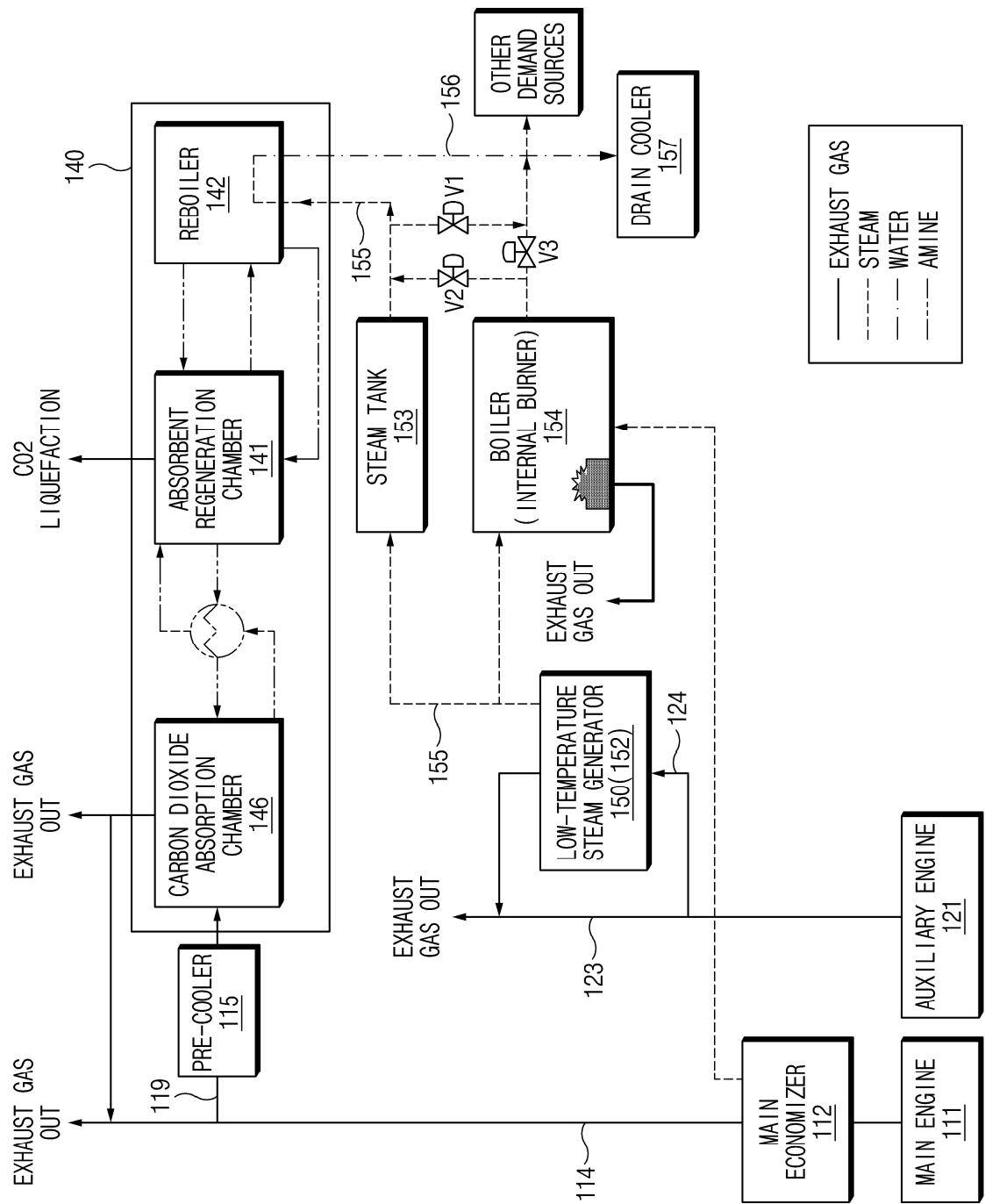
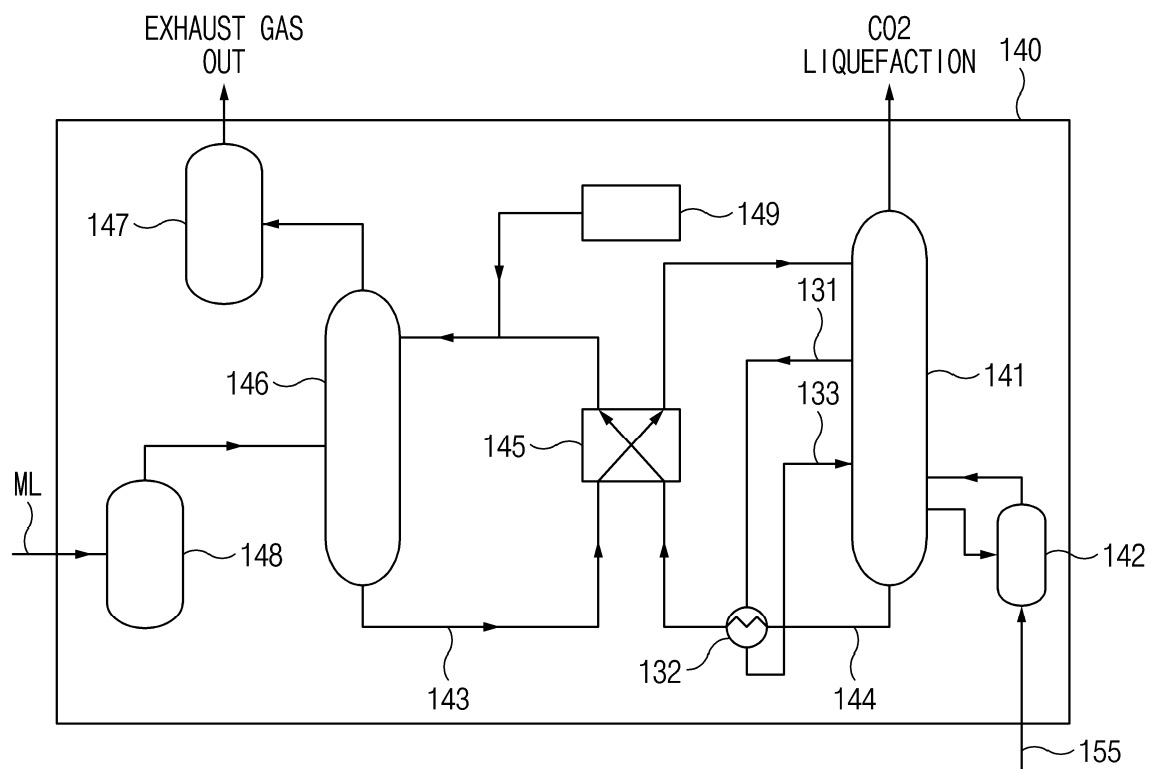


【Drawings】

【Figure 1】



【Figure 2】



【Figure 3】

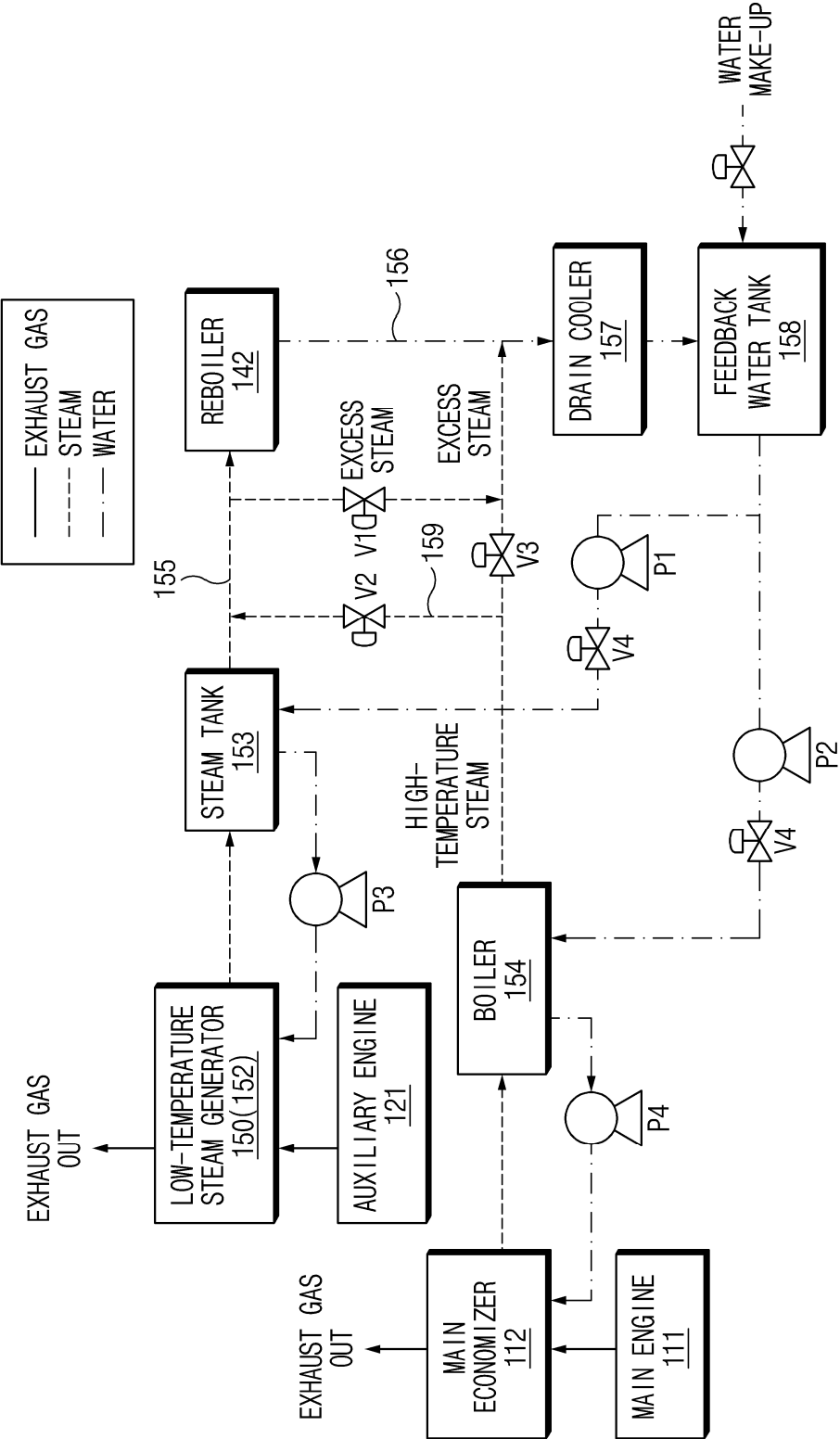
Thermal degradation rates of different amines.

| Solvent         | Concentration(m) | Loading<br>(mol CO <sub>2</sub> /mol alkalinity) | k <sub>1</sub> (x10 <sup>-7</sup> s <sup>-1</sup> ) |       |       |       |       | Reference               |
|-----------------|------------------|--------------------------------------------------|-----------------------------------------------------|-------|-------|-------|-------|-------------------------|
|                 |                  |                                                  | 100 C                                               | 120 C | 135 C | 150 C | 175 C |                         |
| MEA             | 3.5              | 0.4                                              | 0.03                                                | 0.22  | 1.09  |       |       | Davis(2009)             |
| MEA             | 7                | 0.2                                              |                                                     | 0.28  | 0.90  |       | 3.97  | Davis(2009)             |
| MEA             | 7                | 0.4                                              | 0.02                                                | 0.29  | 1.34  | 8.28  |       | Davis(2009)             |
| MEA             | 11               | 0.2                                              |                                                     | 0.19  | 0.69  |       |       | Davis(2009)             |
| DEA             | 4.0              | 0.5                                              |                                                     |       | 9.91  |       |       | Eide-Haugmoet al.(2011) |
| DGA             | 7                | 0.4                                              |                                                     |       | 0.39  |       |       | Davis(2009)             |
| PZ              | 8                | 0.47                                             |                                                     |       |       |       | 0.24  | Freeman(2011)           |
| PZ              | 8                | 0.3                                              |                                                     |       | 0.01  | 0.61  | 1.32  | Freeman(2011)           |
| PZ              | 8                | 0.2                                              |                                                     |       |       |       | 0.79  | Freeman(2011)           |
| PZ              | 8                | 0.1                                              |                                                     |       |       |       | 0.66  | Freeman(2011)           |
| PZ              | 8                | 0.0                                              |                                                     |       |       | 0.001 | 0.07  | Freeman(2011)           |
| 1-MPZ           | 8                | 0.3                                              |                                                     |       |       | 0.36  |       | Freeman(2011)           |
| 2-MPZ           | 8                | 0.3                                              |                                                     |       |       | 0.25  |       | Freeman(2011)           |
| MDEA            | 7                | 0.2                                              |                                                     |       | 0.42  | 4.38  |       | Cloosmann(2011)         |
| Mor             | 8                | 0.3                                              |                                                     |       |       |       | 0.5   | Freeman(2011)           |
| Pyr             | 8                | 0.3                                              |                                                     |       |       |       | 14.0  | Freeman(2011)           |
| HomopZ          | 8                | 0.3                                              |                                                     |       |       |       | 18.5  | Freeman(2011)           |
| (PD             | 8                | 0.3                                              |                                                     |       |       |       | 0.84  | Freeman(2011)           |
| t2,5-DimethylPZ | 2                | 0.3                                              |                                                     |       |       | 0.09  |       | Freeman(2011)           |
| HMDA            | 8                | 0.3                                              |                                                     |       |       |       | 1.9   | Namjoshi et al.(2013)   |
| BAE             | 8                | 0.4                                              |                                                     |       |       |       | 2.0   | Namjoshi et al.(2013)   |
| DAB             | 8                | 0.4                                              |                                                     |       |       |       | 27.2  | Namjoshi et al.(2013)   |
| PDA             | 5.0              | 0.4                                              |                                                     |       |       | 4.08  |       | Hatchell(2014)          |
| Putrescine      | 5.0              | 0.4                                              |                                                     |       |       | 2.69  |       | Hatchell(2014)          |
| EDA             | 5.0              | 0.4                                              |                                                     |       |       | 7.97  |       | Hatchell(2014)          |
| HMI             | 8                | 0.3                                              |                                                     |       |       |       | 59.30 | Freeman(2011)           |
| HEEDA           | 3.5              | 0.4                                              |                                                     |       | 16.0  |       |       | Freeman(2011)           |
| AMP             | 7.0              | 0.4                                              |                                                     |       | 0.21  | 0.86  |       | Freeman et al.(2010a)   |
| HEP             | 7.0              | 0.4                                              |                                                     |       | 0.46  |       |       | Freeman et al.(2010a)   |
| DETA            | 7                | 0.4                                              |                                                     |       | 9.91  |       |       | Freeman et al.(2010a)   |
| AEP             | 2.33             | 0.4                                              |                                                     |       | 1.91  |       |       | Davis(2009)             |

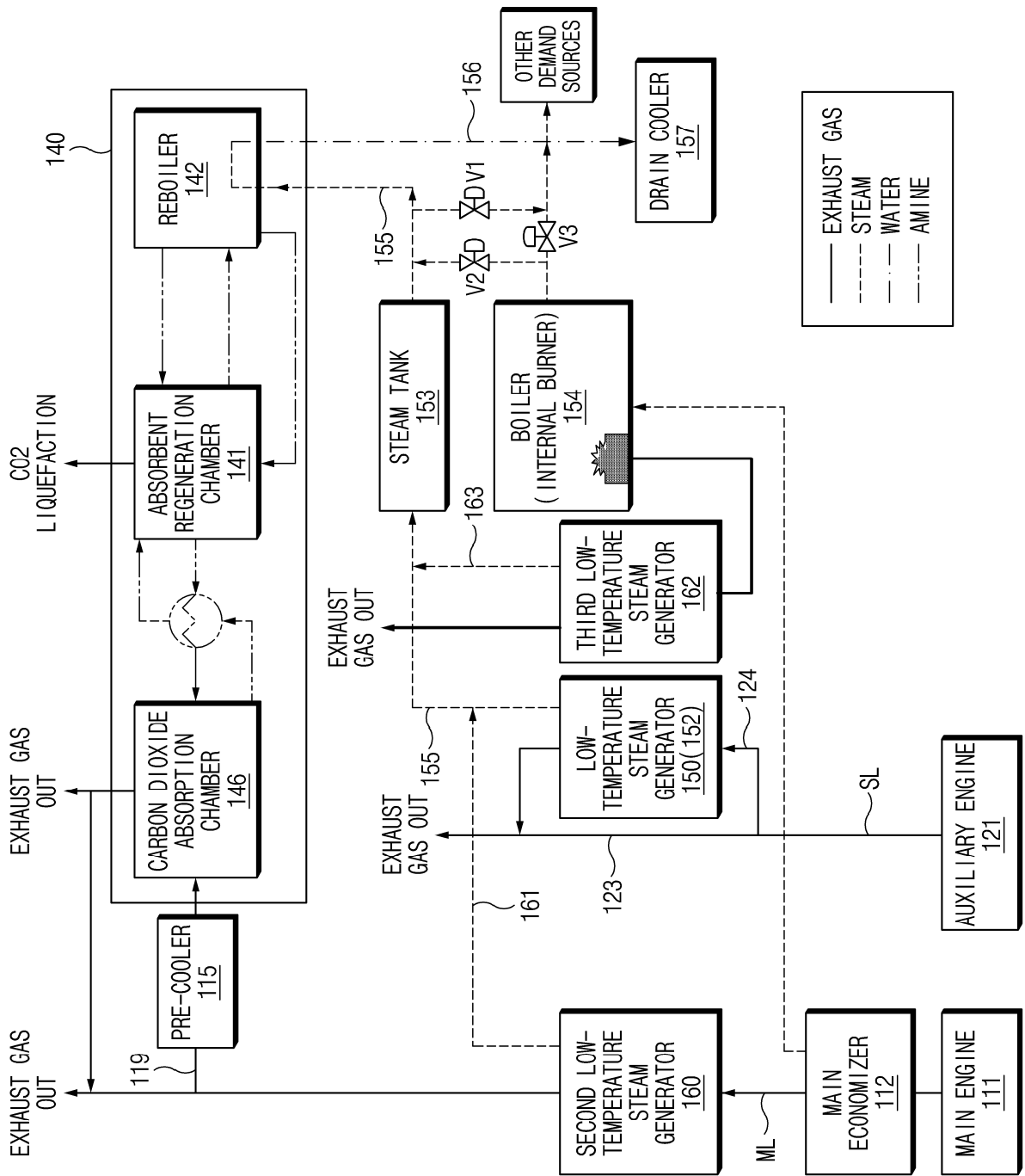
【Figure 4】

| Pressure(barg) | Temperature(degC)<br>tSatW(P) |
|----------------|-------------------------------|
| 0              | 100.0                         |
| 1              | 120.4                         |
| 2              | 133.7                         |
| 3              | 143.7                         |
| 4              | 151.9                         |
| 5              | 158.9                         |
| 6              | 165.0                         |
| 7              | 170.5                         |
| 8              | 175.4                         |
| 9              | 179.9                         |
| 10             | 184.1                         |
| 20             | 214.9                         |
| 30             | 235.7                         |
| 40             | 251.8                         |
| 50             | 265.2                         |
| 60             | 276.7                         |
| 70             | 286.8                         |
| 80             | 295.9                         |
| 90             | 304.2                         |
| 100            | 311.7                         |
| 200            | 366.2                         |

【Figure 5】



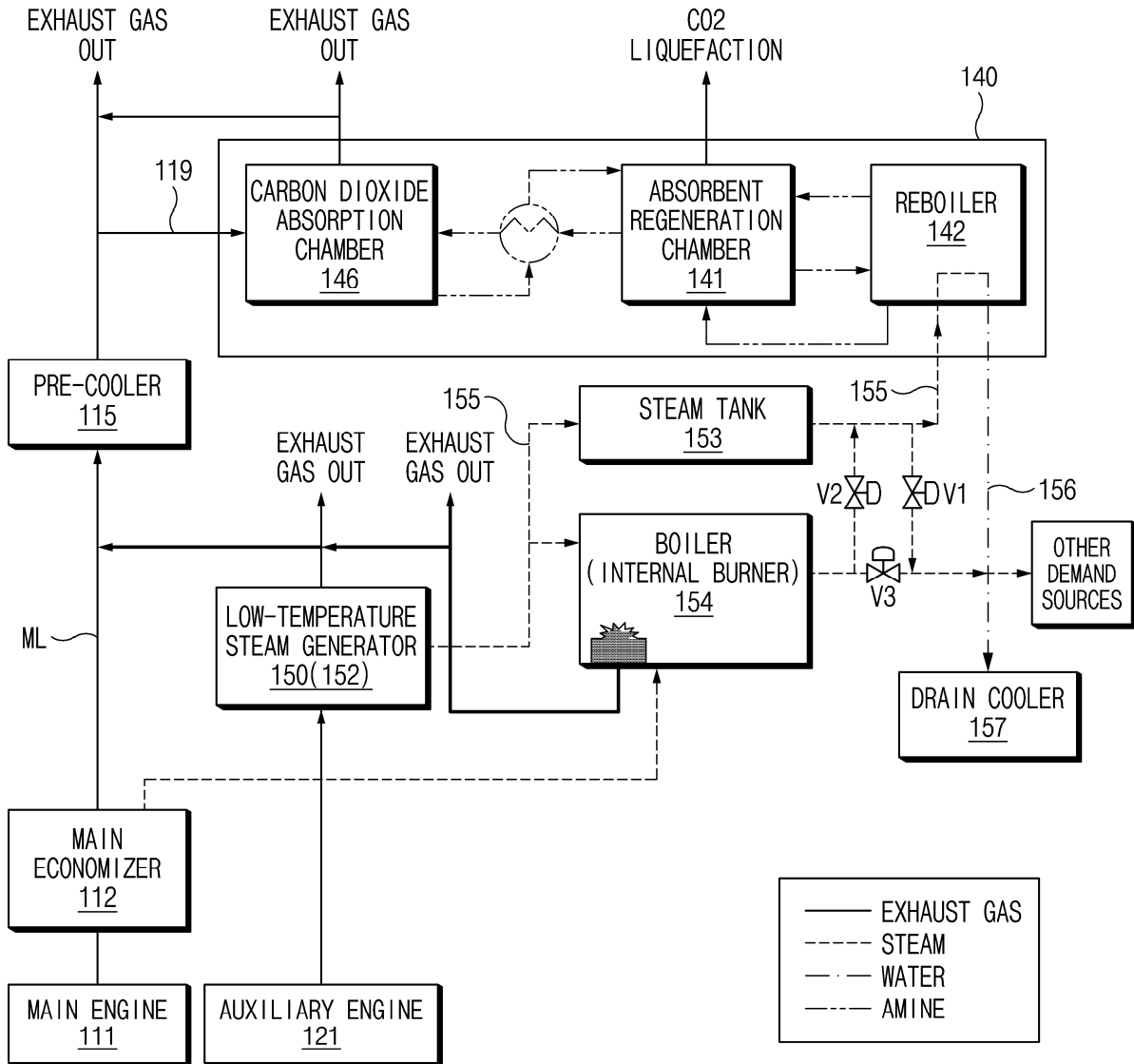
【Figure 6】



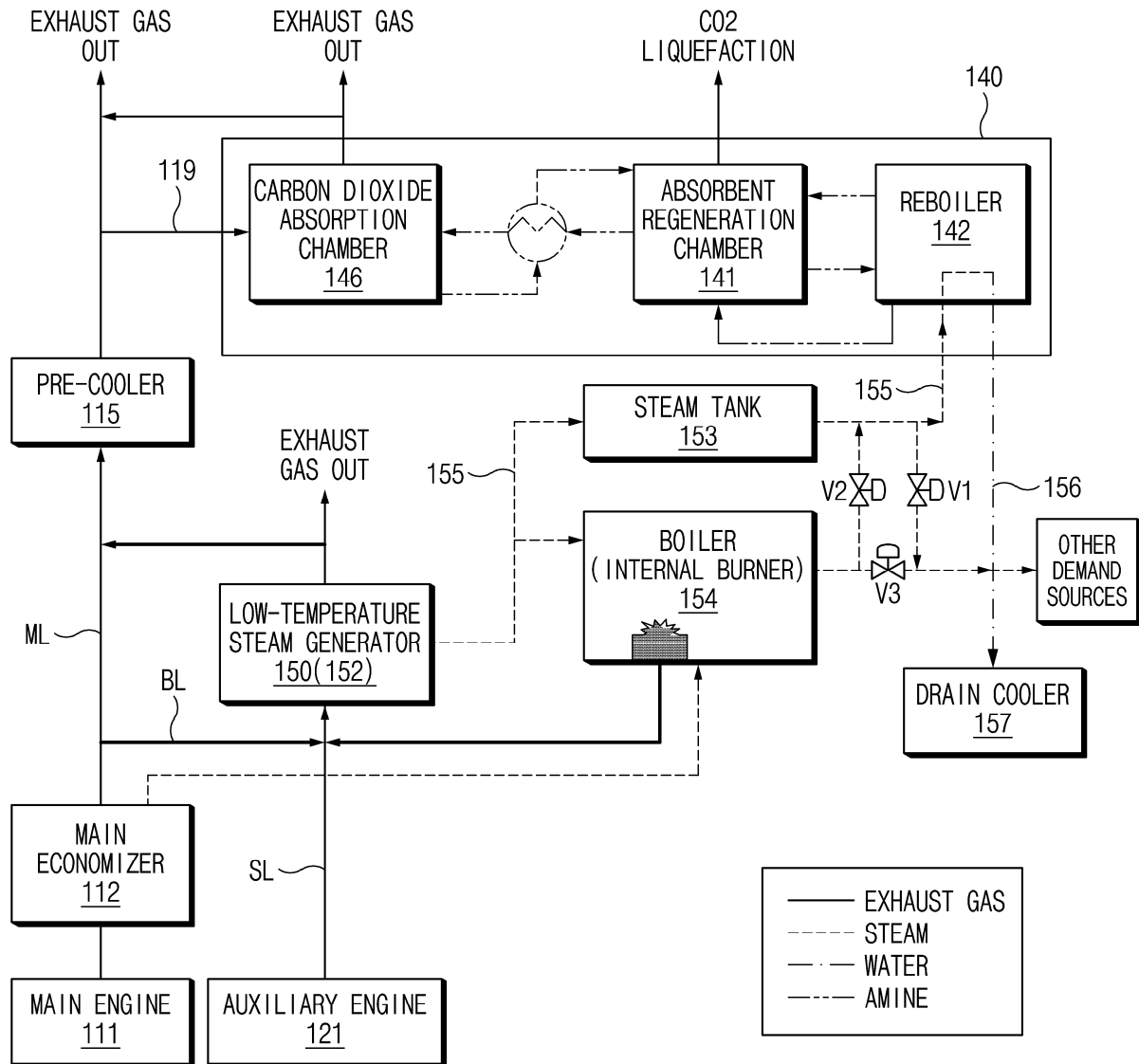


[illegible]

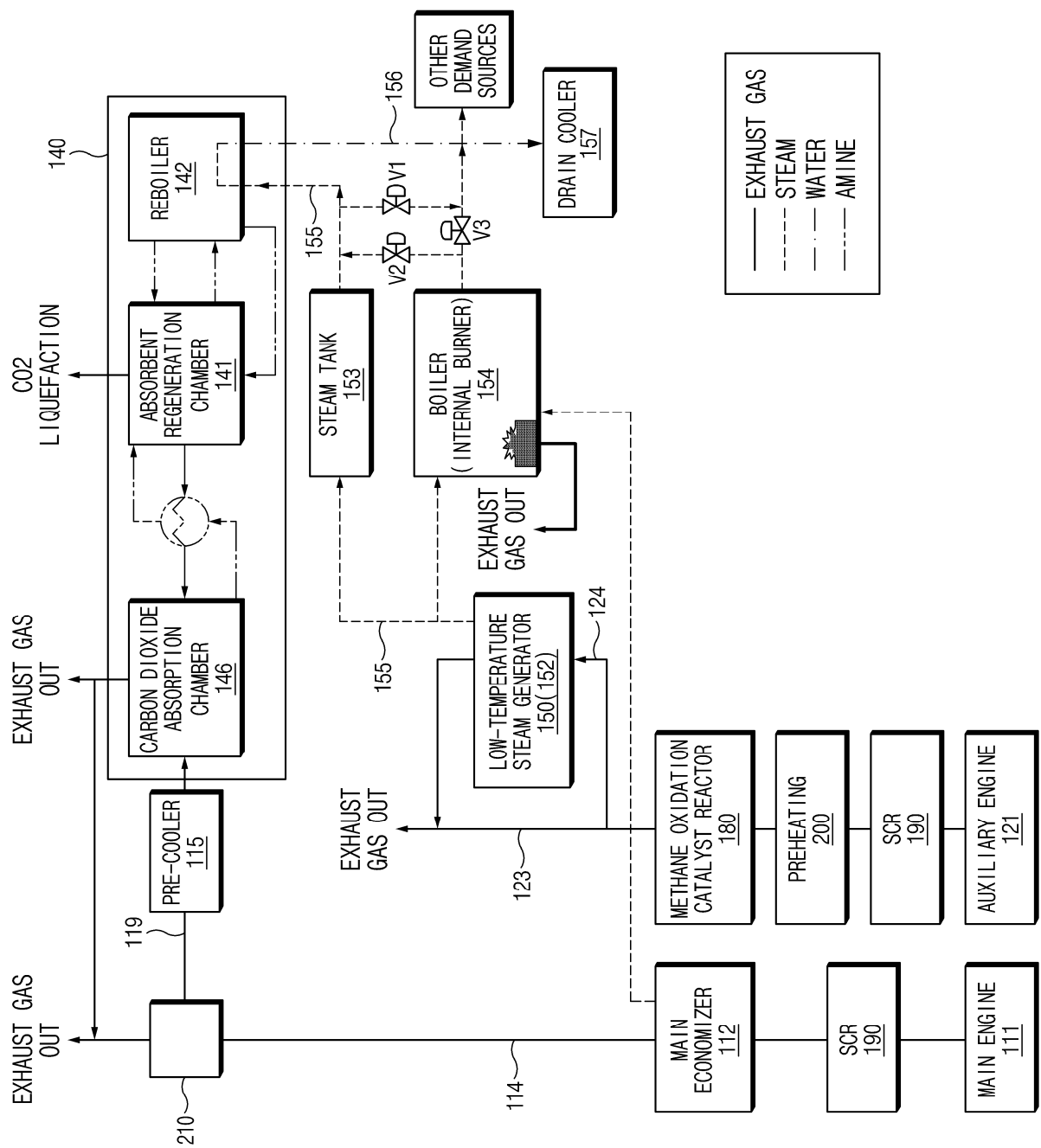
【Figure 9】



【Figure 10】



【Figure 11】



【Figure 12】

