

KAISER ECO-Combi

Design

- Up to 2000 kg more payload compared to other systems due to cylindrical design as well as various other weight optimized components (up to 4000 kg more payload in case of water recycling).
- Tank divided into three chambers (fresh water, slurry tank and separator).

Tank material **Stainless steel** , thickness: 5 mm, Ø 1700 mm
(slurry tank made in stainless steel only !)

3-axle

Fresh water tank
 Slurry tank
 Total capacity

3 000 Liter
7 500 Liter
10 500 Liter

Fresh water tank

- Service water for the liquid ring pump is integrated in the fresh water tank (Patent).
- Water reservoir for the High Pressure Water Pump.

Rear door opening	with single safety lever lock
Charging hole	with pneumatic valve
Level indicator	for water level indication
Discharging	4" with gate valve

Slurry tank

- As a result of shut-off and safety valve the slurry tank can be filled completely in any position.

Separator

- No maintenance during operation due to automatic drain of the separator.
- No overflow of dirty particles to the vacuum pump.

Manhole	Ø 300 mm with overpressure safety valve
Drain	4" with gate valve (NW 100)

Tank end

- Kaiser security lock ring with constant locking pressure over the complete circumference.
- This design enables easy and safe emptying without splashing to the side.

Material	H II 1.0425 with coating inside
Opening cylinder locking valve	with automatic security
Lock ring incl. rear lights	mechanically secured,
Sight glasses	for water level indication
Rotating beacon	on top of tank end, adjustable in height
Suction- + drain valve	4", manual (NW 100)



Tank tilting system

- Quick emptying of the tank and easy maintenance of the truck chassis.
- Tank can be completely emptied without manual operation (shoveling).

Multistage hydraulic cylinder with security system



Tank cleaning nozzle

- Supports a quick and thorough cleaning.
- Supply is effected directly by the high-pressure system.



Subframe

- No modifications of truck chassis necessary due to mounting all aggregates onto subframe.
Low gravity center of superstructure thanks to integration of the hydraulic pumps into the subframe construction.

VACUUM SYSTEM

KWP 2000i Kaiser Liquid Ring Pump / Vacuum Pump

The Kaiser Liquid Ring Pump is a specifically developed light alloy vacuum pump.
The remarkable features of the unique design of the KWP are the following:

- **Light-weight design** ⇒ increased payload of the vehicle
- **No mechanical friction inside** ⇒ low noise level
- **Minimum wear and tear** ⇒ low maintenance
- **Oil-free air discharge and suitability for dry suction**

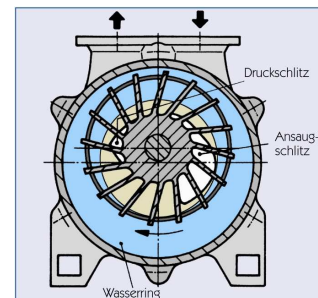
Advantages by integration of vacuum pump into fresh water tank (patent):

- **Short suction line to slurry tank** ⇒ optimum efficiency
- **Additional sound proofing by water insulation**
- **Natural cooling**

Max. capacity 2000 m³/h
max. vacuum/overpressure 0,85 bar / 0,5 bar

Change-over head

Pneumatically operated change-over head for suction-/pressure change as well as opening for filling of fresh water tank



Vacuum pump integration

Technical features:

The vacuum pump is integrated into the fresh water tank. The vacuum pump supplies itself with the water required for the function.

Change-over head

Enables immediate switching from suction to pressure mode and vice versa.

Your advantage:

- **Short suction line to slurry tank**
⇒ optimum efficiency; no performance loss due to long suction lines
- **Additional sound proofing by water insulation**
- **Natural cooling**



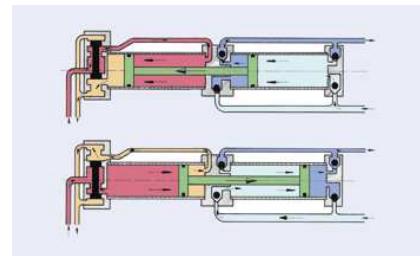
HIGH-PRESSURE SYSTEM

KDU Kaiser Pressure Transformer / High Pressure Water Pump KDU 168

The Kaiser Pressure Transformer is a high-pressure pump which converts the oil pressure into water pressure with 1:1 piston ratio. The KDU's advantages:



- **High efficiency**
- **Considerable fuel saving**
- **Resistant to wear and tear \Rightarrow minimum maintenance costs \Rightarrow extended life**
- **Operating pressure and flow rate are independently adjustable**
- **Low noise level due to low piston speed**
- **Reliable and insensitive to unclean water \Rightarrow especially suitable for water recycling**
- **High dimensioned pressure line from KDU to hose reel \Rightarrow reduced pressure drop**



Capacity	until 350 l/min
Operating pressure	until 200 bar
One moving component	only the piston (apart from control elements)
No damages without water	if filter is plugged or water lacks
Winter operation	emptying of pressure line and hose is possible

High-Pressure Hose Reel

KEH 120-1 Kaiser ECO-Reel

- **Hose drum, suspended on the side of tank end.**
- **Hydraulically slewable by 180° to the right, servo-supported.**

Incl. jetting hose	120 m, \varnothing 1" rubber
jetting hose	
Capacity	120 m, \varnothing 1"
Pressure line KDU to reel	\varnothing 1"
Speed regulation	infinitely variable



Central operation panel

- Valve bank for: uproll - unroll - tie up - slew reel
- Infinitely variable speed regulation
- KDU on-off
- KWP on-off
- Suction boom operation up-down, slew left-right, telescope extend-pull in, KWP suction-pressure, suction boom gate on-off
- Pressure gauge and vacuum pressure gauge
- Infinitely variable speed range of diesel engine

Diesel engine start-stop

HYDRAULIC SYSTEM with HRS-control system

- **Vacuum pump**

The KWP is driven by a hydraulic piston pump-motor unit.

Engagement of the KWP is therefore possible anytime at any speed range.

Relief valves avoid overload of vacuum pump.

- **High-pressure system**

The high-pressure system is being driven by a hydraulic pump.

Automatic adjustment of water flow to consumer by means of pump-pressure regulated control system ⇒ fuel saving, easy operation, no water pressure relief valves necessary.

- **Hose reel drive**

A gear pump with additional infinitely variable control system supplies power to the hose reel.

- Pump drive by PTO of the truck engine ⇒ optimum torque (1000 - max. 1400 rpm) ⇒ high economy and low noise emission
- No vibration transmission due to rubber-cushioned hydraulic pump
- Support as hydraulic-oil reservoir with integrated oil filter, water filter and heat exchanger - simultaneously support for tilt cylinder and KDU
- Incl. conventional hydraulic oil



OPERATION OF VEHICLE

Control

Valve block is fitted on the rear right side of the vehicle with following functions:

- Tank end open-close
- Lock ring open-close
- Tilt

(Central control panel at hose reel see high-pressure hose reel)



Hose box / fenders on both sides

- Stainless steel box fitted to the left and right of the tank
- Original MAN fenders at rear axle



KSR 10 Kaiser Telescopic Suction Boom

- Light-alloy construction with aluminium head
- Lifting and lowering hydraulic, 45° lifting angle
- Spur wheel drive for 320° hydraulic slewing
- Hydraulically telescopicable 1,45 m and reach 2,95 - 4,4 m
- Intake and pneumatical stop valve into slurry tank 6 " (NW 150)
- Operation at central operation panel
- Suction hose Ø 6 " = 150 mm
- Suction tube Ø 5" = 125 mm, 3 m long



Tank finish

- **All steel parts are sandblasted and spray-painted in customer's single -colour. The pipes are galvanized and the tank is coated inside.**

Grey-coloured parts: High-pressure hose reel, suction boom, lock ring and support.

Labeling

All operating elements, as well as warning and safety information in the following language:

English

Special customer requests for labeling and advertising possible after consultation

Operator's Manual / Spare Part List

Operator's manual and spare parts list in the following language:

English

Specifications subject to change!

Technical data may change due to selected options and accessories.

Options

ZA-046 Hooks for suction tubes, 4-fold

- Mounted on left side of the tank
- Galvanized, with rubber clamps for securing tubes
- For 4 tubes DN125



ZA-187 Kaiser Water Recycling "Rotomax"

- Stainless steel screen
- Slotted hole screen 0.5 mm
- Incl. vacuum relief valve

Description of function:

- a) Cleaning water and sewer water will be directly suctioned, together with the slurry, into the slurry tank
- b) From the slurry tank, the dirty water will be pumped through a "self-cleaning" filter by means of a centrifugal pump, directly to the high-pressure pump
- c) The filtered cleaning water passes from there, via the jetting hose, to the sewer cleaning nozzle

The centrifugal pump is also used to drain remaining water.

- Very simple recycling system
- No need to use valuable and expensive drinking water for cleaning work
- Reduced transport costs
- Single chamber system – the entire tank can be used as a slurry tank
- Efficient work performance
- High vehicle payload due to low weight of the recycling system
- Easy cleaning of the recycling system
- Conventional suction/cleaning operation possible at any time
- Continuous washing guarantee
- Vehicle can also be used at any time for conventional sewer work (without modifications)

ZA-189 Flushing device for "Rotomax" water recycling

- High-pressure and low-pressure water bar for additional filter cleaning
- Extending the recycling application area to sewers which are extremely contaminated

ZA- rear bumper

- Original MAN rear bumper , solid fitted to the end of the chassis ,with rear lights

ZA-480 Hydraulic oil cooler

- Additional hydraulic oil cooler allows suction only , with overheating the hydraulic system

ZA-485 Pressure relief

- Pressure relief at high pressure jetting system when pressing emergency stop

ZA-530 Jetting Nozzles

1 Set Jetting Nozzles (for 320 l/min)

- 1 bomb 1"
- 1 nozzle 1"
- 1 nozzle 1/2"

ZA-810 ECO-Hand reel 40 m 1/2"

- Galvanized hose drum with capacity of 40 m 1/2" jetting hose
- Incl. 20 m 1/2" jetting hose, with handgun and swivel joint

