Kombox

Compressor Waste Heat Recovery System

User Manual

Tanpera®

Project	:
Customer	:
Heat Exchanger Type	:
Serial Number	:
Year	:

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Table of Contents

1. Liability and Warranty Terms

Tanpera Kombox Series Compressor Waste Heat Recovery System is a technological device that enables recovery of waste heat generated in compressors.

- Responsibility of the operator begins upon delivery of the device.
- The installation and operation manual must be read before delivery.
- The installation and operation manual must be kept near and visible to the control unit. Check suitability of environmental conditions by observing the Transport, Storage,
- Placement items written in Section 5.
- Mechanical and electrical installation must be performed only by authorized persons or companies informed about the product, taking into account environmental and fluid conditions in Section 6.
- After installation is completed, call Tanpera to request the pre-commissioning check form for the product.
- After all pre-commissioning check items are fully satisfied for all products, call Tanpera to request commissioning.
- During commissioning, ensure accompaniment by person(s) authorized by the user, acceptance of the product, and benefit from the user training provided.
- Do not intervene in the device before commissioning; our company is not responsible for any damage that may occur and the given warranty terms will be void.
- Product warranty is valid for 2 years from the invoice date.

Oil temperature must not fall below the temperature specified by the compressor manufacturer.

2. Safety

The Electricity symbol, together with the word, indicates that failure to comply with safety information will result in electric shock, death or severe (irreversible) injuries.

The Danger symbol, together with the word, indicates an imminent hazard; failure to comply with safety information will result in death or severe (irreversible) injuries.

The Hot Surface symbol, together with the word, indicates that the contact surface exceeds 60°C and that failure to comply with safety information will result in severe (irreversible) injuries.

Take general occupational safety measures during device commissioning or maintenance.

Notes;

- The device contains high-pressure hot water during operation. Ensure the device is out of service and the system is depressurized during maintenance or disassembly.
- Device components are heavy loads. Please take the necessary safety measures during device transport and handling.
- The device must be used in a fixed installation.
  The device is not suitable for outdoor use.
- The device is not suitable for use in flammable environments and with mineral oils.
- It must be operated with clean service water free of particles.

3. Device Appearance

1 Oil Inlet
2 Water Outlet
3 Oil Outlet
4 Water Inlet

KOMBOX

4. Device Label

Kombox Series

Compressor Waste Heat Recovery System

Model	KOMBOX 55
Design Pressure	10 bar
Test Pressure	16 bar
Operating Temperature	90 C
Seri No	KOMBOX0001

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5. Device Description

Tanpera Kombox Series Compressor Heat Recovery System is a packaged system specially designed to make the energy in oil usable. In the compressor waste heat recovery system, oil heated in the screw unit flows to the three-way thermostatic valve. If the temperature arriving at the thermostatic valve is higher than the temperature set on the valve, it is directed to the brazed plate heat exchanger in the Compressor Waste Heat Recovery system. Heat in the oil is transferred to the water in the secondary circuit via the brazed heat exchanger. With this method, approximately 90% of the electrical energy consumed when the compressor runs at full load is converted into useful energy. Thus, compressor waste heat can generally be used to obtain hot water for many different purposes such as service hot water heating, comfort heating systems or process heating systems.

6. Scope of Delivery

The scope of delivery is described on the delivery note. Perform the necessary checks for material, accuracy and damage immediately after receiving the device.

On the pallet;

- Control panel and hydraulic unit
- Heat recovery system

7. Transport

Products must be transported so that they do not overturn, are not crushed and do not get wet during transport.

When unloading from the vehicle, products must be handled carefully so they do not fall or overturn; when necessary, transport equipment must be used to move them to the storage or installation location.

8. Storage

- Products must be stored in a dry and well-ventilated environment.
- Precautions must be taken against possible overturning of products due to earthquake or other reasons.
- Do not place loads on products and store them so that no object can fall on them.
- The product must be protected against water ingress and wetting from above or the sides.

9. Relocation and Disassembly Procedures

- To prevent electrical accidents, power isolation must be performed by authorized personnel.
- During mechanical disassembly, safety conditions must be observed if the system is in operation.
- Before mechanical disassembly, water in the tank and hydraulic unit must be drained.
- After mechanical disassembly, relocation must be performed in accordance with transport rules.

10. Environmental Conditions

- Products must be operated in a dry and well-ventilated environment.
- Products must be protected against flooding from the floor and from above.
- Provisions must be made for water drainage that may be required during service and maintenance of the device.
- At least 600 mm clearance must be left around the device for service and maintenance.

11. Fluid Conditions

- Heating and cooling systems must be filled with water of standard-compliant quality. (Compliance with DIN 2035 of the Association of German Engineers is recommended.)
- Air or gas vents must be performed in heating and cooling systems.
- A system flushing operation must be performed to separate sludge and dirt in the heating system.

12. Pre-Commissioning Preparation

Please review the form below for commissioning and pre-installation preparation. Review the form below before making electrical and mechanical connections. When conditions are met, contact our company for commissioning.

Project Name:		Company Name:		Date
		Phone:		
		Email:		
Product Type	Compressor Waste Heat Recovery System	Serial No:		

1	Is the device used in the heating circuit or the service water circuit?
2	What is the name of the circuit in which the device is located?
3	Have connection (bypass) ports been provided for incoming/outgoing oil lines from the compressor?
4	Have connection ports been provided for incoming/outgoing water lines from the heating/service water installation?
5	What are the required temperature regimes? (for oil and water circuits)
6	Has drainage been provided for water surges that may occur when the water circuit valve is opened?
7	Have the required piping connections for service or heating water been brought to the device?
8	Has at least 600 mm clearance been left around the control unit for service and maintenance?
9	Is the device operated in a dry and well-ventilated environment?
10	If it is a closed-circuit comfort application, are there an expansion tank and safety valve in the system?
11	Has the heating system been filled with water of standard-compliant quality?
12	Has a water leak test been performed on the heating system in accordance with standards?
13	Have air or gas vents been performed in the heating system?
14	Has flushing (cleaning) been performed for the heating system?
15	Has the heating system been brought to the operating pressure at which it must run?
16	Has the power supply been brought to the rear section of the control unit in accordance with standards?
17	Is the power supply three-phase (220V) and were voltage values measured before connection?
18	Are the cable cross-sections used in the power supply appropriate for the power the device may draw?
19	If it is a service water circuit, is the recommended boiler used?
20	If no boiler is used, is there an anti-scalding PT valve?
21	If automation connection is required, have the dry contact cables been run to the device?

Notes: .....

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WE HEREBY DECLARE THAT ALL OF THE ABOVE ITEMS HAVE BEEN COMPLETED

Company Name Requesting Commissioning:

Authorized Name Surname:

Authorized Title:

Date: Signature:

13. Dimensions

	A (mm)	B (mm)	C (mm)
KOMBOX L	880	1170	1060
KOMBOX M	770	960	570
KOMBOX S	590	840	570

13) ERROR CODES

Error Code	Description
Error Code 1	Status Signal
Error Code 2	Oil Temperature Warning

14. Device Operation

1. Automatic Mode
2. Stop
3. Settings Menu
4. Device Information
5. Proportional Control Valve Opening Percentage
6. Required Oil Return Temperature

1. PID Settings
2. Manual Mode Settings
3. Language Option
4. Date - Time Settings
5. Info Setup

- T1 Oil Outlet Temperature
- T2 Oil Inlet Temperature
- T3 Water Outlet Temperature
- T4 Water Inlet Temperature

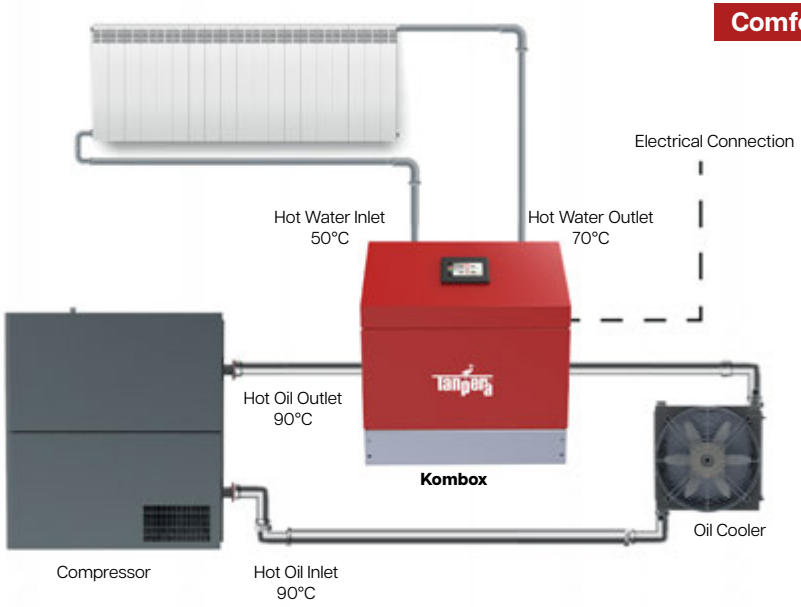
Relay 2 is reserved for a dry contact signal. It can be controlled from here.

Relay 1 provides an output signal according to the device AUTO and STOP modes.

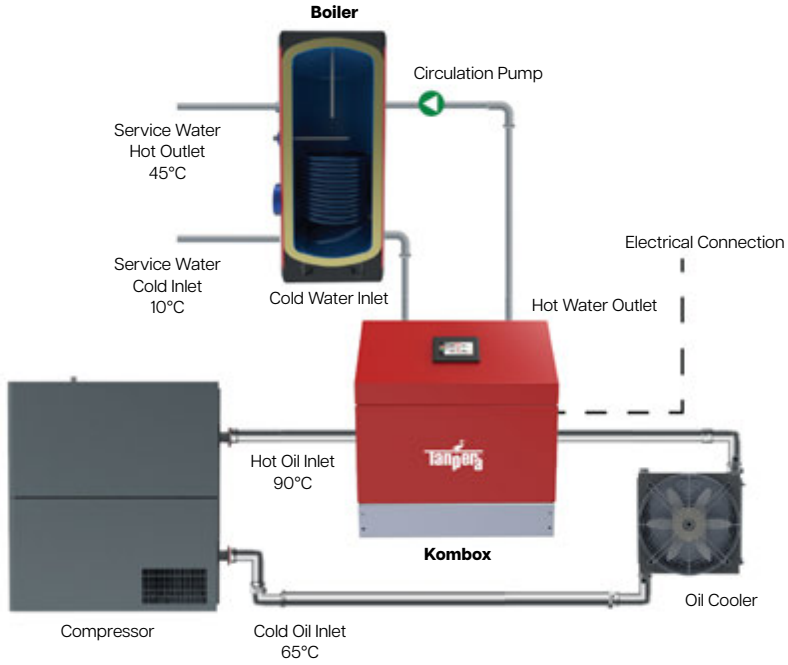
The proportional control valve can be opened manually from this screen.

15. Installation Diagram

Comfort Heating



Process and Service Hot Water Heating



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