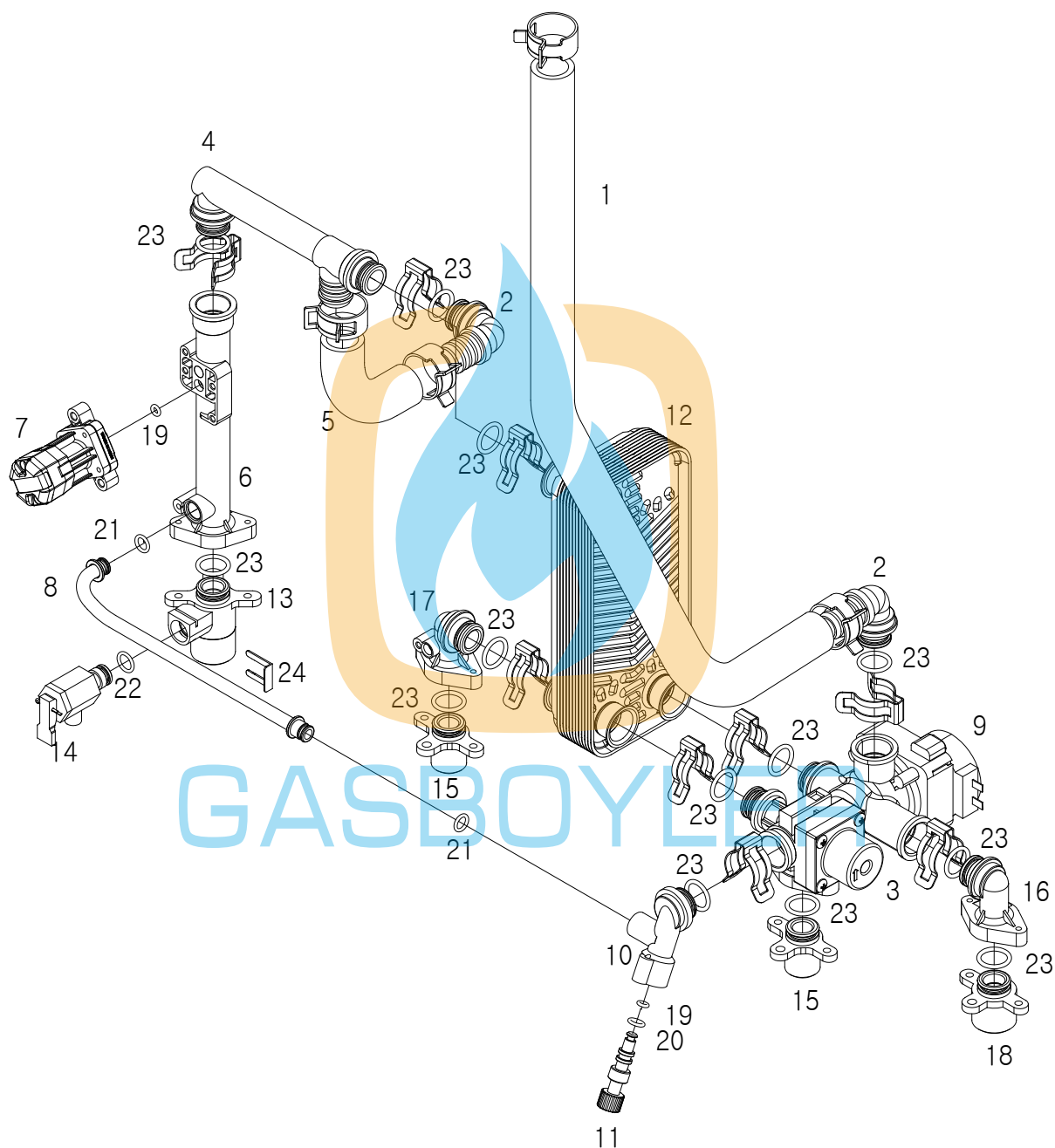
# GASBOILER

## 2. HEATING PART



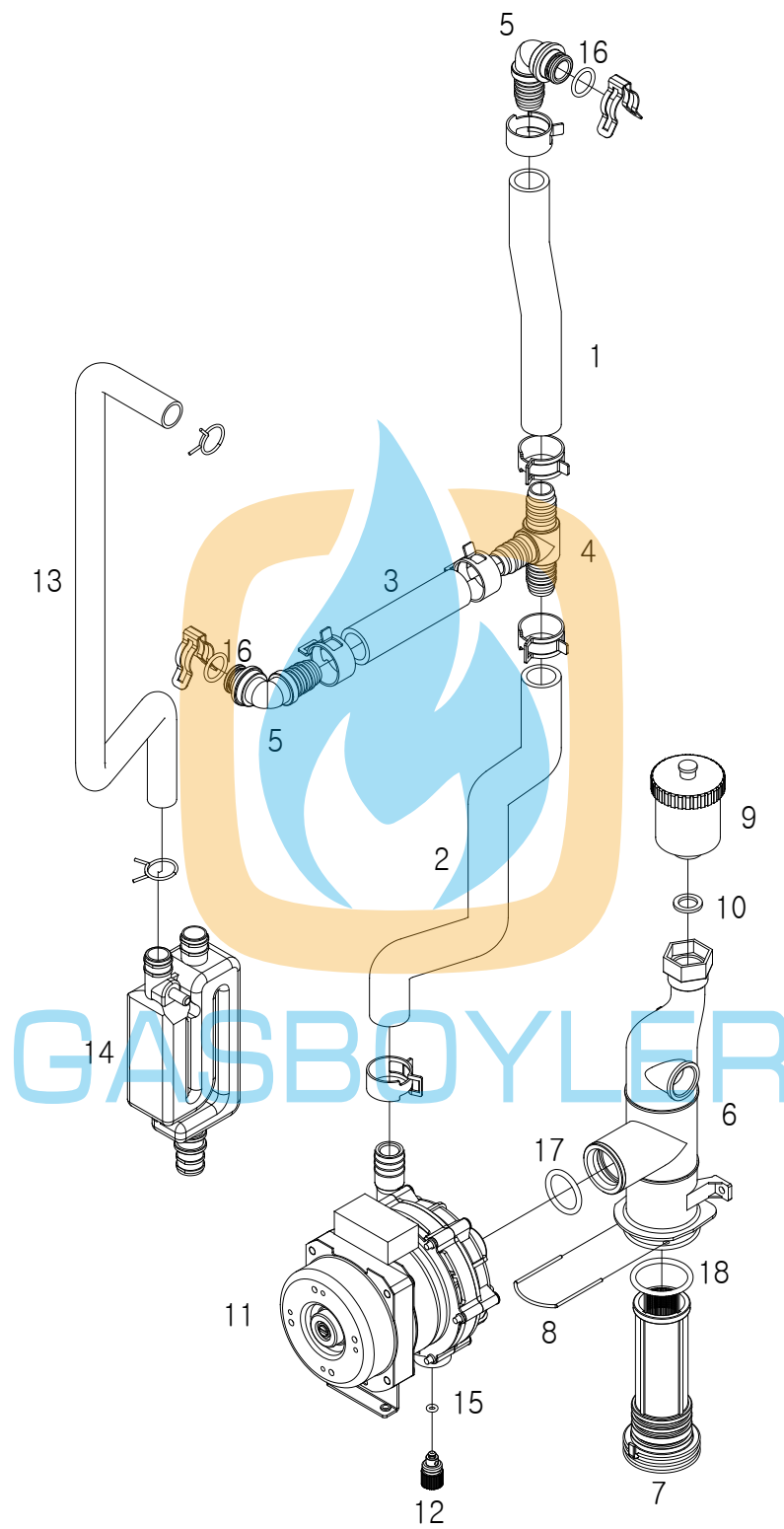
| No |     | PART NAME                          | PART CODE  | PCS | APPLIED MODEL |     | REMARK     |
|----|-----|------------------------------------|------------|-----|---------------|-----|------------|
|    |     |                                    |            |     | 16K           | 20K |            |
| 2  | 1   | MAIN HEAT EXCHANGER<br>WHOLE ASS'Y | 3318114820 | 1   | ■             | ■   | 103FIN     |
| 2  | 2   | THERMOSTAT                         | 3317904500 | 1   | ■             | ■   | AUTO 95°C  |
| 2  | 3   | SENSOR TEMP HEAT-<br>HOT-OUT       | 3314805A00 | 1   | ■             | ■   |            |
| 2  | 4   | BURNER ASS'Y                       | 3316108700 | 1   | ■             | ■   | 10FIN      |
| 2  | 5   | BURNER MANIFOLD<br>ASS'Y           | 3316105510 | 1   | ■             | ■   |            |
| 2  | 5-1 | NOZZLE                             | 3317303200 | 10  | ■             | ■   | Φ1.55(LNG) |
| 2  | 5-2 | NOZZLE                             | 3317303000 | 10  | ■             | ■   | Φ1.1(LPG)  |
| 2  | 6   | CHAMBER SIDE ASS'Y                 | 3316305800 | 1   | ■             | ■   |            |
| 2  | 7   | DISTRIBUTE UP                      | 3311806200 | 1   | ■             | ■   |            |
| 2  | 8   | DISTRIBUTE LOW                     | 3311806100 | 1   | ■             | ■   |            |
| 2  | 9   | FLAME SENSOR                       | 3314805100 | 1   | ■             | ■   |            |
| 2  | 10  | IGNITOR PLUG                       | 3317101000 | 1   | ■             | ■   |            |
| 2  | 11  | SPARK HOLDER                       | 3313001900 | 1   | ■             | ■   |            |
| 2  | 12  | IGNITOR TRANS                      | 3317102300 | 1   | ■             | ■   |            |
| 2  | 13  | CHAMBER FRONT<br>ASS'Y             | 3316307400 | 1   | ■             | ■   |            |
| 2  | 14  | SUB HEAT EXCHANGER<br>ASS'Y        | 3318114500 | 1   | ■             | ■   |            |
| 2  | 15  | SUB HEAT CONNECT<br>HOSE           | 3313207600 | 1   | ■             | ■   |            |
| 2  | 16  | HOSE NIPPLE                        | 3318400800 | 1   | ■             | ■   |            |
| 2  | 17  | FAN ASS'Y                          | 3311850700 | 1   | ■             | ■   |            |
| 2  | 18  | FAN BRACKET                        | 3310601500 | 1   | ■             | ■   |            |
| 2  | 19  | CUTOFF SWITCH ASS'Y                | 3317903720 | 1   | ■             | ■   |            |
| 2  | 20  | O-RING(P-4)                        | 3314600300 | 1   | ■             | ■   | SILICONE   |
| 2  | 21  | O-RING(P-16)                       | 3314601500 | 1   | ■             | ■   | SILICONE   |

### 3. HOT WATER HEATING PART



| No |    | PART NAME                         | PART CODE  | PCS | APPLIED MODEL |     | REMARK   |
|----|----|-----------------------------------|------------|-----|---------------|-----|----------|
|    |    |                                   |            |     | 16K           | 20K |          |
| 3  | 1  | SUPPLY HOSE                       | 3313208500 | 1   | ■             | ■   |          |
| 3  | 2  | HOSE NIPPLE                       | 3318400800 | 2   | ■             | ■   |          |
| 3  | 3  | FLOW SWITCH                       | 3317904600 | 1   | ■             | ■   |          |
| 3  | 4  | RETURN PIPE UP                    | 3314425800 | 1   | ■             | ■   |          |
| 3  | 5  | CLOSED HOSE                       | 3313205800 | 1   | ■             | ■   |          |
| 3  | 6  | RETURN PIPE LOW                   | 3314429000 | 1   | ■             | ■   |          |
| 3  | 7  | SENSOR PRESSURE                   | 3314806000 | 1   | ■             | ■   | 0~3.5bar |
| 3  | 8  | REPLENISH PIPE ASS'Y              | 3314425900 | 1   | ■             | ■   |          |
| 3  | 9  | 3-WAY VALVE ASS'Y                 | 3315434900 | 1   | ■             | ■   |          |
| 3  | 10 | REPLENISH VALVE<br>BODY           | 3315434300 | 1   | ■             | ■   |          |
| 3  | 11 | REPLENISH VALVE<br>COCK           | 3312600100 | 1   | ■             | ■   |          |
| 3  | 12 | HOT WATER HEAT<br>EXCHANGER ASS'Y | 3318112300 | 1   | ■             | ■   | 12FIN    |
| 3  | 13 | RETURN UNION                      | 3318504700 | 1   | ■             | ■   |          |
| 3  | 14 | PRESSURE RELIEF<br>VALVE          | 3315400400 | 1   | ■             | ■   |          |
| 3  | 15 | WATER IN UNION                    | 3318505000 | 2   | ■             | ■   |          |
|    |    | HOT WATER OUT<br>UNION            |            |     |               |     |          |
| 3  | 16 | SUPPLY NIPPLE                     | 3319000800 | 1   | ■             | ■   |          |
| 3  | 17 | HOT WATER NIPPLE                  | 3319001800 | 1   | ■             | ■   |          |
| 3  | 18 | SUPPLY UNION                      | 3318504900 | 1   | ■             | ■   |          |
| 3  | 19 | O-RING(P-4)                       | 3314600300 | 3   | ■             | ■   | SILICONE |
| 3  | 20 | O-RING(P-7)                       | 3314603600 | 1   | ■             | ■   | SILICONE |
| 3  | 21 | O-RING(P-8)                       | 3314602000 | 2   | ■             | ■   | SILICONE |
| 3  | 22 | O-RING(P-10)                      | 3314602300 | 1   | ■             | ■   | SILICONE |
| 3  | 23 | O-RING(P-16)                      | 3314601500 | 13  | ■             | ■   | SILICONE |
| 3  | 24 | EXPASION PIPE<br>SPRING           | 3315101200 | 1   | ■             | ■   |          |

## 4. CIRCULATION PART

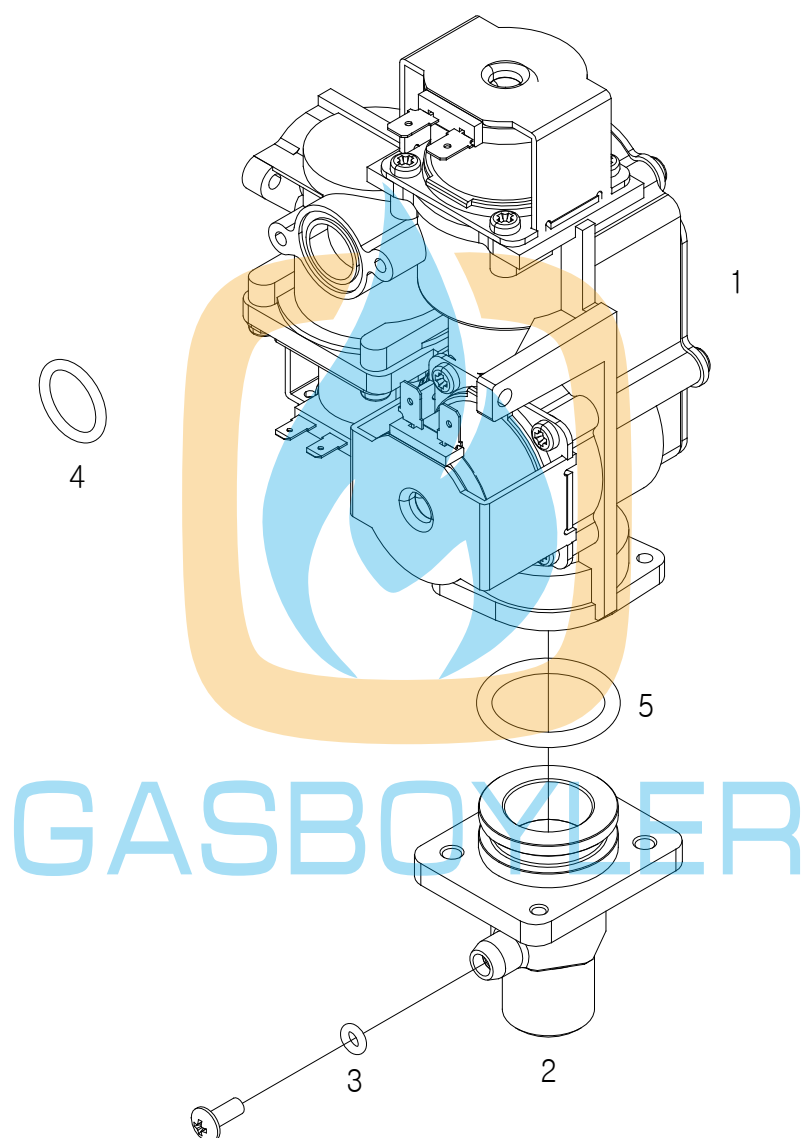




| No |    | PART NAME              | PART CODE  | PCS | APPLIED MODEL |     | REMARK   |
|----|----|------------------------|------------|-----|---------------|-----|----------|
|    |    |                        |            |     | 16K           | 20K |          |
| 4  | 1  | RETURN HOSE UP         | 3313209300 | 1   | ■             | ■   |          |
| 4  | 2  | RETURN HOSE LOW        | 3313209200 | 1   | ■             | ■   |          |
| 4  | 3  | EXPANSION TANK<br>HOSE | 3313209400 | 1   | ■             | ■   |          |
| 4  | 4  | TEE NIPPLE             | 331840300  | 1   | ■             | ■   |          |
| 4  | 5  | HOSE NIPPLE            | 3318400800 | 2   | ■             | ■   |          |
| 4  | 6  | STRAINER BODY          | 3318002200 | 1   | ■             | ■   |          |
| 4  | 7  | STRAINER HOLDER        | 3313002300 | 1   | ■             | ■   |          |
| 4  | 8  | STRAINER PIN           | 3318001800 | 1   | ■             | ■   |          |
| 4  | 9  | AIR VENT ASS'Y         | 3310061200 | 1   | ■             | ■   |          |
| 4  | 10 | AIR VENT PACKING       | 3314005900 | 1   | ■             | ■   |          |
| 4  | 11 | PUMP ASS'Y             | 3317418800 | 1   | ■             | ■   |          |
| 4  | 12 | DRAIN COCK             | 3316500100 | 1   | ■             | ■   |          |
| 4  | 13 | SIPHON HOSE            | 3313208800 | 1   | ■             | ■   |          |
| 4  | 14 | SIPHON TANK            | 3317505300 | 1   | ■             | ■   |          |
| 4  | 15 | O-RING(P-4)            | 3314600300 | 1   | ■             | ■   | SILICONE |
| 4  | 16 | O-RING(P-16)           | 3314601500 | 2   | ■             | ■   | SILICONE |
| 4  | 17 | O-RING(P-25)           | 3314602500 | 1   | ■             | ■   | SILICONE |
| 4  | 18 | O-RING(P-34)           | 3314602400 | 1   | ■             | ■   | SILICONE |

# GASBOILER

## 5. GAS SUPPLY PART



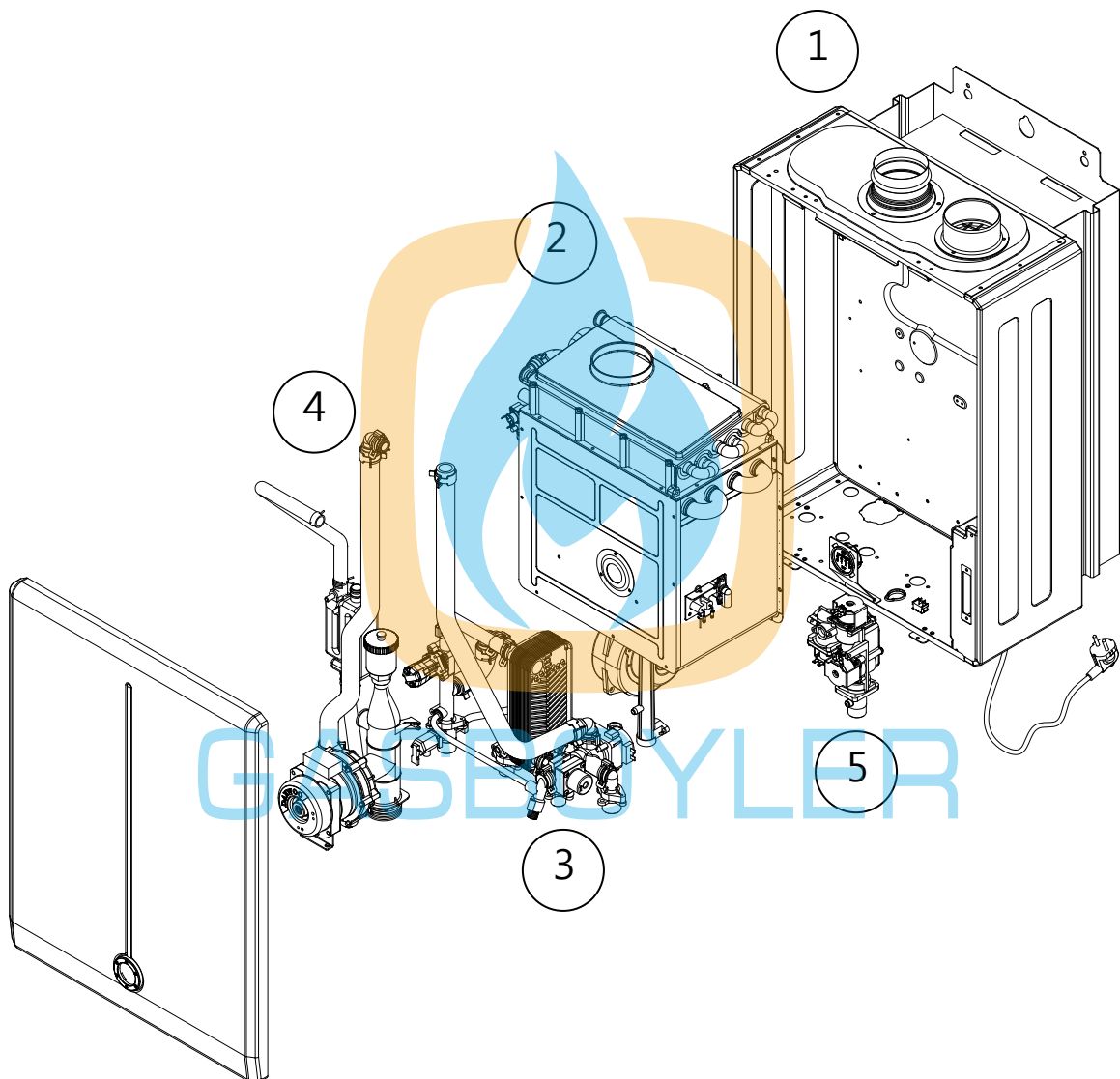
| No |   | PART NAME       | PART CODE  | PCS | APPLIED MODEL |     | REMARK   |
|----|---|-----------------|------------|-----|---------------|-----|----------|
|    |   |                 |            |     | 16K           | 20K |          |
| 5  | 1 | GAS VALVE       | 3315404700 | 1   | ■             | ■   |          |
| 5  | 2 | GAS VALVE UNION | 3318504400 | 1   | ■             | ■   |          |
| 5  | 3 | O-RING(P-4)     | 3314600300 | 1   | ■             | ■   | SILICONE |
| 5  | 4 | O-RING(P-16)    | 3314600600 | 1   | ■             | ■   | NBR      |
| 5  | 5 | O-RING(P-26)    | 3314000500 | 1   | ■             | ■   | NBR      |



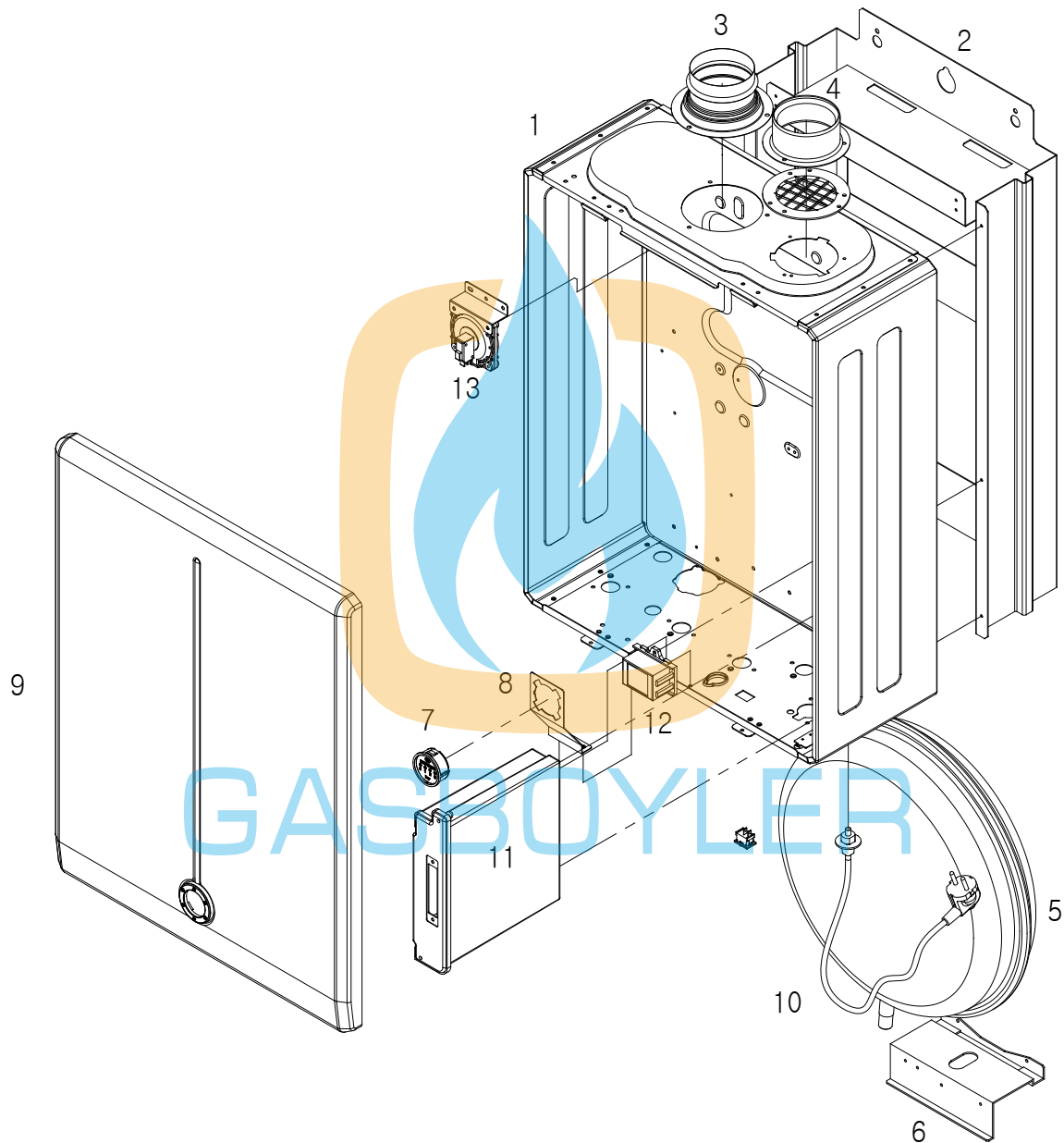
# GASBOYLER

## DAEWOO GAS BOILER

(Model No. DGB-250MES/300MES/350MES)



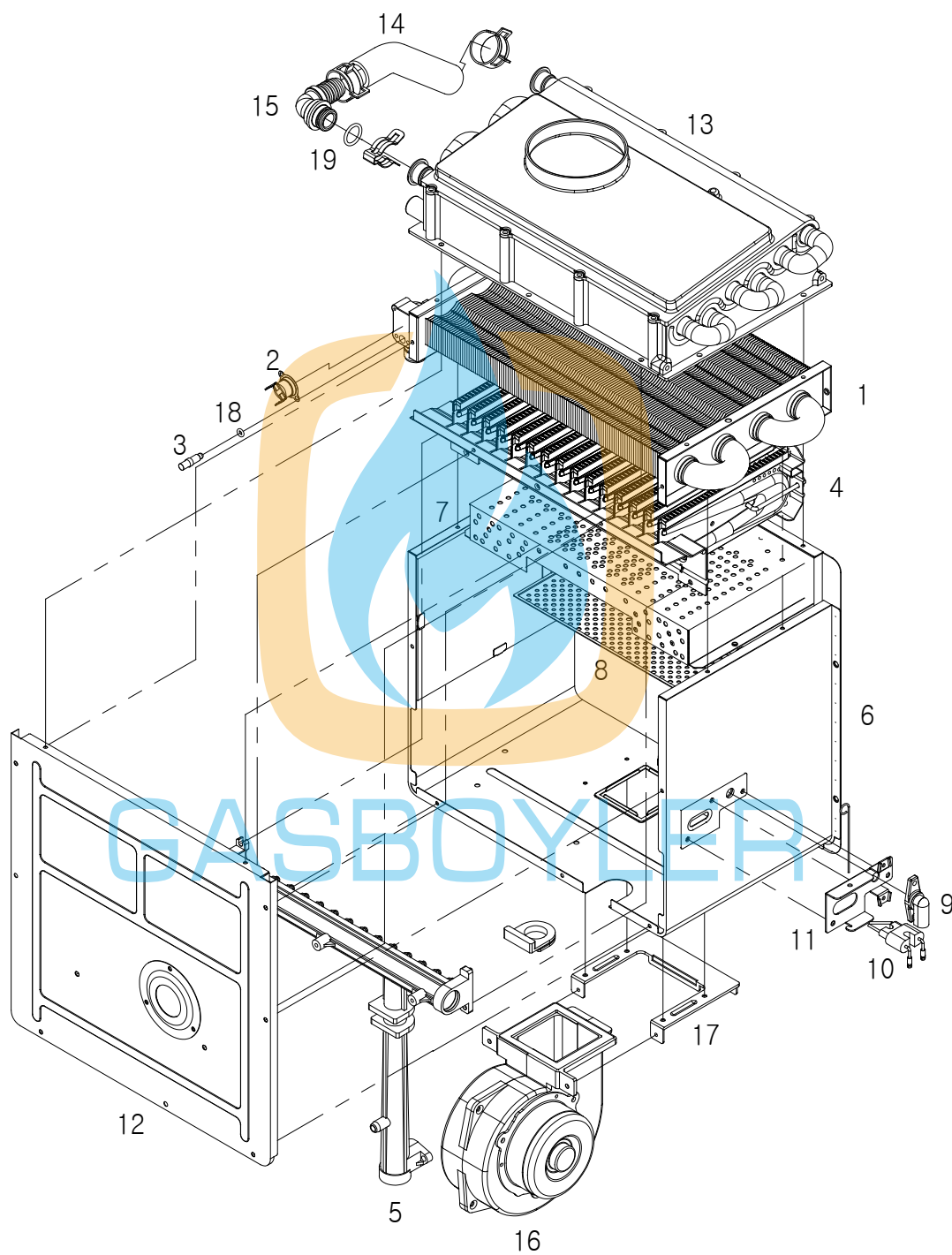
## 1. BODY PART



| No |    | PART NAME                 | PART CODE  | PCS | APPLIED MODEL |     |     | REMARK  |
|----|----|---------------------------|------------|-----|---------------|-----|-----|---------|
|    |    |                           |            |     | 25K           | 30K | 35K |         |
| 1  | 1  | FRAME ASS'Y               | 3312221700 | 1   | ■             | ■   | ■   |         |
| 1  | 2  | FRAME REAR                | 3312203500 | 1   | ■             | ■   | ■   |         |
| 1  | 3  | DUCT OUT FLUE             | 3316633700 | 1   | ■             | ■   | ■   |         |
| 1  | 4  | DUCT IN FLUE              | 3316600600 | 1   | ■             | ■   | ■   |         |
| 1  | 5  | EXPANSION TANK            | 4448F52002 | 1   | ■             | ■   | ■   | 8L      |
| 1  | 6  | EXPANSION TANK<br>BRACKET | 3310603300 | 1   | ■             | ■   | ■   |         |
| 1  | 7  | DISPLAY PRESSURE<br>ASSY  | 3317732500 | 1   | ■             | ■   | ■   |         |
| 1  | 8  | BRACKET PRESSURE          | 3310605600 | 1   | ■             | ■   | ■   |         |
| 1  | 9  | CABINET ASS'Y             | 3310815600 | 1   | ■             | ■   | ■   |         |
| 1  | 10 | POWER CORD                | WUK43K7356 | 1   | ■             | ■   | ■   |         |
| 1  | 11 | M-PCB WHOLE AS            | 331439D500 | 1   | ■             | ■   | ■   | DCSC-G  |
| 1  | 12 | IGNITOR TRANS             | 3317102400 | 1   | ■             | ■   | ■   |         |
| 1  | 13 | CUTOFF SWITCH<br>ASS'Y    | 3317903730 | 1   | ■             | ■   | ■   |         |
| 1  | 14 | ROOMCON WHOLE<br>ASS'Y    | 3317616B00 | 1   | ■             | ■   | ■   | DBR-W31 |

# GASBOILER

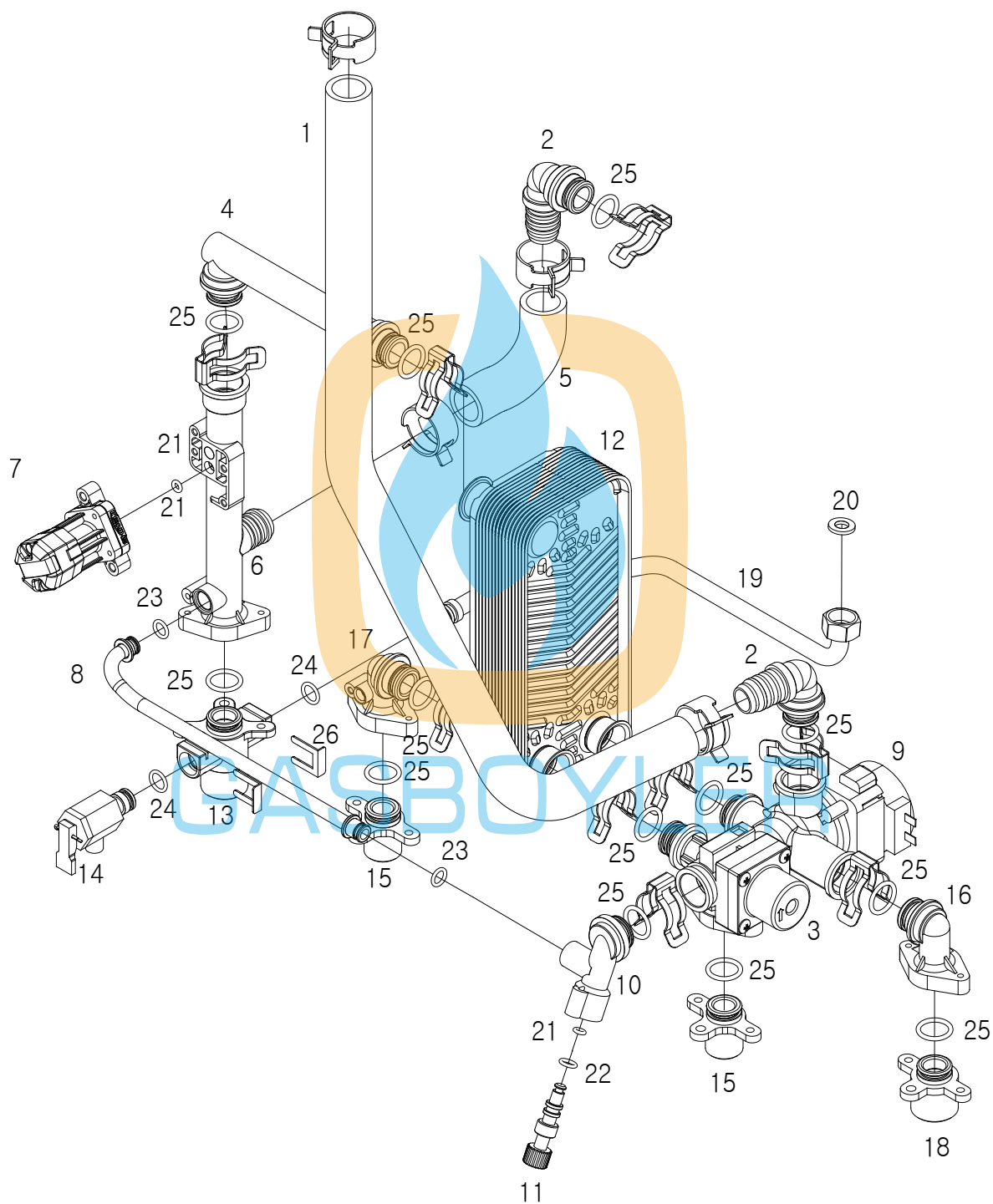
## 2. HEATING PART



| No |     | PART NAME                          | PART CODE  | PCS | APPLIED MODEL |     |     | REMARK     |
|----|-----|------------------------------------|------------|-----|---------------|-----|-----|------------|
|    |     |                                    |            |     | 25K           | 30K | 35K |            |
| 2  | 1   | MAIN HEAT EXCHANGER<br>WHOLE ASS'Y | 3318114920 | 1   | ■             | ■   | ■   | 122FIN     |
| 2  | 2   | THERMOSTAT                         | 3317904500 | 1   | ■             | ■   | ■   | AUTO 95°C  |
| 2  | 3   | SENSOR TEMP HEAT-<br>HOT-OUT       | 3314805A00 | 1   | ■             | ■   | ■   |            |
| 2  | 4   | BURNER ASS'Y                       | 3316123700 | 1   | ■             | ■   | ■   | 15FIN      |
| 2  | 5   | BURNER MANIFOLD<br>ASS'Y           | 3313123600 | 1   | ■             | ■   | ■   |            |
| 2  | 5-1 | NOZZLE                             | 3317303200 | 15  | ■             | ■   | ■   | Φ1.55(LNG) |
| 2  | 5-2 | NOZZLE                             | 3317303000 | 15  | ■             | ■   | ■   | Φ1.1(LPG)  |
| 2  | 6   | CHAMBER SIDE ASS'Y                 | 3316305800 | 1   | ■             | ■   | ■   |            |
| 2  | 7   | DISTRIBUTE UP                      | 3318402900 | 1   | ■             | ■   | ■   |            |
| 2  | 8   | DISTRIBUTE LOW                     | 3314506300 | 1   | ■             | ■   | ■   |            |
| 2  | 9   | FLAME SENSOR                       | 3314805100 | 1   | ■             | ■   | ■   |            |
| 2  | 10  | IGNITOR PLUG                       | 3317101000 | 1   | ■             | ■   | ■   |            |
| 2  | 11  | SPARK HOLDER                       | 3313001900 | 1   | ■             | ■   | ■   |            |
| 2  | 12  | CHAMBER FRONT<br>ASS'Y             | 3316307400 | 1   | ■             | ■   | ■   |            |
| 2  | 13  | SUB HEAT EXCHANGER<br>ASS'Y        | 3318114600 | 1   | ■             | ■   | ■   |            |
| 2  | 14  | SUB HEAT CONNECT<br>HOSE           | 3313207600 | 1   | ■             | ■   | ■   |            |
| 2  | 15  | HOSE NIPPLE                        | 3318400800 | 1   | ■             | ■   | ■   |            |
| 2  | 16  | FAN ASS'Y                          | 3311851900 | 1   | ■             | ■   | ■   |            |
| 2  | 17  | FAN BRACKET                        | 3310601500 | 1   | ■             | ■   | ■   |            |
| 2  | 18  | O-RING(P-4)                        | 3314600300 | 1   | ■             | ■   | ■   | SILICONE   |
| 2  | 19  | O-RING(P-16)                       | 3314601500 | 1   | ■             | ■   | ■   | SILICONE   |

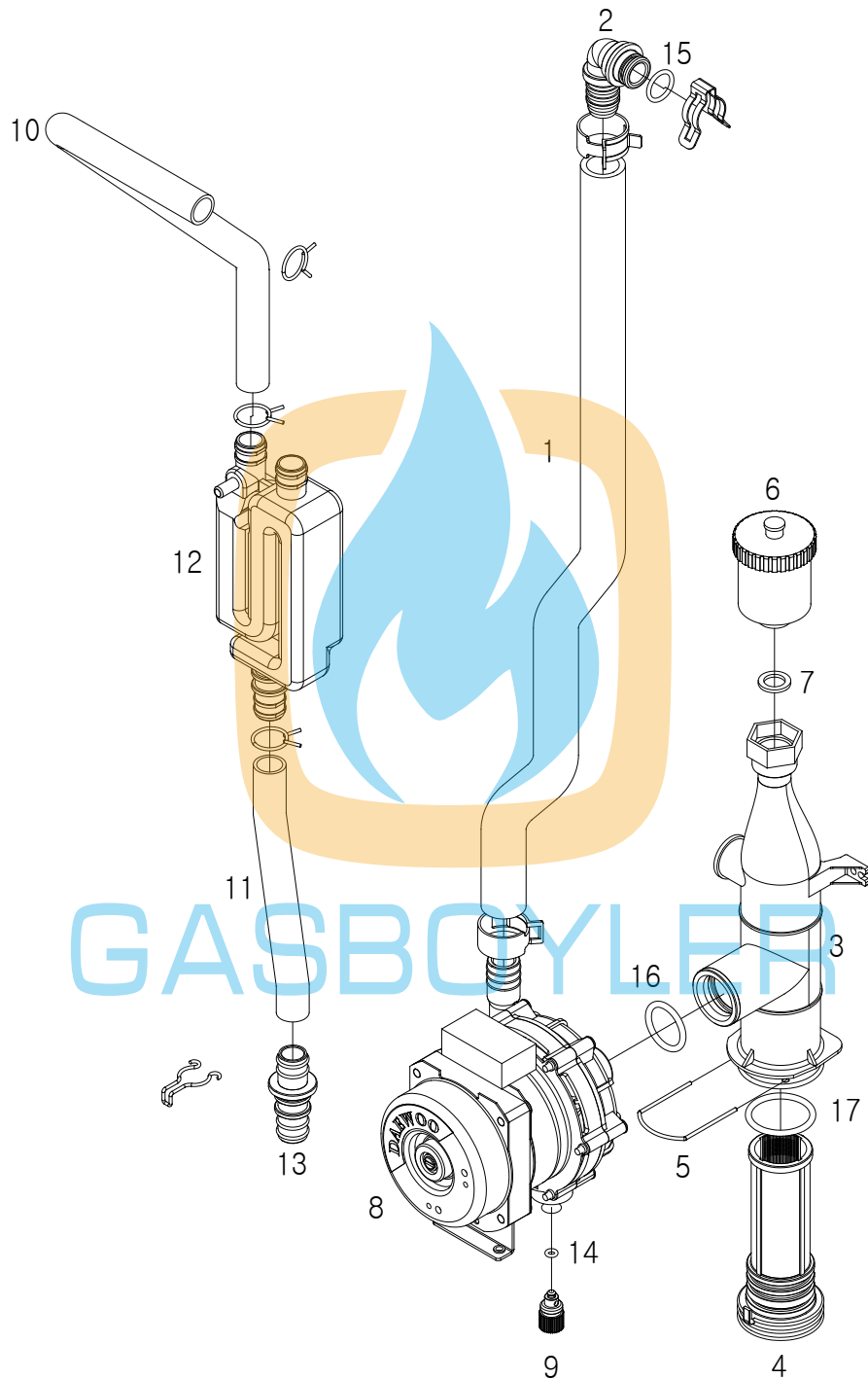


### 3. HOT WATER HEATING PART

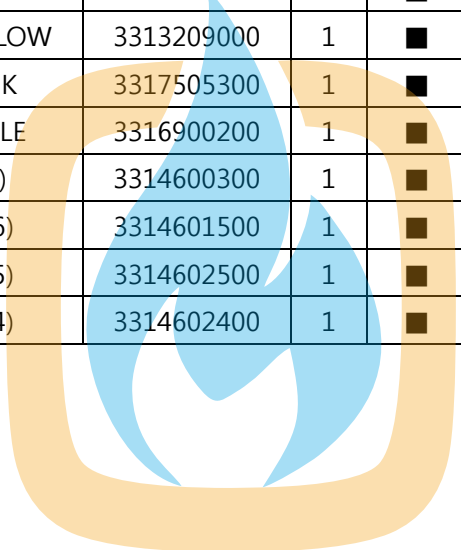


| No |    | PART NAME                      | PART CODE  | PCS | APPLIED MODEL |     |     | REMARK   |
|----|----|--------------------------------|------------|-----|---------------|-----|-----|----------|
|    |    |                                |            |     | 25K           | 30K | 35K |          |
| 3  | 1  | SUPPLY HOSE                    | 3313205500 | 1   | ■             | ■   | ■   |          |
| 3  | 2  | HOSE NIPPLE                    | 3318400800 | 2   | ■             | ■   | ■   |          |
| 3  | 3  | FLOW SWITCH                    | 3317904600 | 1   | ■             | ■   | ■   |          |
| 3  | 4  | RETURN PIPE UP                 | 3314426800 | 1   | ■             | ■   | ■   |          |
| 3  | 5  | CLOSED HOSE                    | 3313205800 | 1   | ■             | ■   | ■   |          |
| 3  | 6  | RETURN PIPE LOW                | 3314429100 | 1   | ■             | ■   | ■   |          |
| 3  | 7  | SENSOR PRESSURE                | 3314806000 | 1   | ■             | ■   | ■   | 0~3.5bar |
| 3  | 8  | REPLENISH PIPE ASS'Y           | 3314426000 | 1   | ■             | ■   | ■   |          |
| 3  | 9  | 3-WAY VALVE ASS'Y              | 3315434100 | 1   | ■             | ■   | ■   |          |
| 3  | 10 | REPLENISH VALVE BODY           | 3315433300 | 1   | ■             | ■   | ■   |          |
| 3  | 11 | REPLENISH VALVE COCK           | 3312600100 | 1   | ■             | ■   | ■   |          |
| 3  | 12 | HOT WATER HEAT EXCHANGER ASS'Y | 3318112400 | 1   | ■             | ■   | ■   | 16FIN    |
| 3  | 13 | RETURN UNION                   | 3318504800 | 1   | ■             | ■   | ■   |          |
| 3  | 14 | PRESSURE RELIEF VALVE          | 3315404400 | 1   | ■             | ■   | ■   |          |
| 3  | 15 | WATER IN UNION                 | 3318505000 | 2   | ■             | ■   | ■   |          |
|    |    | HOT WATER OUT UNION            |            |     | ■             | ■   | ■   |          |
|    | 16 | SUPPLY NIPPLE                  | 3319000800 | 1   | ■             | ■   | ■   |          |
| 3  | 17 | HOT WATER NIPPLE               | 3319001800 | 1   | ■             | ■   | ■   |          |
| 3  | 18 | SUPPLY UNION                   | 3318504900 | 1   | ■             | ■   | ■   |          |
| 3  | 19 | EXPANSION TANK PIPE ASS'Y      | 3314428600 | 1   | ■             | ■   | ■   |          |
| 3  | 20 | EXPANSION TANK PIPE PACKING    | 3314003600 | 1   | ■             | ■   | ■   |          |
| 3  | 21 | O-RING(P-4)                    | 3314600300 | 3   | ■             | ■   | ■   | SILICONE |
| 3  | 22 | O-RING(P-7)                    | 3314603600 | 1   | ■             | ■   | ■   | SILICONE |
| 3  | 23 | O-RING(P-8)                    | 3314602000 | 2   | ■             | ■   | ■   | SILICONE |
| 3  | 24 | O-RING(P-10)                   | 3314602300 | 2   | ■             | ■   | ■   | SILICONE |
| 3  | 25 | O-RING(P-16)                   | 3314601500 | 13  | ■             | ■   | ■   | SILICONE |
| 3  | 26 | EXPANSION PIPE SPRING          | 3315101200 | 2   | ■             | ■   | ■   |          |

## 4. CIRCULATION PART

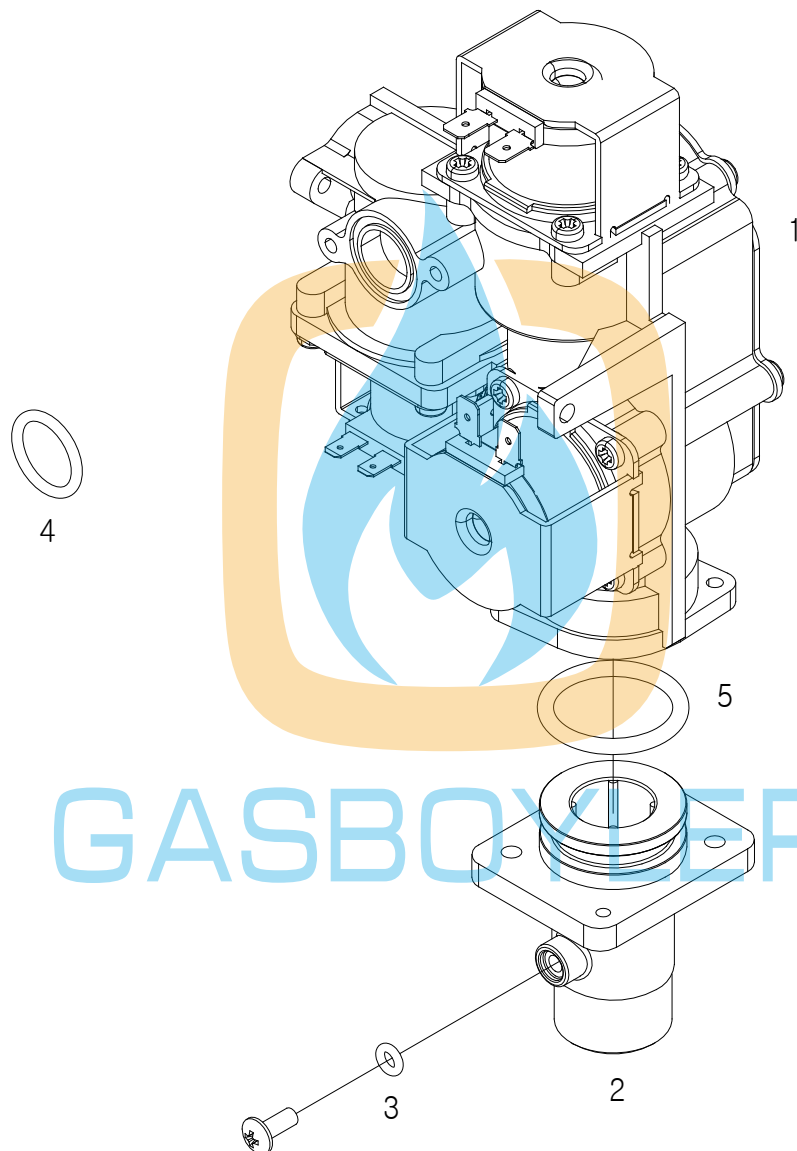


| No |    | PART NAME        | PART CODE  | PCS | APPLIED MODEL |     |     | REMARK   |
|----|----|------------------|------------|-----|---------------|-----|-----|----------|
|    |    |                  |            |     | 25K           | 30K | 35K |          |
| 4  | 1  | RETURN HOSE      | 3313209100 | 1   | ■             | ■   | ■   |          |
| 4  | 2  | HOSE NIPPLE      | 3318400800 | 1   | ■             | ■   | ■   |          |
| 4  | 3  | STRAINER BODY    | 3318001300 | 1   | ■             | ■   | ■   |          |
| 4  | 4  | STRAINER HOLDER  | 3313002300 | 1   | ■             | ■   | ■   |          |
| 4  | 5  | STRAINER PIN     | 3318001800 | 1   | ■             | ■   | ■   |          |
| 4  | 6  | AIR VENT ASS'Y   | 3310061200 | 1   | ■             | ■   | ■   |          |
| 4  | 7  | AIR VENT PACKING | 3314005900 | 1   | ■             | ■   | ■   |          |
| 4  | 8  | PUMP ASS'Y       | 3317418800 | 1   | ■             | ■   | ■   |          |
| 4  | 9  | DRAIN COCK       | 3316500100 | 1   | ■             | ■   | ■   |          |
| 4  | 10 | SIPHON HOSE UP   | 3313208900 | 1   | ■             | ■   | ■   |          |
| 4  | 11 | SIPHON HOSE LOW  | 3313209000 | 1   | ■             | ■   | ■   |          |
| 4  | 12 | SIPHON TANK      | 3317505300 | 1   | ■             | ■   | ■   |          |
| 4  | 13 | SIPHON NIPPLE    | 3316900200 | 1   | ■             | ■   | ■   |          |
| 4  | 14 | O-RING(P-4)      | 3314600300 | 1   | ■             | ■   | ■   | SILICONE |
| 4  | 15 | O-RING(P-16)     | 3314601500 | 1   | ■             | ■   | ■   | SILICONE |
| 4  | 16 | O-RING(P-25)     | 3314602500 | 1   | ■             | ■   | ■   | SILICONE |
| 4  | 17 | O-RING(P-34)     | 3314602400 | 1   | ■             | ■   | ■   | SILICONE |



# GASBOILER

## 5. GAS SUPPLY PART



| No |   | PART NAME       | PART CODE  | PCS | APPLIED MODEL |     |     | REMARK   |
|----|---|-----------------|------------|-----|---------------|-----|-----|----------|
|    |   |                 |            |     | 25K           | 30K | 35K |          |
| 5  | 1 | GAS VALVE       | 3315404700 | 1   | ■             | ■   | ■   |          |
| 5  | 2 | GAS VALVE UNION | 3318504300 | 1   | ■             | ■   | ■   |          |
| 5  | 3 | O-RING(P-4)     | 3314600300 | 1   | ■             | ■   | ■   | SILICONE |
| 5  | 4 | O-RING(P-16)    | 3314600600 | 1   | ■             | ■   | ■   | NBR      |
| 5  | 5 | O-RING(P-26)    | 3314000500 | 1   | ■             | ■   | ■   | NBR      |



**GASBOYLER**

## Content

1. Gas Boiler(Specifications)
2. General Description
3. Appearance of boiler
  - 3.1 DGB-160MES/200MES
  - 3.2 DGB-250MES/300MES/350MES
  - 3.3 Installation
4. Heating & Hot Water System
  - 4.1 Heating System(DGB-160MES/200MES)
  - 4.2 Hot Water System(DGB-160MES/200MES)
  - 4.3 Heating System(DGB-250MES/300MES/350MES)
  - 4.4 Hot Water System(DGB-250MES/300MES/350MES)



**GASBOYLER**

## 1. Gas Boiler(Specifications)

Table 1.1

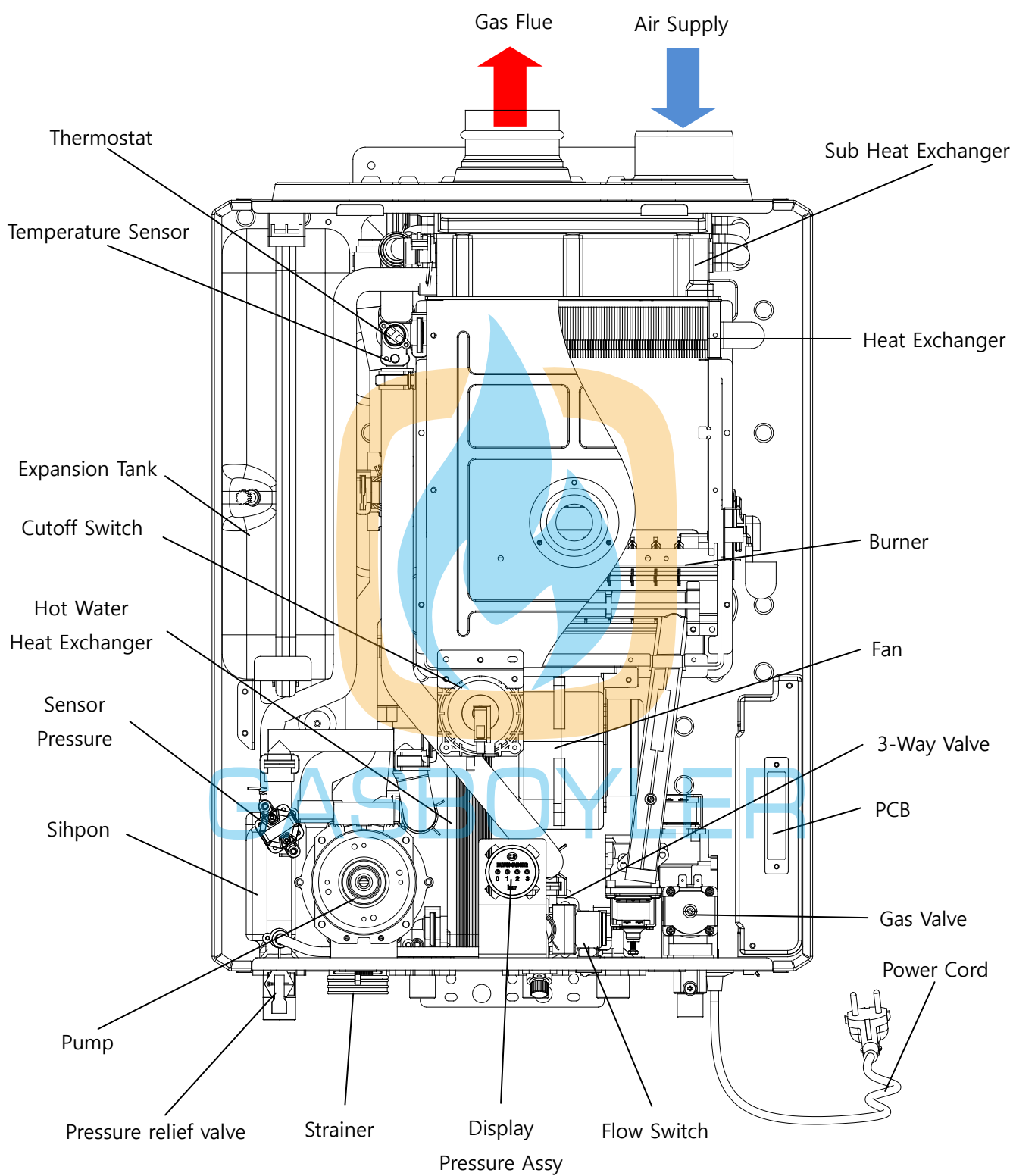
| Model No.                                                      |                                        | Condensing Type                     |              |
|----------------------------------------------------------------|----------------------------------------|-------------------------------------|--------------|
|                                                                |                                        | DGB-160MES                          | DGB-200MES   |
| Type                                                           |                                        | Instantaneous Gas fired boiler      |              |
| Use                                                            |                                        | Central heating/ Domestic hot water |              |
| Gas control type                                               |                                        | Proportional gas control system     |              |
| Heating circulation type                                       |                                        | Hermetic tank (Closed) type         |              |
| Heating output                                                 |                                        | 8.1kW~18.6kW                        | 8.1kW~23.3kW |
| Condensed Heating output<br>(Supply/Return 50/30°C)            |                                        | 8.1kW~19.8kW                        | 8.1kW~24.4kW |
| Hot water output                                               |                                        | 8.1kW~23.3kW                        |              |
| Hot water supply                                               | Increased<br>dT25                      | 13.3L/min                           |              |
|                                                                | Increased<br>dT40                      | 8.3L/min                            |              |
| Min. water pressure on hot water                               |                                        | 20kPa(0.2bar)                       |              |
| Range of gas pressure                                          |                                        | 1~2.5kPa(10~25mbar)                 |              |
| Gas input                                                      | Heating                                | 8.2kW~20.0kW                        | 8.2kW~24.9kW |
|                                                                | Hot water                              | 8.2kW~24.9kW                        |              |
| Useful efficiency at Heating<br>Output (Supply/Return 80/60°C) |                                        | 97.3%                               | 97%          |
| Useful efficiency at Heating<br>Output (Supply/Return 50/30°C) |                                        | 106.2%                              | 106.3%       |
| Useful efficiency at Heating<br>Output (Return 30°C)           |                                        | 106.4%                              |              |
| Power supply                                                   |                                        | AC 220V 50Hz                        |              |
| Electrical input                                               |                                        | 115W                                |              |
| Size(WxHxD)                                                    |                                        | 490x626x242 mm                      |              |
| Weight                                                         |                                        | 30Kg(Packed 32Kg)                   |              |
| Duct diameter                                                  |                                        | Air inlet 110mm/Gas flue 80mm       |              |
| Piping                                                         | Gas                                    | 15mm(1/2")                          |              |
|                                                                | Water in/<br>Hot water out             | 15mm(1/2")                          |              |
|                                                                | Heating water in/<br>Heating water out | 20mm(3/4")                          |              |



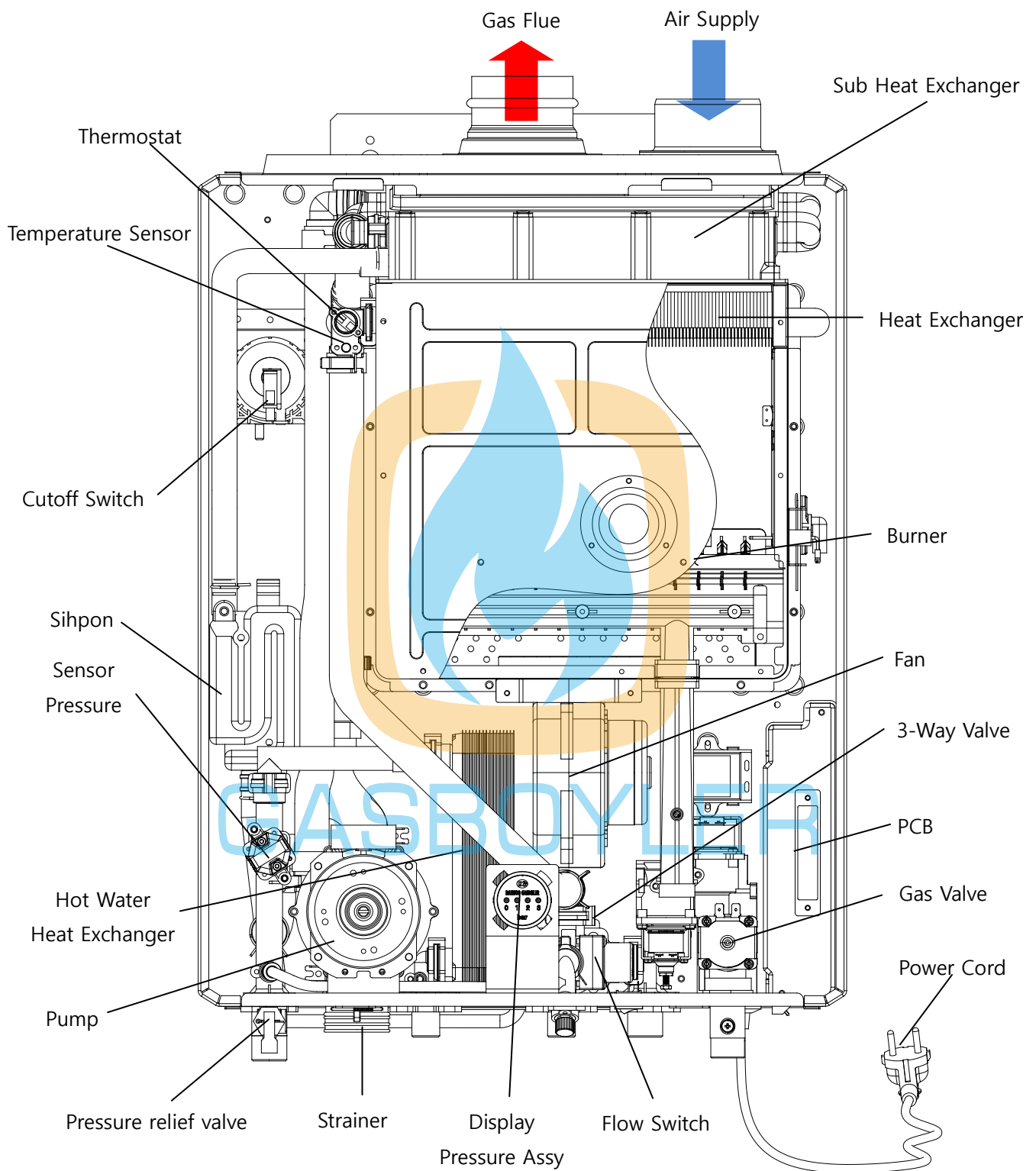
Table 1.2

| Model No.                                                      |                                        | Condensing Type                     |               |               |
|----------------------------------------------------------------|----------------------------------------|-------------------------------------|---------------|---------------|
|                                                                |                                        | DGB-250MES                          | DGB-300MES    | DGB-350MES    |
| Type                                                           |                                        | Instantaneous Gas fired boiler      |               |               |
| Use                                                            |                                        | Central heating/ Domestic hot water |               |               |
| Gas control type                                               |                                        | Proportional gas control system     |               |               |
| Heating circulation type                                       |                                        | Hermetic tank (Closed) type         |               |               |
| Heating output                                                 |                                        | 11.6kW~29.1kW                       | 11.6kW~34.9kW | 11.6kW~38.4kW |
| Condensed Heating output<br>(Supply/Return 50/30°C)            |                                        | 11.6kW~30.0kW                       | 11.6kW~36.6kW | 11.6kW~40.7kW |
| Hot water output                                               |                                        | 11.6kW~29.1kW                       | 11.6kW~34.9kW | 11.6kW~40.7kW |
| Hot water supply                                               | Increased<br>dT25                      | 16.7L/min                           | 20.0L/min     | 23.3L/min     |
|                                                                | Increased<br>dT40                      | 10.4L/min                           | 12.5L/min     | 14.6L/min     |
| Min. water pressure on hot water                               |                                        | 20kPa(0.2bar)                       |               |               |
| Range of gas pressure                                          |                                        | 1~2.5kPa(10~25mbar)                 |               |               |
| Gas input                                                      | Heating                                | 11.8kW~30.5kW                       | 11.8kW~37.1kW | 11.8kW~41.0kW |
|                                                                | Hot water                              | 11.8kW~30.5kW                       | 11.8kW~37.1kW | 11.8kW~41.0kW |
| Useful efficiency at Heating<br>Output (Supply/Return 80/60°C) |                                        | 98.5%                               | 97.7%         | 97.4%         |
| Useful efficiency at Heating<br>Output (Supply/Return 50/30°C) |                                        | 106.3%                              | 106.2%        | 106.3%        |
| Useful efficiency at Heating<br>Output (Return 30°C)           |                                        | 106.5%                              |               |               |
| Power supply                                                   |                                        | AC 220V 50Hz                        |               |               |
| Electrical input                                               |                                        | 115W                                | 125W          | 135W          |
| Size(WxHxD)                                                    |                                        | 490x626x365mm                       |               |               |
| Weight                                                         |                                        | 36Kg(Packed 38Kg)                   |               |               |
| Duct diameter                                                  |                                        | Air inlet 110mm/Gas flue 80mm       |               |               |
| Piping                                                         | Gas                                    | 20mm(3/4")                          |               |               |
|                                                                | Water in/<br>Hot water out             | 15mm(1/2")                          |               |               |
|                                                                | Heating water in/<br>Heating water out | 20mm(3/4")                          |               |               |

## 2. General Description



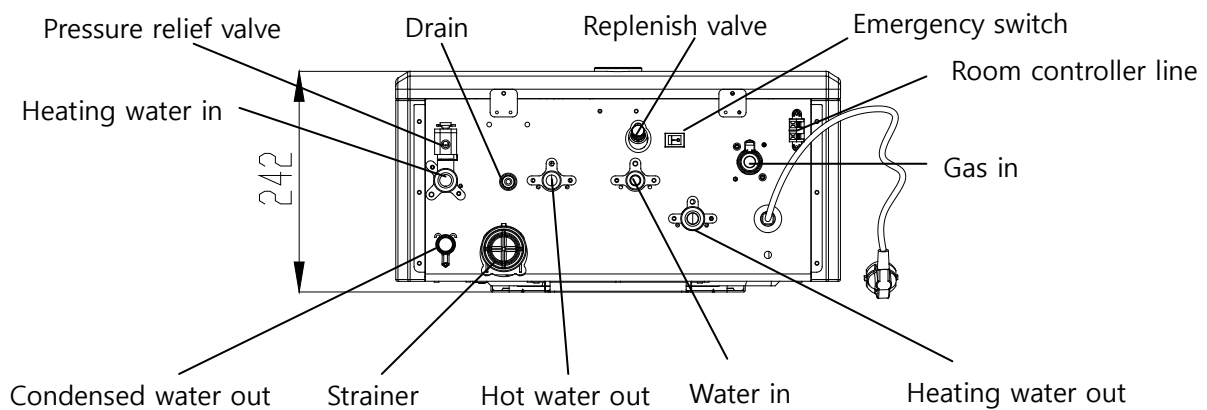
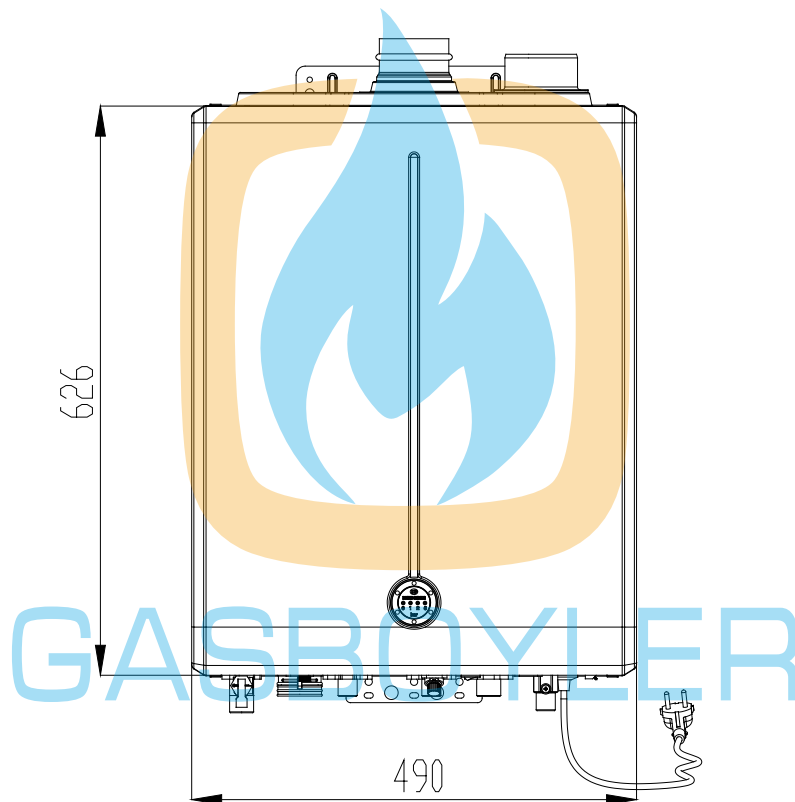
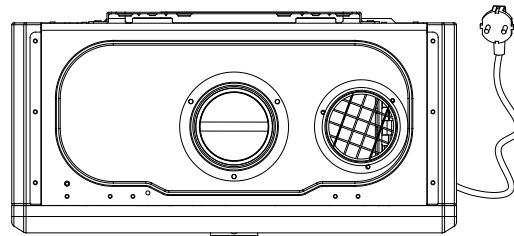
Pic. 2.1 DGB-160MES/200MES



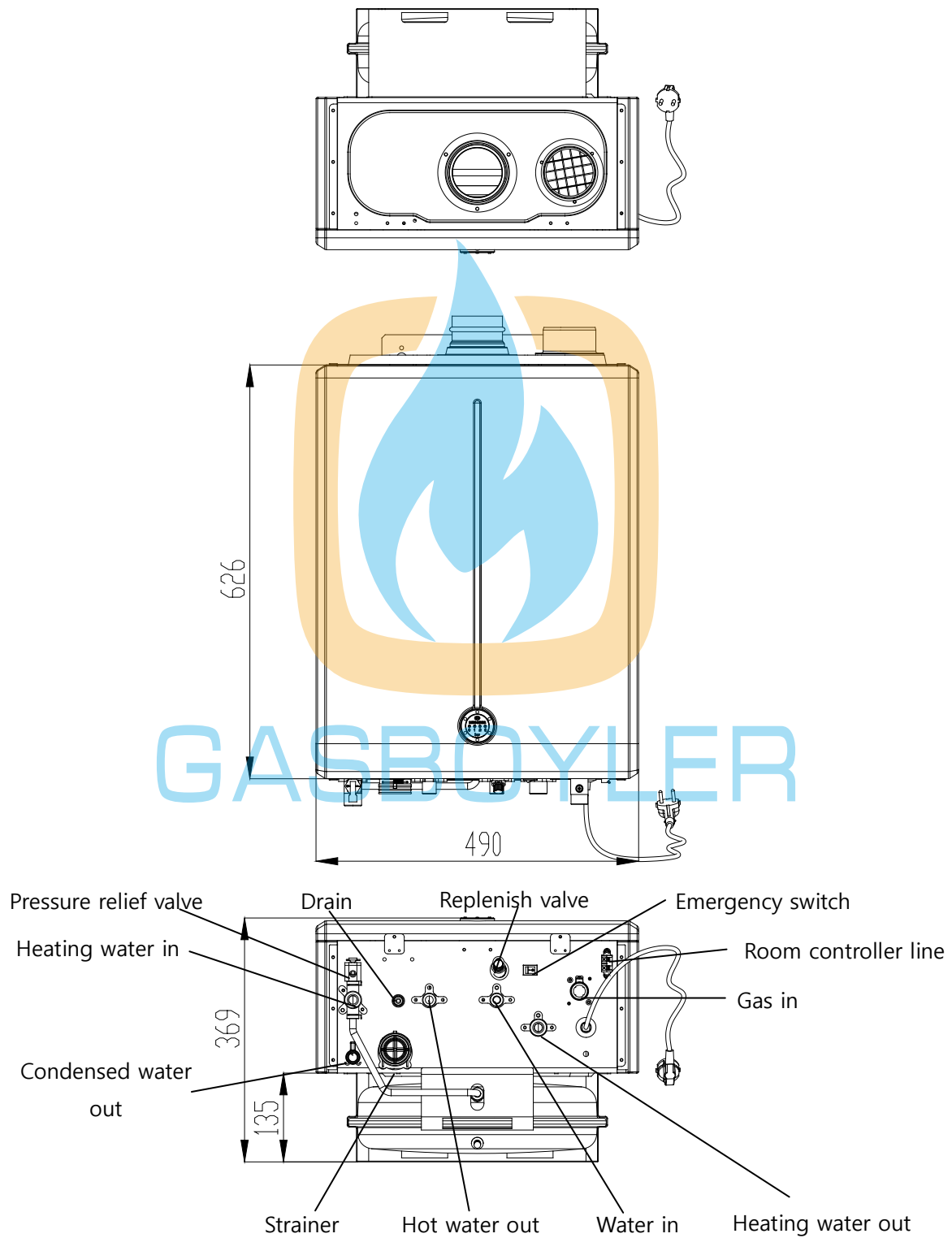
Pic. 2.2 DGB-250MES/300MES/350MES

### 3. Appearance of boiler

3.1. Model : DGB-160MES/200MES



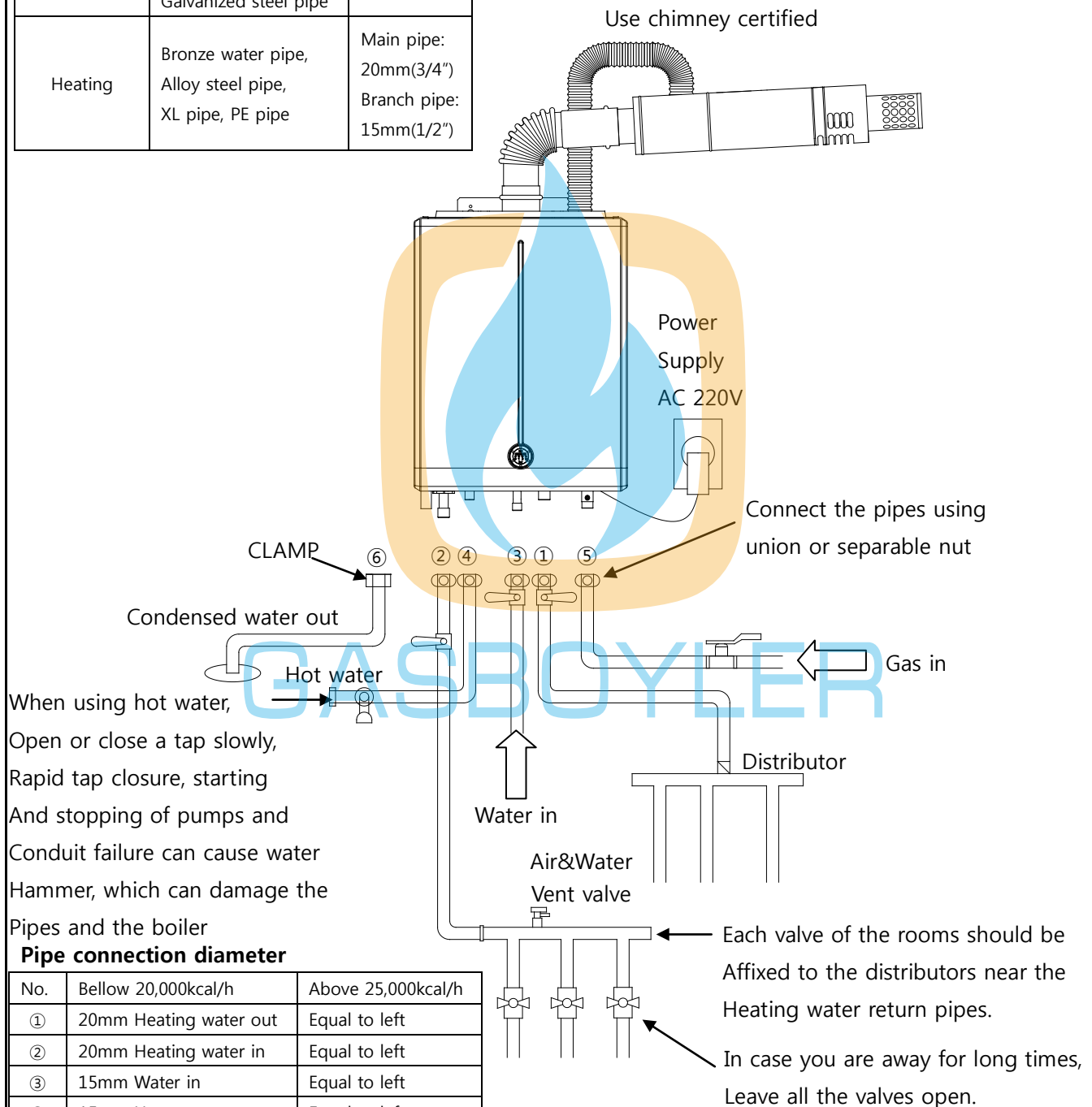
### 3.2. Model : DGB-250MES/300MES/350MES



### 3.4 Installation

#### Components & Size

| Sort                       | Components                                                         | Size                                                   |
|----------------------------|--------------------------------------------------------------------|--------------------------------------------------------|
| Gas                        | Metal pipes, Gasware,<br>Metal flexible hose<br>tested & certified | 15mm(1/2"),<br>20mm(3/4")                              |
| Water in,<br>Hot water out | Bronze water pipe,<br>Alloy steel pipe,<br>Galvanized steel pipe   | 15mm(1/2")                                             |
| Heating                    | Bronze water pipe,<br>Alloy steel pipe,<br>XL pipe, PE pipe        | Main pipe:<br>20mm(3/4")<br>Branch pipe:<br>15mm(1/2") |

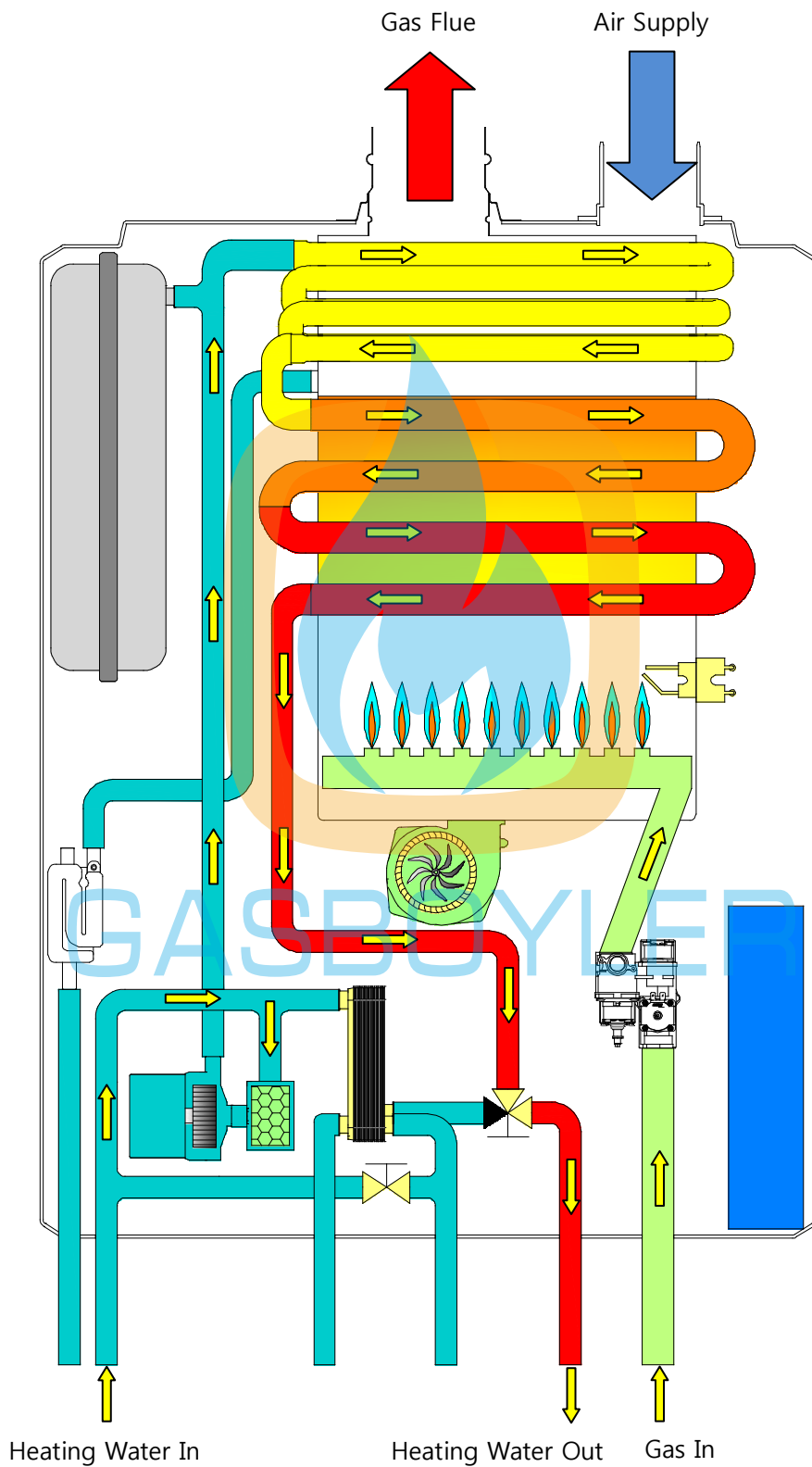


#### Pipe connection diameter

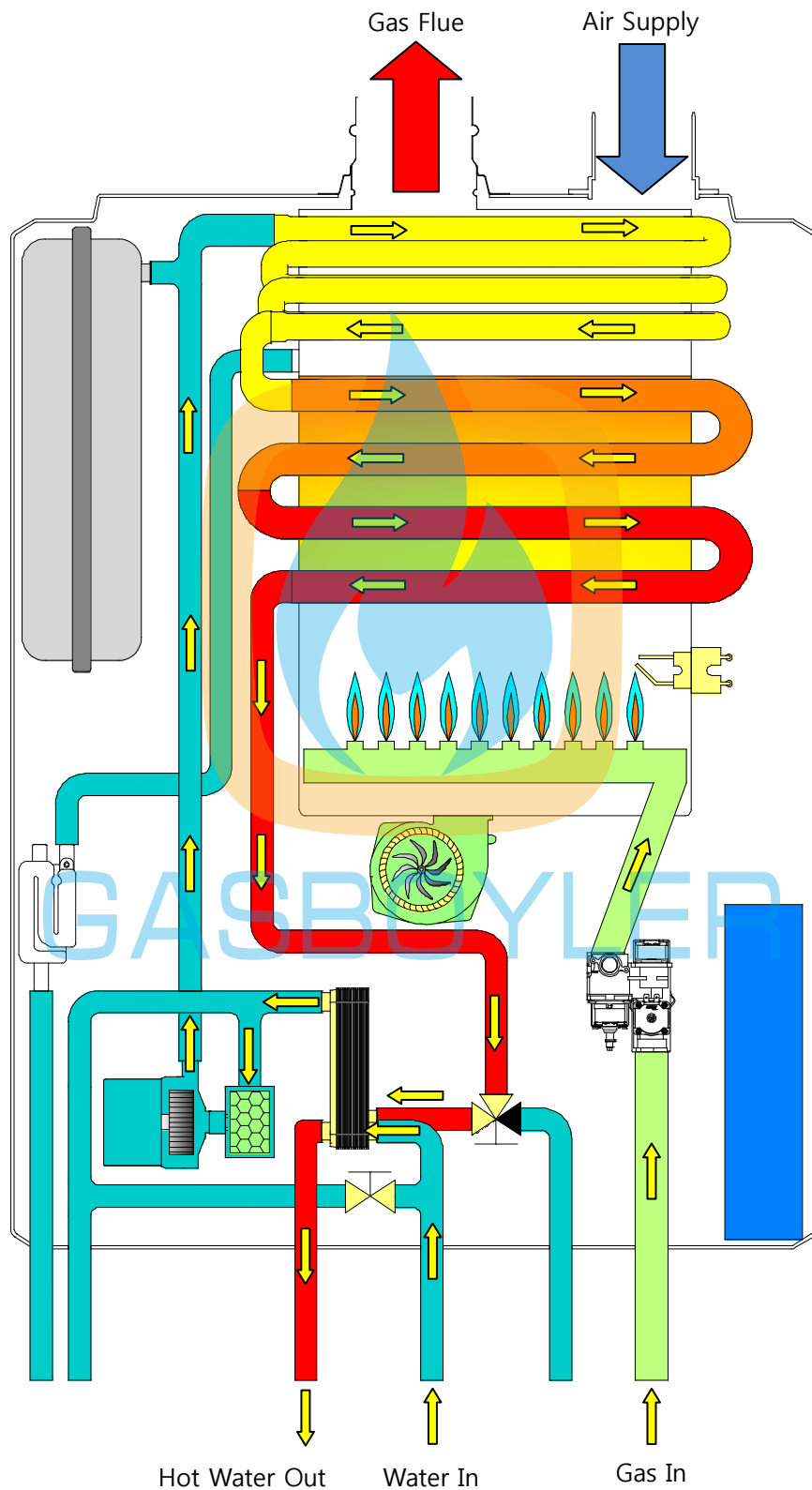
| No. | Bellow 20,000kcal/h     | Above 25,000kcal/h |
|-----|-------------------------|--------------------|
| ①   | 20mm Heating water out  | Equal to left      |
| ②   | 20mm Heating water in   | Equal to left      |
| ③   | 15mm Water in           | Equal to left      |
| ④   | 15mm Hot water out      | Equal to left      |
| ⑤   | 15mm Gas in             | 20mm Gas in        |
| ⑥   | Φ13 Condensed Water Out | Equal to left      |

## 4. Heating & Hot Water System

### 4.1. Heating System(Model : DGB-160MES/200MES)

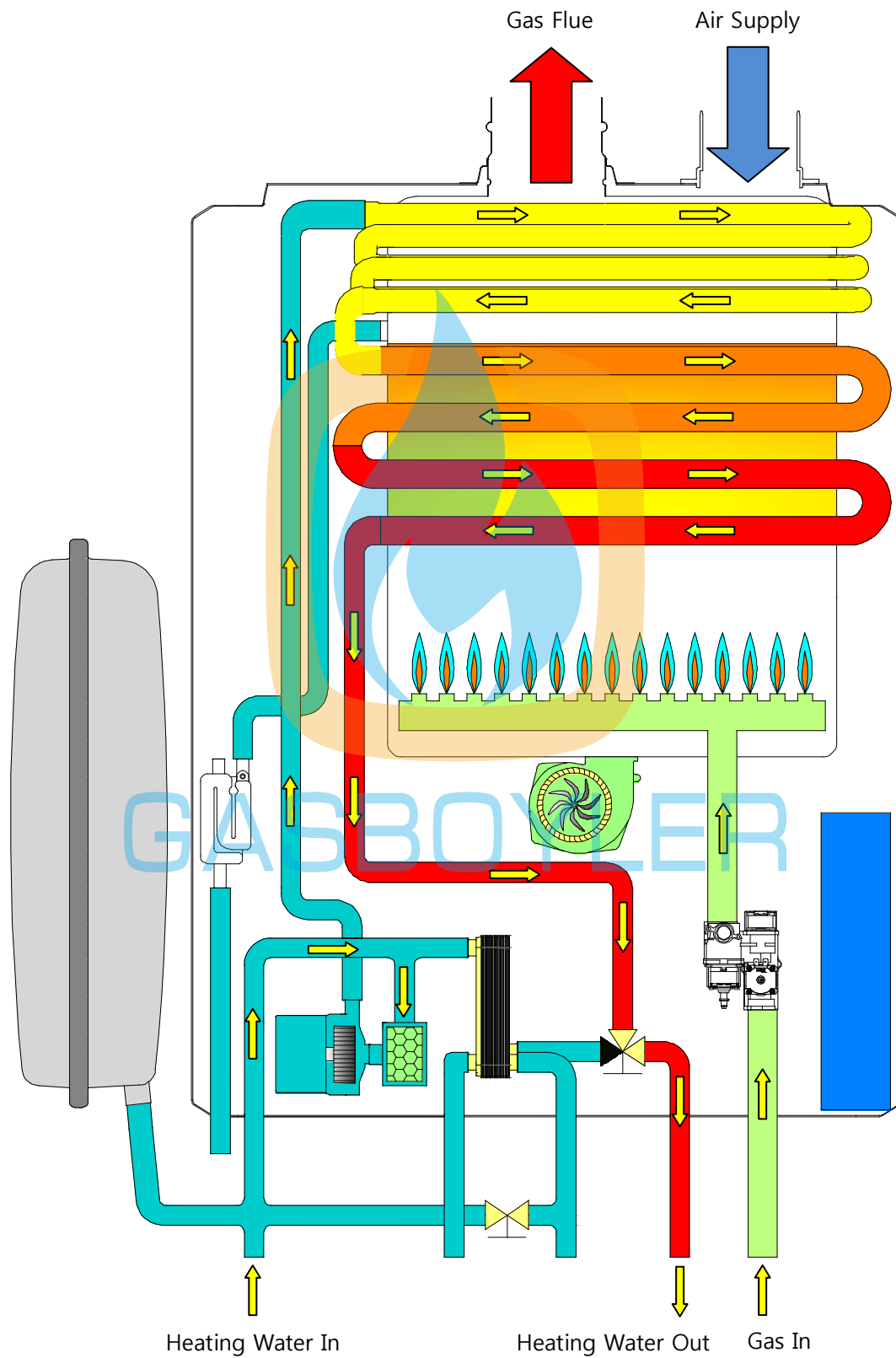


#### 4.2. Hot Water System(Model : DGB-160MES/200MES)

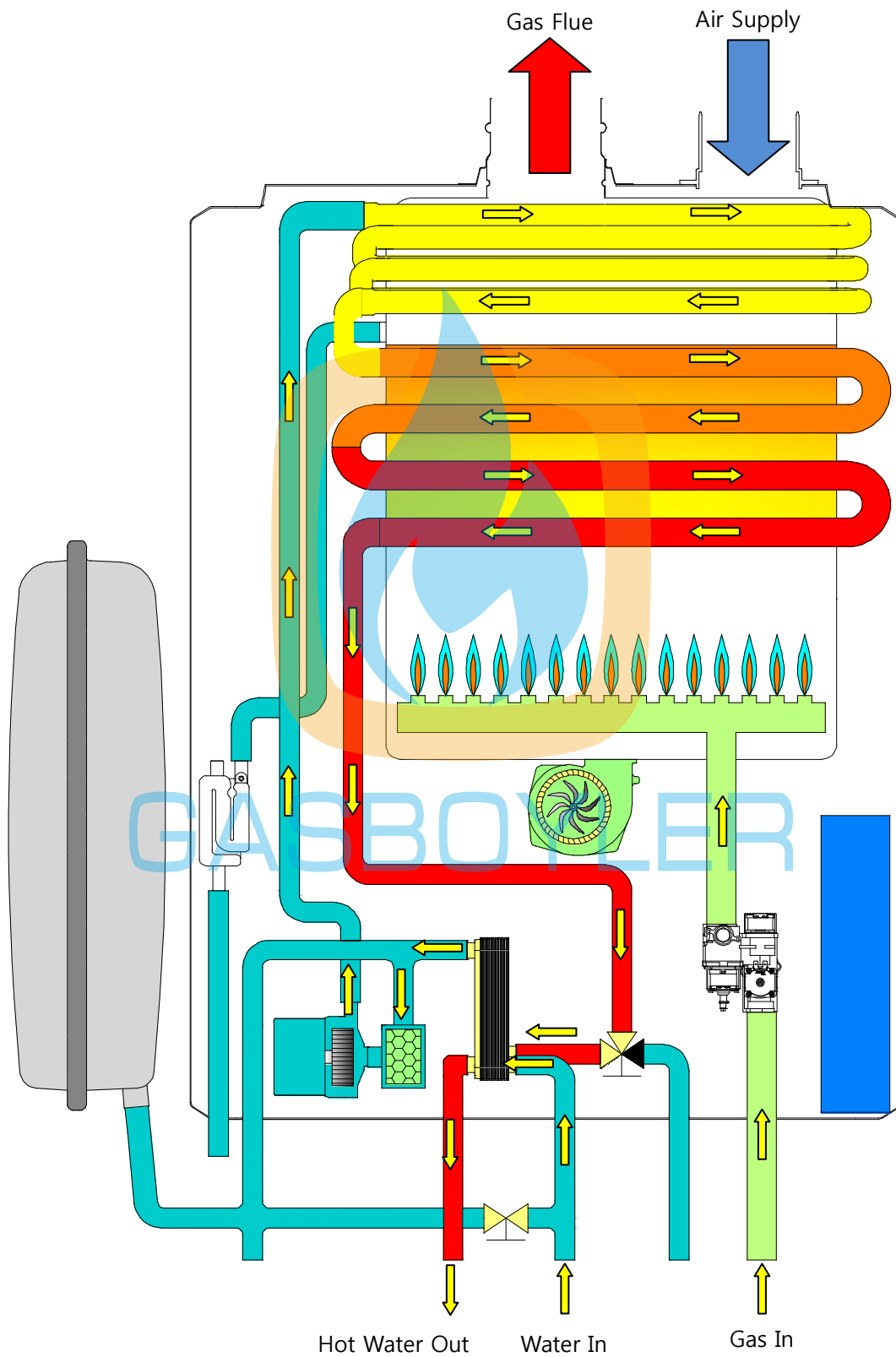




#### 4.3. Heating System(Model : DGB-250MES/300MES/350MES)

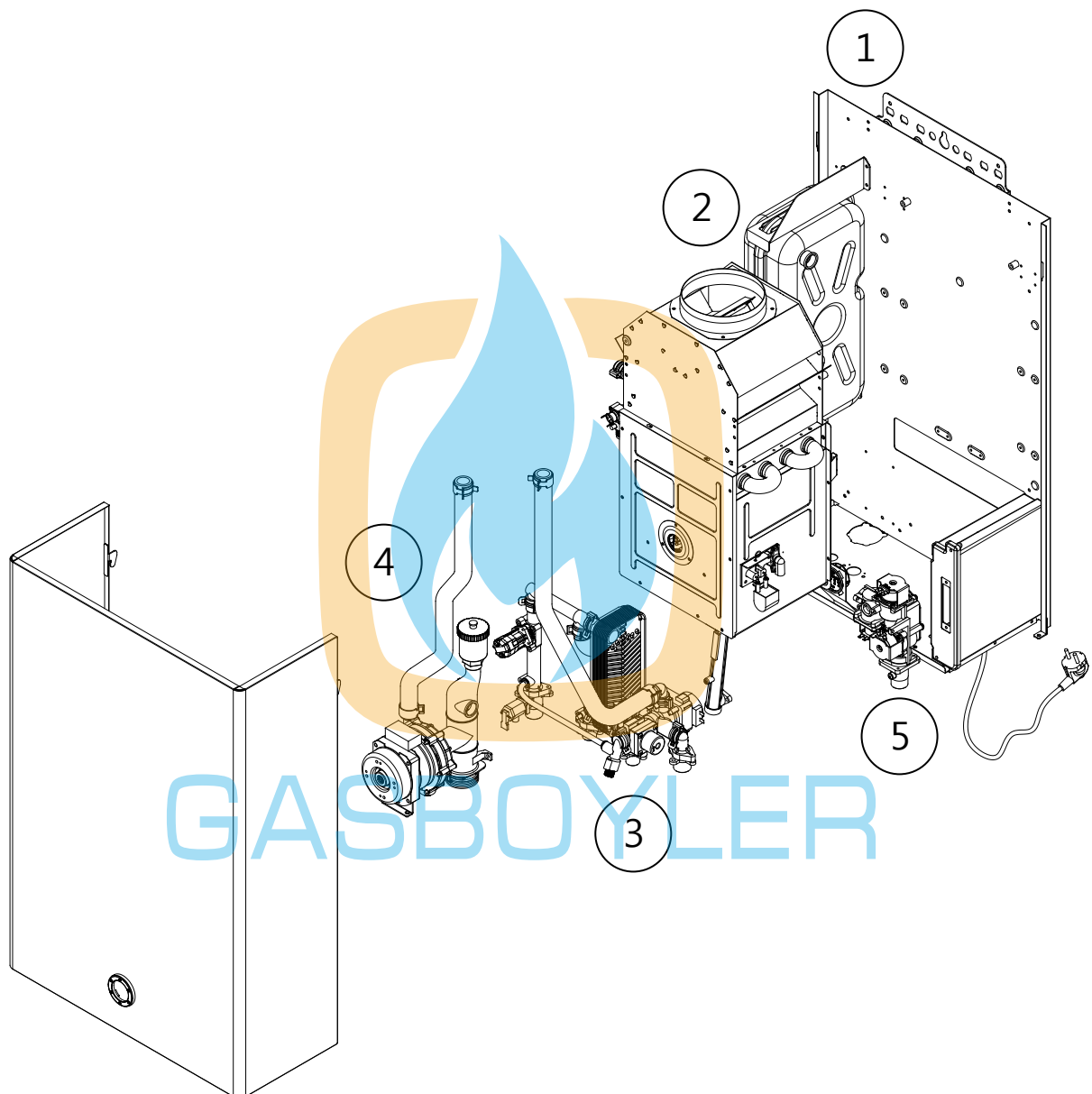


#### 4.4. Hot Water System(Model : DGB- DGB-250MES/300MES/350MES)

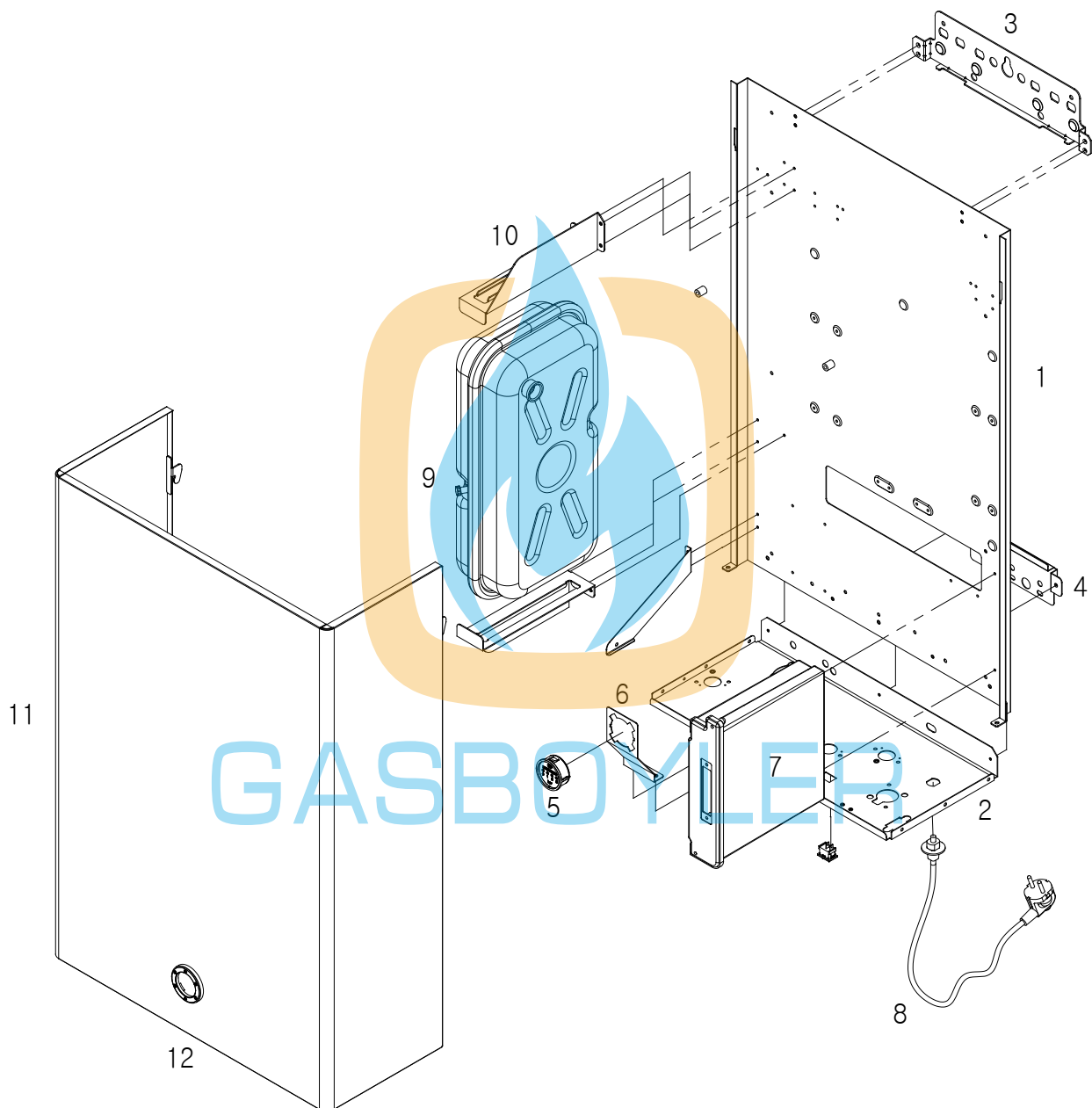


## DAEWOO GAS BOILER

(Model No. DGB-110MCF/130MCF/160MCF)



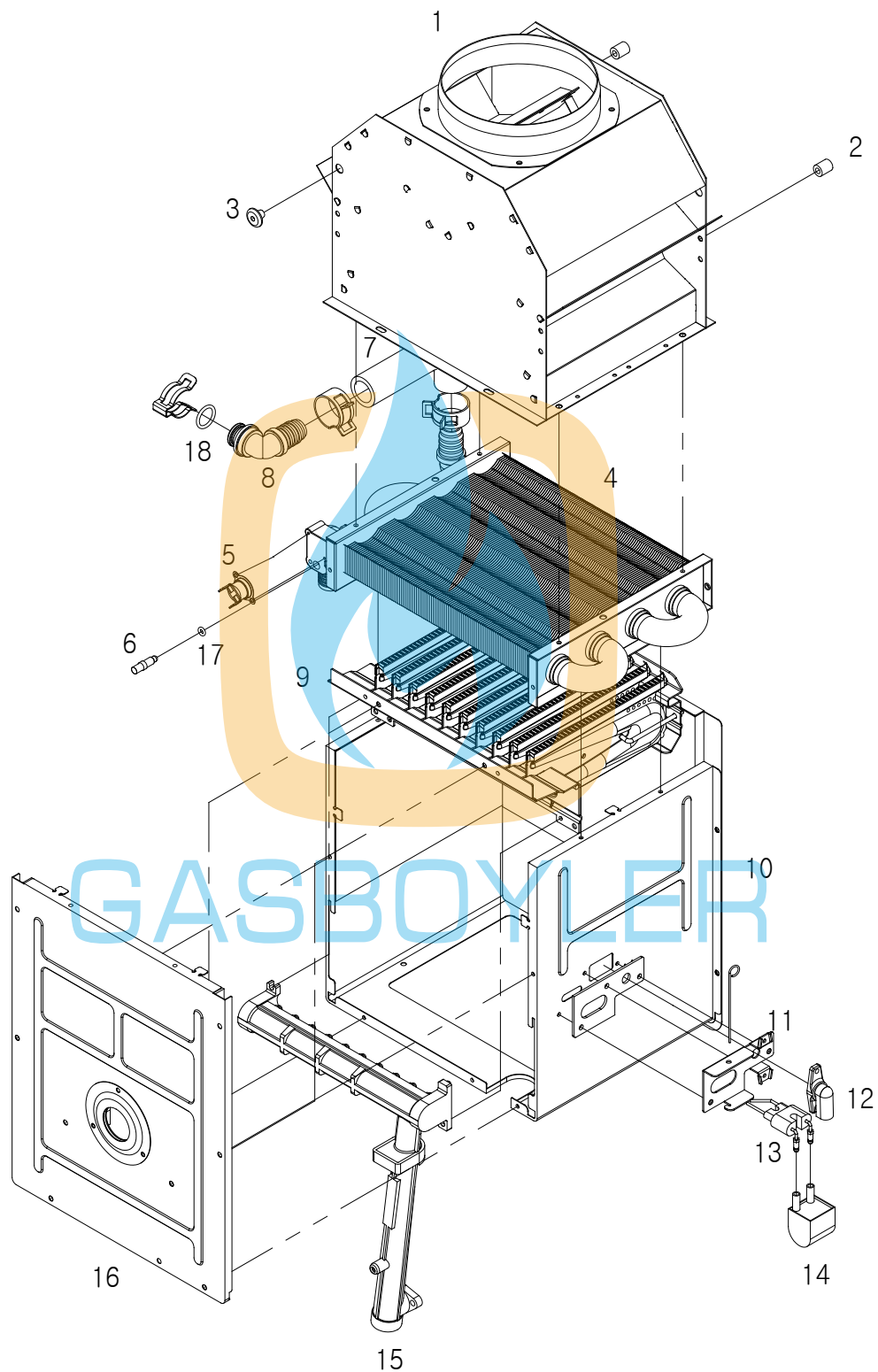
## 1. BODY PART



| No |    | PART NAME                    | PART CODE  | PCS | APPLIED MODEL |     |     | REMARK  |
|----|----|------------------------------|------------|-----|---------------|-----|-----|---------|
|    |    |                              |            |     | 11K           | 13K | 16K |         |
| 1  | 1  | FRAME MIDDLE                 | 3312219910 | 1   | ■             | ■   | ■   |         |
| 1  | 2  | FRAME LOWER                  | 3312207600 | 1   | ■             | ■   | ■   |         |
| 1  | 3  | FRAME INSTALL                | 3312200840 | 1   | ■             | ■   | ■   |         |
| 1  | 4  | FRAME BRACKET                | 3312203100 | 1   | ■             | ■   | ■   |         |
| 1  | 5  | DISPLAY PRESSURE<br>ASSY     | 3317732500 | 1   | ■             | ■   | ■   |         |
| 1  | 6  | BRACKET PRESSURE             | 3310605600 | 1   | ■             | ■   | ■   |         |
| 1  | 7  | M-PCB WHOLE ASSY             | 331439G100 | 1   | ■             | ■   | ■   | CF-G    |
| 1  | 8  | POWER CORD                   | WUK43K7352 | 1   | ■             | ■   | ■   |         |
| 1  | 9  | EXPANSION TANK               | 3317502900 | 1   | ■             | ■   | ■   |         |
| 1  | 10 | EXPANSION TANK<br>BRACKET    | 3310603900 | 2   | ■             | ■   | ■   |         |
| 1  | 11 | CABINET WHOLE<br>ASSY        | 3310815700 | 1   | ■             | ■   | ■   |         |
| 1  | 12 | PRESSURE GAUGE<br>DECORATION | 3311601000 | 1   | ■             | ■   | ■   |         |
| 1  | 13 | ROOMCON WHOLE<br>ASSY        | 3317616B00 | 1   | ■             | ■   | ■   | DBR-W31 |

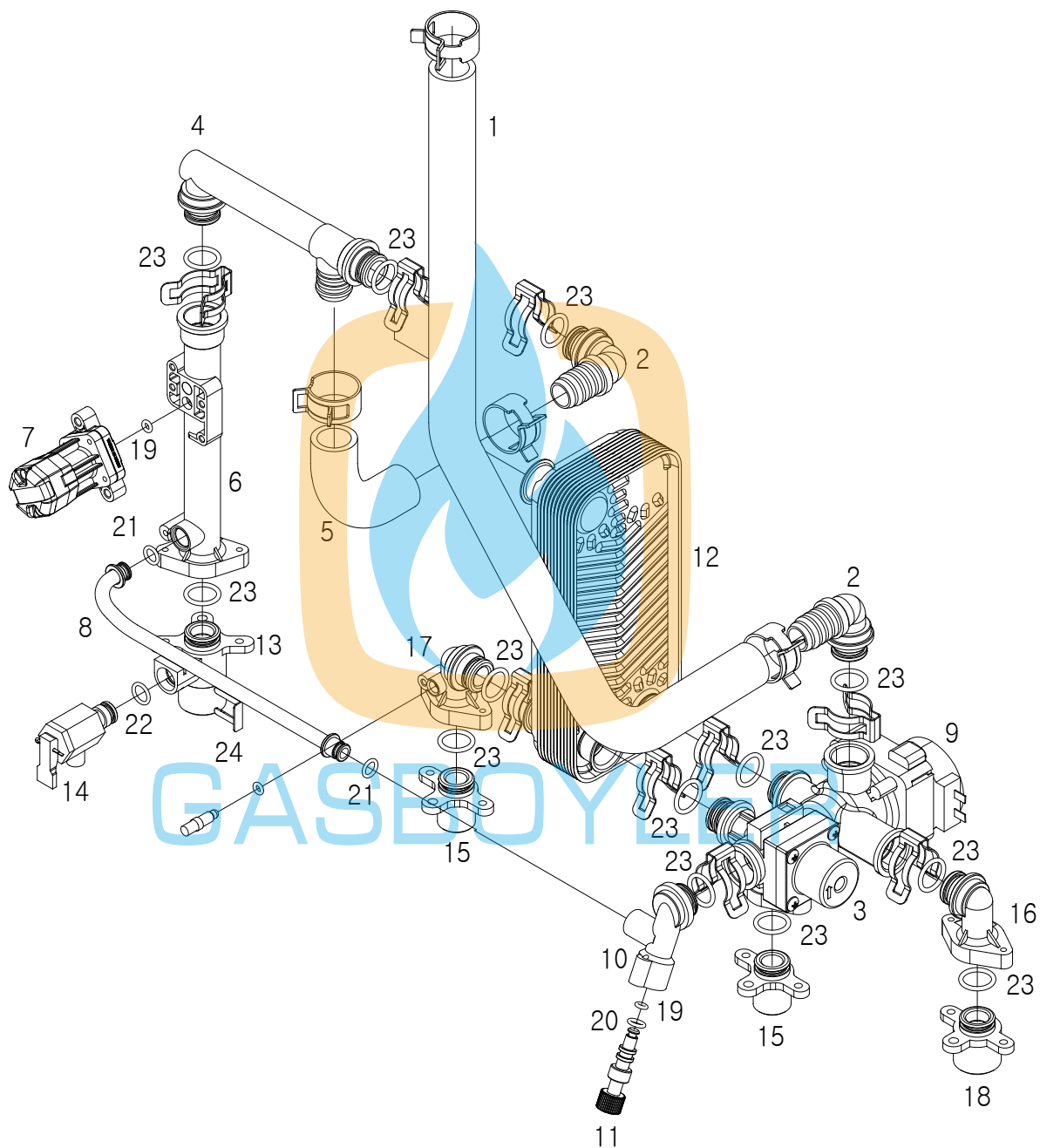
# GASBOILER

## 2. HEATING PART



| No |      | PART NAME                          | PART CODE  | PCS | APPLIED MODEL |     |     | REMARK     |
|----|------|------------------------------------|------------|-----|---------------|-----|-----|------------|
|    |      |                                    |            |     | 11K           | 13K | 16K |            |
| 2  | 1    | HOOD ASS'Y                         | 3317005700 | 1   | ■             | ■   | ■   |            |
| 2  | 2    | HOOD FIXTURE                       | 3317005790 | 2   | ■             | ■   | ■   |            |
| 2  | 3    | CABLE FIXTURE<br>PACKING           | 3314004910 | 1   | ■             | ■   | ■   |            |
| 2  | 4    | MAIN HEAT EXCHANGER<br>WHOLE ASS'Y | 3318108750 | 1   | ■             | ■   | ■   | 83FIN      |
| 2  | 5    | THERMOSTAT                         | 3317904500 | 1   | ■             | ■   | ■   | AUTO 95°C  |
| 2  | 6    | SENSOR TEMP HEAT-<br>HOT-FLUE      | 3314805800 | 1   | ■             | ■   | ■   |            |
| 2  | 7    | EXPANSION TANK<br>HOSE             | 3313204200 | 1   | ■             | ■   | ■   |            |
|    | 8    | HOSE NIPPLE                        | 3318400800 | 1   | ■             | ■   | ■   |            |
| 2  | 9    | BURNER ASS'Y                       | 3316108700 | 1   | ■             | ■   | ■   | 8FIN       |
| 2  | 10   | CHAMBER SIDE ASS'Y                 | 3316305800 | 1   | ■             | ■   | ■   |            |
| 2  | 11   | SPARK HOLDER                       | 3313001900 | 1   | ■             | ■   | ■   |            |
| 2  | 12   | FRAME SENSOR                       | 3314805400 | 1   | ■             | ■   | ■   |            |
| 2  | 13   | IGNITOR PLUG                       | 3317101100 | 1   | ■             | ■   | ■   |            |
| 2  | 14   | IGNITOR TRANS                      | 3317101400 | 1   | ■             | ■   | ■   |            |
| 2  | 15   | MANIFOLD ASS'Y                     | 3316105510 | 1   | ■             | ■   | ■   |            |
| 2  | 15-1 | NOZZLE                             | 4448J50N00 | 10  | ■             | ■   | ■   | Φ1.2(LNG)  |
| 2  | 15-2 | NOZZLE                             | 3317300400 | 10  | ■             | ■   | ■   | Φ0.95(LPG) |
| 2  | 16   | CHAMBER FRONT<br>ASS'Y             | 3316307400 | 1   | ■             | ■   | ■   |            |
| 2  | 17   | O-RING(P-4)                        | 3314600300 | 1   | ■             | ■   | ■   | SILICONE   |
| 2  | 18   | O-RING(P-16)                       | 3314601500 | 1   | ■             | ■   | ■   | SILICONE   |

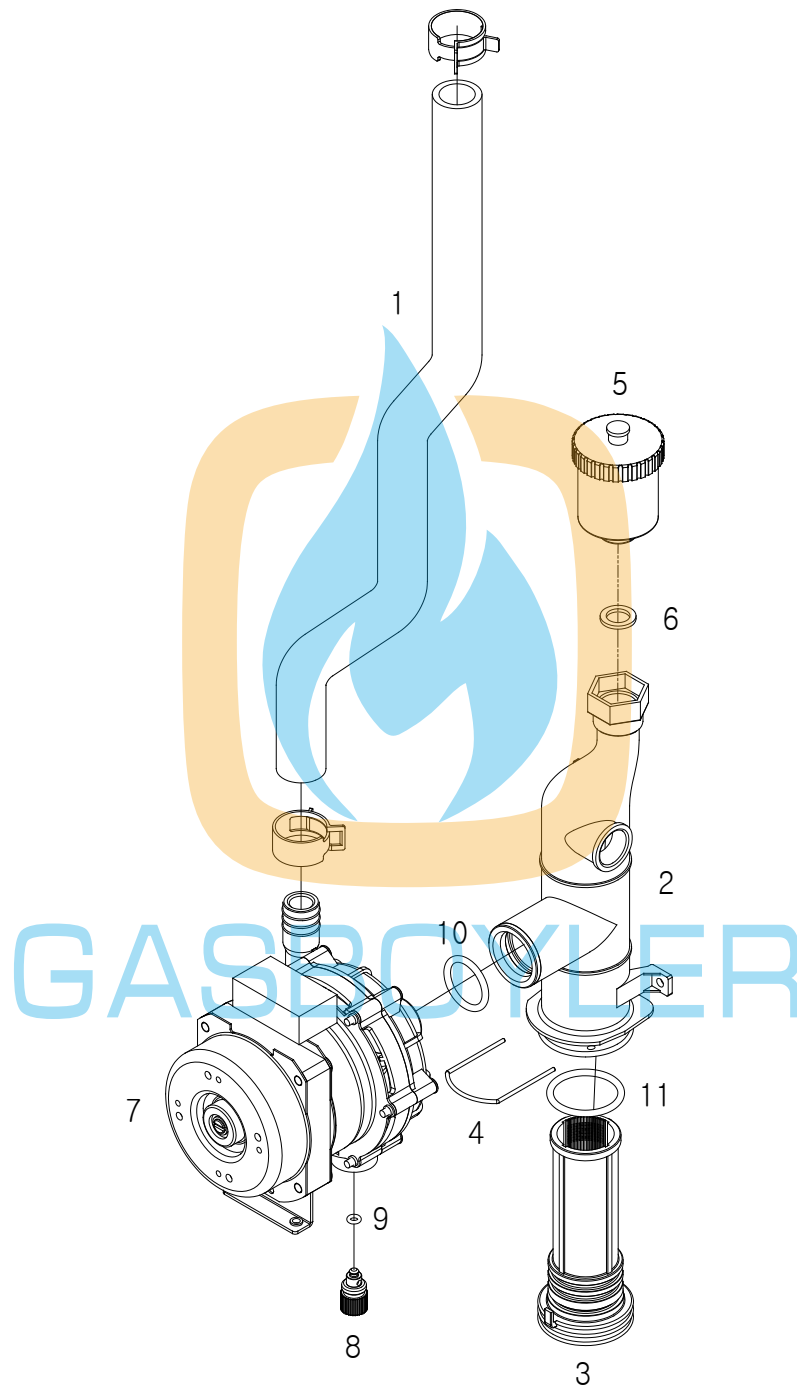
### 3. HOT WATER HEATING PART





| No |    | PART NAME                         | PART CODE  | PCS | APPLIED MODEL |     |     | REMARK   |
|----|----|-----------------------------------|------------|-----|---------------|-----|-----|----------|
|    |    |                                   |            |     | 11K           | 13K | 16K |          |
| 3  | 1  | SUPPLY HOSE                       | 3313205400 | 1   | ■             | ■   | ■   |          |
| 3  | 2  | HOSE NIPPLE                       | 3318400800 | 2   | ■             | ■   | ■   |          |
| 3  | 3  | FLOW SWITCH                       | 3317904600 | 1   | ■             | ■   | ■   |          |
| 3  | 4  | RETURN PIPE UP                    | 3314425800 | 1   | ■             | ■   | ■   |          |
| 3  | 5  | CLOSED HOSE                       | 3313205800 | 1   | ■             | ■   | ■   |          |
| 3  | 6  | RETURN PIPE LOW                   | 3314429000 | 1   | ■             | ■   | ■   |          |
| 3  | 7  | SENSOR PRESSURE                   | 3314806000 | 1   | ■             | ■   | ■   | 0~3.5bar |
| 3  | 8  | REPLENISH PIPE ASS'Y              | 3314425900 | 1   | ■             | ■   | ■   |          |
| 3  | 9  | 3-WAY VALVE                       | 3315434900 | 1   | ■             | ■   | ■   |          |
| 3  | 10 | REPLENISH VALVE<br>BODY           | 3315433300 | 1   | ■             | ■   | ■   |          |
| 3  | 11 | REPLENISH VALVE<br>COCK           | 3312600100 | 1   | ■             | ■   | ■   |          |
| 3  | 12 | HOT WATER HEAT<br>EXCHANGER ASS'Y | 3318112300 | 1   | ■             | ■   | ■   | 12FIN    |
| 3  | 13 | RETURN UNION                      | 3318504700 | 1   | ■             | ■   | ■   |          |
| 3  | 14 | PRESSURE RELIEF<br>VALVE          | 3315404400 | 1   | ■             | ■   | ■   |          |
| 3  | 15 | WATER IN UNION                    | 3318505000 | 1   | ■             | ■   | ■   |          |
|    |    | HOT WATER OUT<br>UNION            |            |     |               |     |     |          |
| 3  | 16 | SUPPLY NIPPLE                     | 3319000800 | 1   | ■             | ■   | ■   |          |
| 3  | 17 | HOT WATER NIPPLE                  | 3319001800 | 1   | ■             | ■   | ■   |          |
| 3  | 18 | SUPPLY UNION                      | 3318504900 | 1   | ■             | ■   | ■   |          |
| 3  | 19 | O-RING(P-4)                       | 3314600300 | 3   | ■             | ■   | ■   | SILICONE |
| 3  | 20 | O-RING(P-7)                       | 3314603600 | 1   | ■             | ■   | ■   | SILICONE |
| 3  | 21 | O-RING(P-8)                       | 3314602000 | 2   | ■             | ■   | ■   | SILICONE |
| 3  | 22 | O-RING(P-10)                      | 3314602300 | 1   | ■             | ■   | ■   | SILICONE |
| 3  | 23 | O-RING(P-16)                      | 3314601500 | 13  | ■             | ■   | ■   | SILICONE |
| 3  | 24 | EXPANSION PIPE<br>SPRING          | 3315101200 | 1   | ■             | ■   | ■   |          |

## 4. CIRCULATION PART

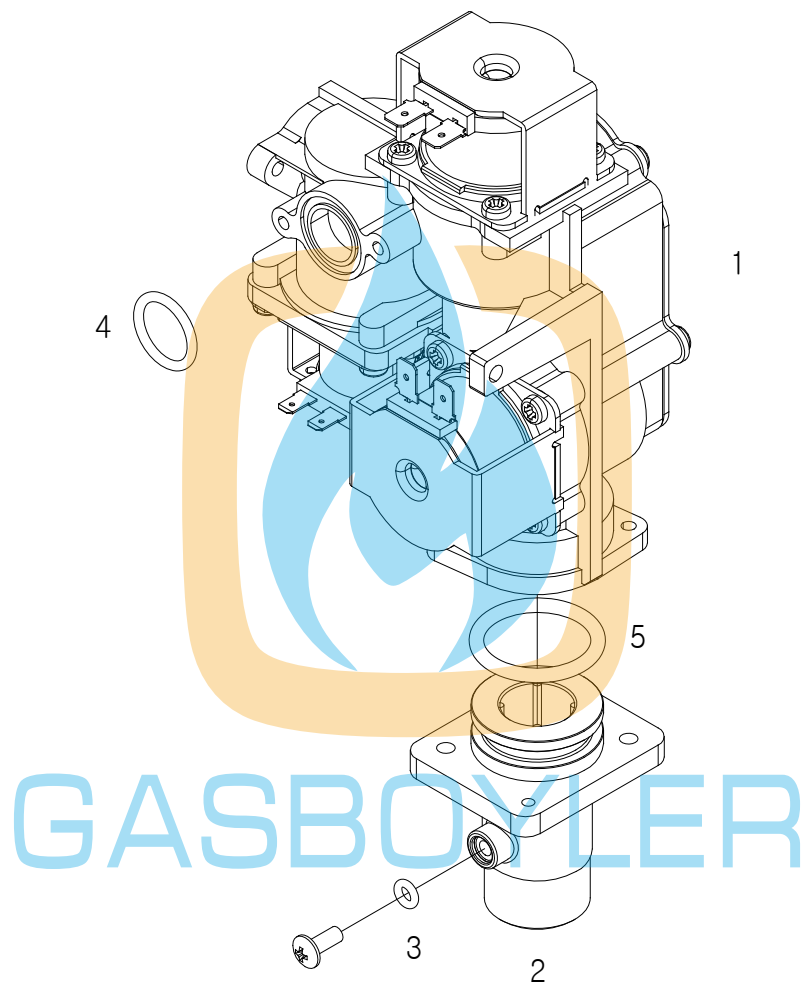


| No |    | PART NAME        | PART CODE  | PCS | APPLIED MODEL |     |     | REMARK   |
|----|----|------------------|------------|-----|---------------|-----|-----|----------|
|    |    |                  |            |     | 11K           | 13K | 16K |          |
| 4  | 1  | RETURN HOSE      | 3313207000 | 1   | ■             | ■   | ■   |          |
| 4  | 2  | STRAINER BODY    | 3318002200 | 1   | ■             | ■   | ■   |          |
| 4  | 3  | STRAINER HOLDER  | 3313002300 | 1   | ■             | ■   | ■   |          |
| 4  | 4  | STRAINER PIN     | 3318001800 | 1   | ■             | ■   | ■   |          |
| 4  | 5  | AIR VENT ASS'Y   | 3310061200 | 1   | ■             | ■   | ■   |          |
| 4  | 6  | AIR VENT PACKING | 3314005900 | 1   | ■             | ■   | ■   |          |
| 4  | 7  | PUMP ASS'Y       | 3317418800 | 1   | ■             | ■   | ■   |          |
| 4  | 8  | DRAIN COCK       | 3316500100 | 1   | ■             | ■   | ■   |          |
| 4  | 9  | O-RING(P-4)      | 3314600300 | 1   | ■             | ■   | ■   | SILICONE |
| 4  | 10 | O-RING(P-25)     | 3314602500 | 1   | ■             | ■   | ■   | SILICONE |
| 4  | 11 | O-RING(P-34)     | 3314602400 | 1   | ■             | ■   | ■   | SILICONE |



# GASBOYLER

## **5. GAS SUPPLY PART**



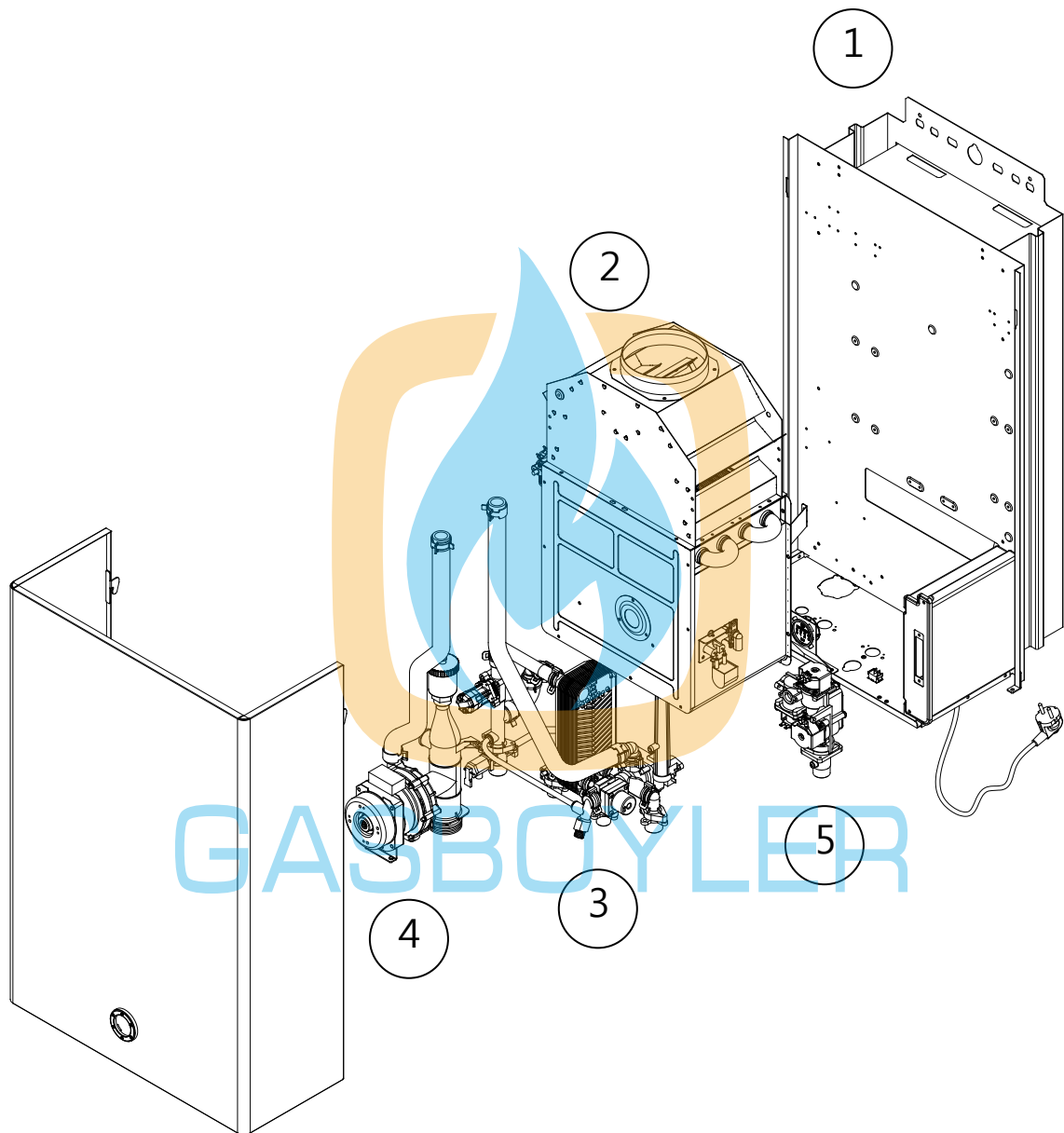
| No |   | PART NAME       | PART CODE  | PCS | APPLIED MODEL |     |     | REMARK   |
|----|---|-----------------|------------|-----|---------------|-----|-----|----------|
|    |   |                 |            |     | 11K           | 13K | 16K |          |
| 5  | 1 | GAS VALVE       | 3315404700 | 1   | ■             | ■   | ■   |          |
| 5  | 2 | GAS VALVE UNION | 3318504400 | 1   | ■             | ■   | ■   |          |
| 5  | 3 | O-RING(P-4)     | 3314600300 | 1   | ■             | ■   | ■   | SILICONE |
| 5  | 4 | O-RING(P-16)    | 3314600600 | 1   | ■             | ■   | ■   | NBR      |
| 5  | 5 | O-RING(P-26)    | 3314000500 | 1   | ■             | ■   | ■   | NBR      |



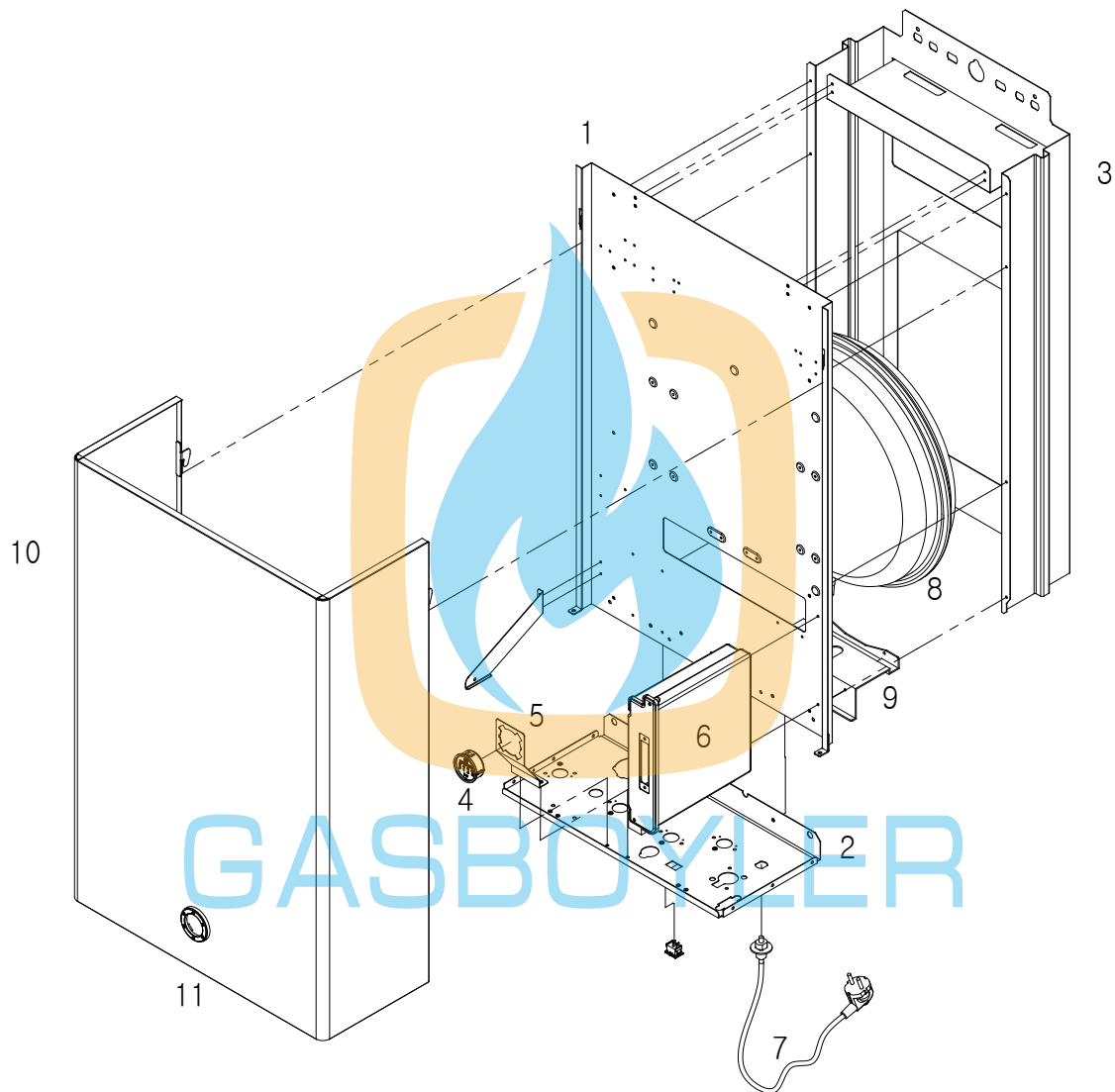
# GASBOYLER

## **DAEWOO GAS BOILER**

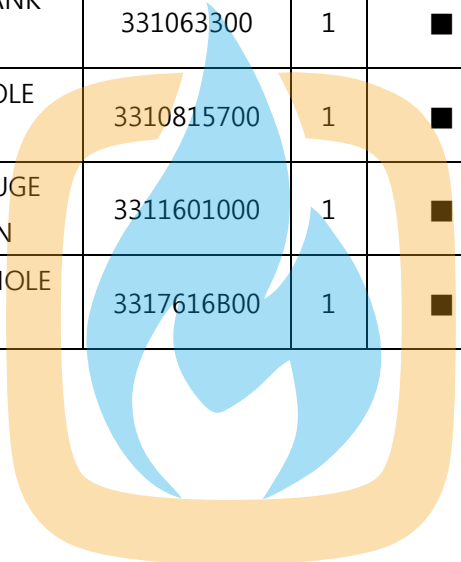
(Model No. DGB-200MCF/250MCF)



## 1. BODY PART



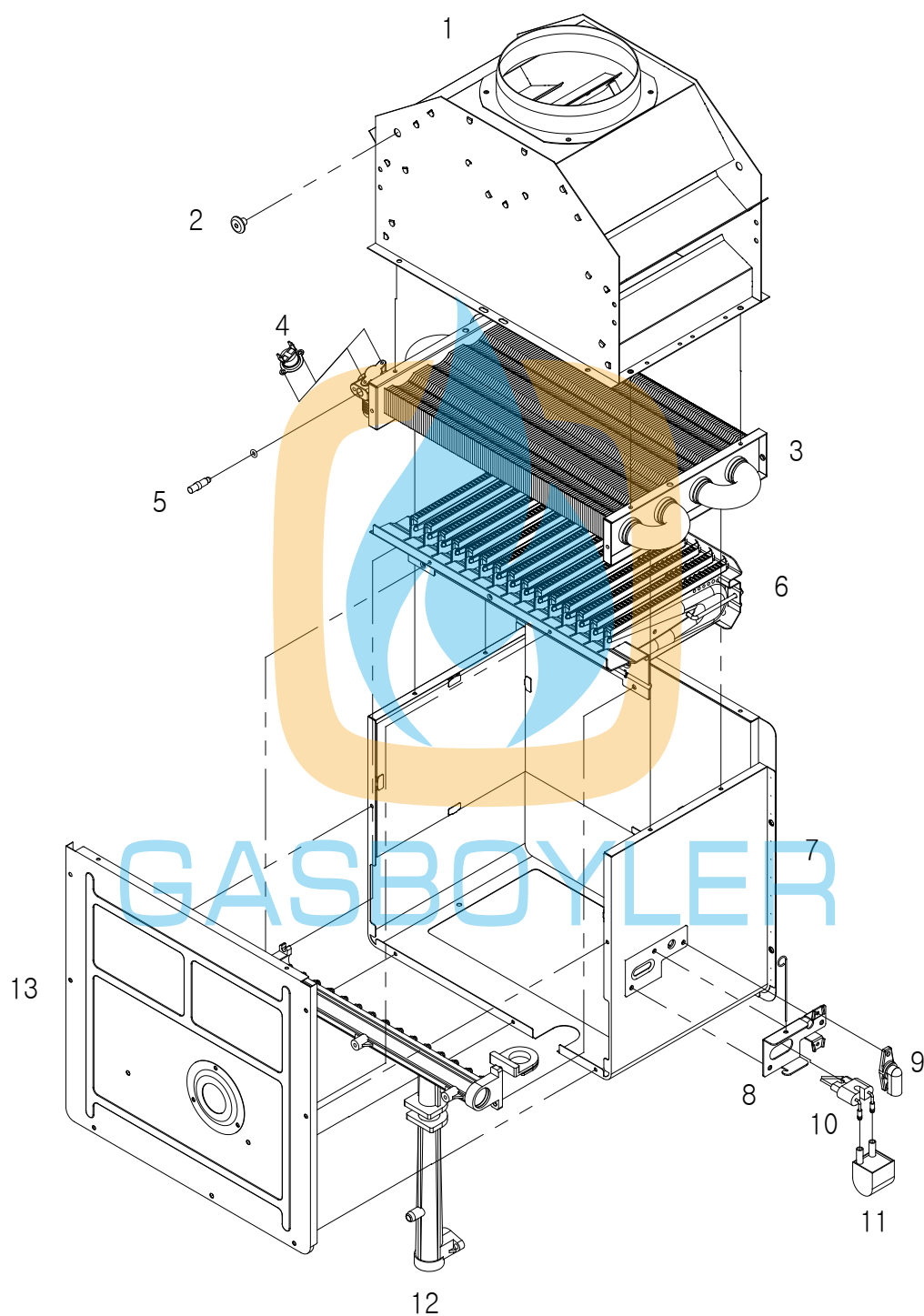
| No |    | PART NAME                    | PART CODE  | PCS | APPLIED MODEL |     | REMARK  |
|----|----|------------------------------|------------|-----|---------------|-----|---------|
|    |    |                              |            |     | 20K           | 25K |         |
| 1  | 1  | FRAME MIDDLE                 | 3312219900 | 1   | ■             | ■   |         |
| 1  | 2  | FRAME LOWER                  | 3312221200 | 1   | ■             | ■   |         |
| 1  | 3  | FRAME REAR                   | 3312221300 | 1   | ■             | ■   |         |
| 1  | 4  | DISPLAY PRESSURE<br>ASSY     | 3317732500 | 1   | ■             | ■   |         |
| 1  | 5  | BRACKET PRESSURE             | 3310605600 | 1   | ■             | ■   |         |
| 1  | 6  | M-PCB WHOLE AS               | 331439G100 | 1   | ■             | ■   | CF-G    |
| 1  | 7  | POWER CORD                   | WUK43K7352 | 1   | ■             | ■   |         |
| 1  | 8  | EXPANSION TANK               | 4448F52002 | 1   | ■             | ■   | 8L      |
| 1  | 9  | EXPANSION TANK<br>BRACKET    | 331063300  | 1   | ■             | ■   |         |
| 1  | 10 | CABINET WHOLE<br>ASSY        | 3310815700 | 1   | ■             | ■   |         |
| 1  | 11 | PRESSURE GAUGE<br>DECORATION | 3311601000 | 1   | ■             | ■   |         |
| 1  | 12 | ROOMCON WHOLE<br>ASSY        | 3317616B00 | 1   | ■             | ■   | DBR-W31 |



# GASBOYLER



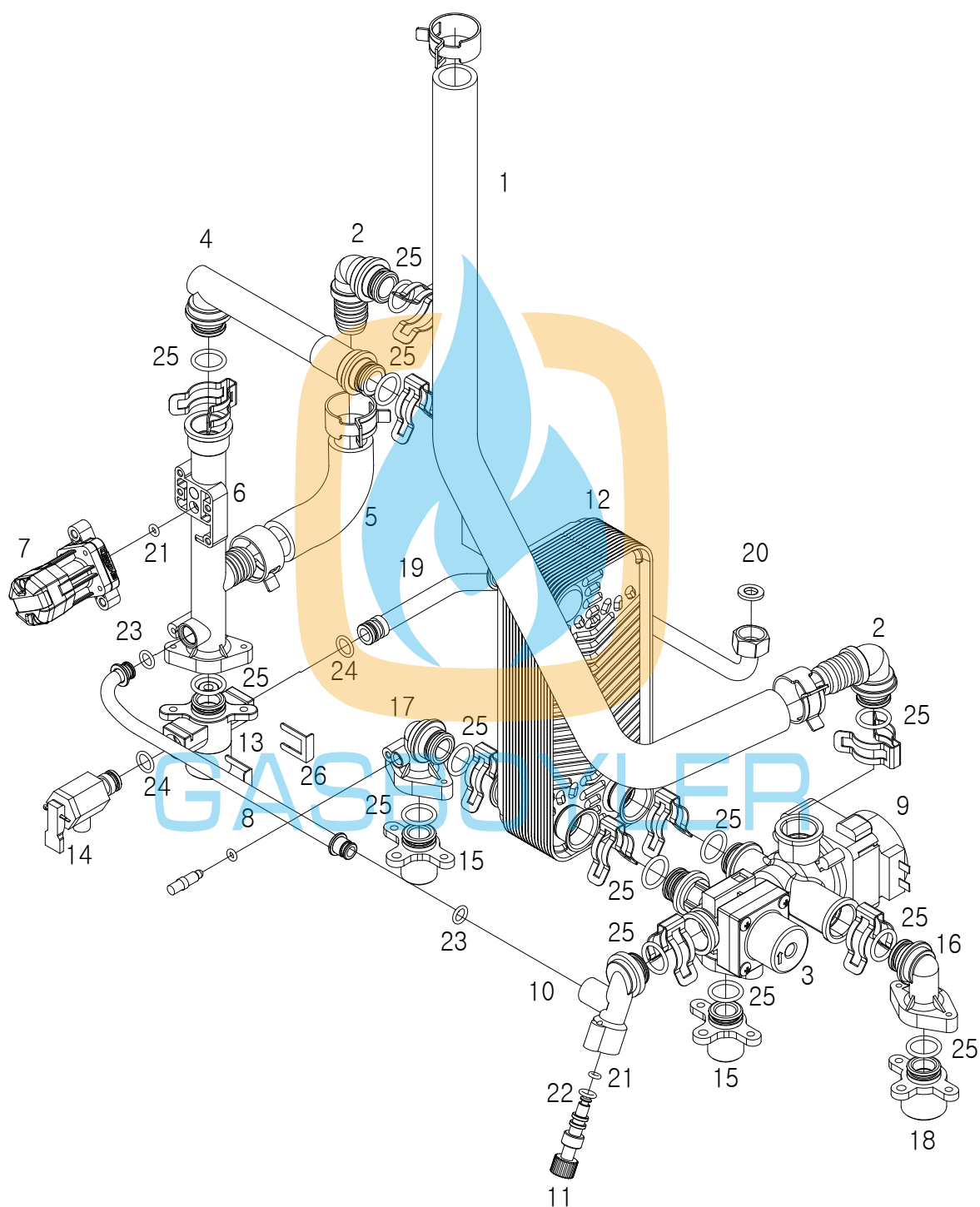
## 2. HEATING PART



| No |      | PART NAME                         | PART CODE  | PCS | APPLIED MODEL |     | REMARK     |
|----|------|-----------------------------------|------------|-----|---------------|-----|------------|
|    |      |                                   |            |     | 20K           | 25K |            |
| 2  | 1    | HOOD ASS'Y                        | 3317005700 | 1   | ■             | ■   |            |
| 2  | 2    | CABLE FIXTURE<br>PACKING          | 3314004910 | 1   | ■             | ■   |            |
| 2  | 3    | MAIN HEAT EXCHANER<br>WHOLE ASS'Y | 3318108760 | 1   | ■             | ■   | 111FIN     |
| 2  | 4    | THERMOSTAT                        | 3317904500 | 1   | ■             | ■   | AUTO 95°C  |
| 2  | 5    | SENSOR TEMP HEAT-<br>HOT-FLUE     | 3314805800 | 1   | ■             | ■   |            |
| 2  | 6    | BURNER ASS'Y                      | 3316123700 | 1   | ■             | ■   | 15FIN      |
| 2  | 7    | CHAMBER SIDE ASS'Y                | 3316315700 | 1   | ■             | ■   |            |
| 2  | 8    | SPARK HOLDER                      | 3313001900 | 1   | ■             | ■   |            |
| 2  | 9    | FRAME SENSOR                      | 3314805400 | 1   | ■             | ■   |            |
| 2  | 10   | IGNITOR PLUG                      | 3317101100 | 1   | ■             | ■   |            |
| 2  | 11   | IGNITOR TRANS                     | 3317101400 | 1   | ■             | ■   |            |
| 2  | 12   | MANIFOLD ASS'Y                    | 3316123600 | 1   | ■             | ■   |            |
| 2  | 12-1 | NOZZLE                            | 4448J50N00 | 15  | ■             | ■   | Φ1.2(LNG)  |
| 2  | 12-2 | NOZZLE                            | 3317300400 | 15  | ■             | ■   | Φ0.95(LPG) |
| 2  | 13   | CHAMBER FRONT<br>ASS'Y            | 3316303900 | 1   | ■             | ■   |            |

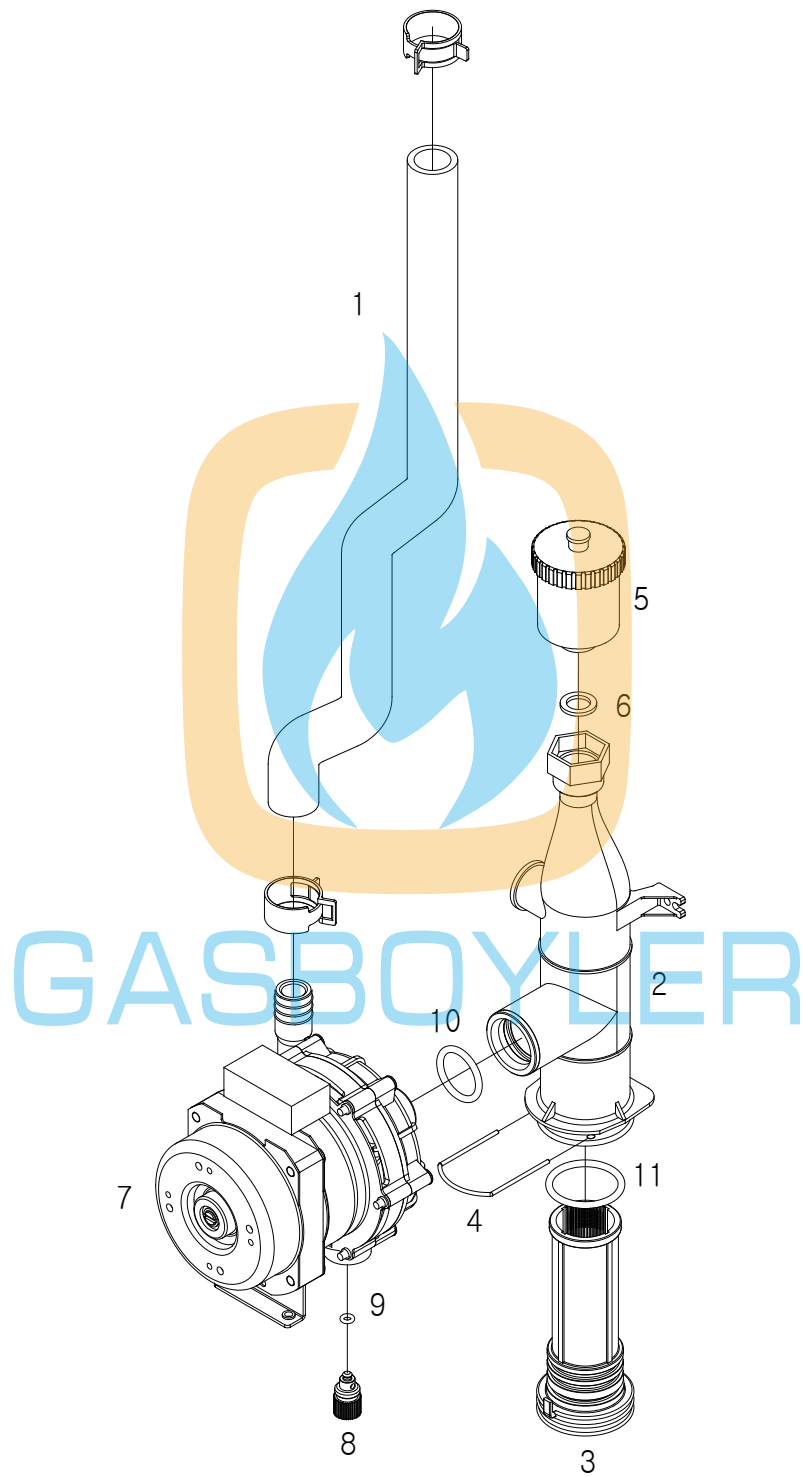
# GASBOYLER

### 3. HOT WATER HEATING PART



| No |    | PART NAME                         | PART CODE  | PCS | APPLIED MODEL |     | REMARK   |
|----|----|-----------------------------------|------------|-----|---------------|-----|----------|
|    |    |                                   |            |     | 20K           | 25K |          |
| 3  | 1  | SUPPLY HOSE                       | 3313205500 | 1   | ■             | ■   |          |
| 3  | 2  | HOSE NIPPLE                       | 3318400800 | 2   | ■             | ■   |          |
| 3  | 3  | FLOW SWITCH                       | 3317904600 | 1   | ■             | ■   |          |
| 3  | 4  | RETURN PIPE UP                    | 3314426500 | 1   | ■             | ■   |          |
| 3  | 5  | CLOSED HOSE                       | 3313205800 | 1   | ■             | ■   |          |
| 3  | 6  | RETURN PIPE LOW                   | 3314429100 | 1   | ■             | ■   |          |
| 3  | 7  | SENSOR PRESSURE                   | 3314806000 | 1   | ■             | ■   | 0~3.5bar |
| 3  | 8  | REPLENISH PIPE ASS'Y              | 3314426000 | 1   | ■             | ■   |          |
| 3  | 9  | 3-WAY VALVE                       | 3315434900 | 1   | ■             | ■   |          |
| 3  | 10 | REPLENISH VALVE<br>BODY           | 3315433300 | 1   | ■             | ■   |          |
| 3  | 11 | REPLENISH VALVE<br>COCK           | 3312600100 | 1   | ■             | ■   |          |
| 3  | 12 | HOT WATER HEAT<br>EXCHANGER ASS'Y | 3318112400 | 1   | ■             | ■   | 16FIN    |
| 3  | 13 | RETURN UNION                      | 3318504800 | 1   | ■             | ■   |          |
| 3  | 14 | PRESSURE RELIEF<br>VALVE          | 3315404400 | 1   | ■             | ■   |          |
| 3  | 15 | WATER IN UNION                    | 3318505000 | 2   | ■             | ■   |          |
|    |    | HOT WATER OUT<br>UNION            |            |     |               |     |          |
| 3  | 16 | SUPPLY NIPPLE                     | 3319000800 | 1   | ■             | ■   |          |
| 3  | 17 | HOT WATER NIPPLE                  | 3319001800 | 1   | ■             | ■   |          |
| 3  | 18 | SUPPLY UNION                      | 3318504900 | 1   | ■             | ■   |          |
| 3  | 19 | EXPANSION TANK<br>PIPE ASS'Y      | 3314426100 | 1   | ■             | ■   |          |
| 3  | 20 | EXPANSION TANK<br>PIPE PACKING    | 3314003600 | 1   | ■             | ■   |          |
| 3  | 21 | O-RING(P-4)                       | 3314600300 | 3   | ■             | ■   | SILICONE |
| 3  | 22 | O-RING(P-7)                       | 3314603600 | 1   | ■             | ■   | SILICONE |
| 3  | 23 | O-RING(P-8)                       | 3314602000 | 2   | ■             | ■   | SILICONE |
| 3  | 24 | O-RING(P-10)                      | 3314602300 | 2   | ■             | ■   | SILICONE |
| 3  | 25 | O-RING(P-16)                      | 3314601500 | 13  | ■             | ■   | SILICONE |
| 3  | 26 | EXPANSION PIPE<br>SPRING          | 3315101200 | 2   | ■             | ■   |          |

## 4. CIRCULATION PART

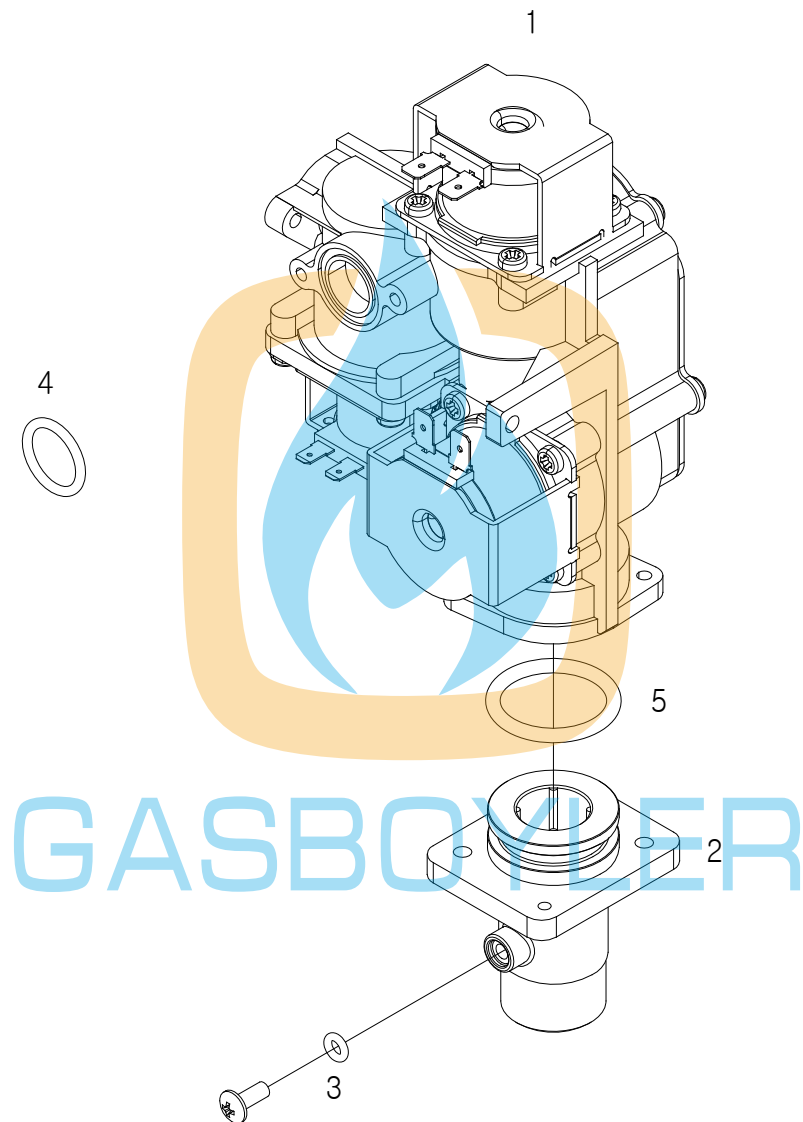


| No |    | PART NAME        | PART CODE  | PCS | APPLIED MODEL |     | REMARK   |
|----|----|------------------|------------|-----|---------------|-----|----------|
|    |    |                  |            |     | 20K           | 25K |          |
| 4  | 1  | RETURN HOSE      | 3313206900 | 1   | ■             | ■   |          |
| 4  | 2  | STRAINER BODY    | 3318002200 | 1   | ■             | ■   |          |
| 4  | 3  | STRAINER HOLDER  | 3313002300 | 1   | ■             | ■   |          |
| 4  | 4  | STRAINER PIN     | 3318001800 | 1   | ■             | ■   |          |
| 4  | 5  | AIR VENT ASS'Y   | 3310061200 | 1   | ■             | ■   |          |
| 4  | 6  | AIR VENT PACKING | 3314005900 | 1   | ■             | ■   |          |
| 4  | 7  | PUMP ASS'Y       | 3317418800 | 1   | ■             | ■   |          |
| 4  | 8  | DRAIN COCK       | 3316500100 | 1   | ■             | ■   |          |
| 4  | 9  | O-RING(P-4)      | 3314600300 | 1   | ■             | ■   | SILICONE |
| 4  | 10 | O-RING(P-25)     | 3314602500 | 1   | ■             | ■   | SILICONE |
| 4  | 11 | O-RING(P-34)     | 3314602400 | 1   | ■             | ■   | SILICONE |



# GASBOYLER

## 5. GAS SUPPLY PART



| No |   | PART NAME       | PART CODE  | PCS | APPLIED MODEL |     | REMARK   |
|----|---|-----------------|------------|-----|---------------|-----|----------|
|    |   |                 |            |     | 20K           | 25K |          |
| 5  | 1 | GAS VALVE       | 3315404700 | 1   | ■             | ■   |          |
| 5  | 2 | GAS VALVE UNION | 3318504300 | 1   | ■             | ■   |          |
| 5  | 3 | O-RING(P-4)     | 3314600300 | 1   | ■             | ■   | SILICONE |
| 5  | 4 | O-RING(P-16)    | 3314600600 | 1   | ■             | ■   | NBR      |
| 5  | 5 | O-RING(P-26)    | 3314000500 | 1   | ■             | ■   | NBR      |



**GASBOYLER**



## **Content**

1. Gas Boiler(Specifications)
2. General Description
3. Appearance of boiler
  - 3.1 DGB-110MCF/130MCF/160MCF
  - 3.2 DGB-200MCF/250MCF
  - 3.3 Installation
4. Heating & Hot Water System
  - 4.1 Heating System(DGB-110MCF/130MCF/160MCF)
  - 4.2 Hot Water System(DGB-110MCF/130MCF/160MCF)
  - 4.3 Heating System(DGB-200MCF/250MCF)
  - 4.4 Hot Water System(DGB-200MCF/250MCF)



**GASBOYLER**

## 1. Gas Boiler(Specifications)

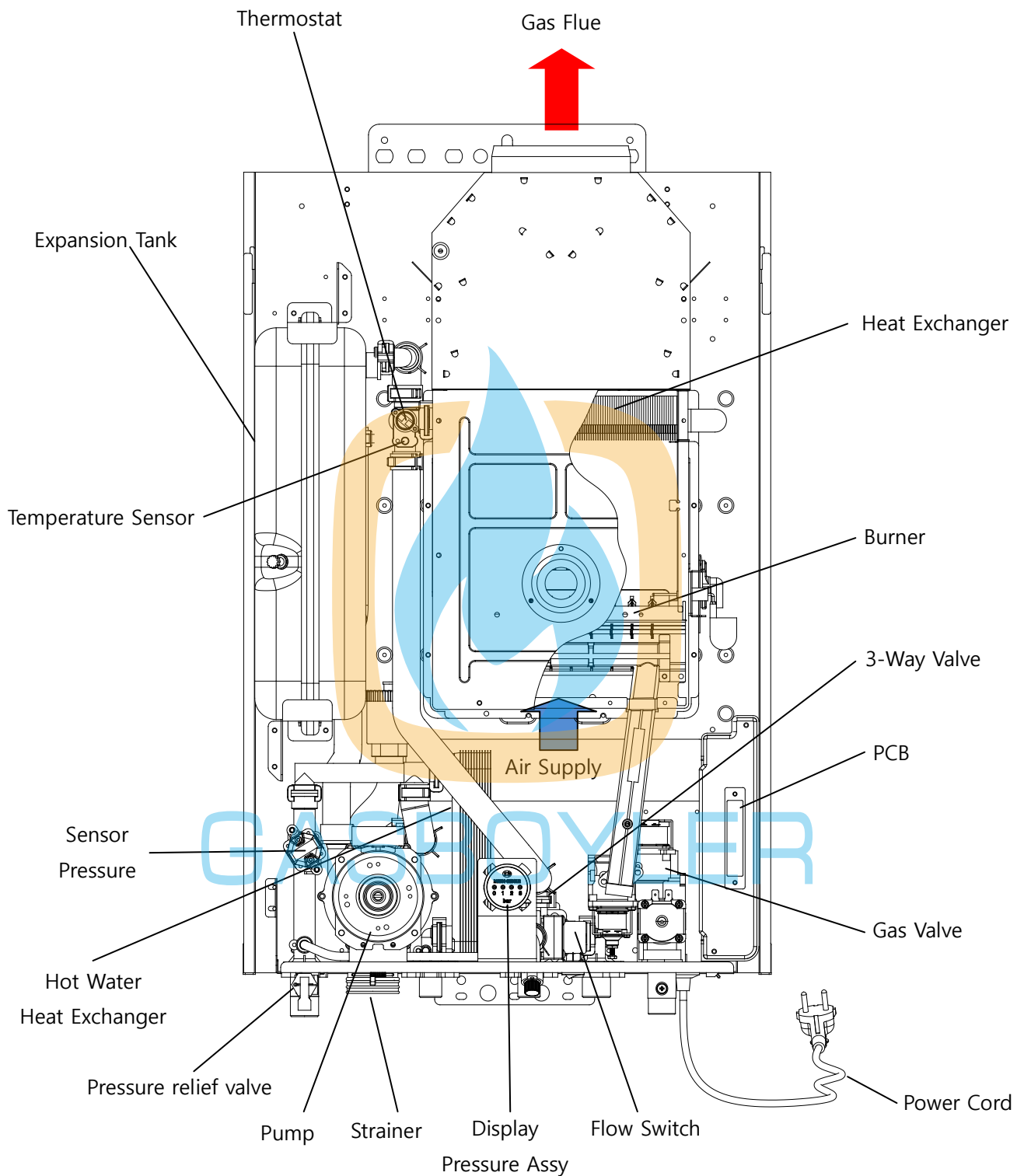
Table 1.1

| Model No.                        |                                        | Natural Exhaust Type                |             |             |
|----------------------------------|----------------------------------------|-------------------------------------|-------------|-------------|
|                                  |                                        | DGB-110MCF                          | DGB-130MCF  | DGB-160MCF  |
| Type                             |                                        | Instantaneous Gas fired boiler      |             |             |
| Use                              |                                        | Central heating/ Domestic hot water |             |             |
| Gas control type                 |                                        | Proportional gas control system     |             |             |
| Heating circulation type         |                                        | Hermetic tank (Closed) type         |             |             |
| Heating output(max.)             |                                        | 12.8kW                              | 15.1kW      | 18.6kW      |
| Range of Heating output          |                                        | 10.5~12.8kW                         | 10.5~15.1kW | 10.5~18.6kW |
| Hot water output(max.)           |                                        | 18.6kW                              |             |             |
| Range of Hot water output        |                                        | 10.5~18.6kW                         |             |             |
| Hot water supply                 | Increased dT25                         | 10.7L/min                           |             |             |
|                                  | Increased dT40                         | 6.7L/min                            |             |             |
| Min. water pressure on hot water |                                        | 20kPa(0.2bar)                       |             |             |
| Range of gas pressure            |                                        | 1~2.5kPa(10~25mbar)                 |             |             |
| Gas input                        | Heating                                | 14.5kW                              | 18.6kW      | 21.1kW      |
|                                  | Hot water                              | 21.1kW                              |             |             |
| Heating efficiency               |                                        | 88.5%                               | 88.6%       | 88.6%       |
| Power supply                     |                                        | 220V 50Hz                           |             |             |
| Electrical input                 |                                        | 95W                                 |             |             |
| Size(WxHxD)                      |                                        | 496x750x241mm                       |             |             |
| Weight                           |                                        | 29Kg                                |             |             |
| Duct diameter                    |                                        | Φ130                                |             |             |
| Piping                           | Gas                                    | 15mm(1/2")                          |             |             |
|                                  | Water in/<br>Hot water out             | 15mm(1/2")                          |             |             |
|                                  | Heating water in/<br>Heating water out | 20mm(3/4")                          |             |             |

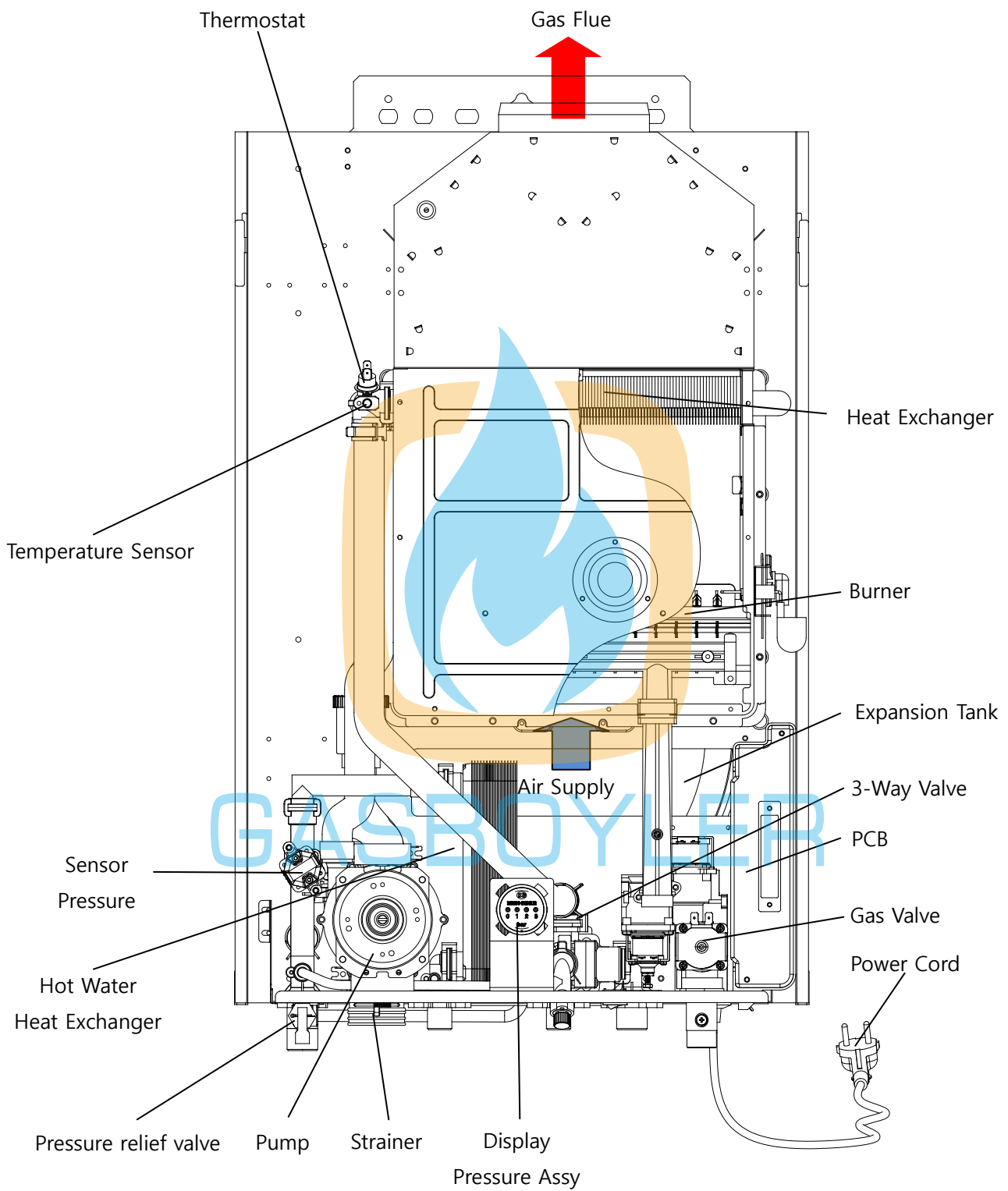
Table 1.2

| Model No.                        |                                        | Natural Exhaust Type                |               |
|----------------------------------|----------------------------------------|-------------------------------------|---------------|
|                                  |                                        | DGB-200MCF                          | DGB-250MCF    |
| Type                             |                                        | Instantaneous Gas fired boiler      |               |
| Use                              |                                        | Central heating/ Domestic hot water |               |
| Gas control type                 |                                        | Proportional gas control system     |               |
| Heating circulation type         |                                        | Hermetic tank (Closed) type         |               |
| Heating output(max.)             |                                        | 23.3kW                              | 29.1kW        |
| Range of Heating output          |                                        | 14.0~23.3kW                         | 14.0~29.1kW   |
| Hot water output(max.)           |                                        | 23.3kW                              | 29.1kW        |
| Range of Hot water output        |                                        | 14.0~23.3kW                         | 14.0~29.1kW   |
| Hot water supply                 | Increased dT25                         | 13.3L/min                           | 16.7L/min     |
|                                  | Increased dT40                         | 8.3L/min                            | 10.4L/min     |
| Min. water pressure on hot water |                                        | 20kPa(0.2bar)                       |               |
| Range of gas pressure            |                                        | 1~2.5kPa(10~25mbar)                 |               |
| Gas input(max.)                  | Heating                                | 26.5kW                              | 32.8kW        |
|                                  | Hot water                              | 26.5kW                              | 32.8kW        |
| Heating efficiency               |                                        | 88.7%                               | 88.7%         |
| Power supply                     |                                        | 220V 50Hz                           |               |
| Electrical input                 |                                        | 95W                                 |               |
| Size(WxHxD)                      |                                        | 496x750x356mm                       | 496x750x356mm |
| Weight                           |                                        | 35Kg                                | 35Kg          |
| Duct diameter                    |                                        | Φ130                                |               |
| Piping                           | Gas                                    | 20mm(3/4")                          |               |
|                                  | Water in/<br>Hot water out             | 15mm(1/2")                          |               |
|                                  | Heating water in/<br>Heating water out | 20mm(3/4")                          |               |

## 2. General Description



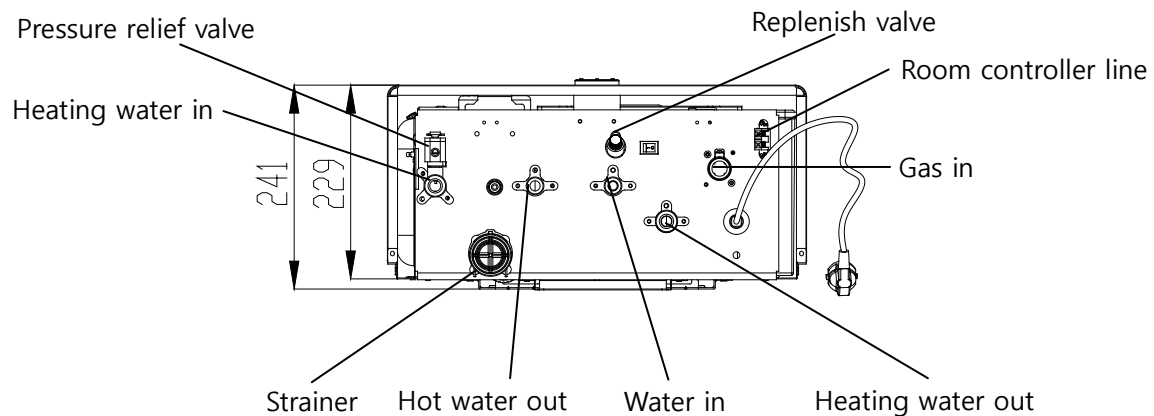
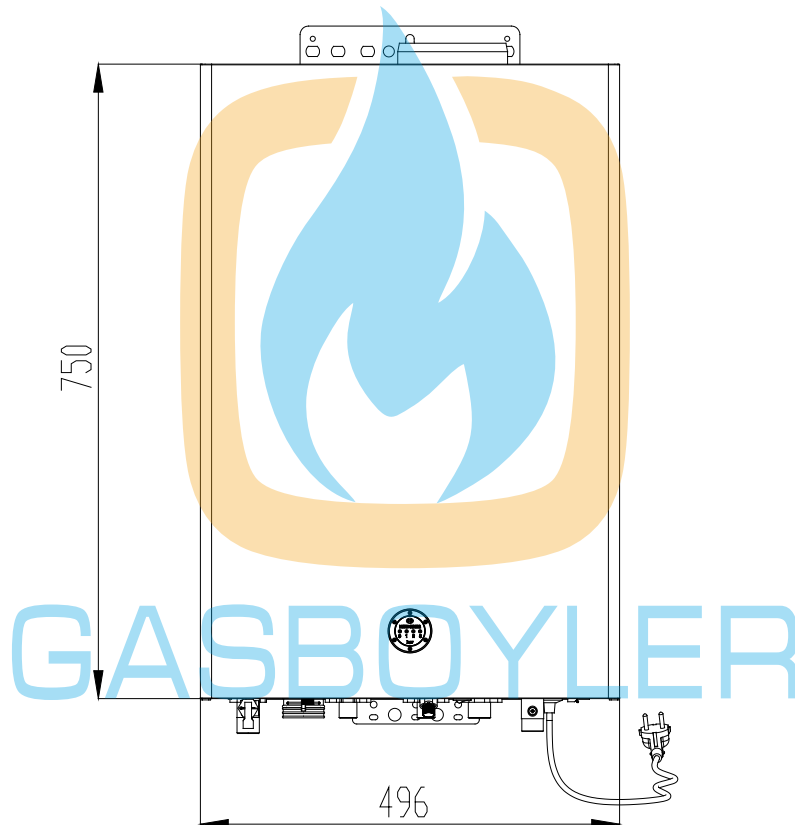
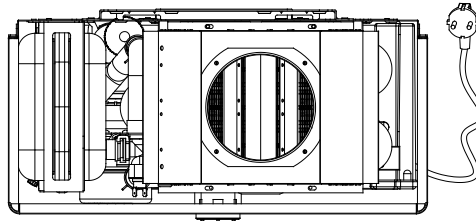
Pic. 2.1 DGB-110MCF/130MCF/160MCF



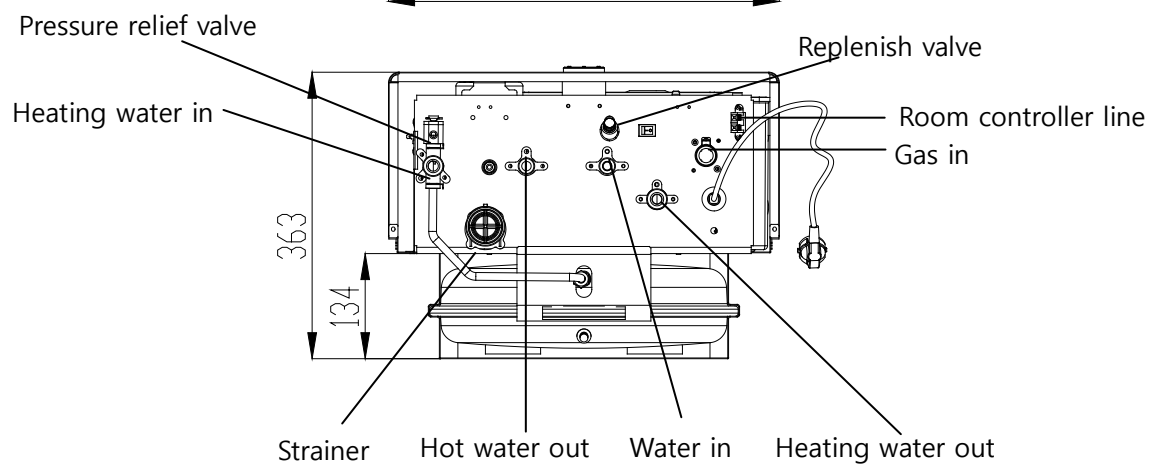
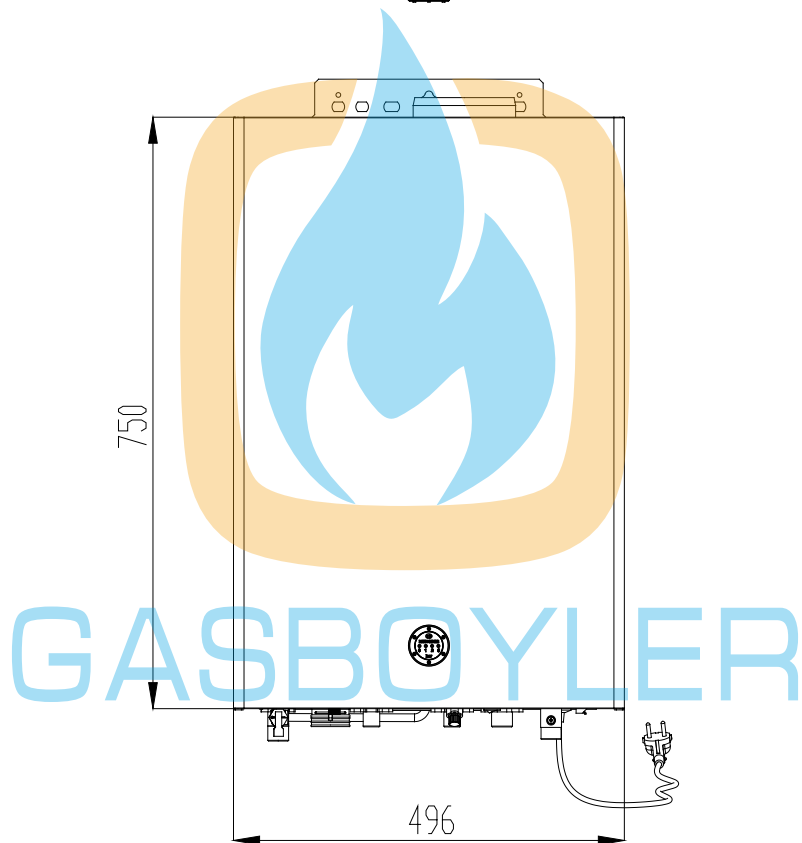
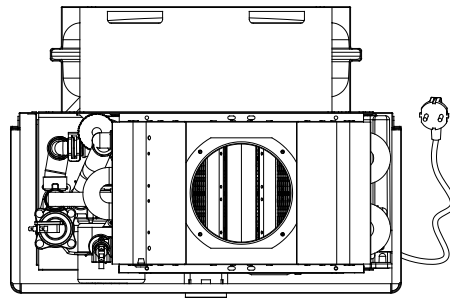
Pic. 2.2 DGB-200MCF/250MCF

### 3. Appearance of boiler

3.1. Model : DGB-110MCF/130MCF/160MCF



### 3.2. Model : DGB-200MCF/250MCF



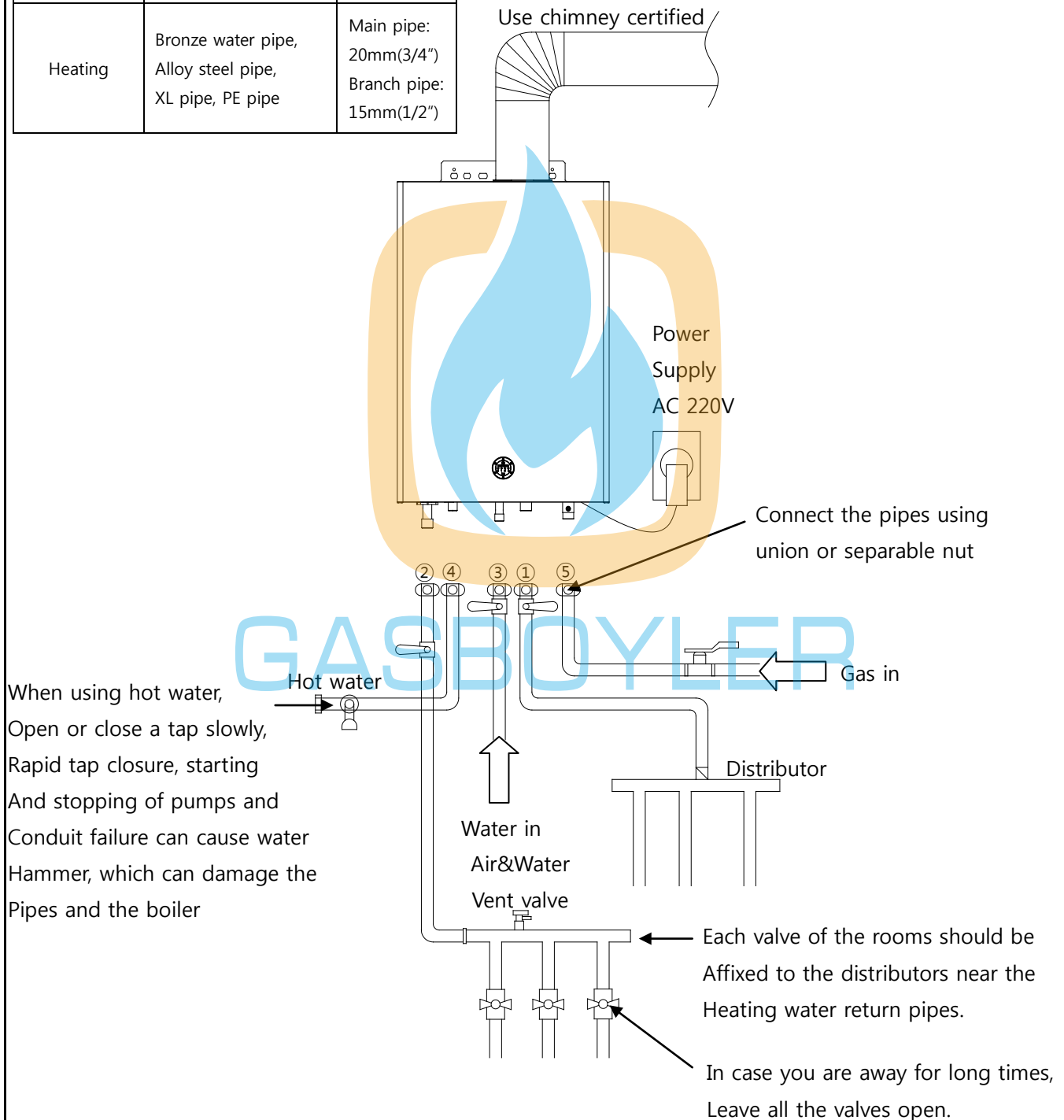
### 3.3 Installation

#### Components & Size

| Sort                       | Components                                                         | Size                                                   |
|----------------------------|--------------------------------------------------------------------|--------------------------------------------------------|
| Gas                        | Metal pipes, Gasware,<br>Metal flexible hose<br>tested & certified | 15mm(1/2"),<br>20mm(3/4")                              |
| Water in,<br>Hot water out | Bronze water pipe,<br>Alloy steel pipe,<br>Galvanized steel pipe   | 15mm(1/2")                                             |
| Heating                    | Bronze water pipe,<br>Alloy steel pipe,<br>XL pipe, PE pipe        | Main pipe:<br>20mm(3/4")<br>Branch pipe:<br>15mm(1/2") |

#### Pipe connection diameter

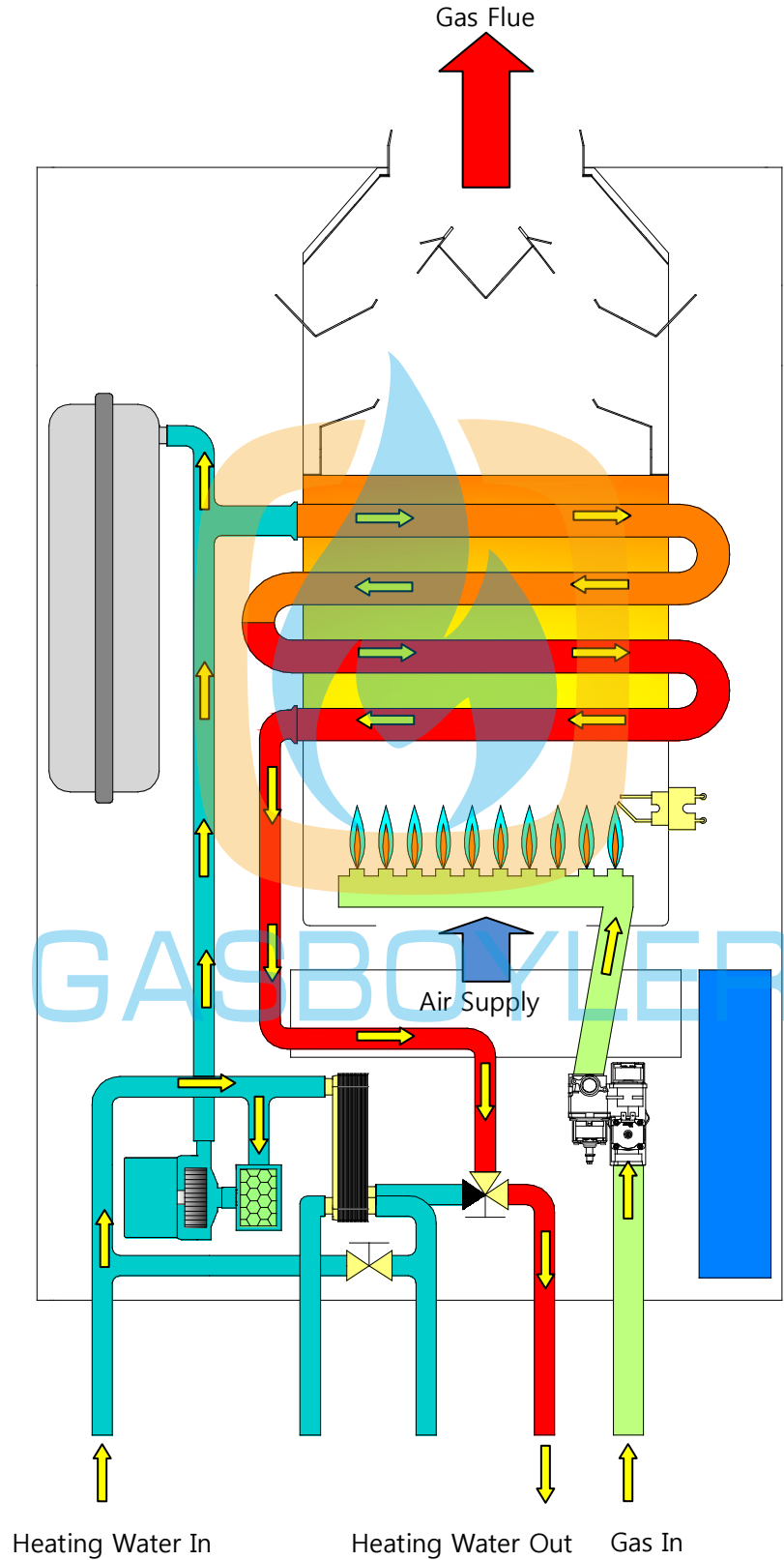
| No. | Bellow 20,000kcal/h    | Above 25,000kcal/h |
|-----|------------------------|--------------------|
| ①   | 20mm Heating water out | Equal to left      |
| ②   | 20mm Heating water in  | Equal to left      |
| ③   | 15mm Water in          | Equal to left      |
| ④   | 15mm Hot water out     | Equal to left      |
| ⑤   | 15mm Gas in            | 20mm Gas in        |



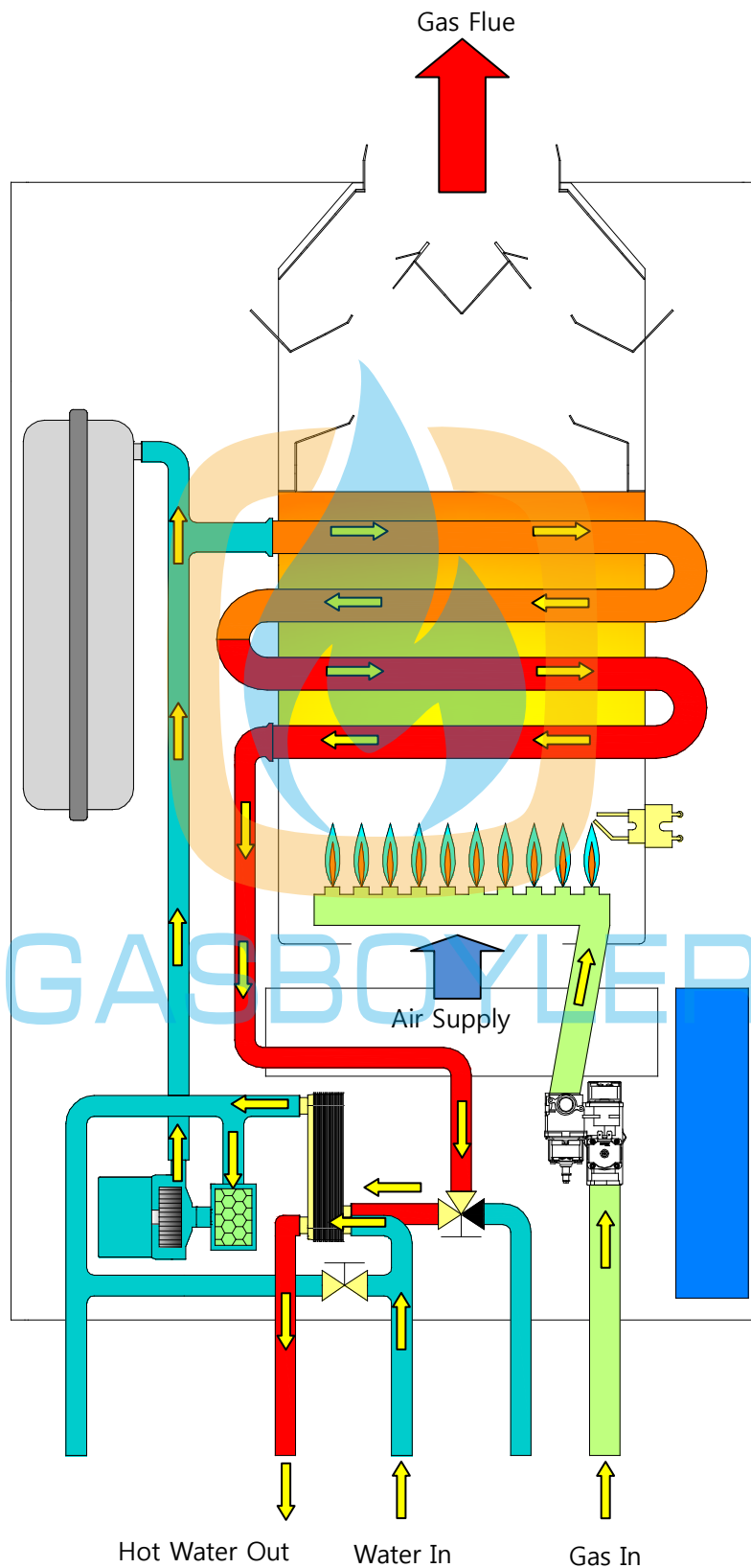


## 4. Heating & Hot Water System

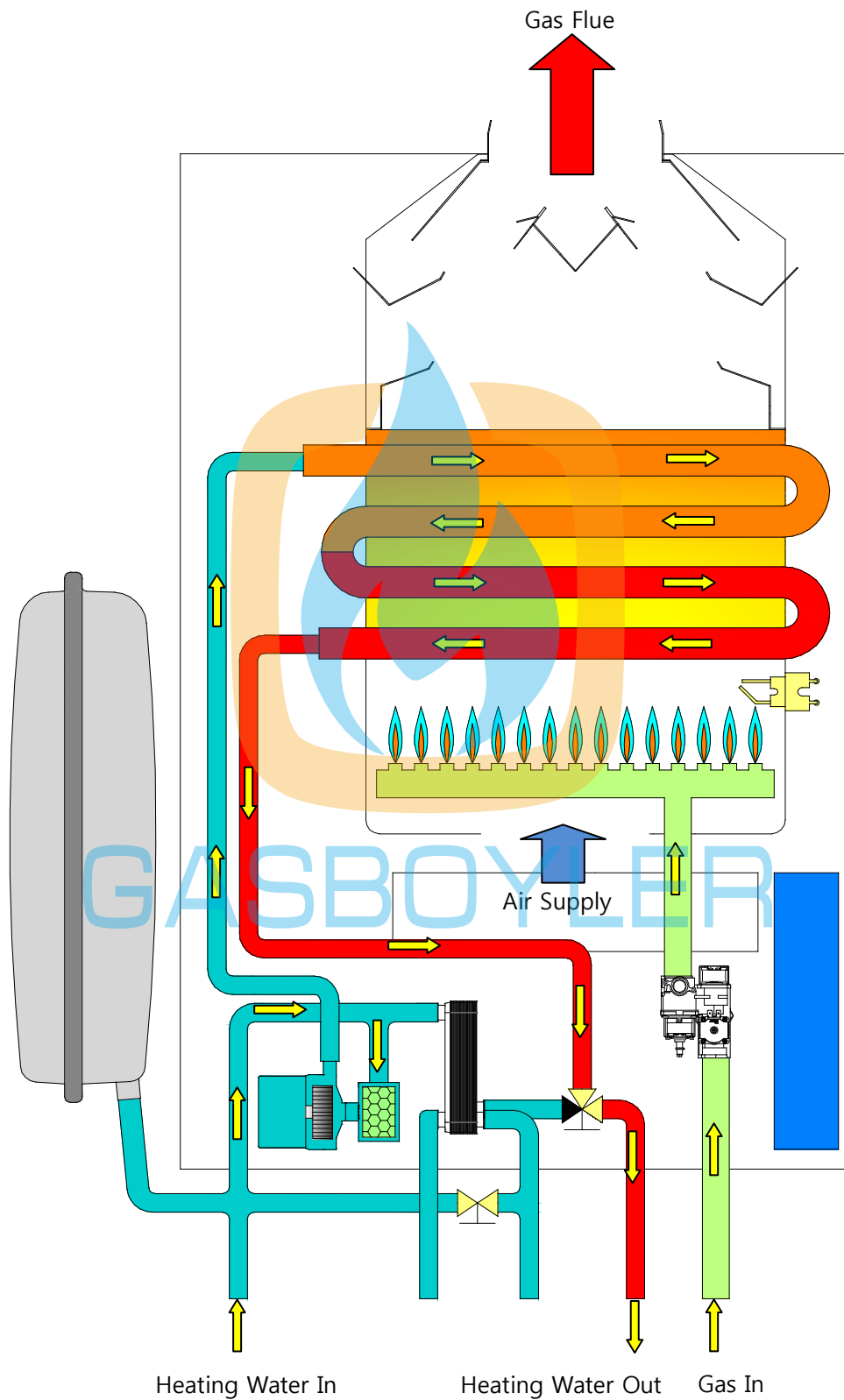
### 4.1. Heating System(Model : DGB-110MCF/130MCF/160MCF)



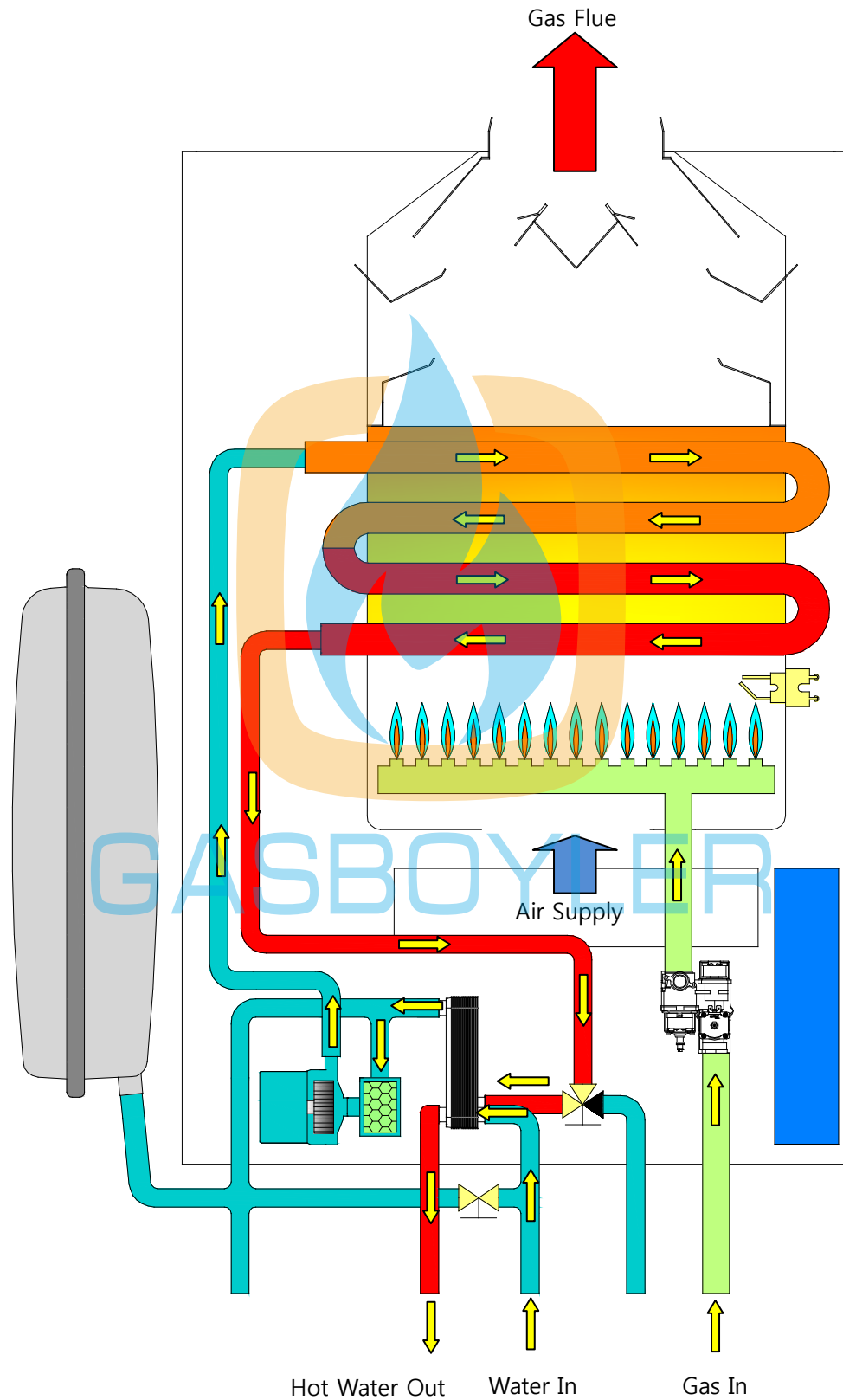
#### 4.2. Hot Water System(Model : DGB-110MCF/130MCF/160MCF)



#### 4.3. Heating System(Model : DGB-200MCF/250MCF)



#### 4.4. Hot Water System(Model : DGB-200MCF/250MCF)



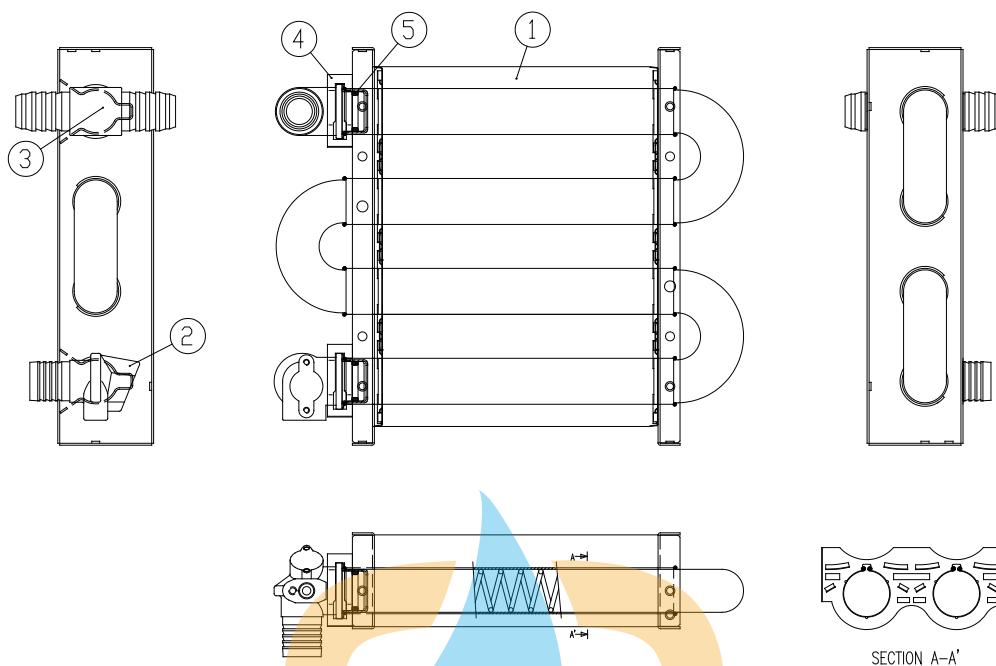
## MAIN PARTS

1. MAIN HEAT EXCHANGER WHOLE ASS'Y
2. SUB HEAT EXCHANGER ASS'Y
3. HOT WATER HEAT EXCHANER ASS'Y
4. BURNER ASS'Y
5. MANIFOLD ASS'Y
6. FAN
7. PUMP
8. GAS VALVE
9. 3-WAY VALVE
10. SAFETY VALVE
11. SENSOR PRESSURE
12. FLOW SWITCH
13. THERMOSTAT
14. IGNITOR TRANS
15. FLAME SENSOR
16. TEMPERATURE SENSOR
17. EXPANSION TANK
18. CHIMNEY



GASBOILER

## 1. MAIN HEAT-EXCHANGER WHOLE ASS'Y

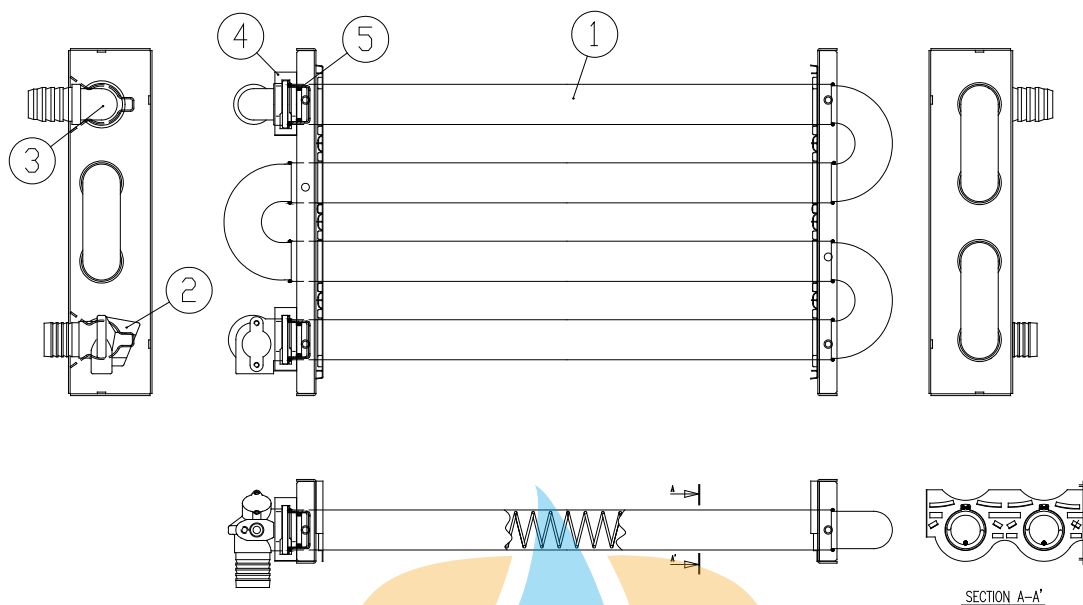


Pic 1.1

Table 1.1

| Bolier Model | 100MSC                        | 130/160/200MSC | 110/130/160MCF |
|--------------|-------------------------------|----------------|----------------|
| FIN Q'TY     | 67                            | 85             | 83             |
| Material     | FIN : C1220P<br>PIPE : C1220T |                |                |
| PART CODE    | 3318111120                    | 3318108640     | 3318108750     |

| No | PART NAME                 | PART CODE  | PCS | APPLIED MODEL |                            |                            | REMARK |
|----|---------------------------|------------|-----|---------------|----------------------------|----------------------------|--------|
|    |                           |            |     | 100MSC        | 130MSC<br>160MSC<br>200MSC | 110MCF<br>130MCF<br>160MCF |        |
| 1  | MAIN HEAT EXCHANGER ASS'Y | 3318111110 | 1   | ■             |                            |                            | 67FIN  |
| 1  | MAIN HEAT EXCHANGER ASS'Y | 3318108620 | 1   |               | ■                          |                            | 85FIN  |
| 1  | MAIN HEAT EXCHANGER ASS'Y | 3318108740 | 1   |               |                            | ■                          | 83FIN  |
| 2  | NIPPLE SUPPLY             | 3319002200 | 1   | ■             | ■                          | ■                          |        |
| 3  | NIPPLE RETURN             | 3318403300 | 1   | ■             | ■                          | ■                          |        |
| 4  | SPRING S                  | 3315100400 | 2   | ■             | ■                          | ■                          |        |
| 5  | O-RING(P-16)              | 3314601500 | 2   | ■             | ■                          | ■                          |        |

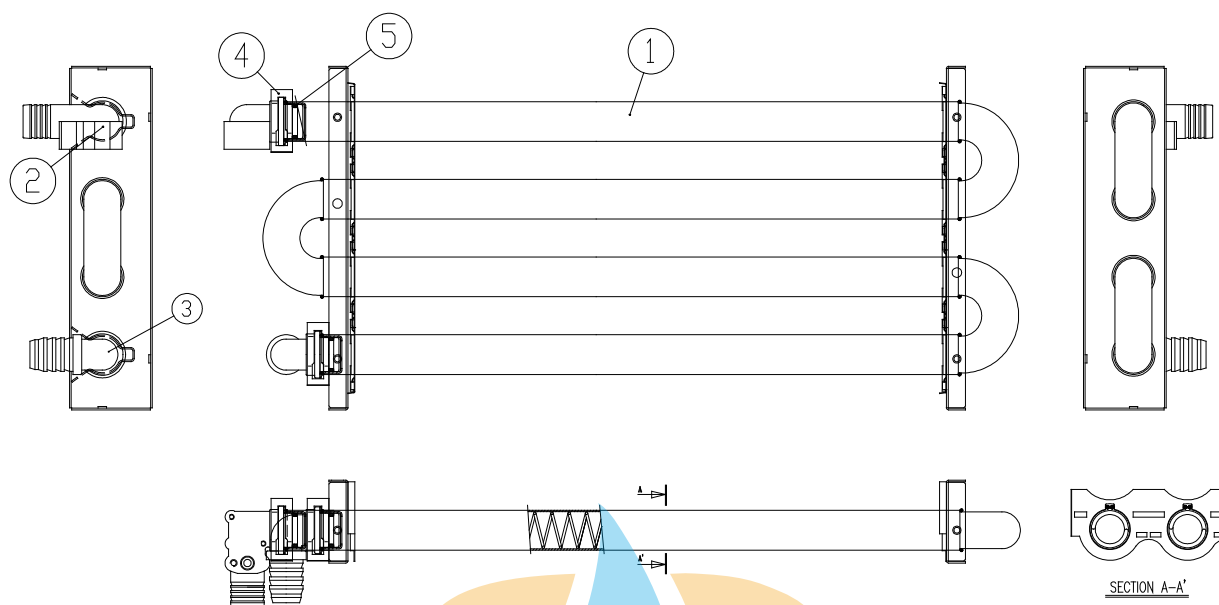


Pic 1.2

Table 1.2

| Bolier Model | 250/300MSC                    | 200/250MCF |
|--------------|-------------------------------|------------|
| FIN Q'TY     | 122                           | 111        |
| Material     | FIN : C1220P<br>PIPE : C1220T |            |
| PART CODE    | 3318114930                    | 3318108760 |

| No | PART NAME                 | PART CODE  | PCS | APPLIED MODEL    |                  | REMARK |
|----|---------------------------|------------|-----|------------------|------------------|--------|
|    |                           |            |     | 250MSC<br>300MSC | 200MCF<br>250MCF |        |
| 1  | MAIN HEAT EXCHANGER ASS'Y | 3318114910 | 1   | ■                |                  | 122FIN |
| 1  | MAIN HEAT EXCHANGER ASS'Y | 3318108740 | 1   |                  | ■                | 111FIN |
| 2  | NIPPLE SUPPLY             | 3319002200 | 1   | ■                | ■                |        |
| 3  | NIPPLE RETURN             | 3318400800 | 1   | ■                | ■                |        |
| 4  | SPRING S                  | 3315100400 | 2   | ■                | ■                |        |
| 5  | O-RING(P-16)              | 3314601500 | 2   | ■                | ■                |        |



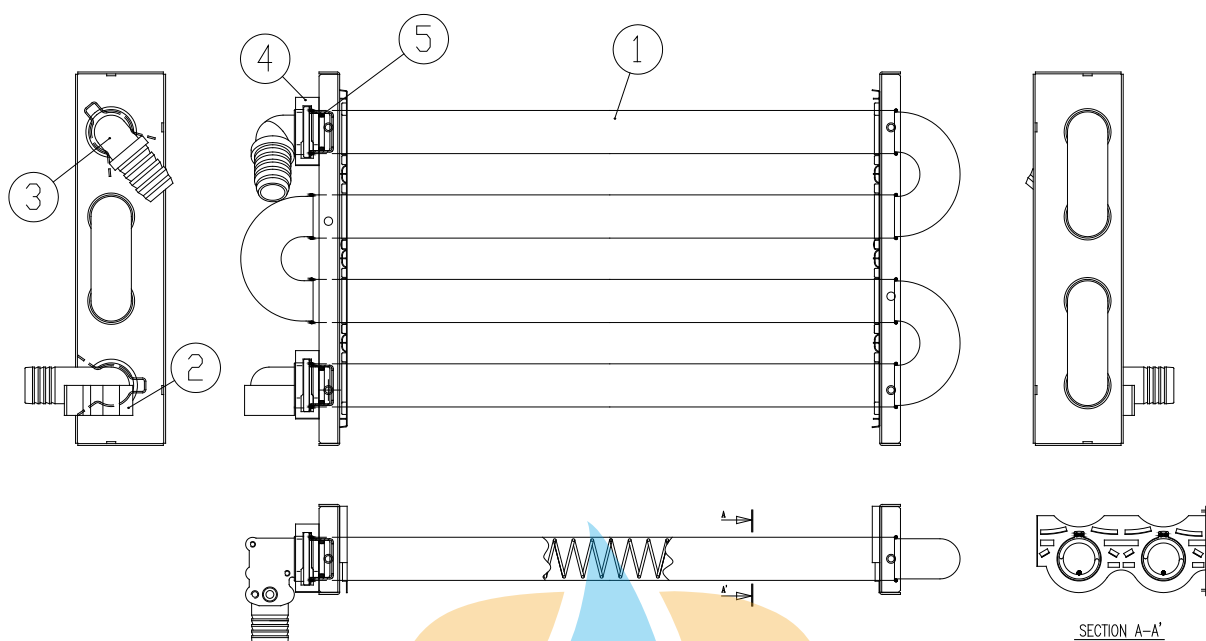
Pic 1.3

Table 1.3

|              |                               |
|--------------|-------------------------------|
| Bolier Model | 350/400MSC                    |
| FIN Q'TY     | 147                           |
| Material     | FIN : C1220P<br>PIPE : C1220T |
| PART CODE    | 3318113020                    |

| No | PART NAME                 | PART CODE  | PCS | APPLIED MODEL    | REMARK |
|----|---------------------------|------------|-----|------------------|--------|
|    |                           |            |     | 350MSC<br>400MSC |        |
| 1  | MAIN HEAT EXCHANGER ASS'Y | 3318113010 | 1   | ■                | 147FIN |
| 2  | NIPPLE SUPPLY             | 3319002300 | 1   | ■                |        |
| 3  | NIPPLE RETURN             | 3318400800 | 1   | ■                |        |
| 4  | SPRING S                  | 3315100400 | 2   | ■                |        |
| 5  | O-RING(P-16)              | 3314601500 | 2   | ■                |        |





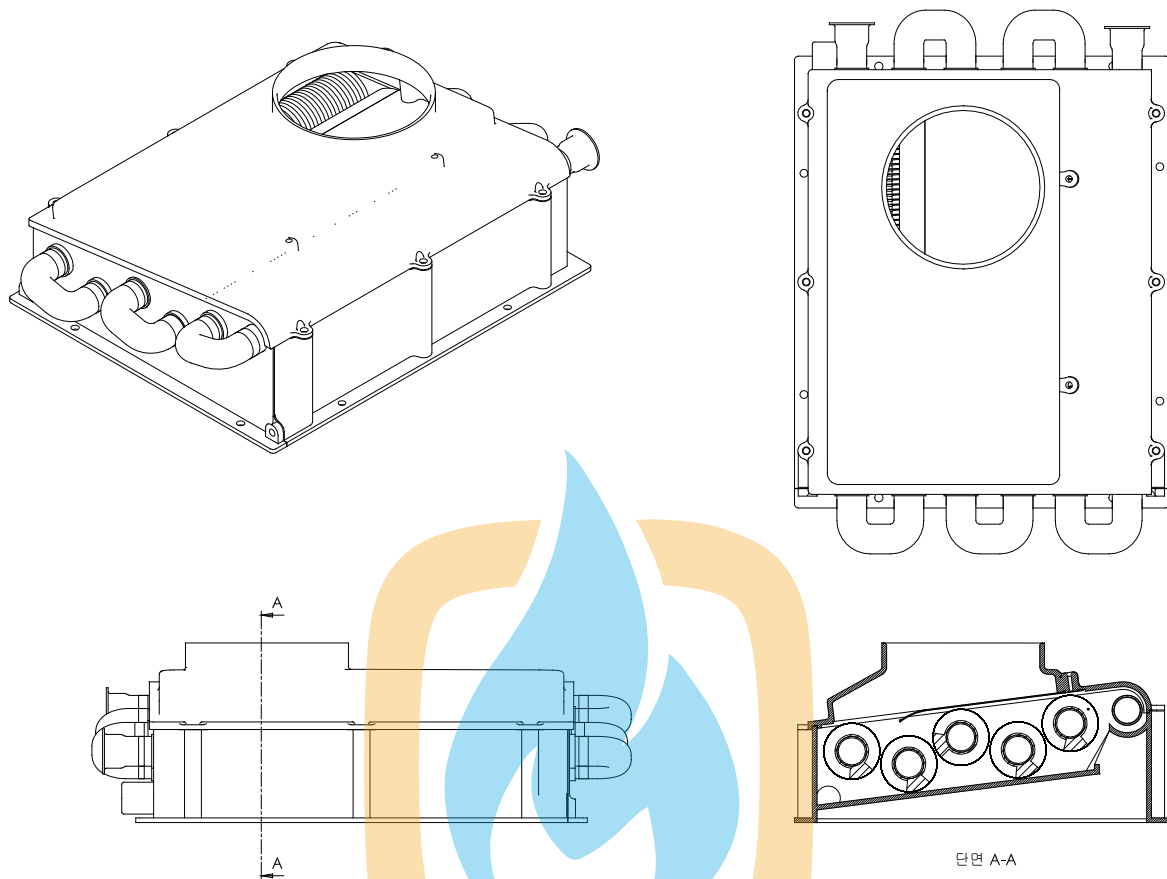
Pic 1.4

Table 1.4

| Bolier Model | 160/200MES                    | 250/300/350MES |
|--------------|-------------------------------|----------------|
| FIN Q'TY     | 103                           | 122            |
| Material     | FIN : C1220P<br>PIPE : C1220T |                |
| PART CODE    | 3318114820                    | 3318114920     |

| No | PART NAME                 | PART CODE  | PCS | APPLIED MODEL    |                  | REMARK |
|----|---------------------------|------------|-----|------------------|------------------|--------|
|    |                           |            |     | 250MSC<br>300MSC | 200MCF<br>250MCF |        |
| 1  | MAIN HEAT EXCHANGER ASS'Y | 3318114810 | 1   | ■                |                  | 103FIN |
| 1  | MAIN HEAT EXCHANGER ASS'Y | 3318114910 | 1   |                  | ■                | 122FIN |
| 2  | NIPPLE SUPPLY             | 3319002300 | 1   | ■                | ■                |        |
| 3  | NIPPLE RETURN             | 3318400800 | 1   | ■                | ■                |        |
| 4  | SPRING S                  | 3315100400 | 2   | ■                | ■                |        |
| 5  | O-RING(P-16)              | 3314601500 | 2   | ■                | ■                |        |

## 2. SUB HEAT EXCHANGER ASSY

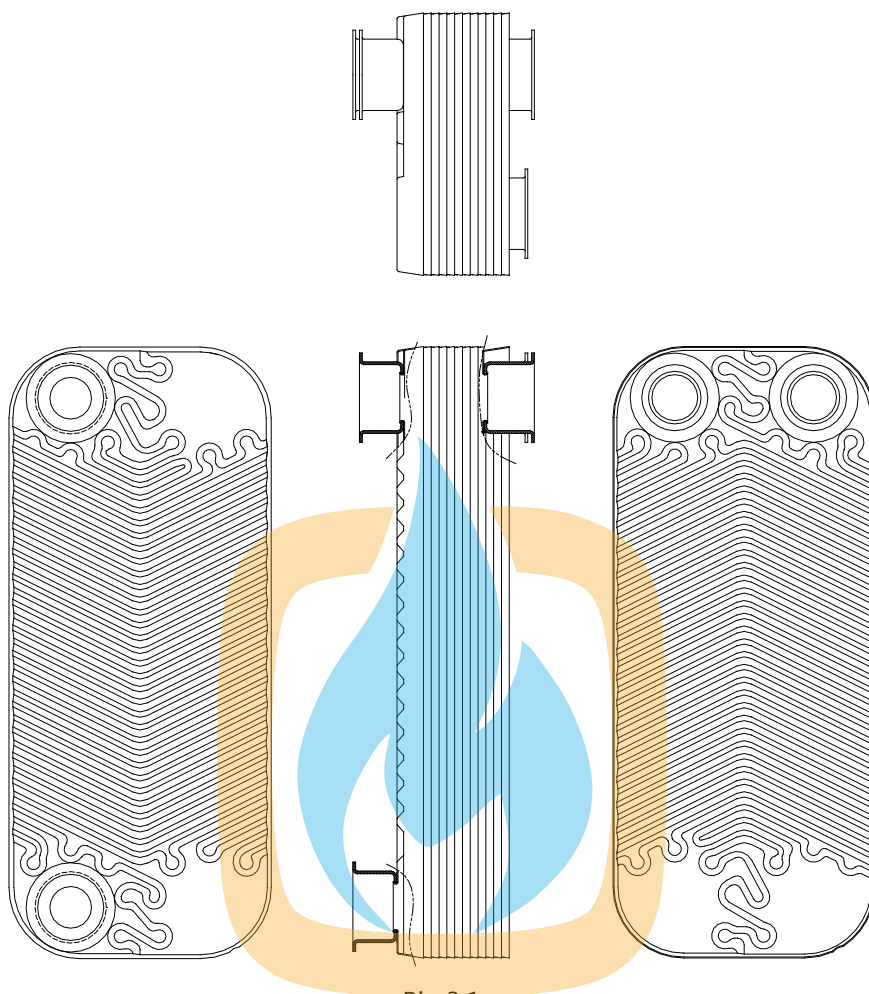


Pic. 2.1

Table. 17.1

| Boiler Model | 160/200MES | 250/300/350MES |
|--------------|------------|----------------|
| Material     | ALDC       | ALDC           |
| PART CODE    | 3318114500 | 3318114600     |

### 3. HOT WATER HEAT EXCHANGER ASS'Y



Pic 3.1

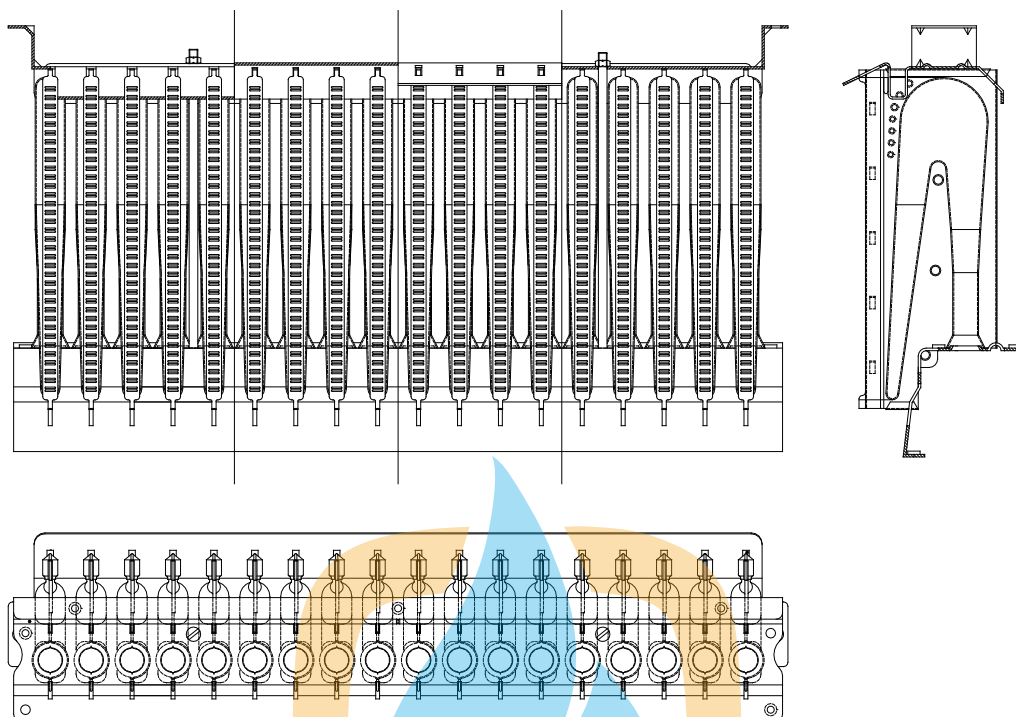
Table 3.1

| Bolier Model | 100/130/160/200MSC | 250/300MSC | 350/400MSC |
|--------------|--------------------|------------|------------|
| FIN Q'TY     | 12                 | 16         | 18         |
| Material     | STS304             |            |            |
| PART CODE    | 3318112300         | 3318112400 | 3318112100 |

Table 3.2

| Bolier Model | 160/200MES<br>110/130/160MCF | 250/300/350MES<br>200/250MCF |
|--------------|------------------------------|------------------------------|
| FIN Q'TY     | 12                           | 16                           |
| Material     | STS304                       |                              |
| PART CODE    | 3318112300                   | 3318112400                   |

#### 4. BURNER ASS'Y



Pic 4.1

Table 4.1

| Bolier Model | 100MSC                                                                                         | 130/160/200MSC | 250/300MSC | 350/400MSC |
|--------------|------------------------------------------------------------------------------------------------|----------------|------------|------------|
| FIN Q'TY     | 6                                                                                              | 8              | 15         | 18         |
| Material     | BURNER FIN : SA1D 40<br>BURNER COVER : STS304<br>FRONT PLATE : SBHAZ-1<br>REAR PALTE : SBHAZ-1 |                |            |            |
| PART CODE    | 3316124300                                                                                     | 33161110100    | 3316123700 | 3316124600 |

Table 4.2

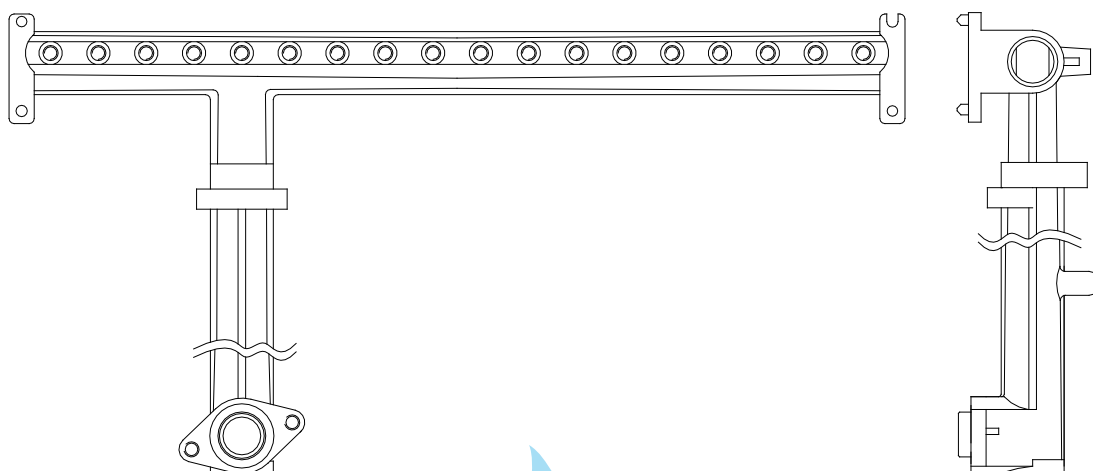
| Bolier Model | 160/200MES                                                                                     | 250/300/350MES |
|--------------|------------------------------------------------------------------------------------------------|----------------|
| FIN Q'TY     | 10                                                                                             | 15             |
| Material     | BURNER FIN : SA1D 40<br>BURNER COVER : STS304<br>FRONT PLATE : SBHAZ-1<br>REAR PALTE : SBHAZ-1 |                |
| PART CODE    | 3316108700                                                                                     | 3316123700     |

Table 4.3

| Bolier Model | 110/130/160MCF                                                                                 | 200/250MCF |
|--------------|------------------------------------------------------------------------------------------------|------------|
| FIN Q'TY     | 10                                                                                             | 15         |
| Material     | BURNER FIN : SA1D 40<br>BURNER COVER : STS304<br>FRONT PLATE : SBHAZ-1<br>REAR PALTE : SBHAZ-1 |            |
| PART CODE    | 3316108700                                                                                     | 3316123700 |



## 5. MANIFOLD ASS'Y



Pic 5.1

Table 5.1

| Bolier Model      |     | 100MSC     | 130/160/200MSC | 250/300MSC | 350/400MSC |
|-------------------|-----|------------|----------------|------------|------------|
| Nozzle Q'TY       |     | 6          | 8              | 15         | 18         |
| NOZZLE Material   |     | C3604BD    |                |            |            |
| MANIFOLD Material |     | ALDC12     |                |            |            |
| NOZZLE            | LNG | Φ1.76      | Φ1.76          | Φ1.55      | Φ1.55      |
|                   | LPG | Φ1.12      | Φ1.12          | Φ1.10      | Φ1.10      |
| PART CODE         |     | 3316124400 | 3316112100     | 3316123600 | 3316124700 |

Table 5.2

| Bolier Model      |     | 160/200MES | 250/300/350MES |
|-------------------|-----|------------|----------------|
| Nozzle Q'TY       |     | 10         | 15             |
| NOZZLE Material   |     | C3604BD    |                |
| MANIFOLD Material |     | ALDC12     |                |
| NOZZLE            | LNG | Φ1.55      | Φ1.55          |
|                   | LPG | Φ1.10      | Φ1.10          |
| PART CODE         |     | 3316105510 | 3313123600     |

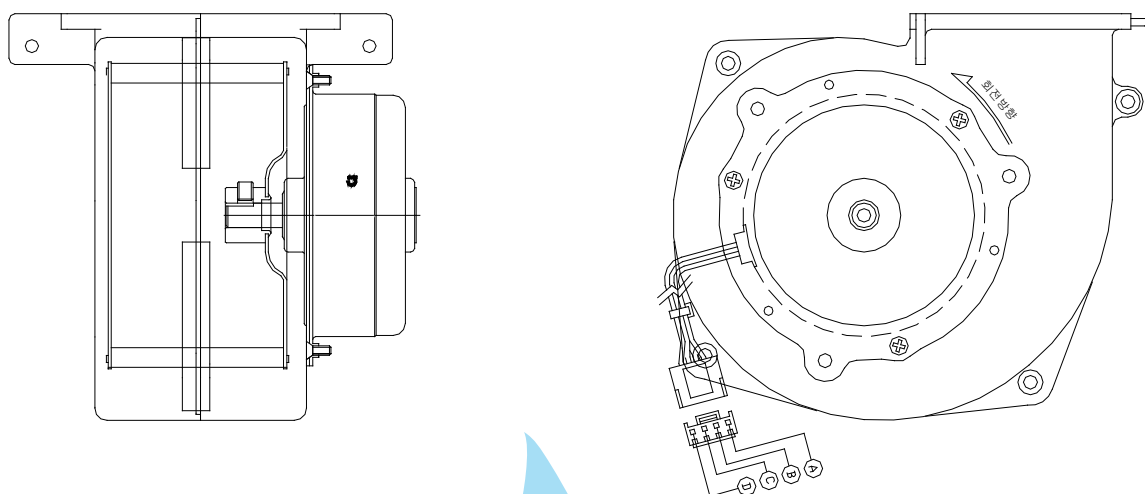
Table 5.3

| Boiler Model      |     | 110/130/160MCF | 200/250MCF |
|-------------------|-----|----------------|------------|
| Nozzle Q'TY       |     | 10             | 15         |
| NOZZLE Material   |     | C3604BD        |            |
| MANIFOLD Material |     | ALDC12         |            |
| NOZZLE            | LNG | Φ1.20          | Φ1.20      |
|                   | LPG | Φ0.95          | Φ0.95      |
| PART CODE         |     | 3316105510     | 3316123600 |



# GASBOYLER

## 6. FAN



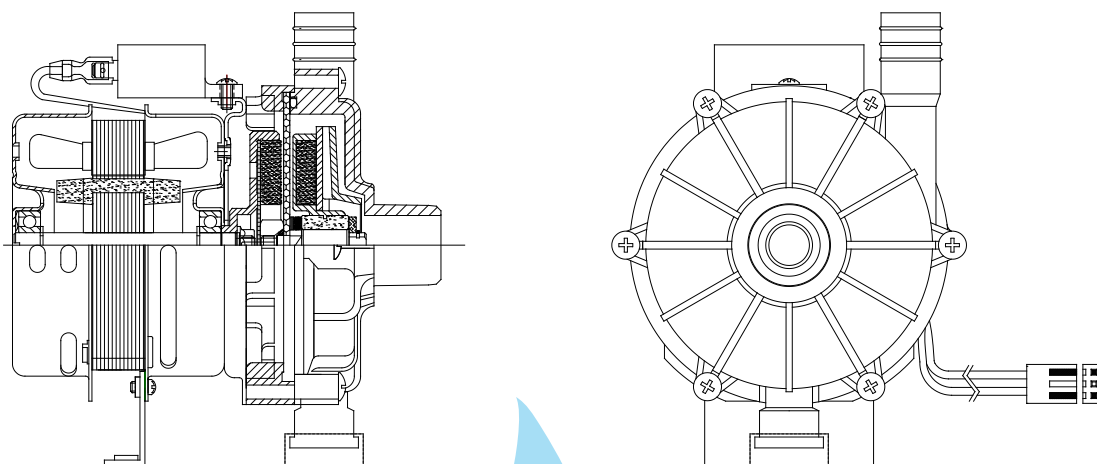
Pic 6.1

Table 6.1

| Bolier Model            | 100/130/160/200/250/300MSC<br>160/200/250/300/350MES | 350/400MSC |
|-------------------------|------------------------------------------------------|------------|
| FAN Model no.           | DF300                                                | DF400      |
| Voltage                 | DC43V                                                |            |
| R . P . M .             | 3466±200ppm                                          |            |
| Starting voltage        | Less than DC5V                                       |            |
| Electric current        | Less than DC2A                                       |            |
| R . P . M . (at closed) | 5110±200ppm                                          |            |
| PART CODE               | 3311852200                                           | 3311852300 |



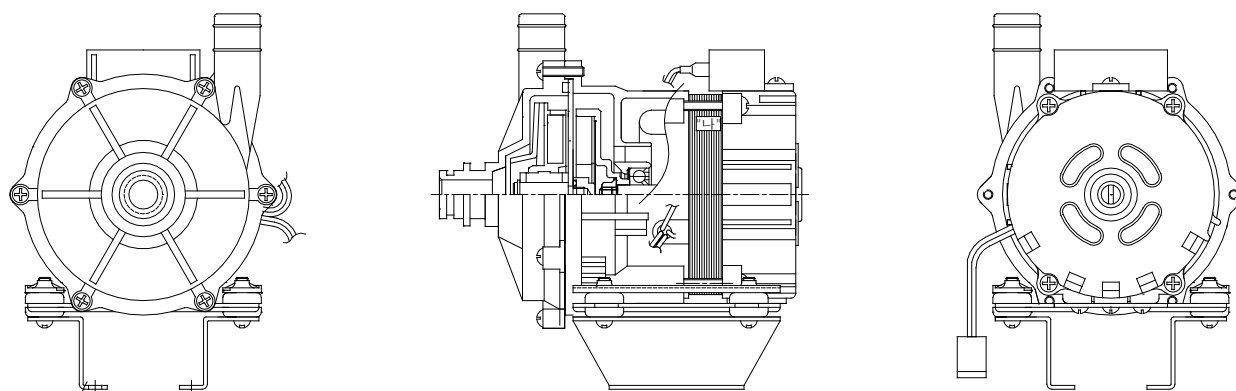
## 7. PUMP



Pic 7.1

Table 7.1

|                  |                                                                                |
|------------------|--------------------------------------------------------------------------------|
| Bolier Model     | 100/130/160/200/250/300MSC<br>160/200/250/300/350MES<br>110/130/160/200/250MCF |
| Pump model no.   | DWMG5070PL                                                                     |
| Voltage          | AC 220V 50Hz                                                                   |
| Electrical Input | 80W                                                                            |
| Flow rate (max.) | 30 l/min                                                                       |
| Head (max.)      | 7m                                                                             |
| PART CODE        | 3317418800                                                                     |



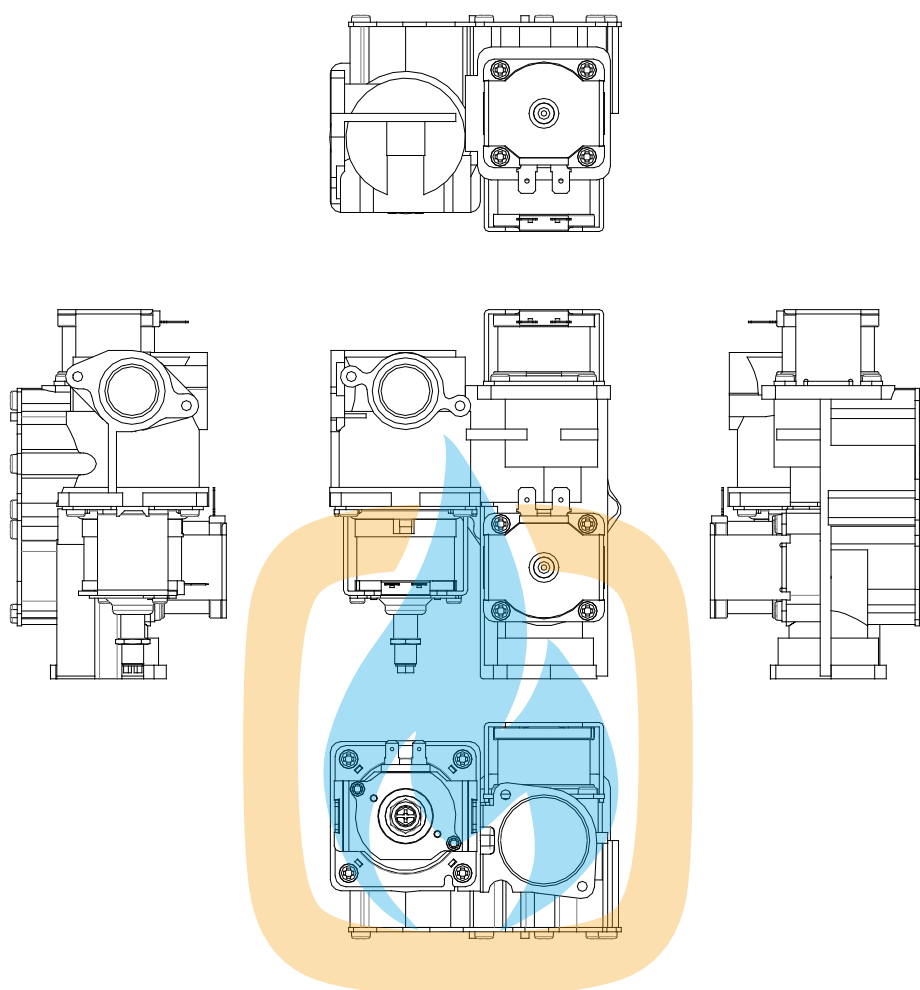
Pic 7.2

Table 7.2

|                  |              |
|------------------|--------------|
| Bolier Model     | 350/400MSC   |
| Pump model no.   | CS-0125DWA   |
| Voltage          | AC 220V 60Hz |
| Electrical Input | 94W          |
| Flow rate (max.) | 25 ℓ/min     |
| Head (max.)      | 10m          |
| PART CODE        | 3317413700   |

**GASBOYLER**

## 8. GAS VALVE



Pic 8.1

Table 8.1

| Bolier Model                 | 100/130/160/200/250/300MSC<br>160/200/250/300/350MES<br>110/130/160/200/250MCF | 250/400MSC |
|------------------------------|--------------------------------------------------------------------------------|------------|
| Gas Valve Model No.          | GRV-301                                                                        | UP33-06    |
| Voltage                      | DC200V                                                                         |            |
| Applied Gas                  | LNG, LPG                                                                       |            |
| Using gas pressure           | Less than 4.9 kPa                                                              |            |
| Gas resisting pressure(max.) | 9.8 kPa                                                                        |            |
| Coil resistance              | 79Ω±10%                                                                        |            |
| Permissible temperature      | -20~60℃                                                                        |            |
| PART CODE                    | 3315404700                                                                     | 3315431500 |

### 9. 3-WAY VALVE

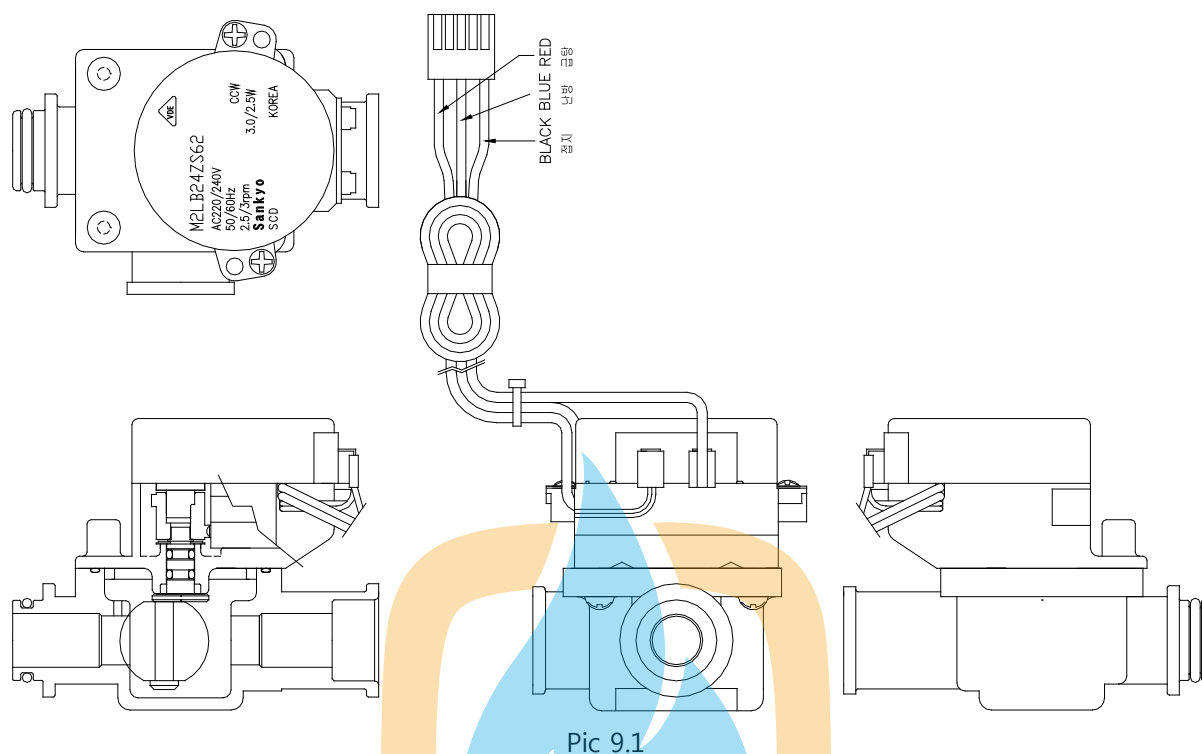
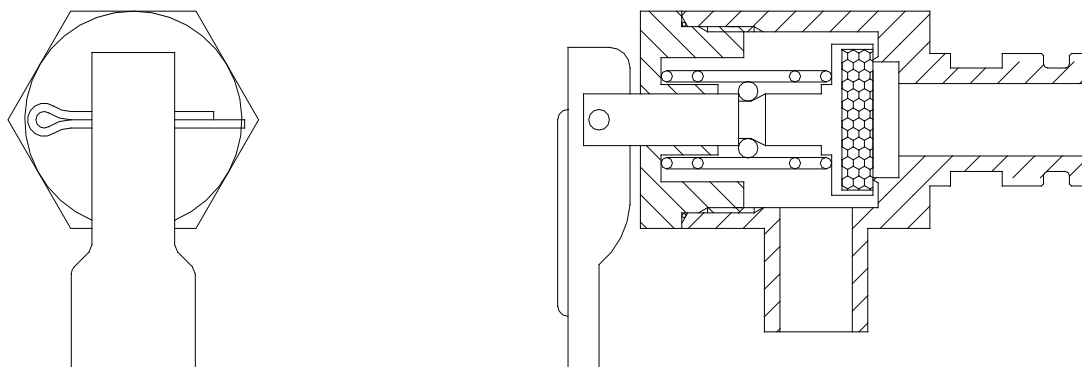


Table 9.1

|                         |                                                                                        |
|-------------------------|----------------------------------------------------------------------------------------|
| Bolier Model            | 100/130/160/200/250/300/350/400MSC<br>160/200/250/300/350MES<br>110/130/160/200/250MCF |
| Voltage                 | AC 220V 60Hz                                                                           |
| Power input             | Less than 3.0W                                                                         |
| Pressure (max.)         | 5kgf/cm <sup>2</sup>                                                                   |
| Permissible temperature | 1~95°C                                                                                 |
| PART CODE               | 3315434900                                                                             |

## 10. PRESSURE RELIEF VALVE



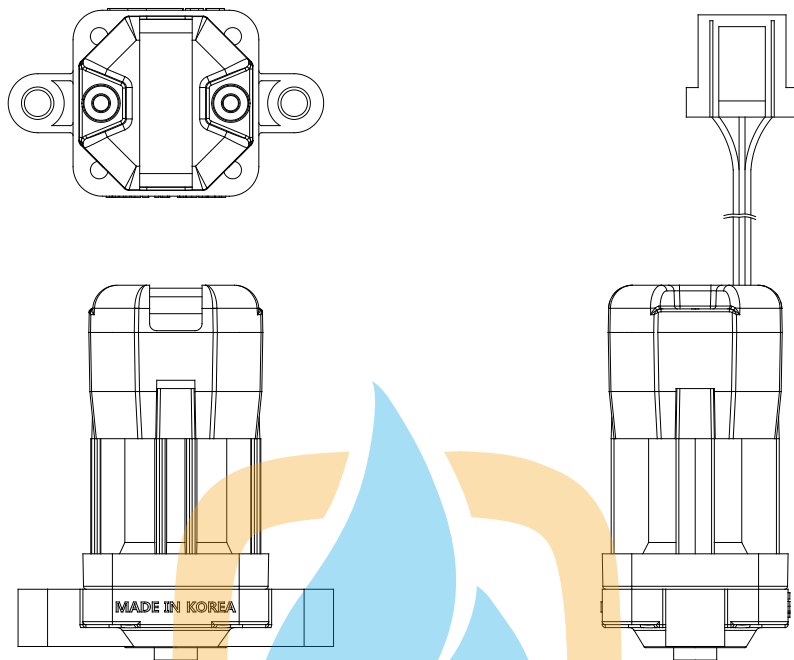
Pic. 10.1

Table. 10.1

| Boiler Model        | 100/130/160/200/250/300/350/400MSC<br>160/200/250/300/350MES<br>110/130/160/200/250MCF |
|---------------------|----------------------------------------------------------------------------------------|
| Pressure resistance | 4.5 kgf/cm <sup>2</sup> or higher                                                      |
| Opening pressure    | 2.7~3.0 kgf/cm <sup>2</sup>                                                            |
| Stop pressure       | Less than opening pressure – 0.5 kgf/cm <sup>2</sup>                                   |
| Thermal resistance  | 120°C                                                                                  |
| RART CODE           | 3315404400                                                                             |

**GASBOYLER**

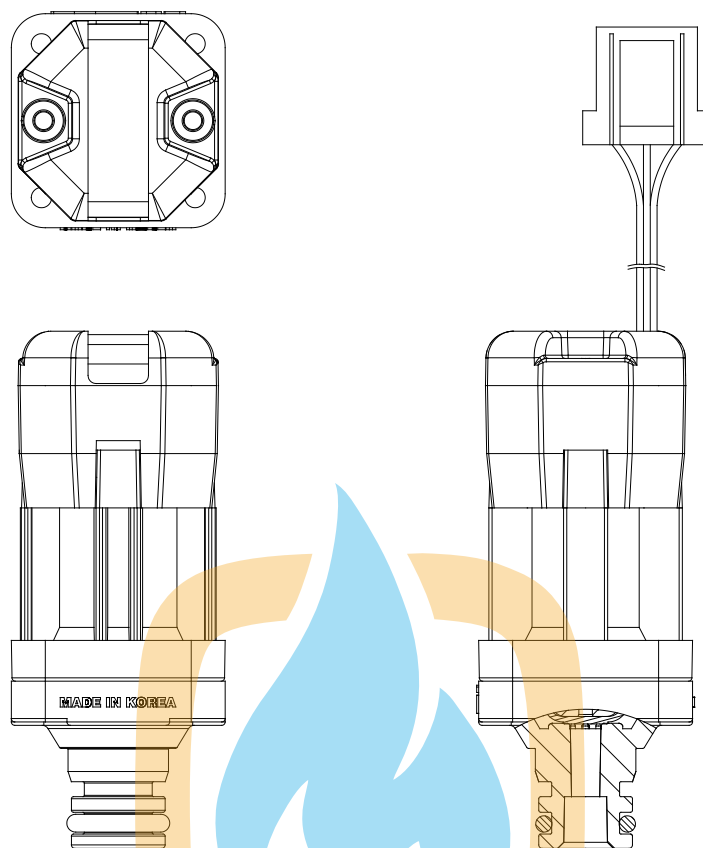
## 11. SENSOR PRESSURE



Pic 11.1

Table 11.1

|              |                            |             |                                                 |
|--------------|----------------------------|-------------|-------------------------------------------------|
| Bolier Model | 100/130/160/200/250/300MSC |             |                                                 |
|              | 160/200/250/300/350MES     |             |                                                 |
|              | 110/130/160/200/250MCF     |             |                                                 |
| Voltage      | DC 5V                      |             |                                                 |
| Output       | Pressure(bar)              | Output(VDC) | Etc                                             |
|              | 0                          | 0.5         | Accuracy ±5% F.S<br>(Included hysteresis value) |
|              | 1                          | 1.5         |                                                 |
|              | 2                          | 2.5         |                                                 |
|              | 3                          | 3.5         |                                                 |
|              | 4                          | (4.5)       |                                                 |
|              | PART CODE                  | 3314806000  |                                                 |

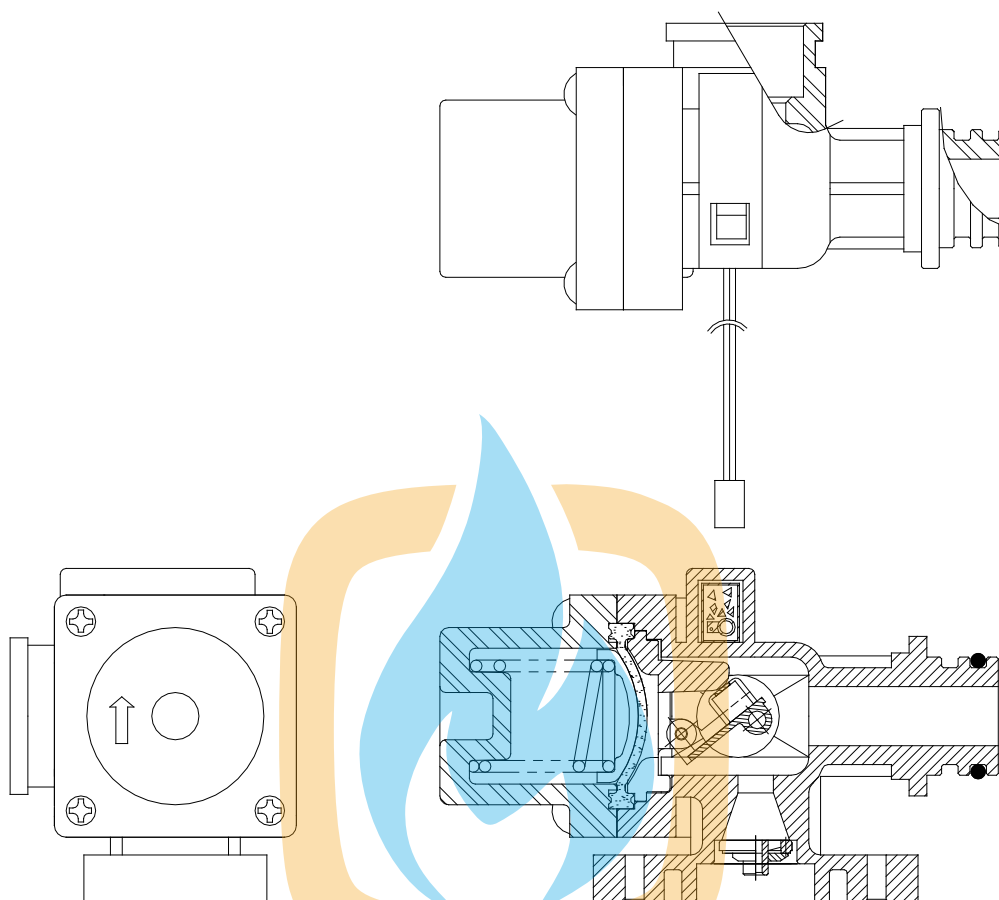


Pic 11.2

Table 5.2

|              |               |             |                                                 |
|--------------|---------------|-------------|-------------------------------------------------|
| Bolier Model | 350/400MSC    |             |                                                 |
| Voltage      | DC 5V         |             |                                                 |
| Output       | Pressure(bar) | Output(VDC) | Etc                                             |
|              | 0             | 0.5         | Accuracy ±5% F.S<br>(Included hysteresis value) |
|              | 1             | 1.5         |                                                 |
|              | 2             | 2.5         |                                                 |
|              | 3             | 3.5         |                                                 |
|              | 4             | (4.5)       |                                                 |
| PART CODE    | 3314806100    |             |                                                 |

## 12. FLOW SWITCH



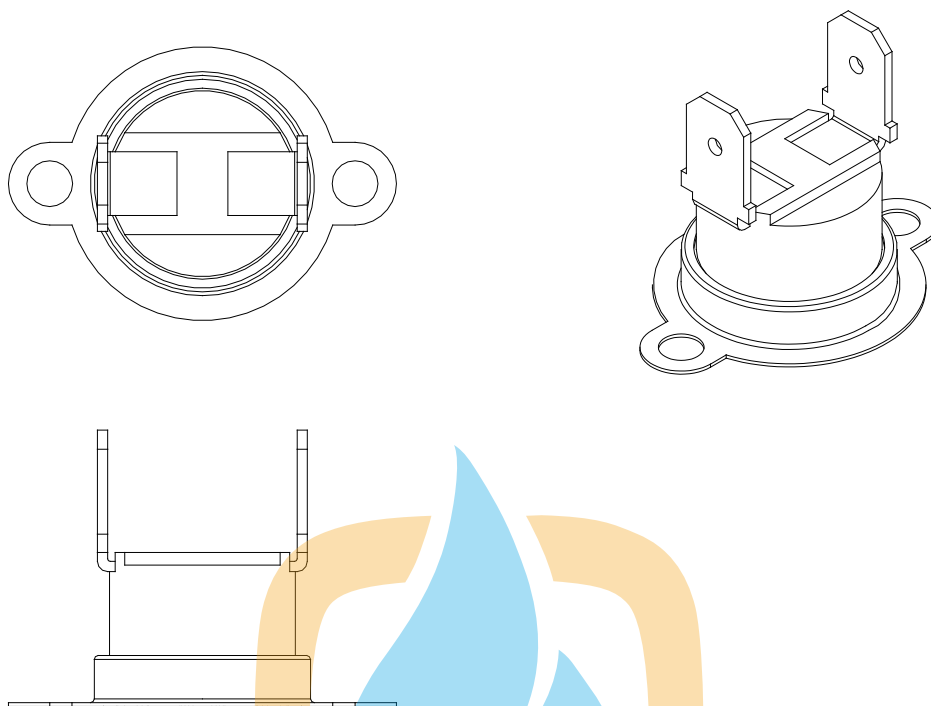
Pic 12.1

Table 12.1

| Bolier Model          | 100/130/160/200/250/300/350/400MSC    |
|-----------------------|---------------------------------------|
|                       | 160/200/250/300/350MES                |
|                       | 110/130/160/200/250MCF                |
| Operation flow rate   | ON : 1.6±0.3l/min, OFF : 1.6±0.3l/min |
| Pressure (max.)       | 17.5kgf/cm <sup>2</sup>               |
| Insulation resistance | More than 100M Ω                      |
| PART CODE             | 3317904600                            |



### 13. THERMOSTAT

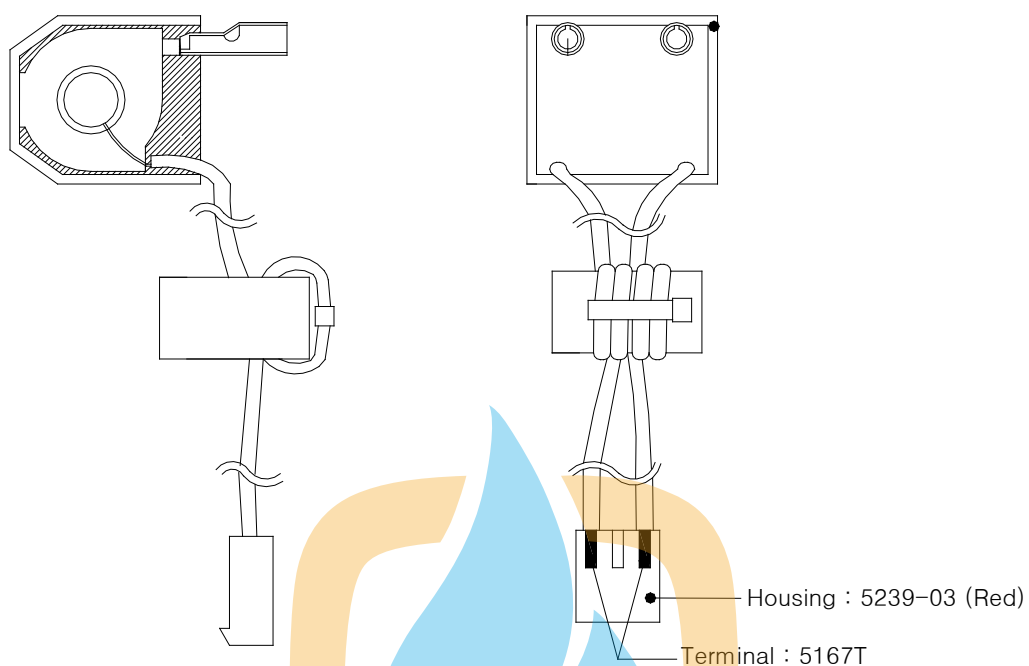


Pic 13.1

Table 13.1

|                       |                                                                                        |
|-----------------------|----------------------------------------------------------------------------------------|
| Bolier Model          | 100/130/160/200/250/300/350/400MSC<br>160/200/250/300/350MES<br>110/130/160/200/250MCF |
| Operation temperature | More than 95°C                                                                         |
| PART CODE             | 3317904500                                                                             |

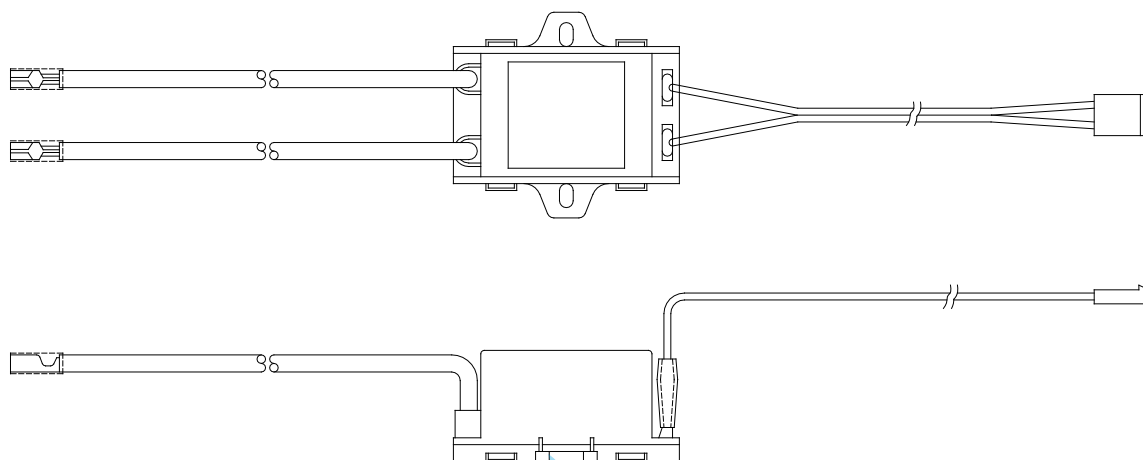
## 14. IGNITOR TRANS



Pic. 14.1

Table. 14.1

|                          |                                                                    |
|--------------------------|--------------------------------------------------------------------|
| Boiler Model             | 100/130/160/200/350/400MSC<br>160/200MES<br>110/130/160/200/250MCF |
| Ignition Trans Model No. | DCI-7910                                                           |
| Output Voltage           | 15,000V                                                            |
| PART CODE                | 3317101400                                                         |



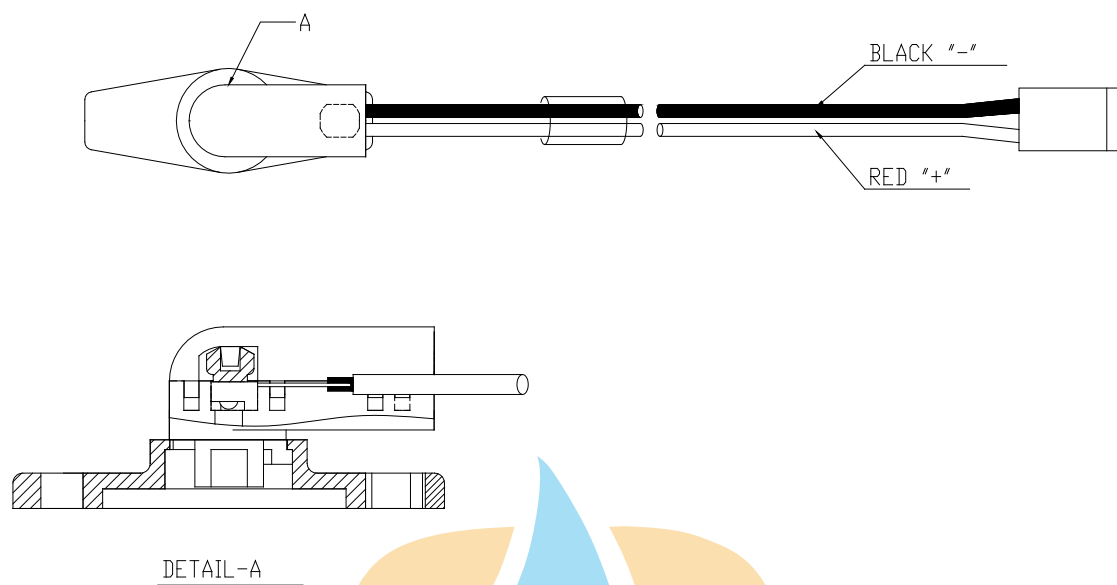
Pic. 14.2

Table. 14.2

|                          |                              |
|--------------------------|------------------------------|
| Boiler Model             | 250/300MSC<br>250/300/350MES |
| Ignition Trans Model No. | DCI-7100NP                   |
| Output Voltage           | 15,000V                      |
| PART CODE                | 3317102400                   |

**GASBOYLER**

## 15. FLAME SENSOR



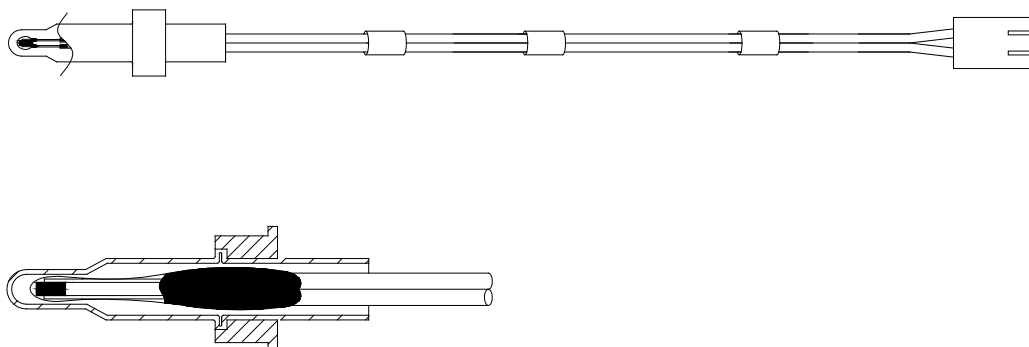
Pic. 15.1

Table. 15.1

|                        |                                                                                        |
|------------------------|----------------------------------------------------------------------------------------|
| Boiler Model           | 100/130/160/200/250/300/350/400MSC<br>160/200/250/300/350MES<br>110/130/160/200/250MCF |
| Flame sensor Model No. | SST553R-01                                                                             |
| PART CODE              | 3314805100                                                                             |

**GASBOYLER**

## 16. TEMPERATURE SENSOR

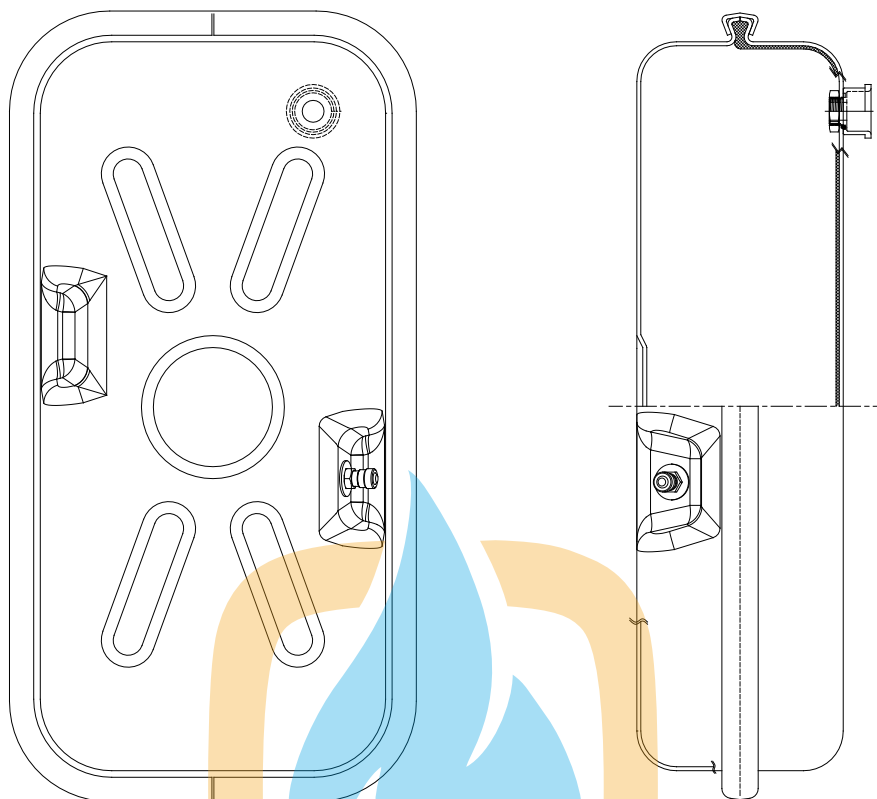


Pic. 16.1

Table. 16.1

|                        |                                                                                        |
|------------------------|----------------------------------------------------------------------------------------|
| Boiler Model           | 100/130/160/200/250/300/350/400MSC<br>160/200/250/300/350MES<br>110/130/160/200/250MCF |
| Temp. sensor Model No. | GSB-DYG-1C01-8                                                                         |
| Resistance             | $R_{50} = 17.6 \text{ KOhm} \pm 5\%$                                                   |
| B-Constant             | $B(0/100) = 3970\text{K} \pm 3\%$                                                      |
| Withstanding Voltage   | AC 1500V, 1 Min (At 80°C Water)<br>Or AC 1800V, 1 Sec. (At room temp)                  |
| Insulation Resistance  | DC 500V 100MOhm. (At room temp)                                                        |
| Operating Temperature  | -20°C ~ 120°C                                                                          |
| PART CODE              | 3314805A00                                                                             |

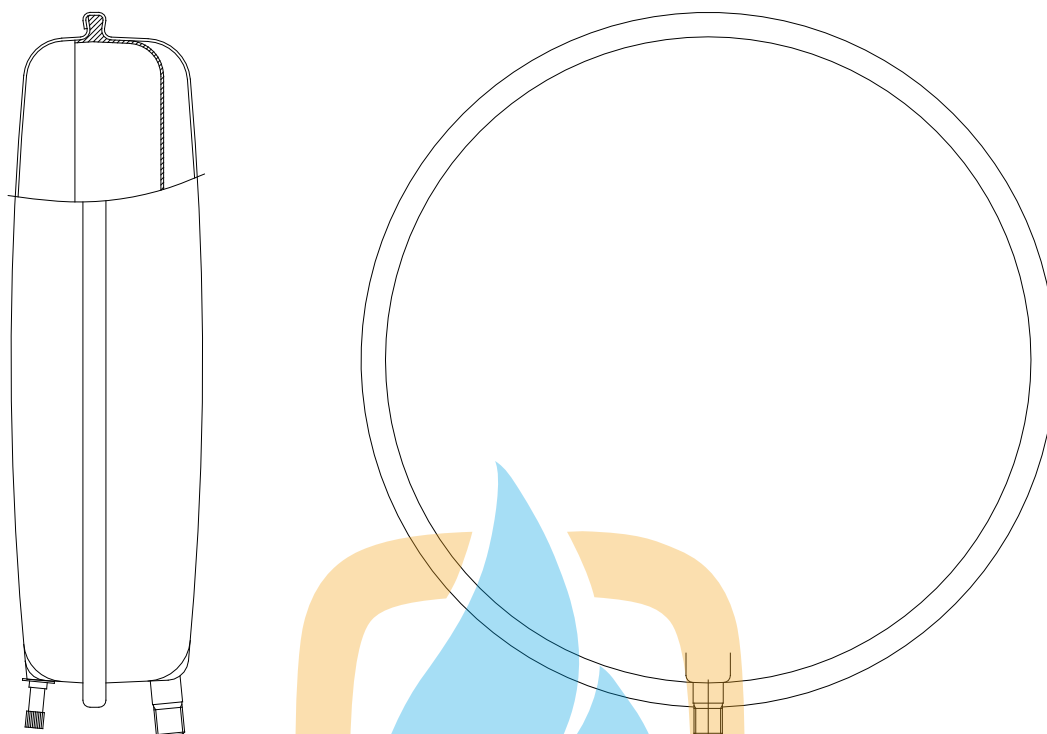
## 17. EXPANSION TANK



Pic. 17.1

Table. 17.1

| Boiler Model               | 100/130/160/200MSC      |
|----------------------------|-------------------------|
|                            | 160/200MES              |
|                            | 110/130/160MCF          |
| Capacity                   | 6L                      |
| Size(mm)                   | 205W x 398H x 104D      |
| Test Pressure              | 4.5 Kgf/cm <sup>2</sup> |
| Pre-Change Pressure        | 0.8 Kgf/cm <sup>2</sup> |
| Category Temperature Range | 0~100°C                 |
| PART CODE                  | 3317502900              |



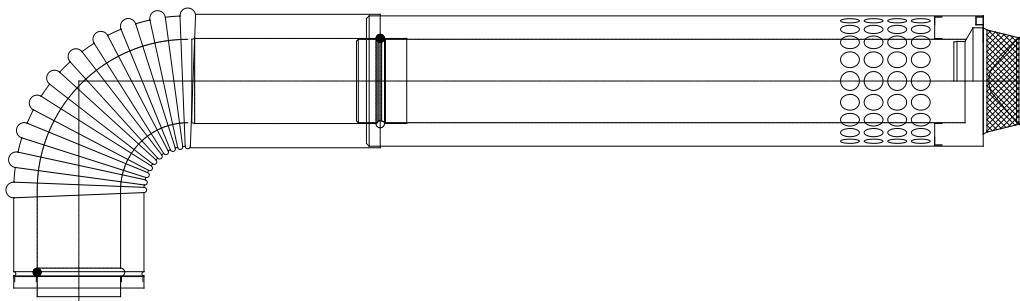
Pic. 17.2

Table. 17.2

| Boiler Model               | 250MSC/300MSC/350MSC/400MSC<br>250/300/350MES<br>200/250MCF |
|----------------------------|-------------------------------------------------------------|
| Capacity                   | 8L                                                          |
| Size(mm)                   | Φ391.5 x 108                                                |
| Test Pressure              | 4.5 Kgf/cm <sup>2</sup>                                     |
| Pre-Change Pressure        | 1.0 Kgf/cm <sup>2</sup>                                     |
| Category Temperature Range | 0~100°C                                                     |
| PART CODE                  | 4448F52002                                                  |

## 18. CHIMNEY

### 18.1 DGB-80C (CO-AXIAL TYPE)

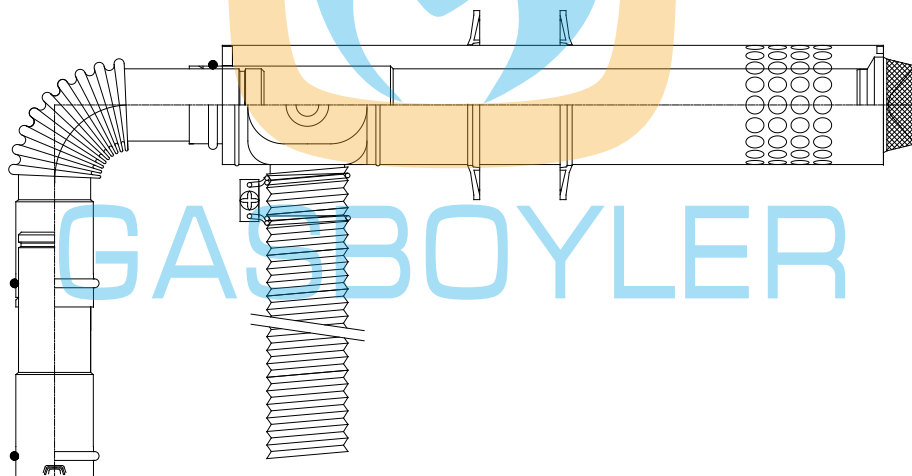


Pic. 18.1

Table. 18.1

|                   |                                                               |
|-------------------|---------------------------------------------------------------|
| Boiler Model      | 100/130/160/200/250/300/350/400MSC                            |
| Chimney Model No. | DGB-80C                                                       |
| Type              | CO-AXIAL                                                      |
| Size              | In pipe : $\Phi 80\text{mm}$ , Out pipe : $\Phi 110\text{mm}$ |

### 18.2 DGB-80L (TWIN TYPE)



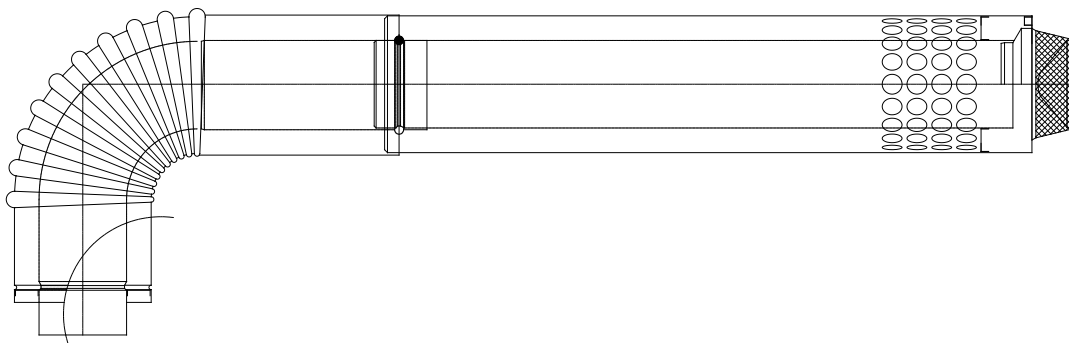
Pic. 18.2

Table. 18.2

|               |                                                               |
|---------------|---------------------------------------------------------------|
| Boiler Model  | 100/130/160/200/250/300/350/400MSC                            |
| Chimney Model | DGB-80L                                                       |
| Type          | TWIN PIPE                                                     |
| Size          | In pipe : $\Phi 80\text{mm}$ , Out pipe : $\Phi 110\text{mm}$ |



### 18.3 DGB-80EC (CO-AXIAL TYPE)

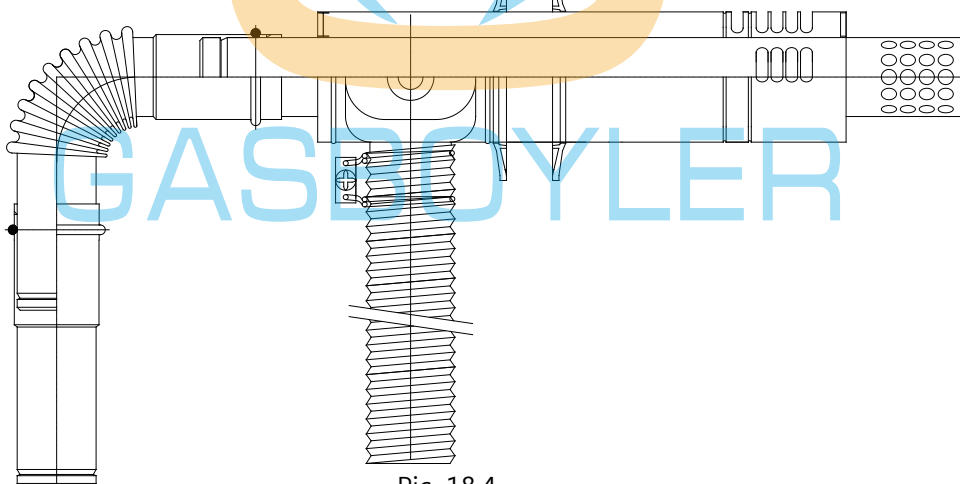


Pic. 18.3

Table. 18.3

|               |                                                               |
|---------------|---------------------------------------------------------------|
| Boiler Model  | 160/200/250/300/350MES                                        |
| Chimney Model | DGB-80EC                                                      |
| Type          | CO-AXIAL                                                      |
| Size          | In pipe : $\Phi 80\text{mm}$ , Out pipe : $\Phi 110\text{mm}$ |

### 18.4 DGB-80E (TWIN TYPE)



Pic. 18.4

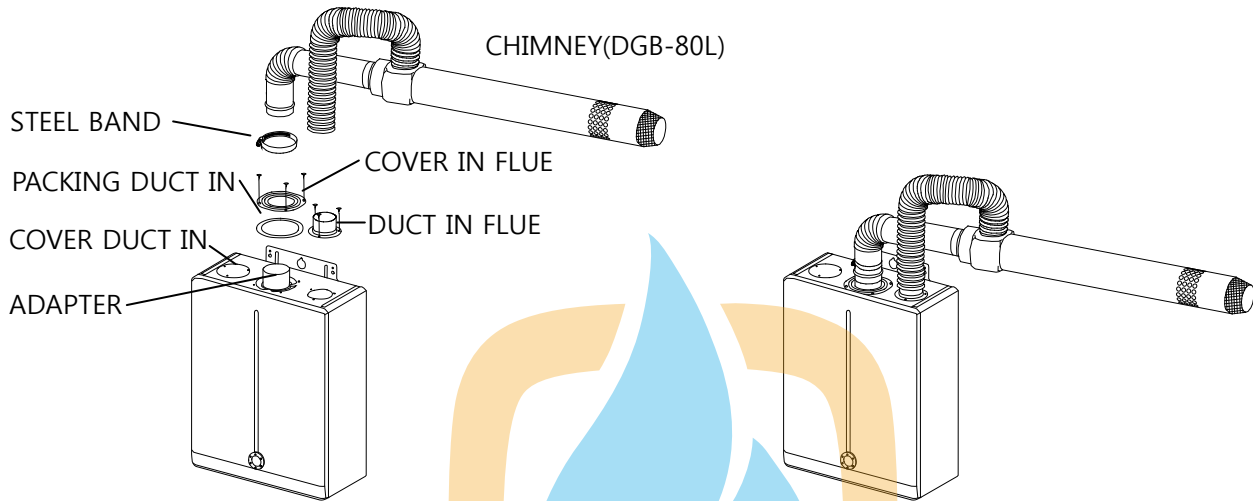
Table. 18.4

|               |                                                               |
|---------------|---------------------------------------------------------------|
| Boiler Model  | 160/200/250/300/350MES                                        |
| Chimney Model | DGB-80E                                                       |
| Type          | TWIN PIPE                                                     |
| Size          | In pipe : $\Phi 80\text{mm}$ , Out pipe : $\Phi 110\text{mm}$ |

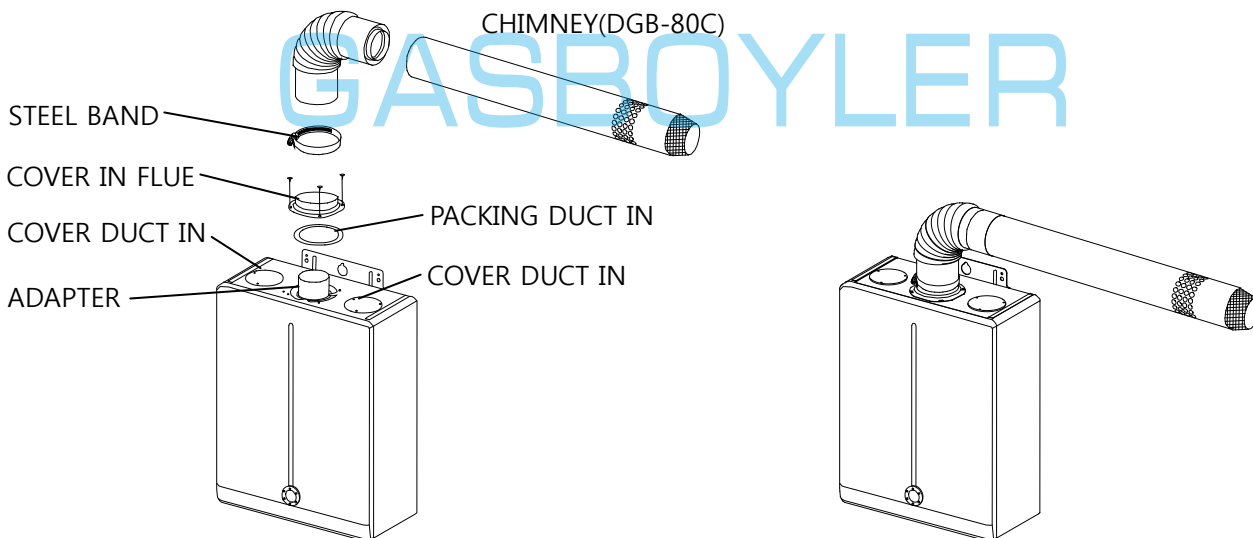
<참고1>

## 연도 조립도(TWIN TYPE & CO-AXIAL TYPE)

### 1. TWIN TYPE(DGB-80L)



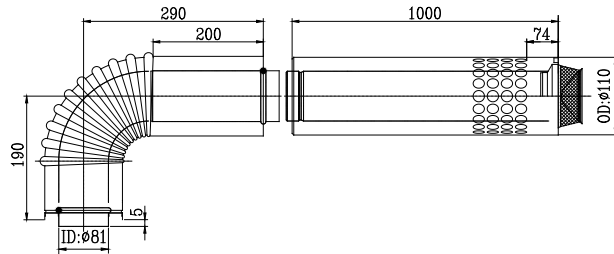
### 2. CO-AXIAL TYPE(DGB-80C)



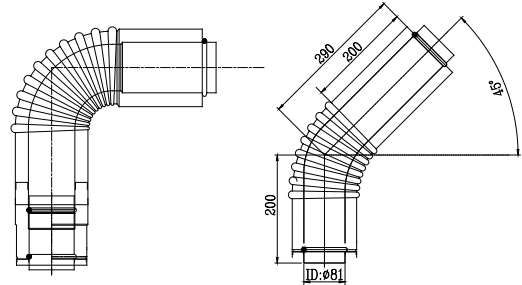
<참고2>

## CO-AXIAL TYPE

### 1. DGB-80C



DGB-80C



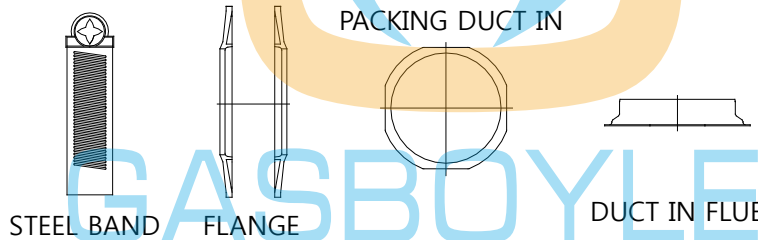
DGB-80C-EL90 / DGB-80C-EL45



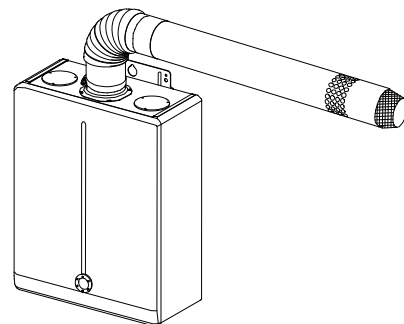
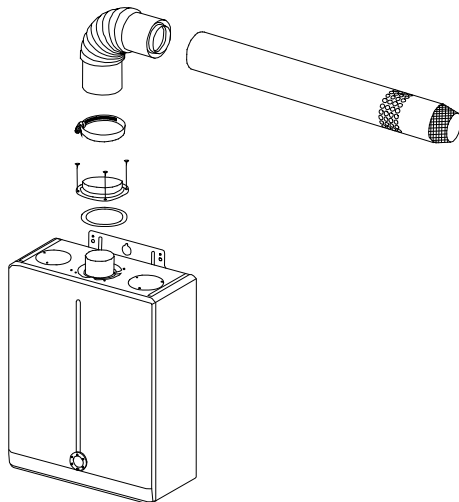
DGB-80C-TOP(L500)  
DGB-80C-TOP(L1500)  
DGB-80C-TOP(L2000)



DGB-80C(L500)  
DGB-80C(L1500)  
DGB-80C(L2000)



## ASSEMBLY



## Room Controller (DBR-W31)

### ■ Controls and Functions

● **Room controller display**

● **Rapid hot water icon**  
This icon is showing when you select 'rapid hot water'

● **Combusion icon**  
This icon is showing when flame is on in the combustion chamber.

● **Going-out icon**  
This icon is showing when you select 'going-out'

● **Outdoor temperature and heating water pressure**

● **Heating button**  
1) Touch this button to turn on and off your heating. When you turn on, the heating icon will flicker and then be lighten.  
2) You can controll your heating condition by room temperature and heating water temperature. You can switch 'room temperature mode' or 'heating water temperature mode' by touching this button long.

● **Going-out button**  
Please touch this button to prevent the boiler from freezing when you go out. Also turning the hot water faucet slightly on will help to prevent the hot water pipe from freezing.

● **Hot water button**  
Touch this button to turn on and off hot water using. When you turn on, the hot water Icon will flicker and then be lighten.

● **Rapid hot water button**  
Please touch this button whety you need to use hot water quickly. You can enjoy hot water within 1 minute.

● **(Set/Hour/Increase) button**

● **(Candle/Minute/Decrease) button**

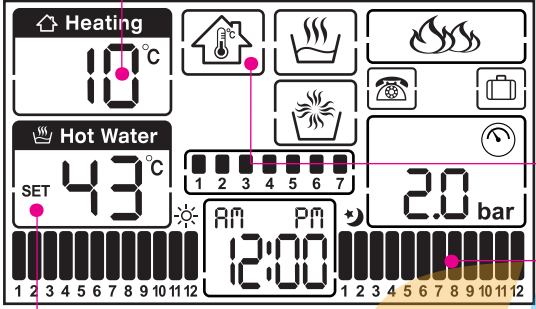
● **Timer / Clock button**  
You can set the timer houly and by the days of week, and adjust the clock.

#### Caution!

- After a power outage, the clock of room controller will initialized at 12:00 and start to operate. So please reset the heating timer and the clock.
- The other options you set before an outage is saved.

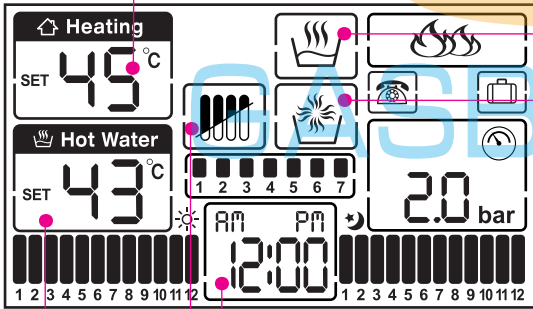
## Room Controller Display (DBR-W31)

### ■ When you controll your heating by room temperature.



- **Heating temperature section**  
The room temperature is showing when you use heating.  
(Room temperature setting range : 5°C ~ 40°C)
- This icon is showing when you select 'Room temperature' control mode.
- **Heating timer section**  
You can set the timer hourly and it is showing in black.
- **Hot water temperature section**  
When you select hot water, the temperature of hot water you set is showing.  
When you are using hot water, the current temperature of hot water is showing. (Hot water temperature setting range : 35°C ~ 60°C)

### ■ When you controll your heating by heating water temperature.



- **Heating temperature section**  
The heating water temperature you set is showing when you use heating. When the combustion is on, the current heating water temperature is showing.  
(Heating water temperature setting range : 45°C ~ 80°C)
- This icon is showing when you select 'Hot water'
- This icon is showing when you select 'Rapid hot water'
- **Clock**  
You can see the present time.
- This icon is showing when you select 'Heating water temperature' control mode
- **Hot water temperature section**  
When you select hot water, the temperature of hot water you set is showing.  
When you are using hot water, the current temperature of hot water is showing.  
(Hot water temperature setting range : 35°C ~ 60°C)

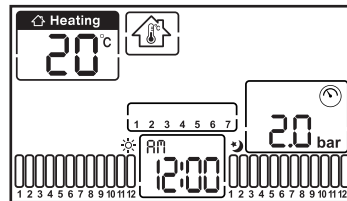
## How to use (DBR-W31)

### When using both heating and hot water

Touch Power button  
(Lights will be on)



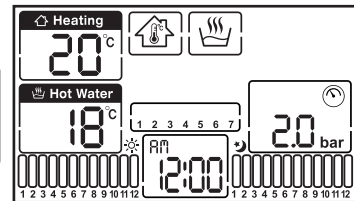
Touch Heating  
button



Heating only



Touch hot water  
button



Both heating and hot water

When using both heating and hot water

#### 1. Heating operation

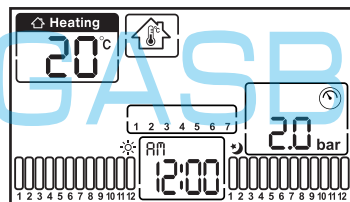
Heating stops when you use hot water, then heating works again after using hot water.

#### 2. Hot water operation

When you use hot water, boiler works only for hot water and stop heating, After using hot water, boiler works for heating again automatically.

### Heating only mode

Touch the  
heating button  
to turn heating  
on, and touch  
hot water  
button to turn  
off.

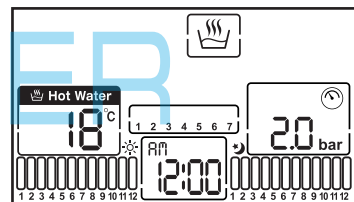


Heating only

Please set this mode when you want to use heating only.

### Hot water only mode

Touch the hot  
water button  
to turn hot  
water on, and  
touch heating  
button to turn  
off.



Hot water only

1. Boiler works only for hot water and the heating is unable.

2. Please set this mode when you want to use hot water in summer.

#### 1. Heating temperature setting

Set the temperature with  $\Delta \nabla$  buttons, then the display will flicker for 10 seconds and complete.

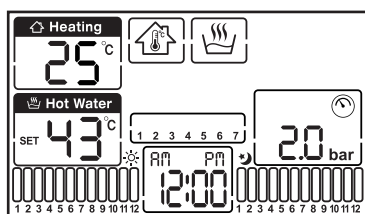
#### 2. Hot water temperature setting

Touch the hot water button and set the temperature with  $\Delta \nabla$  buttons. The display will flicker for 10 seconds and complete.

## How to use (DBR-W31)

### Room temperature Mode / Heating water temperature Mode

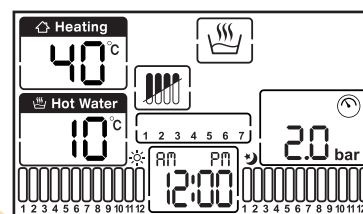
- You can controll your heating by room temperature or heating water temperature.



Room temperature Mode



Touch the heating button long when the heating is on.



Heating water temperature Mode

- Touch the heating button more than 3 seconds and you can switch room temperature mode and heating water temperature mode. The display will flicker for 10 seconds and complete.
- The room temperature mode will not work well by the installed environment of room controller. If so, please use heating water mode.

### Notes

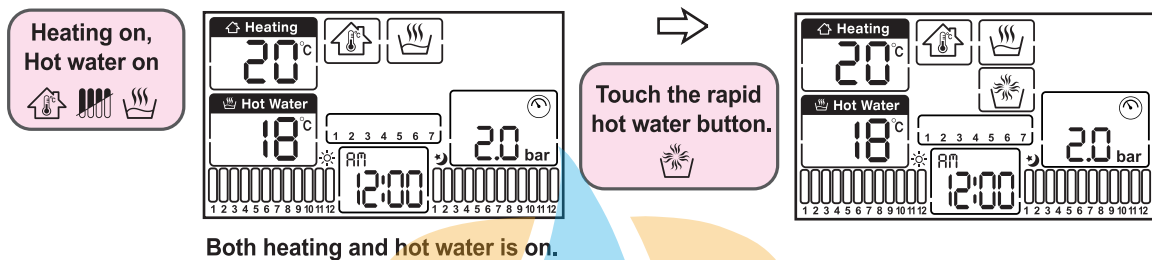
- This boiler is designed with propotional control system which is control the flame by differences between set temperature and current temperature. So you can enjoy pleasant heating and constant hot water.
- The combustion will stop or start when the room temperature or the heating water temperature is over the ignition-extinguishment limit. (below chart for references)

|                                | Ignittion                              | Extinguishment                      |
|--------------------------------|----------------------------------------|-------------------------------------|
| Room temperature mode          | 1°C lower than the set temperature     | Higher than the set tneperature     |
| Heating water temperature mode | 12~18°C lower than the set temperature | 7°C higher than the set temperature |

## How to use (DBR-W31)

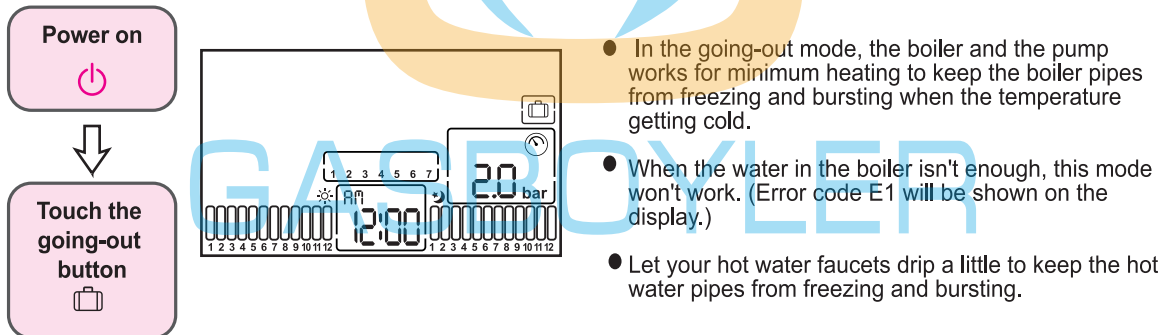
### Rapid hot water mode

- You can enjoy hot water faster by Rapid hot water mode. Please set this mode 1 minute before using hot water.
- Touch the rapid hot water button to turn on and off.



- When the rapid hot water mode is on, boiler works for preheat, though you don't use hot water.
- This mode is automatically off after using hot water or a period of time.

### Going-out mode(Anti-freezing mode)



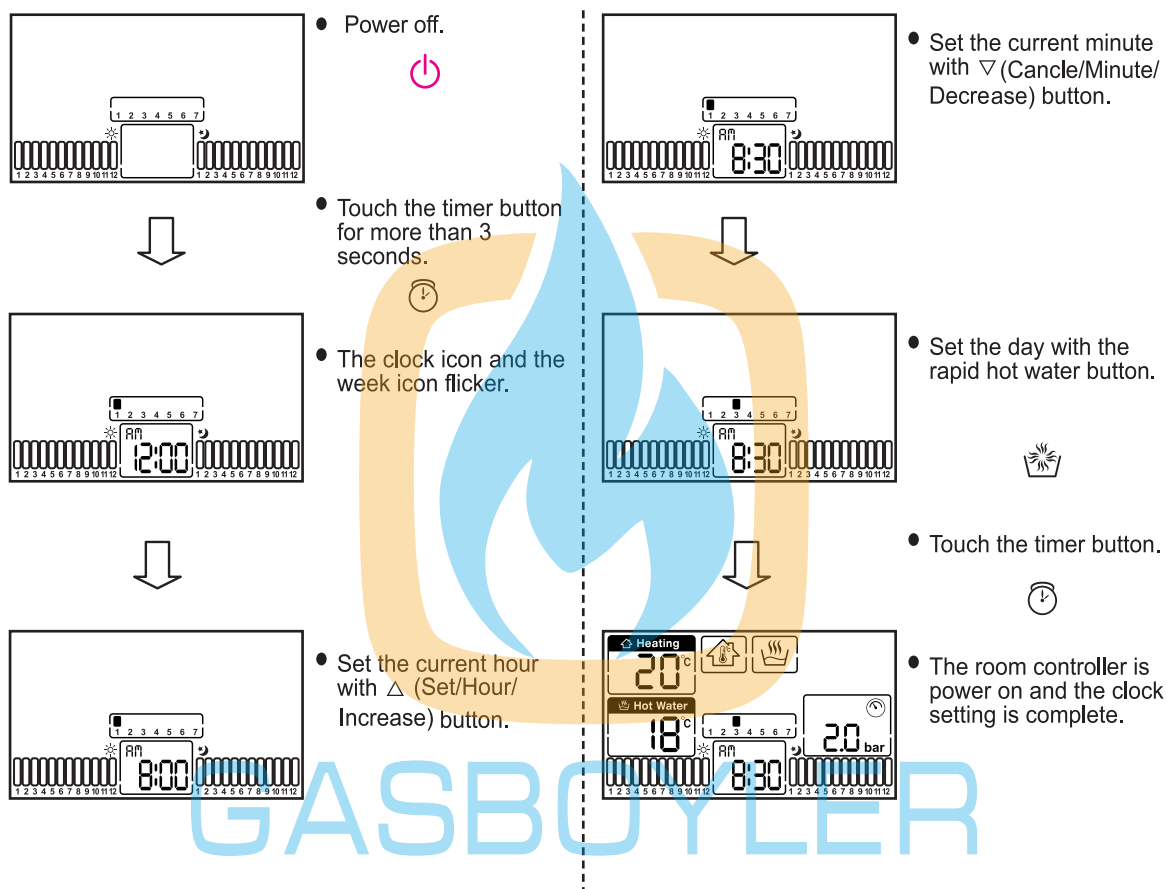
### Cautions on using hot water!

- When the volum of hot water usage is large, the temperature of hot water won't be high enough though the set temperature is high. If so, please reduce the usage.
- When the volum of hot water usage is small, the temperature of hot water will be high eazily though the set temperature is low. If so, please turn on the cold water to make moderate water.
- During hot water use, it is unable to set the hot water temperature over 50°C(to prevent the danger of burn)

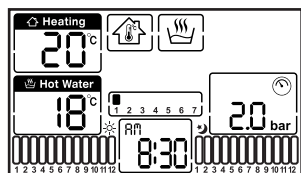


## How to use (DBR-W31)

### Clock and Week setting



### Caution!

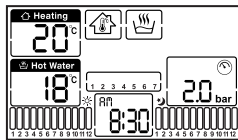


During the power outage, the room controller works with the internal battery for 2 hours. In case of the power outage for more than 2 hours, please reset the clock and the week.

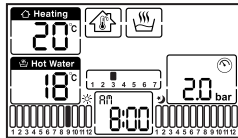
## How to use (DBR-W31)

### Timer setting

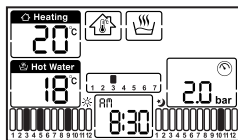
- You can set the timer hourly and by days of the week.
- The boiler works on time you set, so you can save the gas and electric charge.
- When the heating timer section is in white, the boiler works for continuous heating. When the heating timer section is in black, the boiler works only for the hours you set.
- **Timer setting(Weekly mode is set as the factory setting)**
  - 1) Weekly mode : You can set the timer hourly and by days at the same time. A week setting will be repeat.
  - 2) 24 Hour mode : You can set the timer hourly and it repeats every 24 hour.
- **How to change the timer mode**
  - Power on the room controller and touch the timer button for 3 seconds to switch between the weekly mode and 24 hour mode.
  - When the weekly mode is set, week section is on. When the 24 hour mode is on, week section is off.



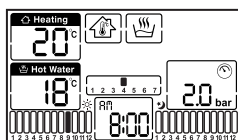
← Touch Timer button.



- **The clock flickers.**
- **Cancel**
  - By touching the ▽ (Candle/Minute/Decrease) button, The heating timer moves clockwise and cancels the any previously set heating timer. (marked white)
- **Setting**
  - By touching the △, (Set/Hour/Increase) button, the heating timer moves clockwise and set the timer hourly. (marked black)



- **The days of week setting(only for the weekly mode)**
  - You can change the days of week with the rapid hot water button when the timer flickers. Please set the timer hourly and change the days also.
- **Complete**
  - Touch the timer button.

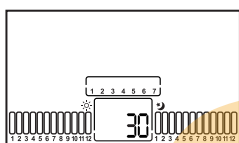


- **The set heating times are marked black.**
- **Heating lasts for 30 minutes and stops 30 minutes in every 1 hour.**

## How to use (DBR-W31)

### Heating duration setting

- You can controll the heating duration when the timer is on.
- The heating lasts for 30 minutes in 1 hour as the factory setting. You can change it for 15, 30, 45, 60 minutes in 1 hour.



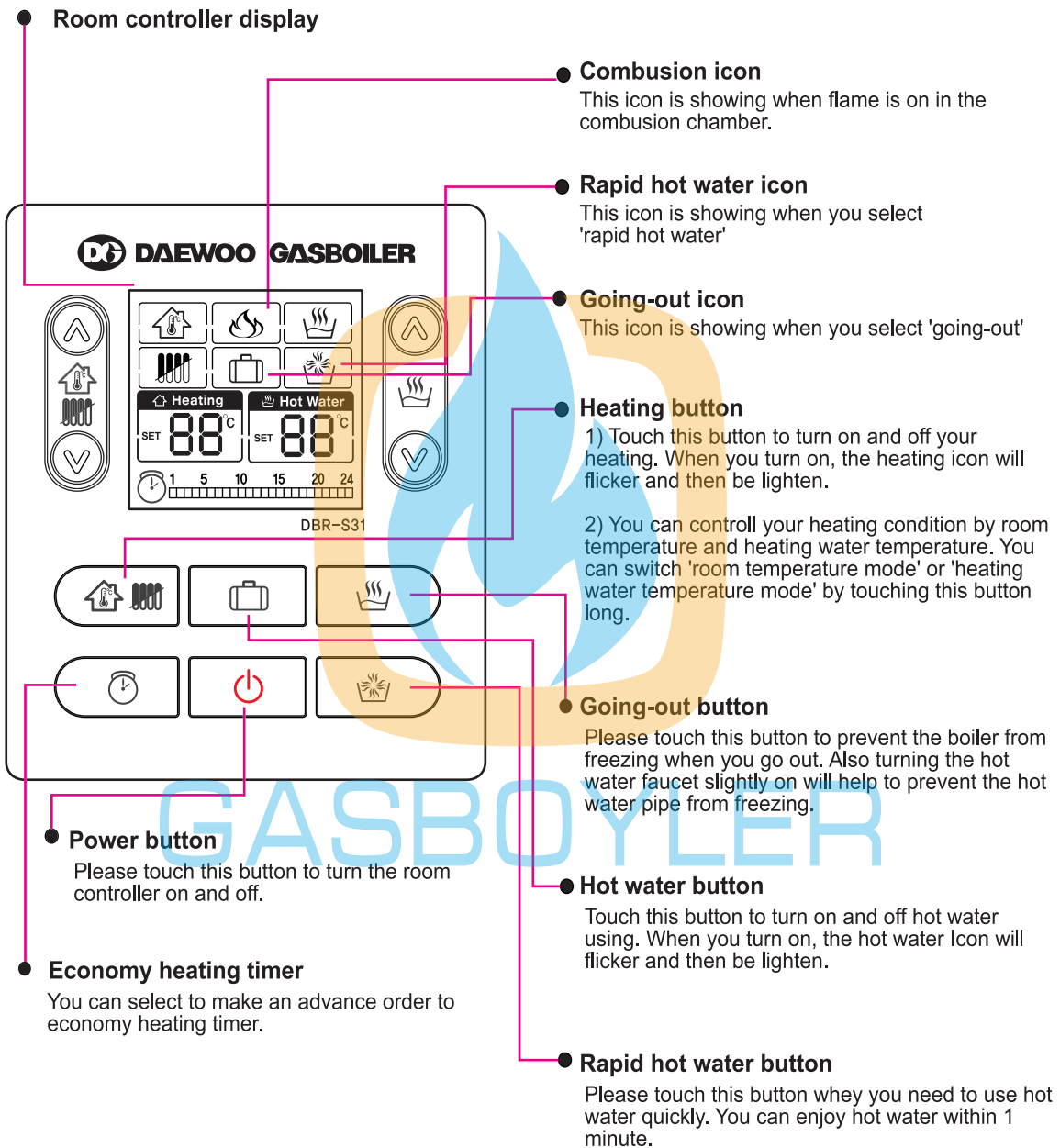
1. "30"(factory setting) will flicker on the display.

2. Choice the duration with the  $\Delta$ (Set/Hour/Increase) button, and touch the power button to complete. (The duration changes 45→60→15→30.)

GASBOYLER

## Room Controller (DBR-S31)

### ■ Controls and Functions

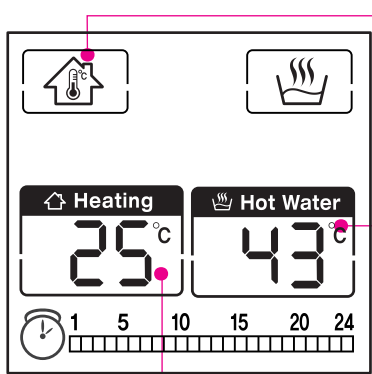


#### Caution!

- After a power outage, the options you set before an outage is saved.
- After a power outage, the economy heating timer starts to work all over again.
- The back light wink out after 30 seconds you press any button.

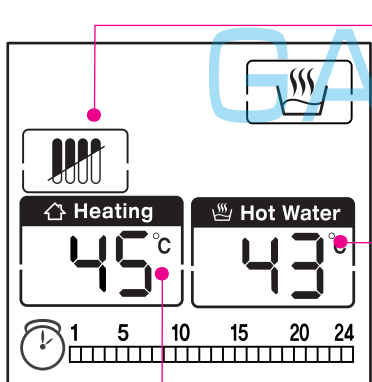
## Room Controller Display (DBR-S31)

### ■ When you controll your heating by room temperature,



- **This icon is showing when you select 'Room temperature' control mode.**  
It flickers when the combustion for heating is on. When you turn the hot water on, this icon is showing automatically and it will flicker when the combustion for hot waer is on.
- **Hot water temperature section**  
When you select hot water, the temperature of hot water you set is showing. When you are using hot water, the current temperature of hot water is showing.  
(Hot water temperature setting range : 35°C ~ 60°C)  
(Factory setting : 43°C)
- **Heating temperature section**  
The room temperature is showing when you use heating.  
(Room temperature setting range : 5°C ~ 40°C)  
(Factory setting : 0°C)

### ■ When you controll your heating by heating water temperature.



- **This icon is showing when you select 'Heating water temperature' control mode.**  
It flickers when the combustion for heating is on. When you turn the hot water on, this icon is showing automatically and it will flicker when the combustion for hot waer is on.
- **Hot water temperature section**  
When you select hot water, the temperature of hot water you set is showing. When you are using hot water, the current temperature of hot water is showing.  
(Hot water temperature setting range : 35°C ~ 60°C)  
(Factory setting : 43°C)
- **Heating temperature section**  
The heating water temperature you set is showing when you use heating. When the combustion is on, the current heating water temperature is showing.  
(Heating water temperature setting range : 45°C ~ 80°C)  
(Factory setting : 45°C)

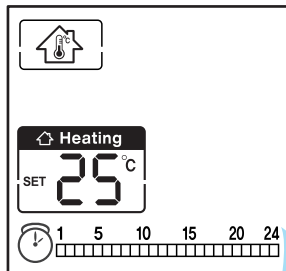
## How to use (DBR-S31)

### When using both heating and hot water

Press Power button  
(Lights will be on)



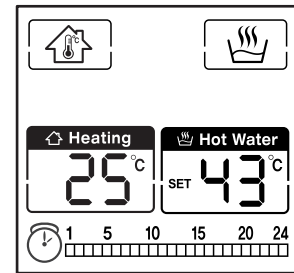
Press Heating  
button



Heating only



Press hot water  
button



Both heating and hot water

#### When using both heating and hot water

##### 1. Heating operation

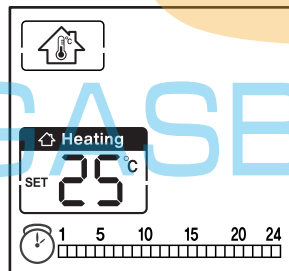
Heating stops when you use hot water, then heating works again after using hot water.

##### 2. Hot water operation

When you use hot water, boiler works only for hot water and stop heating, After using hot water, boiler works for heating again automatically.

### Heating only mode

Press the  
heating button  
to turn heating  
on, and touch  
hot water  
button to turn  
off.

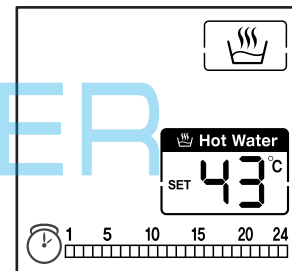


Heating only

Please set this mode when you want to use heating only.

### Hot water only mode

Press the hot  
water button  
to turn hot  
water on, and  
touch heating  
button to turn  
off.



Hot water only

1. Boiler works only for hot water and the heating is unable.
2. Please set this mode when you want to use hot water in summer.

##### 1. Heating temperature setting

Set the temperature with  $\Delta$   $\nabla$  buttons, then the display will flicker for 10 seconds and complete.

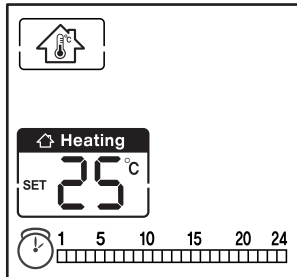
##### 2. Hot water temperature setting

Press the hot water button and set the temperature with  $\Delta$   $\nabla$  buttons. The display will flicker for 10 seconds and complete.

## How to use (DBR-S31)

### Room temperature Mode / Heating water temperature Mode

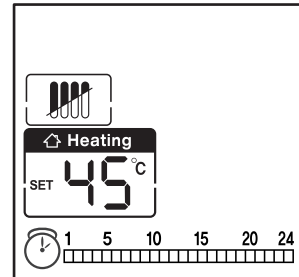
- You can controll your heating by room temperature or heating water temperature.



Room temperature Mode



Press the heating button long when the heating is on.



Heating water temperature Mode

- Press the heating button more than 3 seconds and you can switch room temperature mode and heating water temperature mode. The display will flicker for 10 seconds and complete.
- The room temperature mode will not work well by the installed environment of room controller. If so, please use heating water mode.

### Notes

- This boiler is designed with propotional control system which is control the flame by differences between set temperature and current temperature. So you can enjoy pleasant heating and constant hot water.
- The combustion will stop or start when the room temperature or the heating water temperature is over the ignition-extinguishment limit. (below chart for references)

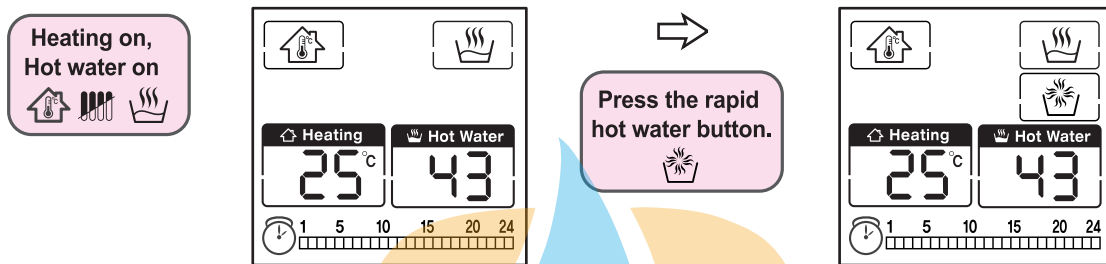
|                                | Ignittion                              | Extinguishment                      |
|--------------------------------|----------------------------------------|-------------------------------------|
| Room temperature mode          | 1°C lower than the set temperature     | Higher than the set tmeperature     |
| Heating water temperature mode | 12~18°C lower than the set temperature | 7°C higher than the set temperature |

- When you turn heating off and turn hot water off, the room controller is power off automatically. In this condition, if you power on the room controller, the both of heating and hot water turn on automatically.

## How to use (DBR-S31)

### Rapid hot water mode

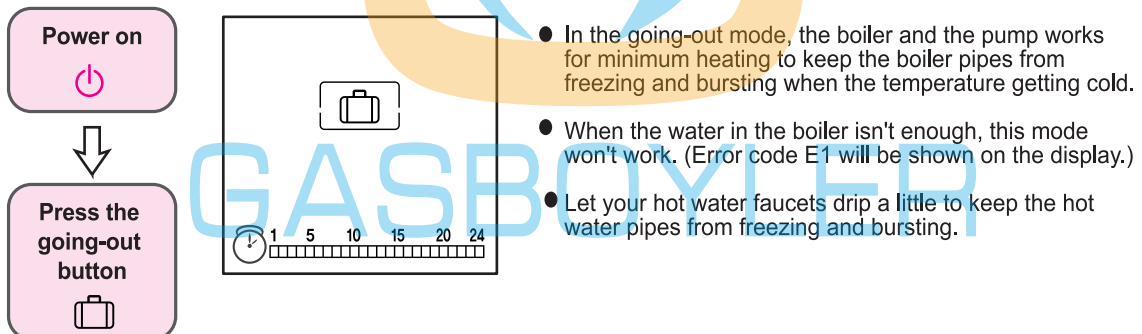
- You can enjoy hot water faster by Rapid hot water mode. Please set this mode 1 minute before using hot water.
- Press the rapid hot water button to turn on and off.



Both heating and hot water is on.

- When the rapid hot water mode is on, boiler works for preheat, though you don't use hot water.
- This mode is automatically off after using hot water or a period of time.

### Going-out mode(Anti-freezing mode)



### Cautions on using hot water!

- When the volum of hot water usage is large, the temperature of hot water won't be high enough though the set temperature is high. If so, please reduce the usage.
- When the volum of hot water usage is small, the temperature of hot water will be high eazily though the set temperature is low. If so, please turn on the cold water to make moderate water.
- During hot water use, it is unable to set the hot water temperature over 50°C(to prevent the danger of burn)

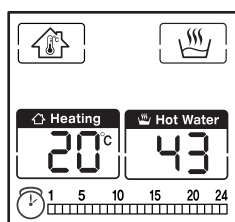


## How to use (DBR-S31)

### Economy heating timer

- The boiler works for 30 minutes in 1 hour on time you select.
- You can save the gas and electric charge with this function.

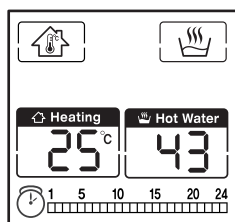
#### 1. Continuous heating



- The heating keeps working on when you don't set the economy heating timer.
- The economy timer section is all in white.

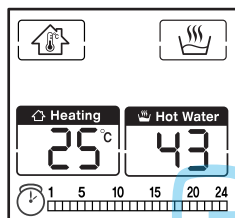
← **Touch Timer button.**

#### 2. Economy heating timer setting



- The economy heating timer section flickers.
- Setting
  - By pressing the  $\Delta$ / $\nabla$  buttons, the economy heating timer moves clockwise and set the timer hourly. (marked black)
- Complete
  - Press the timer button.

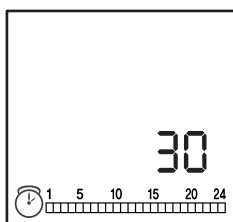
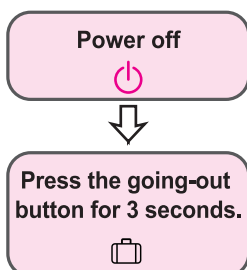
#### 3. When the economy heating timer is ON



- The set economy heating times are marked black.
- Heating lasts for 30 minutes and stops 30 minutes in every hour.
- When you set the economy heating timer for 6 hours and under,

### Heating duration setting

- You can control the heating duration when the timer is on.
- The heating lasts for 30 minutes in 1 hour as the factory setting. You can change it for 15, 30, 45, 60 minutes in 1 hour.



1. "30"(factory setting) will flicker on the display.
2. Choice the duration with the  $\Delta$  (Set/Hour/Increase) button and touch the power button to complete. (The duration changes 45→60→15→30.)

## Error sign in Room controller

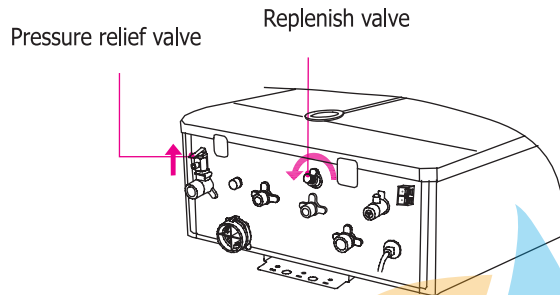
| ERROR SIGN | TROUBLES                                                                                                  | CHECK POINTS                                                                                                   |
|------------|-----------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------|
| E0         | Room controller's temperature sensor failure                                                              | Room controller's temperature sensor                                                                           |
| E1         | No water in boiler                                                                                        | Safety flow switch, Main PCB, Replenish valve, Stop the supply of the water                                    |
| E2         | Incomplete combustion : The yellow tip of flame is occurred when the boiler is burning                    | Flue, Combustion condition                                                                                     |
| E3         | Boiling : No circulation of heating water                                                                 | Pump, Distributer, The condition of heating water circulation                                                  |
| E4         | Flue duct clogged or Fan failure                                                                          | Flue, Fan, Main PCB                                                                                            |
| E5         | Abnormal flame detected                                                                                   | Infrared flame sensor, Main PCB                                                                                |
| E6         | Gas leakage detected(optional) : The E6 is displayed when the gas detector is installed with boiler only. | Check gas leakage, Gas detector, Main PCB                                                                      |
| E7         | The communication failure between Room controller and Main PCB                                            | Room controller, Main PCB                                                                                      |
| E8         | Heating water temperature sensor failure                                                                  | Heating water temperature sensor, Main PCB                                                                     |
| EE         | Fan failure : Fan is not rotating                                                                         | Fan, Main PCB                                                                                                  |
| 버, U1      | Room controller's buttons failure                                                                         | Room controller's buttons                                                                                      |
| E9         | Water leakage is detected in Heating pipe of boiler (Open type of boiler only)                            | Check water leakage in Heating pipe of boiler                                                                  |
| Uo         | Re-operation : Ignition failure                                                                           | Kind of gases, Ignition transformer, Infrared flame sensor, Main PCB, Gas valve, Check gas supply and shortage |
| EF         | When the flow switch is sensing for over 30 min.                                                          | Flow switch, Main PCB                                                                                          |
| EA         | When the replenish valve is operating over 5 times for 1 min. (Open type of boiler only)                  | Check no water in Heating pipe of boiler                                                                       |
| EC         | Boiler's model number failure                                                                             | Check the boiler's model number in SW1 of Main PCB                                                             |
| Ed         | The power frequency is not correct                                                                        | Check the power frequency is 50Hz                                                                              |
| U8         | Hot water temperature sensor failure                                                                      | Hot water temperature sensor, Main PCB                                                                         |

● When error sign appears in the display, exercise useful tips. If you still have trouble, call our service center.

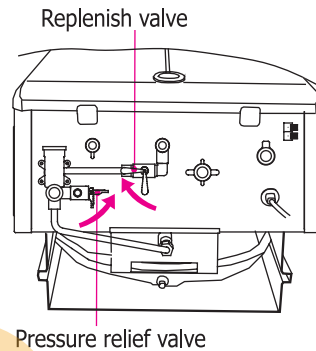
## Checking Heating pipe pressure

- There is a Replenish valve and a Pressure relief valve on the underside of boiler.

Model No. DGB-100/130/160/200/200/250/300MSC



Model No. DGB-350/400MSC



- Please check the heating pipe pressure often with the LED lamp of pressure gauge.

- 1 bar and less : Please open the replenish valve to fill the heating pipes with water until the lamp goes to 1~2 bar. (When the pressure of cold water supply is under 1 bar, please fill the heating pipes until the lamp goes to 3 bar.)
- When the pressure of heating pipes is over 3 bar, heating water is flow out from this pressure relief valve to drop the pressure. In this case, please pull the pressure relief valve upward and send out the water until the lamp goes to 2 bar.
- Low pressure of heating pipes may disturb the circulation of heating water. (Usable minimum pressure is 0.2 bar.)

[Pressure gauge] -

It shows the pressure of heating pipes which is the temperature sensor notice.



| Pressure of heating pipes             | Display sign                        | Appropriate action                                |
|---------------------------------------|-------------------------------------|---------------------------------------------------|
| Under 0.7 bar<br>(No water)           | 0 1 2 3 (3 is lit)                  | Fill the heating pipes with the replenish valve   |
| 0.7~0.9 bar                           | 0 1 2 3 (3 is lit)                  | Fill the heating pipes with the replenish valve   |
| 1.0~1.9 bar                           | 0 1 2 3 (3 is lit)                  |                                                   |
| 2.0~2.6 bar                           | 0 1 2 3 (3 is lit)                  |                                                   |
| 2.7~2.9 bar                           | 0 1 2 3 (2 and 3 are lit)           | Flow out the water with the pressure relief valve |
| More than 3.0<br>(Excessive pressure) | 0 1 2 3 (3 is lit with a starburst) | Flow out the water with the pressure relief valve |

- Pressure relief valve

- This is the safety device to prevent any burst of heating pipes or abnormality of boiler.
- When the pressure of heating pipes is over 2.7 ~ 3 bar, heating water is flow out from this pressure relief valve to drop the pressure.

## Electric Diagram (DCSC-G)

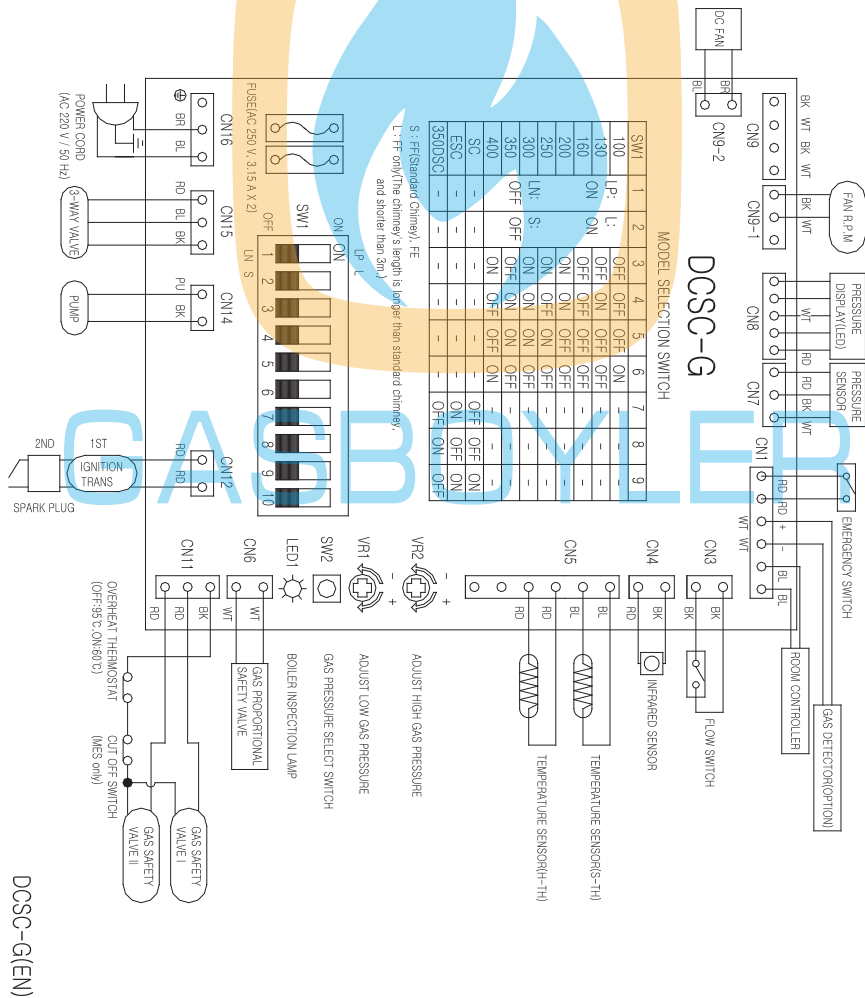
## CHECK POINTS

(AC 220 V / 50 Hz)

| CN  | MEASURED VALUE IN NORMAL CONDITION                                                                                                                               |
|-----|------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1   | During EMERGENCY SW ON : about DC 0 V<br>During EMERGENCY SW OFF : about DC 5 V<br>When leaked gas is detected by gas detector : about DC 12 V                   |
| 3   | During flow switch operation : about DC 0 V<br>During flow switch stop operation : about DC 5 V<br>During combustion cycle : about lower than DC 4.5 V           |
| 4   | During extinction cycle : about DC 5 V                                                                                                                           |
| 5   | Temperature sensor's resistance when no power :<br>about 0.7:159.4k, 30.7:35.6k, 60.7:12.1k, 100.7:3.3k                                                          |
| 6   | During combustion cycle : about DC 9~20 V                                                                                                                        |
| 7   | When heating water is in boiler : about DC 0.5~4.5 V<br>When heating water is not in boiler : about lower than DC 0.5 V                                          |
| 8   | During LED operation : about DC 5 V<br>LED1 ~ 3 : GREEN, LED4 ~ RED                                                                                              |
| 9-1 | During Fan operation : about lower than DC 4.5 V<br>Fan stop operation : about DC 5 V                                                                            |
| 9-2 | During Fan operation : DC 10~40 V, G : DC ground<br>Fan stop operation : about DC 0 V, G : DC ground                                                             |
| 11  | During Gas valve operation : about DC 0 V (BK-RD)<br>Gas valve stop operation : about DC 0 V (BK-RD)                                                             |
| 12  | Resistance of 1st : about 12<br>Resistance of 2nd : about 1k                                                                                                     |
| 14  | During Pump operation : about AC 220 V<br>Pump stop operation : about AC 0 V                                                                                     |
| 15  | During heating cycle : about AC 220 V<br>During hot water cycle : about AC 0 V<br>During heating cycle : about AC 0 V<br>During hot water cycle : about AC 220 V |
| 16  | BK-BL<br>about AC 220 V                                                                                                                                          |

BR-BROWN, BK-BLACK, BL-BLUE, PU-PIPER, RD-RED, WT-WHITE, Y-YELLOW

## ELECTRIC DIAGRAM(DCSC-G)

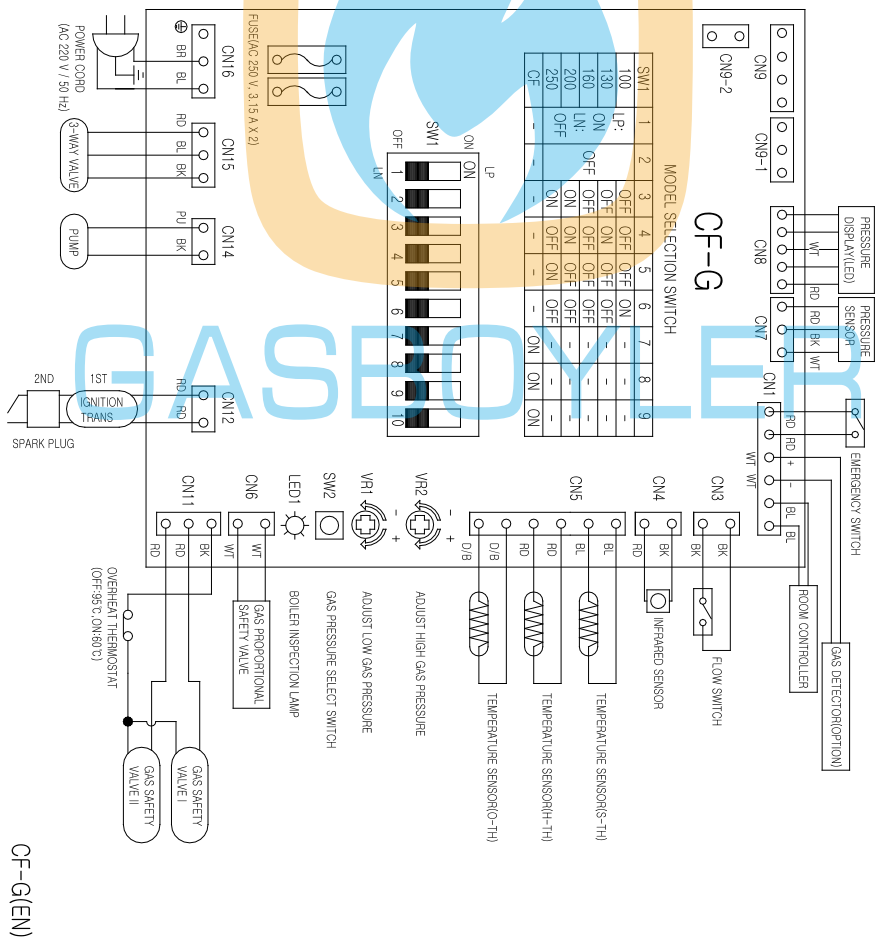


## Electric Diagram (CF-G)

### CHECK POINTS (AC 220 V / 50 Hz)

| CN    | WIRE COLOR                                                                        | MEASURED VALVE IN NORMAL CONDITION                                                                              |
|-------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|
| RD-RD |                                                                                   | During EMERGENCY SW ON : about DC 0 V                                                                           |
| 1     | WT-WT                                                                             | During EMERGENCY SW OFF : about DC 5 V                                                                          |
|       | BL-BL                                                                             | When leaked gas is detected by Gas detector : about DC 12 V                                                     |
| 3     | BK-BK                                                                             | During Flow switch operation : about DC 0 V                                                                     |
| 4     | RD-BK                                                                             | During Flow switch stop operation : about DC 5 V                                                                |
|       | BL-BL                                                                             | During combustion cycle : about lower than DC 4.5 V                                                             |
| 5     | RD-RD                                                                             | Temperature sensor's resistance when no power :<br>about 0°C: 159.4kΩ, 30°C: 38.5kΩ, 60°C: 12.1kΩ, 100°C: 3.9kΩ |
| 6     | WT-WT                                                                             | During combustion cycle : about DC 3~20 V                                                                       |
| 7     | BK-WT                                                                             | When heating water is in boiler : about DC 0.5~4.5 V                                                            |
| 8     | RD-WT                                                                             | When heating water is not in boiler : about lower than DC 0.5 V                                                 |
|       | WT                                                                                | During LED operation : about DC 5 V                                                                             |
| 11    | RD-RD-BK                                                                          | During Gas valve operation : about DC 200 V (BK-RD)                                                             |
| 12    | RD-RD                                                                             | Gas valve stop operation : about DC 0 V (BK-RD)                                                                 |
|       |                                                                                   | Resistance of 1st : about 1kΩ                                                                                   |
|       |                                                                                   | Resistance of 2nd : about 1kΩ                                                                                   |
| 14    | PU-BK                                                                             | During Pump operation : about AC 220 V                                                                          |
|       | BK-BL                                                                             | Pump stop operation : about AC 0 V                                                                              |
| 15    | BK-RD                                                                             | During heating cycle : about AC 220 V                                                                           |
|       |                                                                                   | During hot water cycle : about AC 0 V                                                                           |
| 16    | BR-BL                                                                             | During hot water cycle : about AC 220 V                                                                         |
|       |                                                                                   | about AC 220 V                                                                                                  |
|       | BR-BROWN, BK-BLACK, BL-BLUE, PU-PURPLE, RD-RED, WT-WHITE, Y-YELLOW, D/B-DARK BLUE |                                                                                                                 |

### ELECTRIC DIAGRAM(CF-G)



## Operational Principles

### 1. Normal heating operation

#### 1. Power on

Status LED in Main PCB will turned on.

#### 2. Power button “on”, “heating + hot water” cycle

Pump operates, and the 3-way valve is in Heating mode.

#### 3. Heating ignition temperature $\geq$ Current Heating water supply temperature

Heating ignition temperature is depending on the selected heating temperature.

Heating water supply temperature (ranging from 12°C to 84 °C)

- 1) 12~64°C - 12°C = Ignition temperature
- 2) 65~75°C - 15°C = Ignition temperature
- 3) more than 76°C - 18°C = Ignition temperature

- ① After 0.5 seconds, Fan rotates high speed. (Fan pre-purge)
- ② After 7.5 seconds, SV-1 (Safety valve 1) of Gas valve is ON.
- ③ After 0.5 seconds, Ignition transformer is ON.
- ④ After 0.5 seconds, SV-2 (Safety valve 2) of Gas valve is ON.
- ⑤ After 0.1 seconds, PSV (Proportional valve) of Gas valve is ON.

\* Ignition cycle should last for 7 seconds of maximum discharging time until detection of ignition is detected by the system. During the detection, ignition gas pressure should be constant and Fan should be decreased its rpm from high to low.

\* If ignition cycle is failed more than 3 times, the system should be switched to “Re-operation” status.

\* Ignition gas pressure = 1<sup>st</sup> < 2<sup>nd</sup> < 3<sup>rd</sup>

#### 4. Detection of ignition

- ① Combustion Lamp is on.
- ② Immediately → Ignition transformer is off.
- ③ The Heating temperature should be controlled, according to the between selected heating temperature and current heating water supply temperature.

#### 5. Heating ignition temperature $\geq$ Current Heating water supply temperature

(Heating extinguishment temperature = Heating selected temperature + 5 °C)

- ① Immediately, Gas valve (SV-1, SV-2, PSV) is turned off, Fan rotates mid-speed and combustion ramp is turned off.
- ② After 30 seconds, Fan stops and Pump is in continuous operation status.

#### 6. Selecting power button “off”

- ① Immediately, Gas valve is turned off, Fan rotates high speed and combustion ramp is turned off.
- ② After 30 seconds, Fan and Pump stops.

## 2. Hot water operation

### 1. For using hot water (input Flow switch)

- ① Pump rotates and 3-way valve is switch to Hot water mode.
- ② 3-way valve is switch to Hot water mode.

### 2. Current Heating water supply temperature $\leq 88^{\circ}\text{C}$

- ① After 0.5 seconds, Fan rotates high speed. (Fan pre-purge)
- ② After 0.7 seconds, SV-1 (Safety valve 1) of Gas valve is ON.
- ③ After 0.5 seconds, Ignition transformer is ON.
- ④ After 0.5 seconds, SV-2 (Safety valve 2) of Gas valve is ON.
- ⑤ After 0.1 seconds, PSV (Proportional valve) of Gas valve is ON.

\* Ignition cycle should last for 7 seconds of maximum discharging time until detection of ignition is detected by the system. During the detection, ignition gas pressure should be constant and Fan should be decreased its rpm from high to low.

\* If ignition cycle is failed more than 3 times, the system should be switched to "Re-operation" status.

\* Ignition gas pressure =  $1^{\text{st}} < 2^{\text{nd}} < 3^{\text{rd}}$

\* If hot water is used more than one and half hour, the boiler is turned off automatically.

### 3. Detection of ignition

- ① Combustion Lamp is on.
- ② Immediately  $\rightarrow$  Ignition transformer is off.
- ③ The boiler is controlled proportionally, according to the between selected hot water temperature and heating water supply temperature.

### 4. Current Heating water supply temperature $\leq 90^{\circ}\text{C}$

- ① Immediately, Gas valve turned off, Fan rotates mid-speed and combustion ramp is turned off.
- ② After 30 seconds, Fan rotates low speed.
- ③ After 90 seconds, Fan stops.
- ④ After 120 seconds, Pump stops.

## 3. Re-operation Inspection

### 1. If detection of ignition is failed for 3 ignition cycles for heating and hot water.

- ① The ramp of state in Main PCB is flickering in a period of 1 Hz.
- ② Gas valve and Ignition transformer are turned off.
- ③ After 30 seconds, Fan and Pump stop.

### 2. The requirement of Re-operational inspection cancellation

- If Room controller's power button is turned off and on by force, inspection will be cancelled.
- If Flow switch is turned off and on, inspection will be cancelled.

## 4. The others for safety function

### 1. Freezing prevention

#### ① Freezing preventing Pump operation

In case that heating water temperature is below 7 °C for 3 seconds, Pump rotates clock-wise for 1 minute heating mode and counter clock-wise for 30 seconds hot water mode repeatedly, and it stops when the temperature is above 9 °C for 3 seconds.

#### ② Combustion function for freezing prevention

In case that heating water temperature in below 2 °C, the boiler is burning, and it will be extinguished when the temperature is above 30 °C.

- Freezing preventing Pump operation can function if the power is on, but freezing preventing combustion can occur only in condition that Room controller is connected and inspection hasn't occurred.
- It cannot function in condition of "No water in boiler" or "Temperature sensor failure".

|            | Operation Temp. | Stop Temp. |
|------------|-----------------|------------|
| Pump       | 7 °C            | 9 °C       |
| Combustion | 2 °C            | 30 °C      |

### 2. Pump sticking prevention

① Pump rotates for 5 minutes in heating mode, if Pump stops for 24 hours.

② Pump doesn't rotate in condition of "No water in boiler".

### 3. Overheating prevention (Hot water mode)

① The boiler is extinguished if heating water temperature is above 90 °C at hot water mode.

② The boiler is ignited and burning automatically, if heating water temperature is below 88 °C at hot water mode.

### 4. Exhaust closing (excess air pressure) prevention (FE type only)

During combustion cycle, if yellow flame is produce due to exhaust closing (excess air pressure), the flame voltage becomes less than 0.3V then the condition is understood by the system as exhaust closing (excess air pressure) condition. Then the system goes into extinguishment cycle immediately and Fan high speed revolution is performed as pre-purge and re-ignition is performed.

### 5. Going out function

When you select "Going out" on Room controller

#### ① Freezing preventing Pump operation

In case that heating water temperature is below 12 °C, Pump rotates , and it stops when the temperature is above 13 °C.

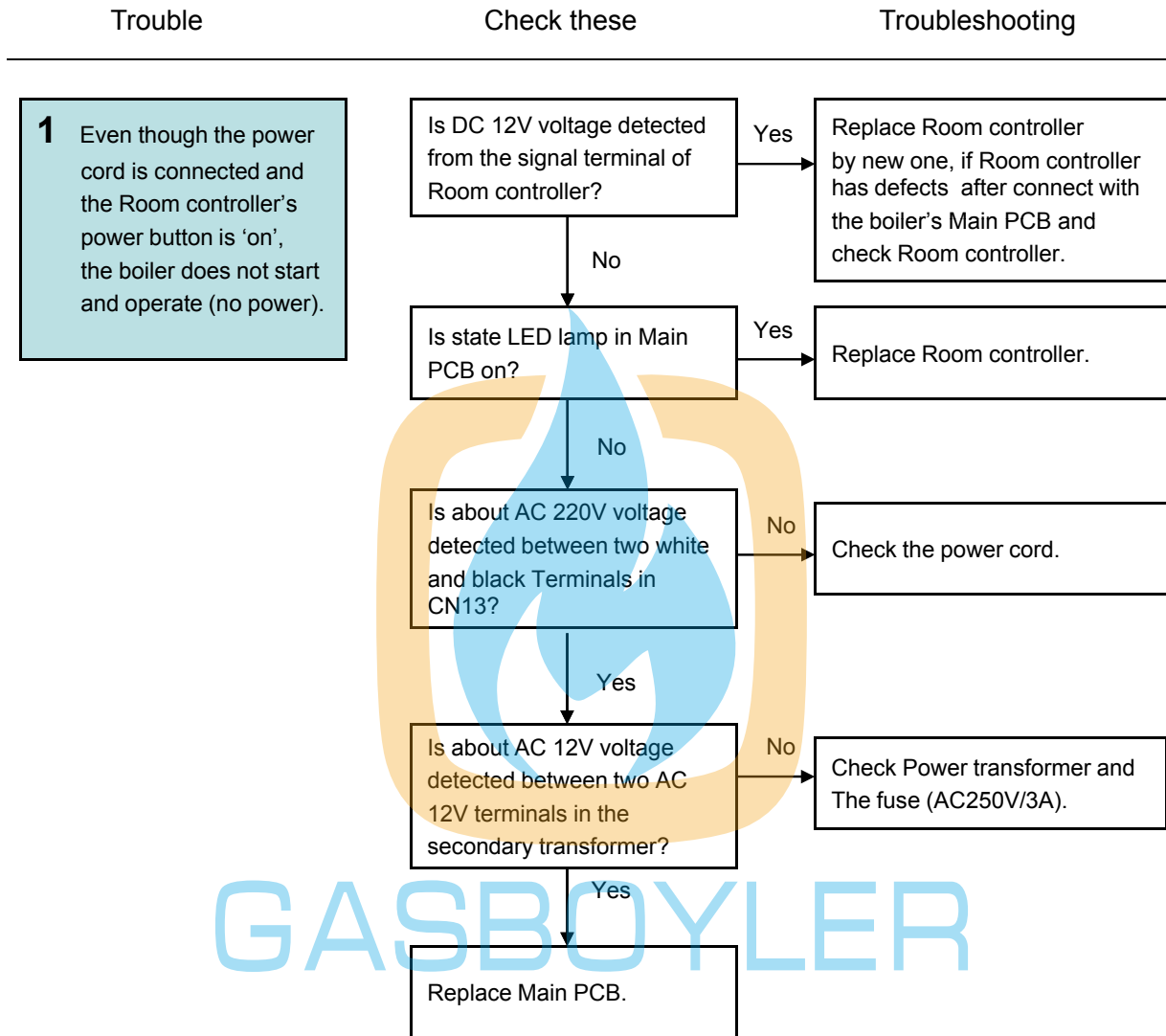
#### ② Combustion function for freezing prevention

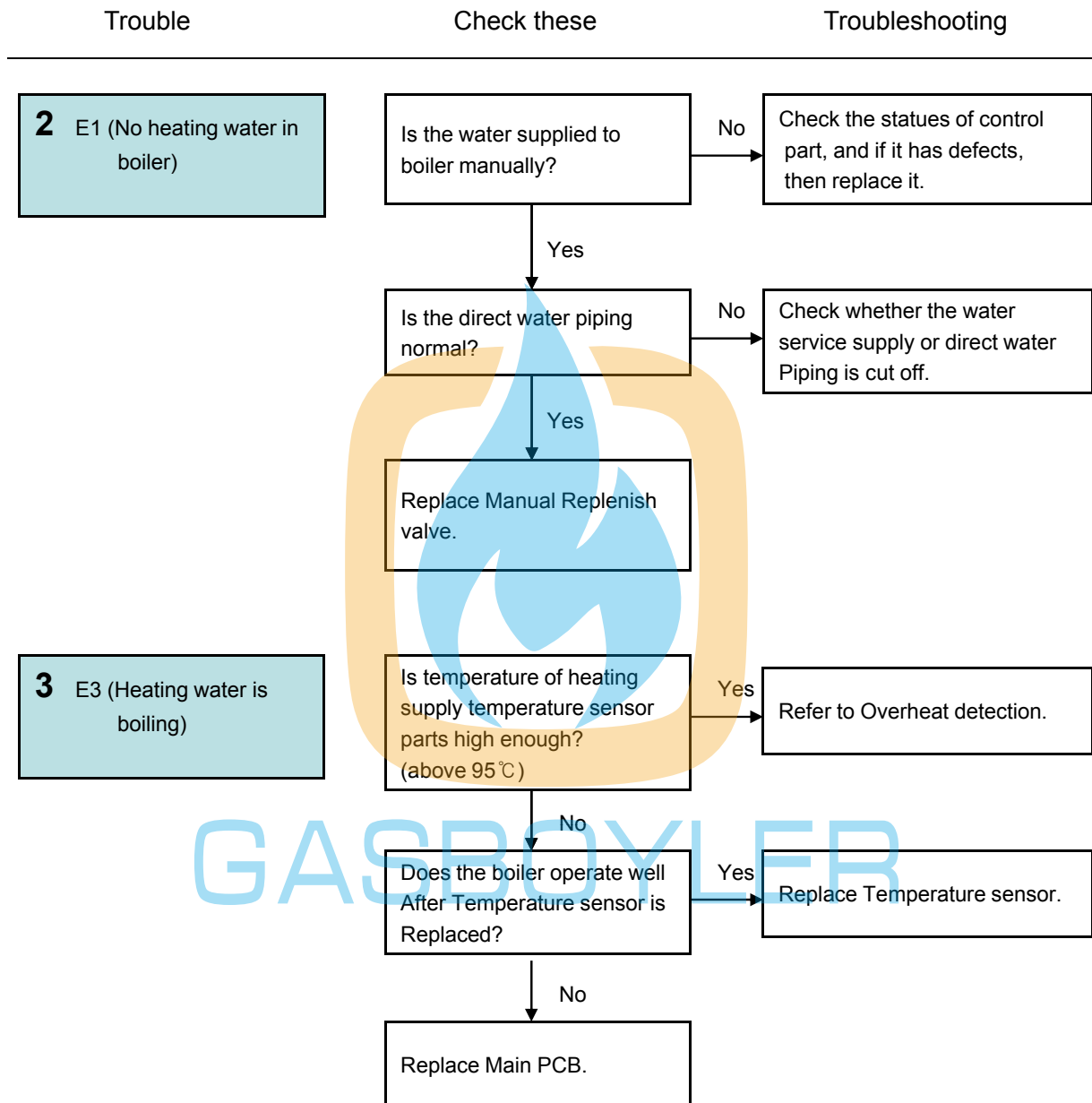
In case that heating water temperature in below 10 °C, the boiler is burning, and it will be extinguished when the temperature is above 30 °C.

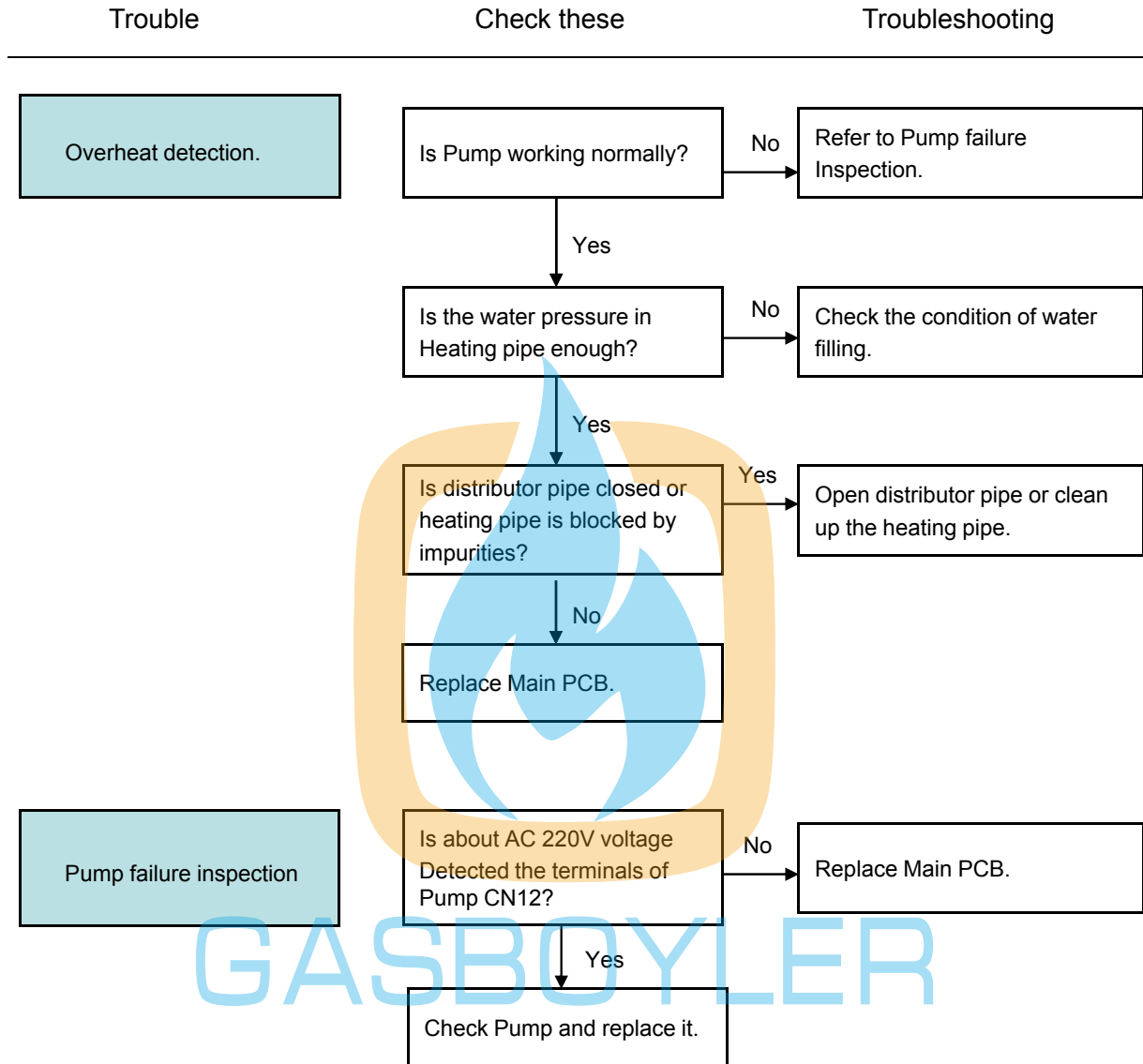
|            | Operation Temp. | Stop Temp. |
|------------|-----------------|------------|
| Pump       | 12 °C           | 13 °C      |
| Combustion | 10 °C           | 30 °C      |

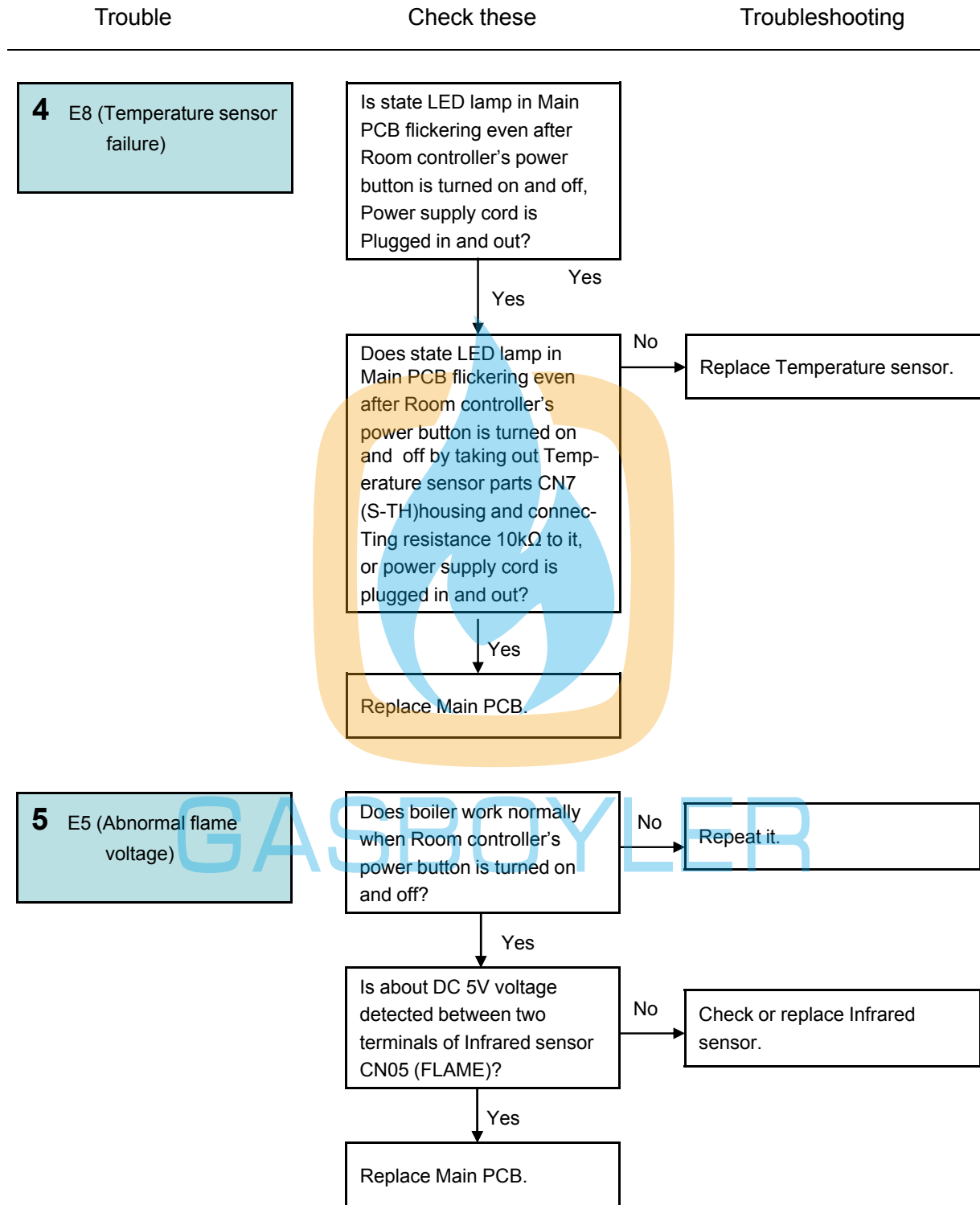


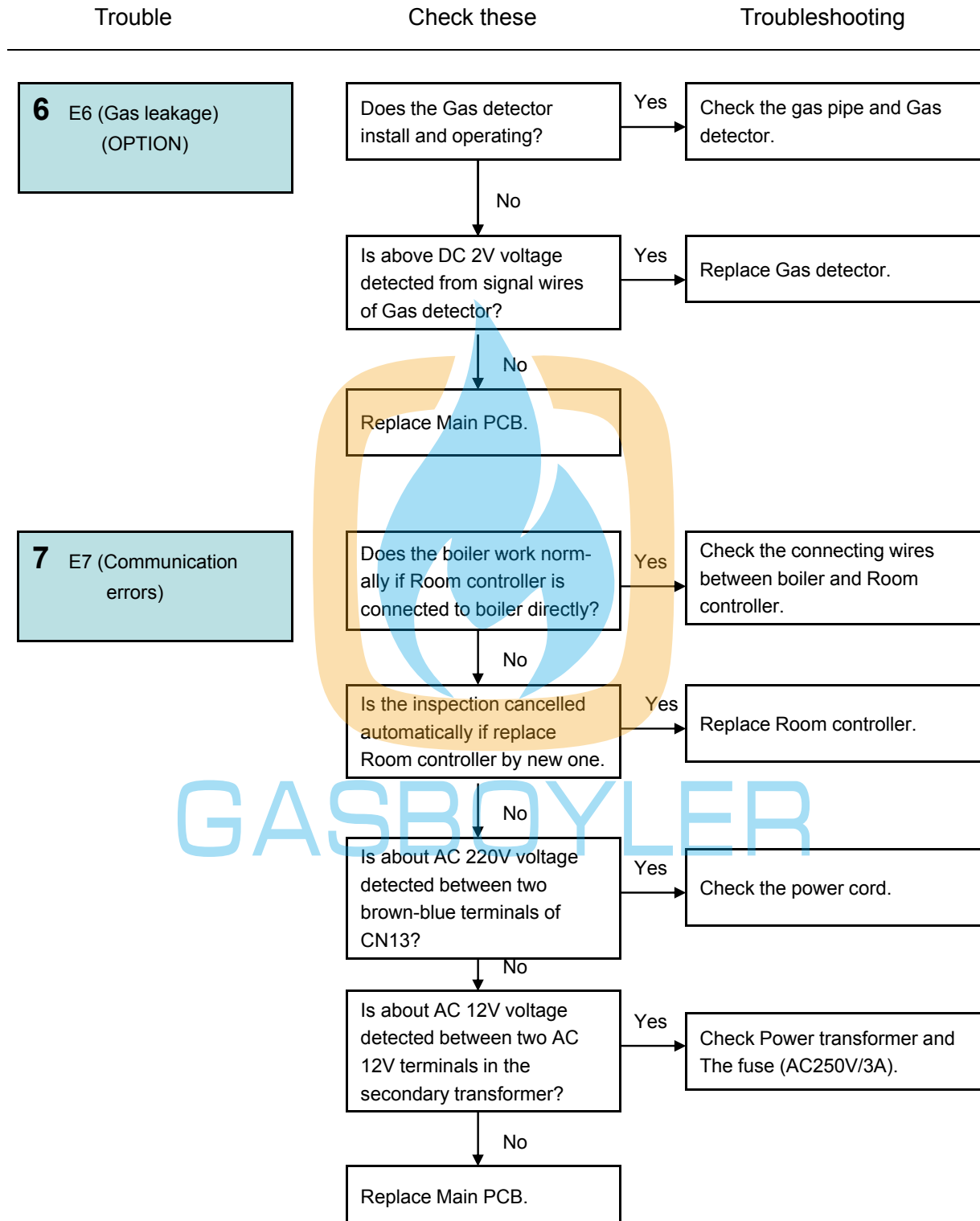
## Troubleshooting

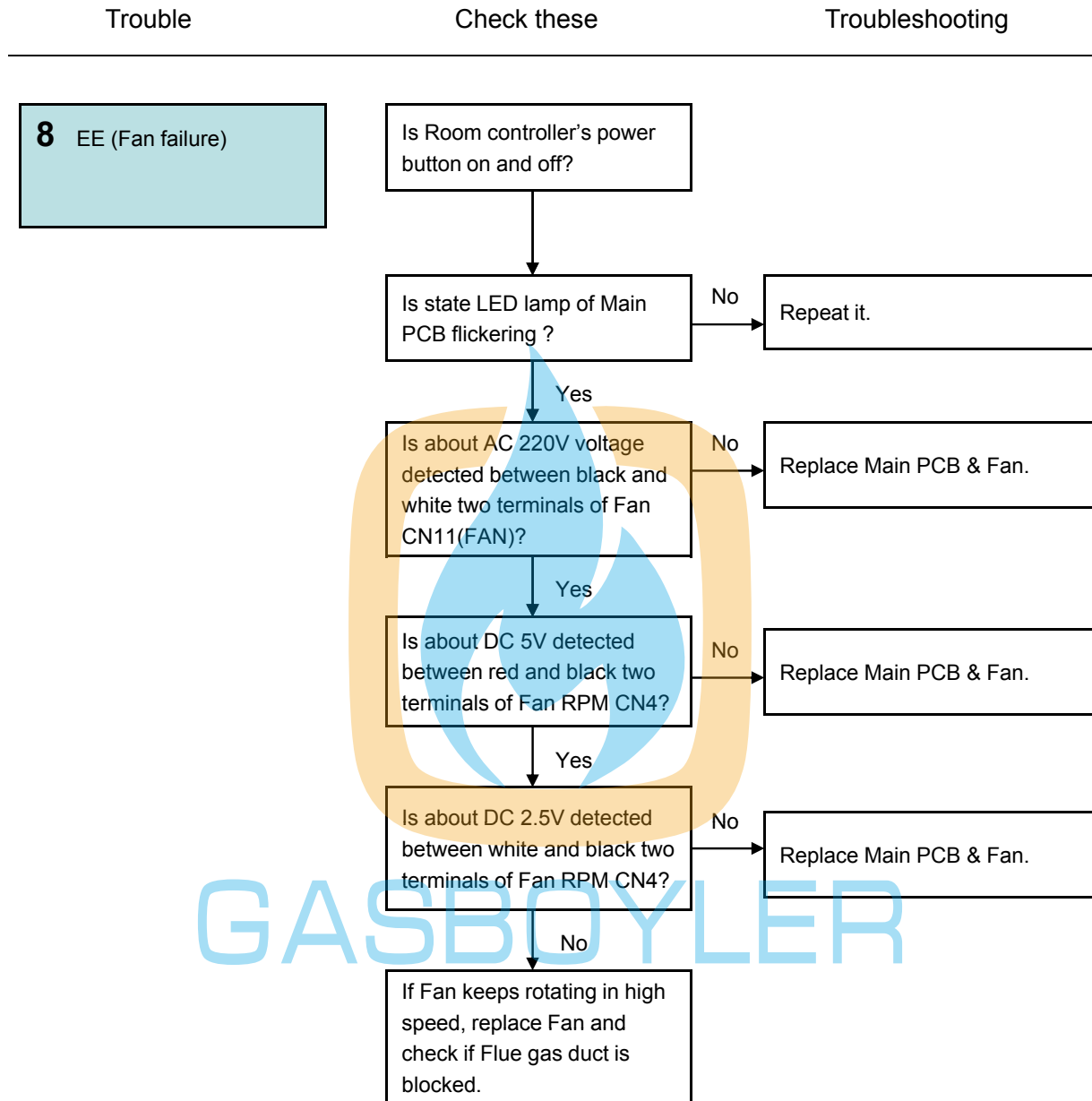












Trouble

Check these

Troubleshooting

**9** The boiler doesn't heating combustion.

Check the condition of Room controller and fixing.  
 - Check if Room controller's power button is off and heating temperature adjusting dial is positioned to Hot-water only.  
 - Compare the selected heating water temperature with current heating water temperature.

Is the boiler working normally after check Room controller's condition and fixing.

Yes

Use heating of boiler.

No

Check the pressure of heating pipe.

If the boiler doesn't work, replace Main PCB.

GASBOILER

