SERO
Pumps & Systems

Hermetically sealed refrigerant transfer pump, PN 40

for temperatures down to –60 °C
SEMA-S...TT

SERO is the optimal technological solution for transporting media which contain gas or which vaporize readily

Operating data

Flow rates:	0,3 up to 35 m^3/h
Heads:	5 up to 350 m
Speed:	max. 1800 1/min
Temperature:	-60 °C up to +120 °C
Suction height:	up to 4 m at 20 °C
Rated pressure:	40 bar
Viscosity:	0,3 up to 230 mPas
Gas entrainment:	max. 50 %
Max. motor:	55 KW
NPSH-pump:	0,4 up to 1,5 m

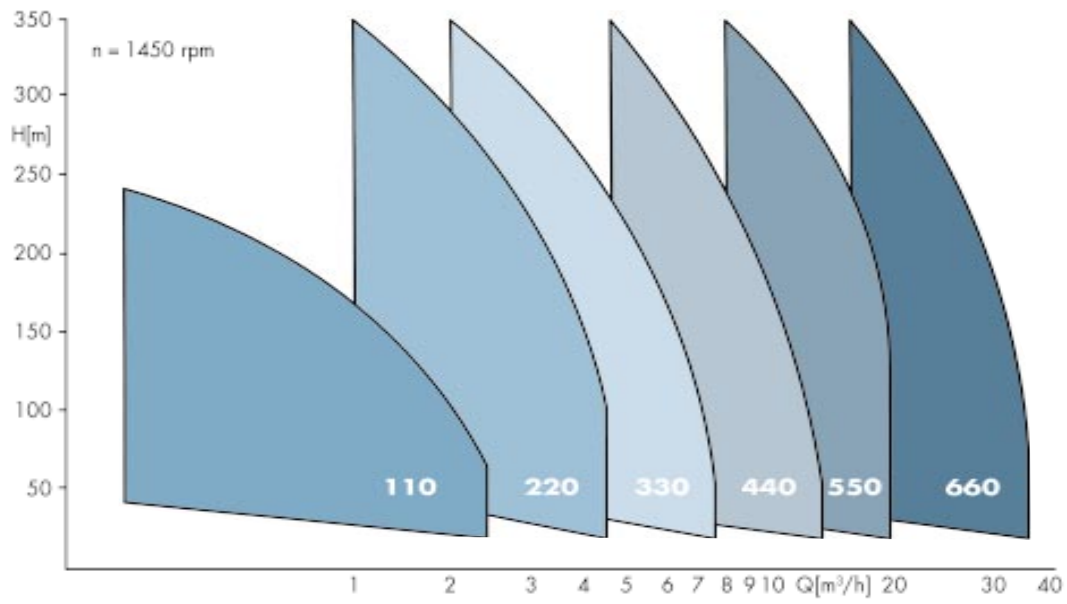
Design

Side channel pump, gas-entraining, without shaft seal, in segmented construction, with open unpressurized impellers, single-stage or multi-stage, with intake NPSH suction impeller and with permanent-magnet drive.

Construction

Housing pressure:	Nominal pressure 40
Socket position:	Suction casing: axial Pressure casing: radial
Flanges:	As specified by DIN 2501, nominal pressure 40, with groove Suction side: Nominal diameters 40-100 mm Pressure side: Nominal diameters 20-65 mm
Bearings:	Suction side: hard carbon in steel housing Intermediate stages: special carbon Magnetic coupling: 2.4610/SIC Bearing mount: Special deep-grooved ball bearing
Direction of rotation:	Counterclockwise
Shaft seal:	Permanent magnet synchronous coupling
Refrigerant design TT:	● all pressurized parts of stainless steel ● ball bearings with special grease packing ● shrink seat for bearing ● internal space protected against entry of air ● expansion disks balance shrinkage
Drive:	Standard 3-phase motors, 4-pole

Performance Range n = 1450 rpm (50 Hz)



Areas of use

- Refrigeration plants for production, storage and transport of refrigerants
- Carbon dioxide supply
- Dry ice producing
- Fire-fighting equipment
- Cold storage plants; ice rinks with artificial ice
- Deicing stations
- Cooling of parts of plants

Liquids to be pumped:

- Ammonia NH_3
- Liquid carbon dioxide, CO_2
- Refrigerating brines
- Other chlorofluorocarbon substitutes

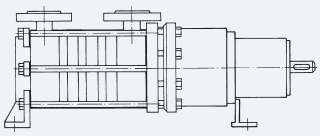
Advantages for you

- Nominal pressure 40 bar
- Maintenance-free
- Water- and grease-free
- No nonferrous metals

We ensure environmental protection from refrigerant leaks

with our pumps without shaft seals

SEMA-S



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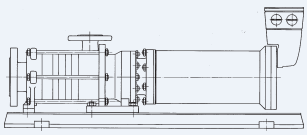
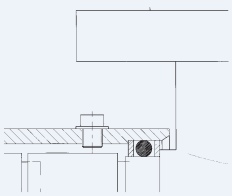
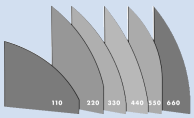




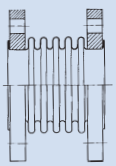
Pump body insulated by a specially constructed jacket (Ophan)

High operating reliability due to SERO hydraulics ensures troublefree production process



Steep H-Q characteristic curve overcomes any high differential pressure that might occur

The output is not interrupted during partial degassing! Partial gas output up to **50 % gas**



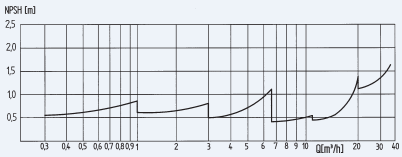
Axial compensators allow shrinkage in the axial direction

Possible pressure drops at start-up are prevented

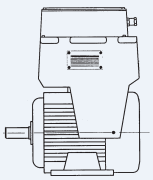
Monitors for high/low load cut the pump off before any possible damage

The intelligent SERO system saves you capital costs and energy costs

No need for diaphragms, etc., in the inlet piping to remove gas



Extremely low NPSH values (to less than 0.5 m) allow low intake heights



Frequency converters control pumps automatically and continuosly when the conditions of the refrigeration plant change. Stepless control of the pump speed expands the power range with simultaneous energy saving.

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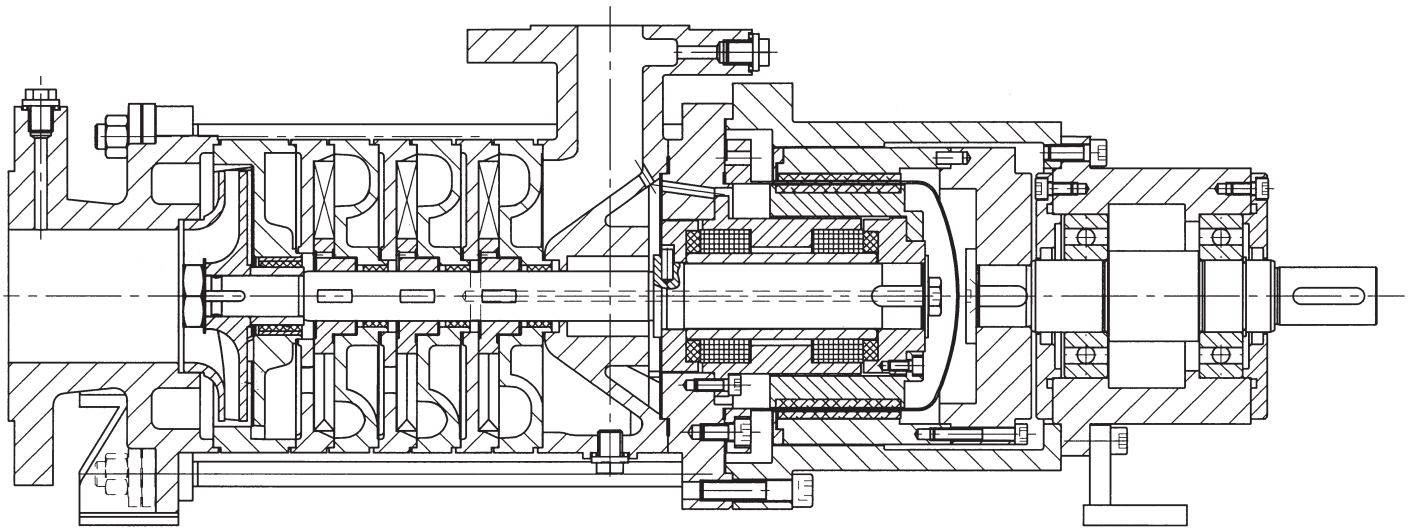
Sectional View



Material Specification

	Material version 32
casing	1.4408
suction stage casing	1.4470
discharge stage casing	1.4470
foot	1.4571
shaft	1.4571
impeller	1.4581
suction impeller	1.4581
sleeve bearing (magnetic coupling)	2.4610 / SIC-SIC
bearing bracket	C35
bearing yoke	St 52
gaskets	PTFE
shaft sleeve	SiSiC
bearing bush	hard carbon
can/flange	2.4610 /1.4571
tie bolt	1.4571

Pump Designation (Example)

SEMA-S 33 5 TT *I.* 32

- Pump series
- Size
- Number of stages
- Refrigerant design
- Material version

High-quality materials subject to change.

41.01.05/00.E.T

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