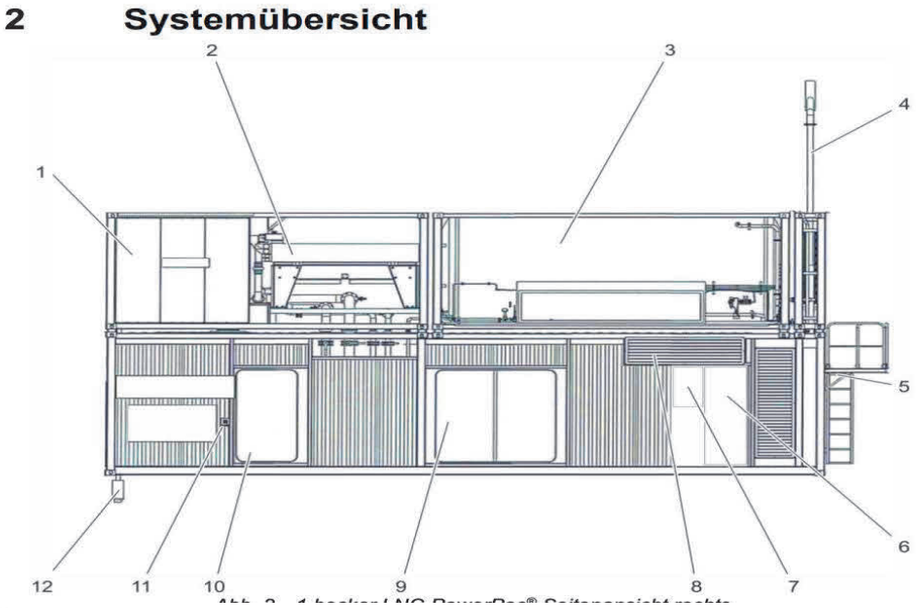
2. System Overview

2.1 System Diagrams

Fig. 2-1: PowerPac



Right View

Key labeled parts:

1. Side cover (18' frame)
2. Table cooler
3. LNG tank
4. Vent mast
5. Work platform
6. CO_2 bottles maintenance door
7. Fire system maintenance door
8. Exhaust air outlet
9. Double maintenance door (right)
10. Single maintenance door (right)
11. Emergency stop
12. Ship connection cables

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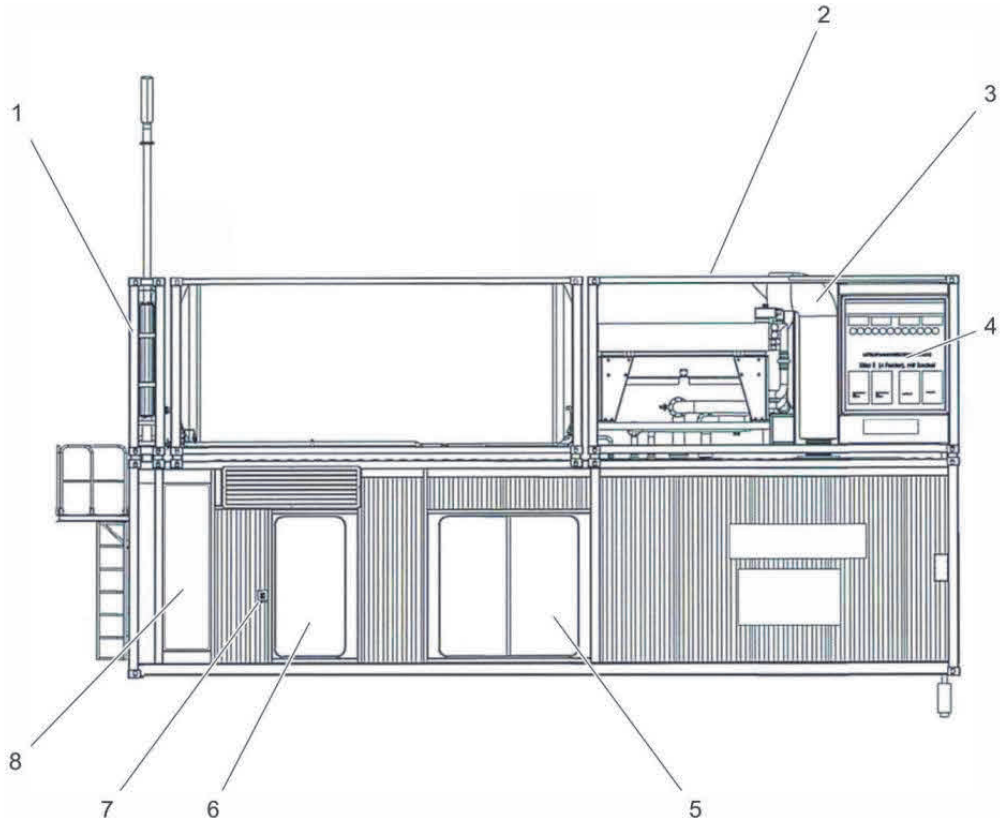

Fig. 2-2: PowerPac Left View

1. 2' frame
2. 18' container
3. Exhaust stack
4. Medium-voltage system
5. Double maintenance door (left)
6. Single maintenance door (left)
7. Emergency stop
8. Nitrogen bottle maintenance door

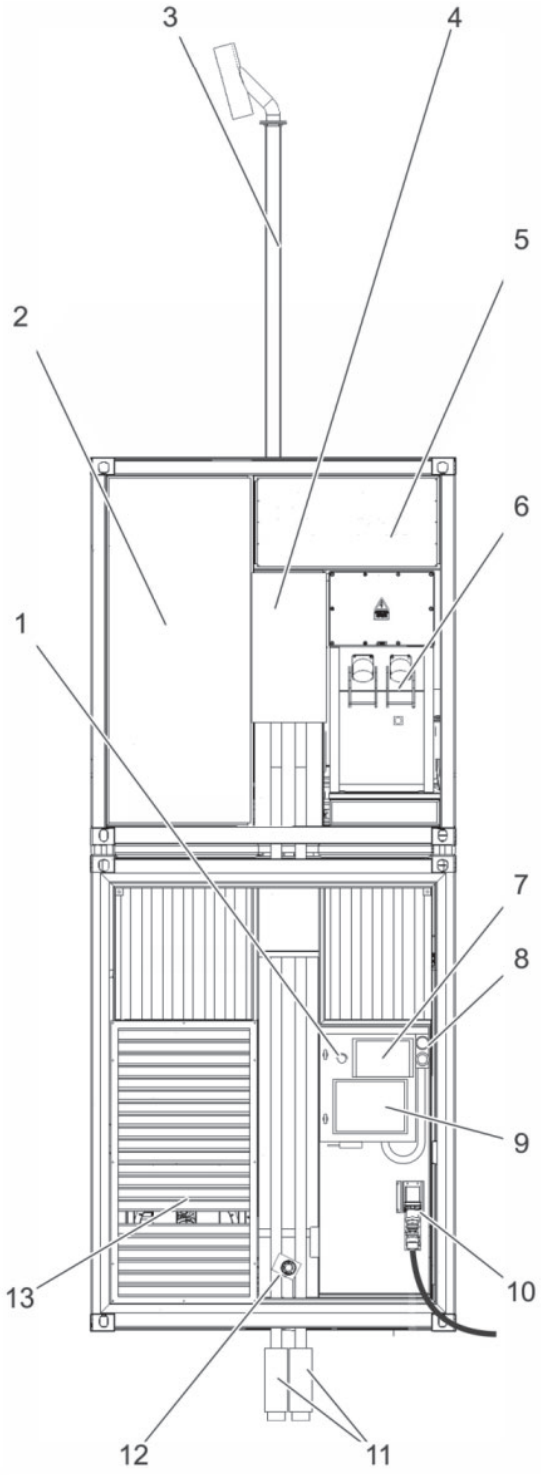
3
4
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Fig. 2-3: PowerPac Front View

1. Emergency stop
2. Medium-voltage supply
3. Vent mast
4. Cable drum
5. COBRA battery (400V UPS)
6. Junction box (for second PowerPac)
7. Fire alarm control panel
8. Fire alarm siren/light
9. PowerPac control panel
10. Shore power connection (400V/63A/50Hz)
11. Ship connection cables
12. Fire hose connection
13. Air inlet

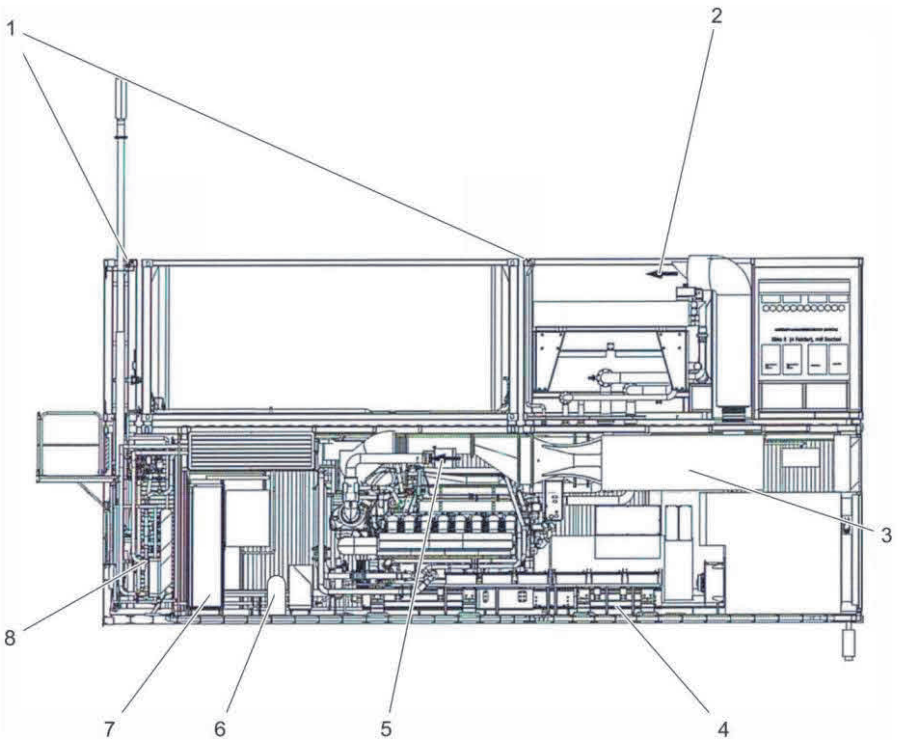

Fig. 2-4: PowerPac Left Internal View

1. Water spray system
2. Exhaust outflow via table cooler

3. Exhaust silencer
4. Starter batteries
5. Air intake for gas engine
6. Control air compressor
7. Control cabinet
8. LNG processing/nitrogen bottle

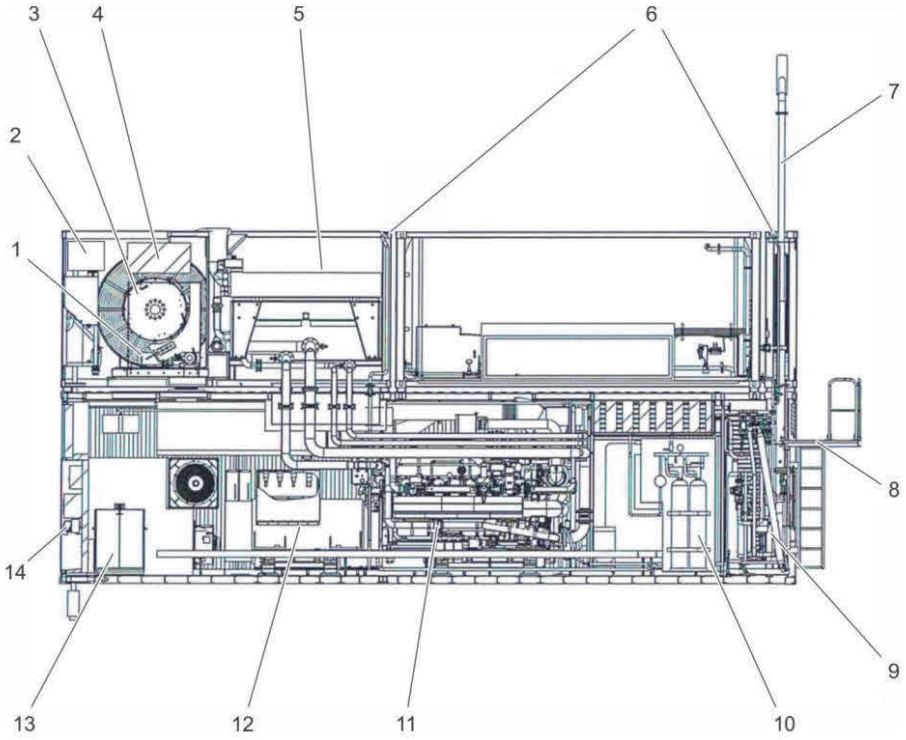

Fig. 2-5: PowerPac Right Internal View

1. Inverter and charger (400V UPS)
2. COBRA battery (400V UPS)
3. Cable drum
4. Cable drum connection box
5. Table cooler
6. Water spray system
7. Vent mast
8. Work platform
9. LNG processing
10. CO_2 bottle
11. Gas engine
12. Generator
13. Internal transformer
14. Shore power 400V/63A/50Hz

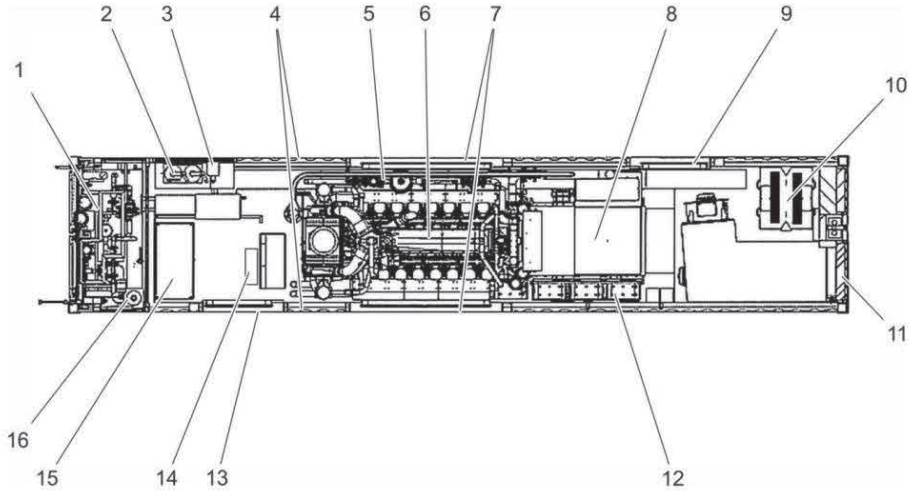

Fig. 2-6: Cross-section at ~2800mm height
Labeled: LNG processing, CO_2 fire system, fire system, exhaust outflow, gas regulation, gas engine, maintenance doors, generator, control air compressor, control cabinet, nitrogen bottle.

1. LNG Processing
2. CO_2 Extinguishing System
3. Fire Extinguishing System
4. Exhaust Outlet from Engine Room
5. Gas Regulation Section
6. Gas Engine
7. Double Maintenance Doors
8. Generator
9. Single Maintenance Door
10. Auxiliary Transformer
11. Air Intake
12. Batteries
13. Single Maintenance Door
14. Compressor for Control Air
15. Control Cabinet (with ZAM)
16. Nitrogen Bottle

The becker LNG PowerPac® is a transportable power generation unit operated with LNG (liquefied natural gas at -161°C).

The system is designed to supply electricity to container ships during their berthing time (loading and unloading) at container terminals in seaports. However, it can also be used for 60 Hz power supply in island operation (without connection to a supply network) on land.

During normal operation, the unit is controlled remotely; connecting and disconnecting the supply lines is done manually.