

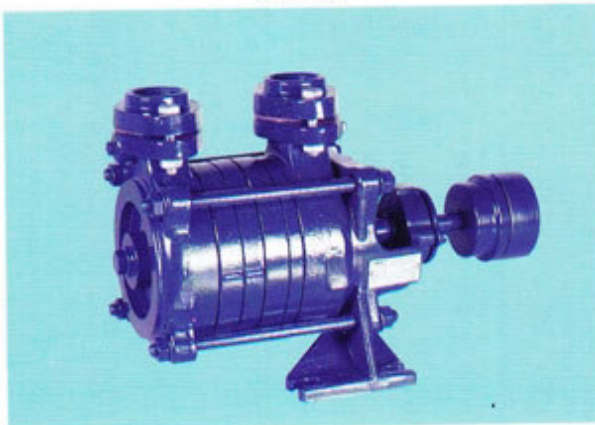
**SERO - GAE**

# **SIDE CHANNEL PUMP PN 16-25**

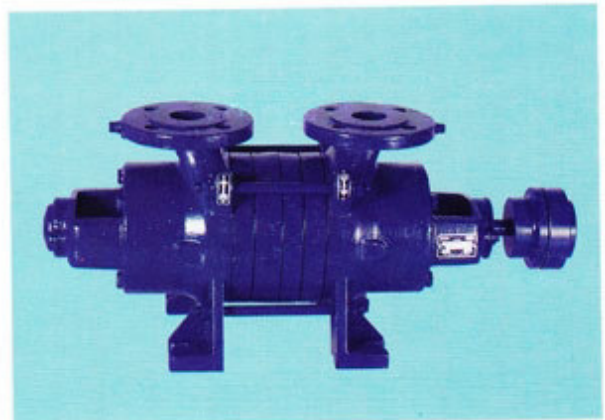
**Self priming pump according to DIN 24254**

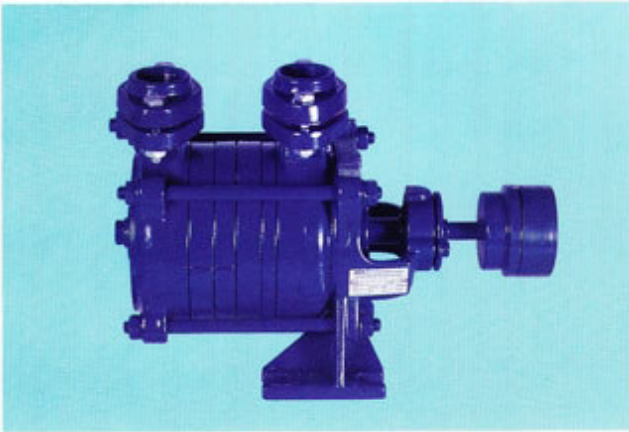
[www.cenitsteknindo.com](http://www.cenitsteknindo.com)

**SOH**



**SRH**





## Field of application

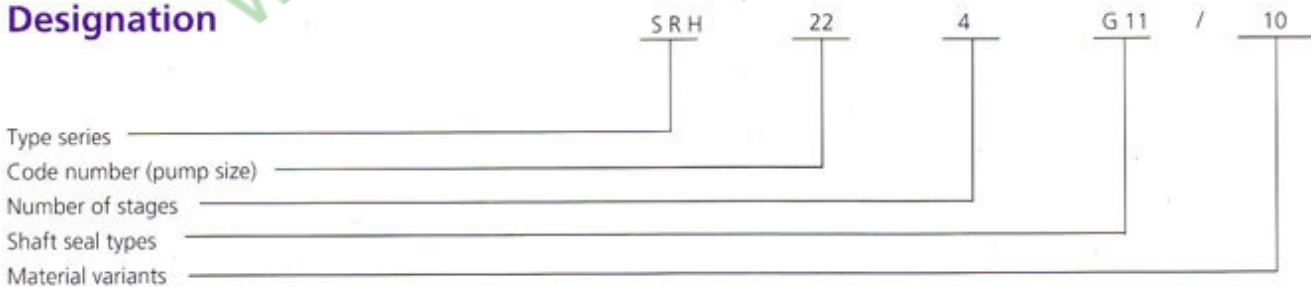
Universally suitable for handling all sorts of clean and turbid liquids. **The media handled must not contain any abrasive substances!**

The pumps are used in the chemical and petrochemical industries, in apparatus engineering, vehicle and naval construction, in agriculture and building services, for irrigation and water supply as well as in other sectors where self-priming is required.

## Design

Horizontal, radially split, self-priming ring-section pump with side channel, single-flow, single- or multi-stage.

## Designation

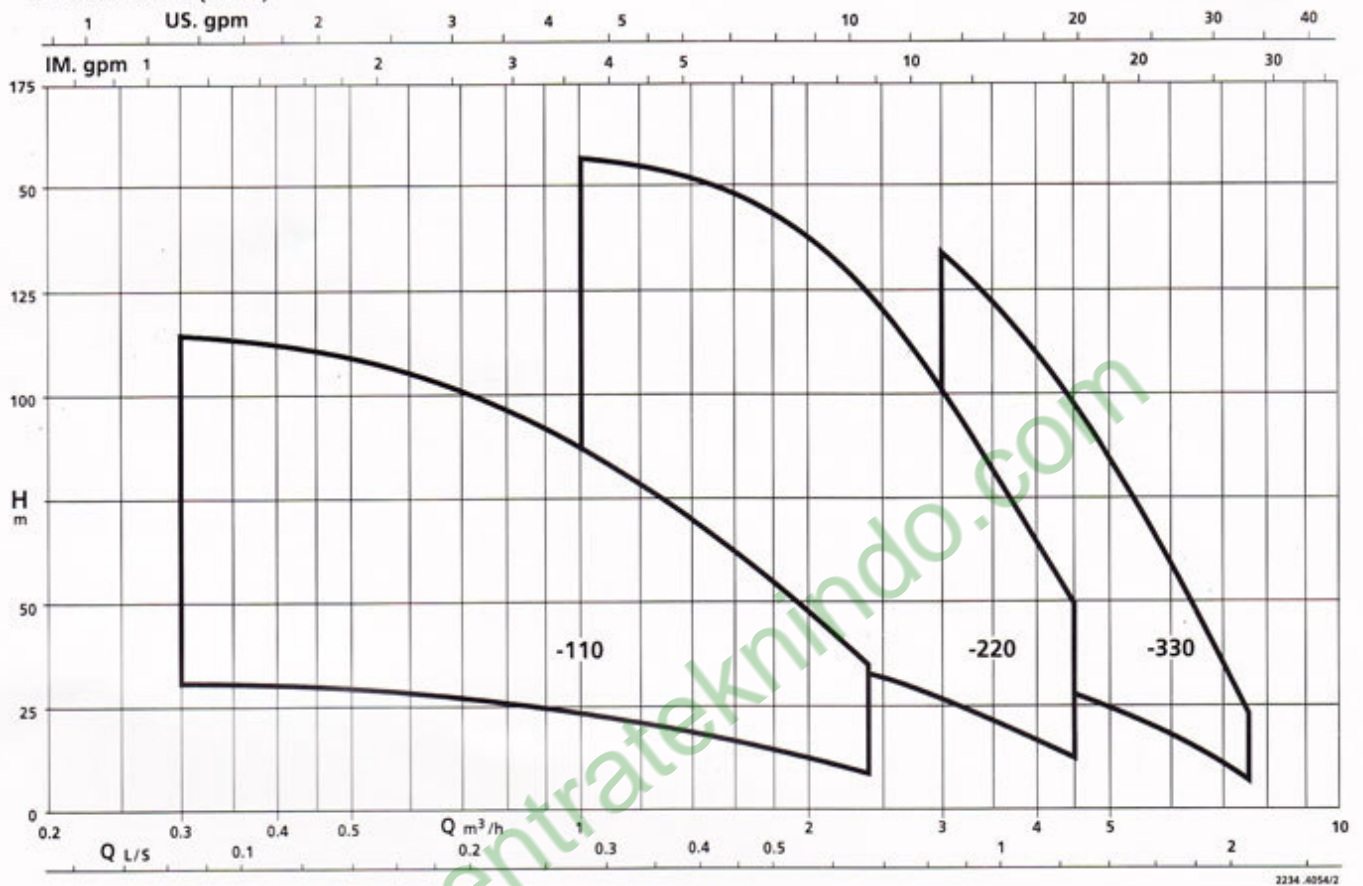


## Operating Data

50 Hz		SOH	SRH
Pump sizes	DN	1" - 1 1/2"	25 up to 50
Capacities	Q	0.3 - 7.5 m <sup>3</sup> /h	0.4 up to 42 m <sup>3</sup> /h
Max. speed	n	1800 1/m	1800 1/min
Heads	H	up to 155 m	up to 240 m
Operating pressures	p	16 bar	25 bar
Operating temperatures	t	-20 up to + 120°C	-20 up to + 120°C
Sense of rotation		clockwise (seen from the motor side)	clockwise (seen from the motor side)

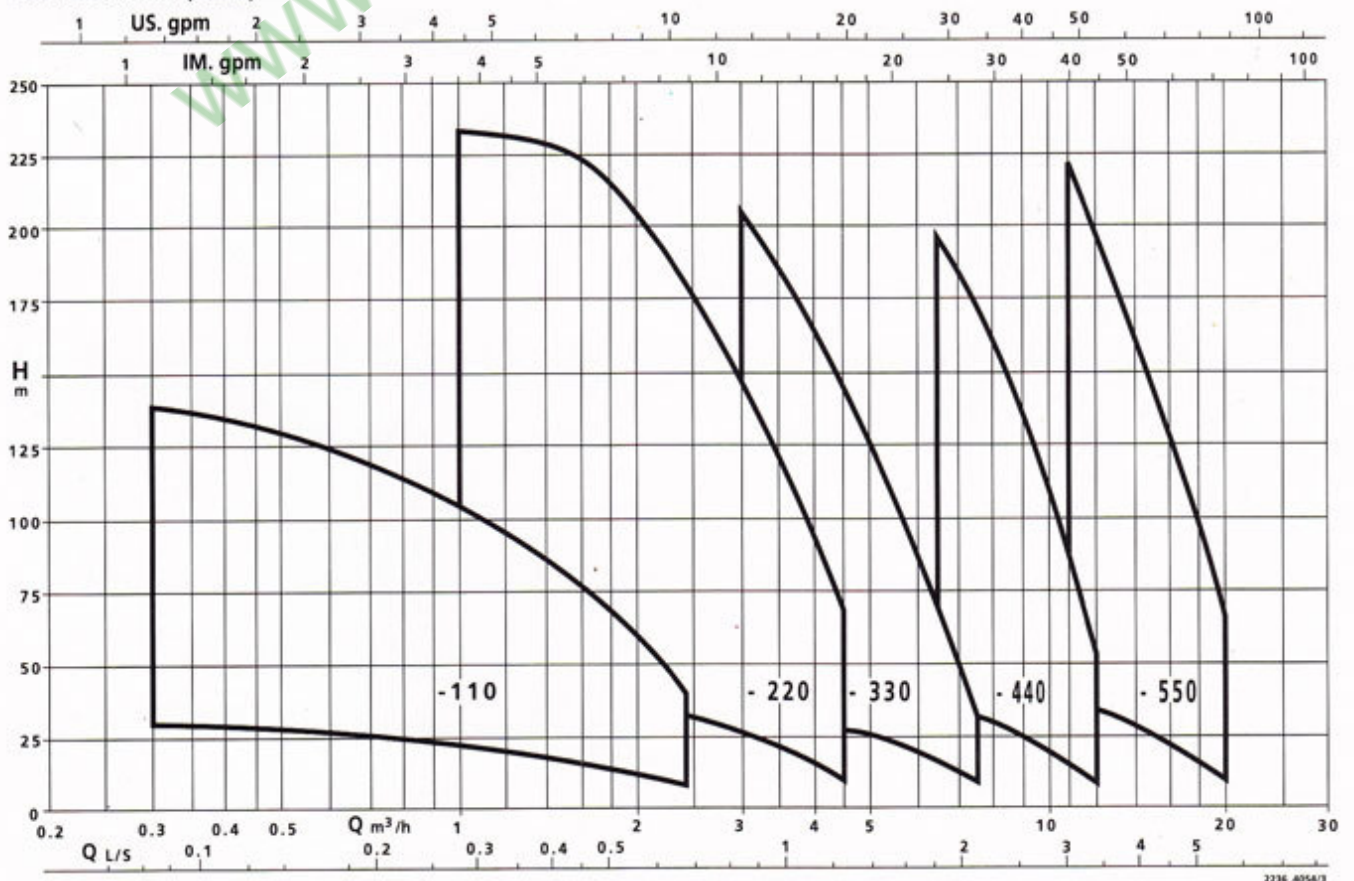
## Selection Charts of SOH

$n = 1450 \text{ 1/min (50Hz)}$



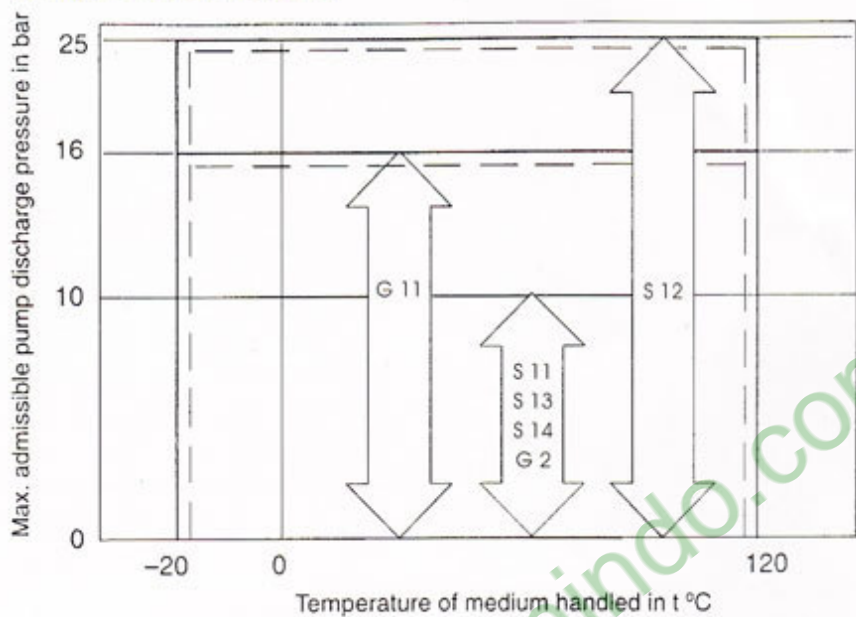
## Selection Charts of SRH

$n = 1450 \text{ 1/min (50Hz)}$





## Pressure and Temperature Limits



## Materials of SOH

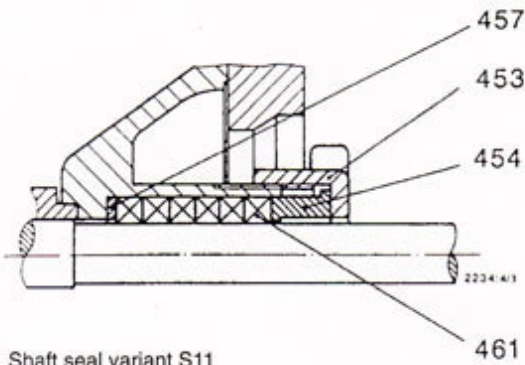
Part No.	Designation	Material variant G	Material variant GG	Material variant C
106	Suction casing	GG-25	GG-25	1.4581
107	Discharge casing	GG-25	GG-25	1.4581
109.1/2	Stage casing	GG-25	GG-25	1.4410
114	Regenerative pump casing	GG-25	GG-25	1.4410
210	Shaft	1.4021	1.4021	1.4571
230	Impeller	CuZn40Al2	1.4059	1.4581
331	Bearing block	GG-25	GG-25	GG-25
360	Bearing cover	GG-25	GG-25	GG-25
411.3	Gasket	PTFE	PTFE	PTFE
454	Stuffing box ring	steel	steel	1.4571
461	Gland packing	asbestos-free	asbestos-free	asbestos-free
545.1	Bearing bush	carbon	carbon	carbon
545.2	Bearing bush	carbon	carbon	carbon
723	Counterflange	GG-25	GG-25	1.4581
905	Tie bolt	steel	steel	steel

## Materials of SRH

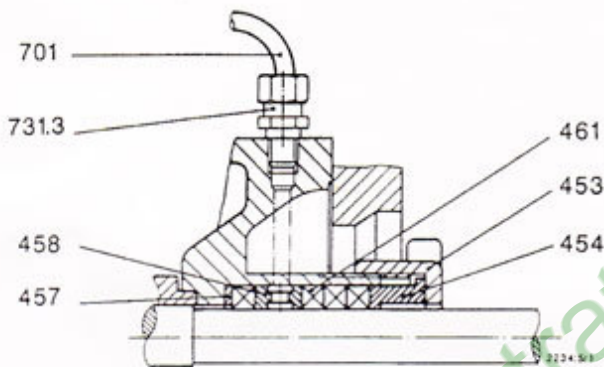
Part No.	Designation	Material variant G	Material variant GG
106	Casing (suction side)	GG-25	GG-25
107	Casing (discharge side)	GG-25	GG-25
109.1/2	Stage casing	GG-25	GG-25
114	Regenerative pump casing	GG-25	GG-25
210	Shaft	1.4021	1.4021
230	Impeller	CuZn40Al2	1.4059
330	Bearing bracket	GG-25	GG-25
360	Bearing cover	GG-25	GG-25
361	Bearing end cover	GG-25	GG-25
411.3	Gasket	PTFE	PTFE
461	Gland packing	asbestos-free	asbestos-free
545	Bearing bush	carbon	carbon
905	Tie bolt	steel	steel

# Shaft Seals of SOH

## Gland packing

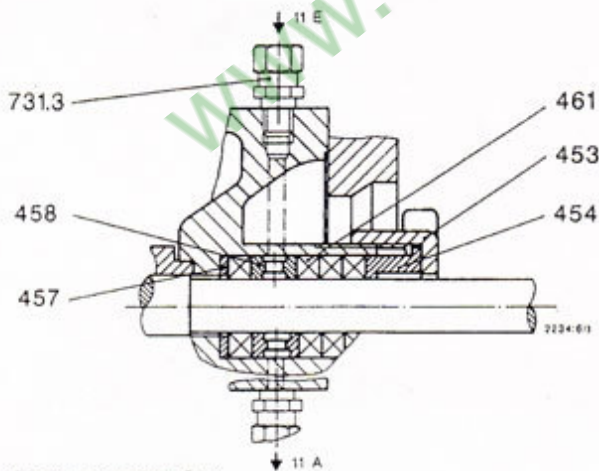


Shaft seal variant S11



Shaft seal variant 03

Shaft seal variant S13



Shaft seal variant S14

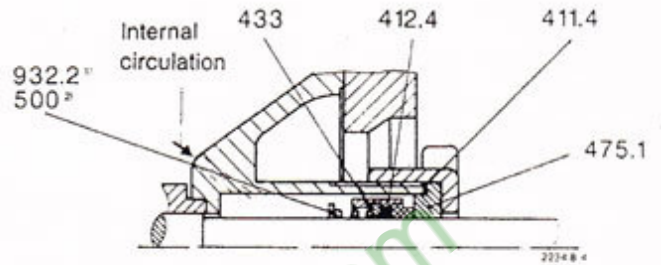
### Limits of application

- S 11 Standard version; stuffing box not balanced
- S 13 Suction side stuffing box secured against air intake by means of by-pass line from the discharge casing (inlet pressure < 0,6 bar)
- S 14 Suction side stuffing box supplied with sealing liquid

### List of components gland packing

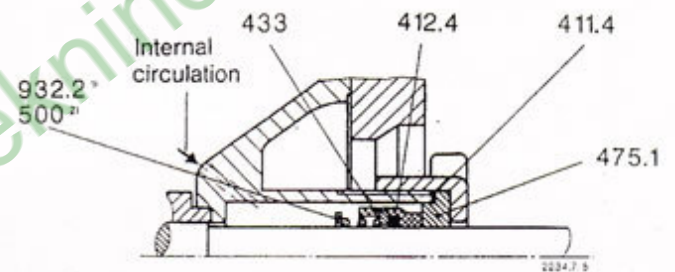
- 453 Gland nut
- 454 Stuffing box ring
- 457 Neck ring
- 458 Lantern ring
- 461 Gland packing
- 701 By-pass line
- 731.3 Pipe union

## Mechanical seals



- 1) Material variante (G, GG)
- 2) Material variante (C)

Shaft seal variant G11 1



- 1) Material variante (G, GG)
- 2) Material variante (C)

Shaft seal variant G 2

### Limits of application

- G 11 Standardized mechanical seal, single-acting, unbalanced, up to 16 bar, without by-pass line, rotating assembly according to DIN 24 960
- G 2 Standardized mechanical seal, single-acting, unbalanced, up to 10 bar, without by-pass line

### Mechanical seal materials

	G 2		G 11	
Rotating seal ring	carbon		carbon	
Stationary seal ring	cast chrome		cast chrome	
O-ring	Viton		EP-Viton-Viton PTFE	
Spring	1.4571			
Other metal parts	1.4571			

- Code acc.to DIN 24 960 : Carbon B<sub>1</sub>
- Cast chrome S<sub>2</sub>
- Viton V

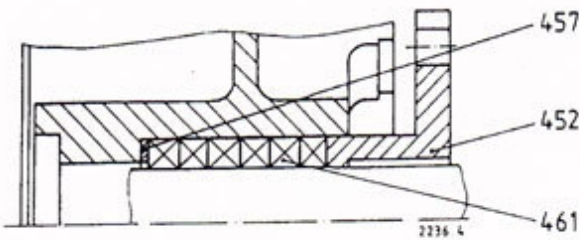
### List of components mechanical seal

- 411.4 Gasket
- 412.4 O-ring
- 433 Mechanical seal
- 475.1 Stationary seal ring
- 500 Ring
- 932.2 Circlip

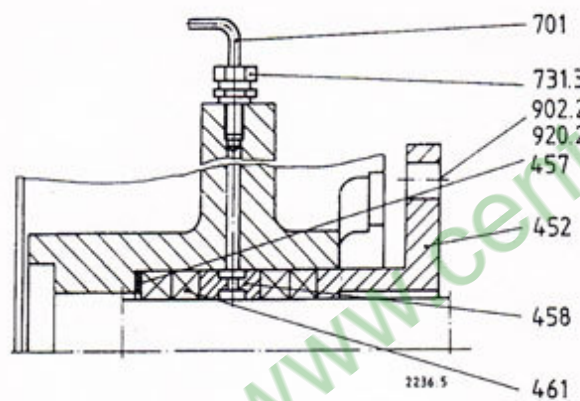


# Shaft Seals of SRH

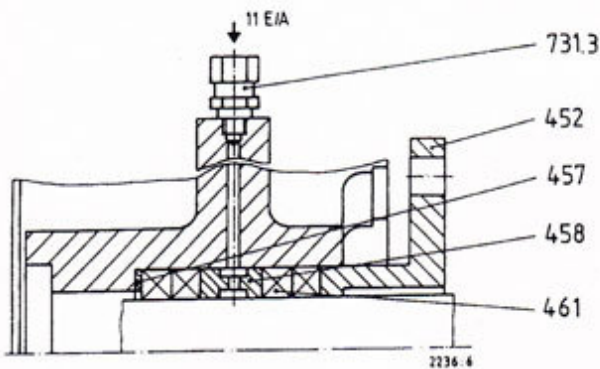
## Gland packings



Shaft seal variant S11



Shaft seal variant S 12/S 13



Shaft seal variant S 14

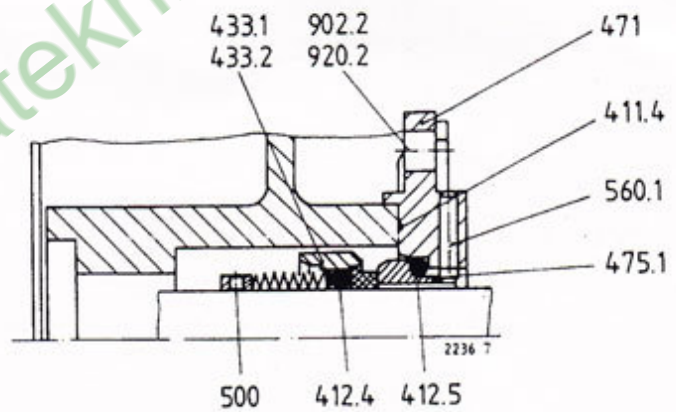
## Limits of application

- S 11 Standard version; stuffing box not balanced
- S 12 Discharge side stuffing box balanced by means of by-pass line to the suction casing (if discharge pressure > 10 bar)
- S 13 Suction side stuffing box secured against air intake by means of by-pass line from the discharge casing (inlet pressure < 0,6 bar)
- S 14 Suction side stuffing box supplied with sealing liquid

## List of components gland packing

- 452 Gland cover
- 457 Neck ring
- 458 Lantern ring
- 461 Gland packing
- 701 By-pass line
- 731 Pipe union
- 901 Stud
- 920 Hexagon nut

## Mechanical seal



Shaft seal variant G11

## Limits of application

- G 11 Standardized mechanical seal, single-acting, unbalanced, up to 16 bar, without by-pass line, according to DIN 24 960

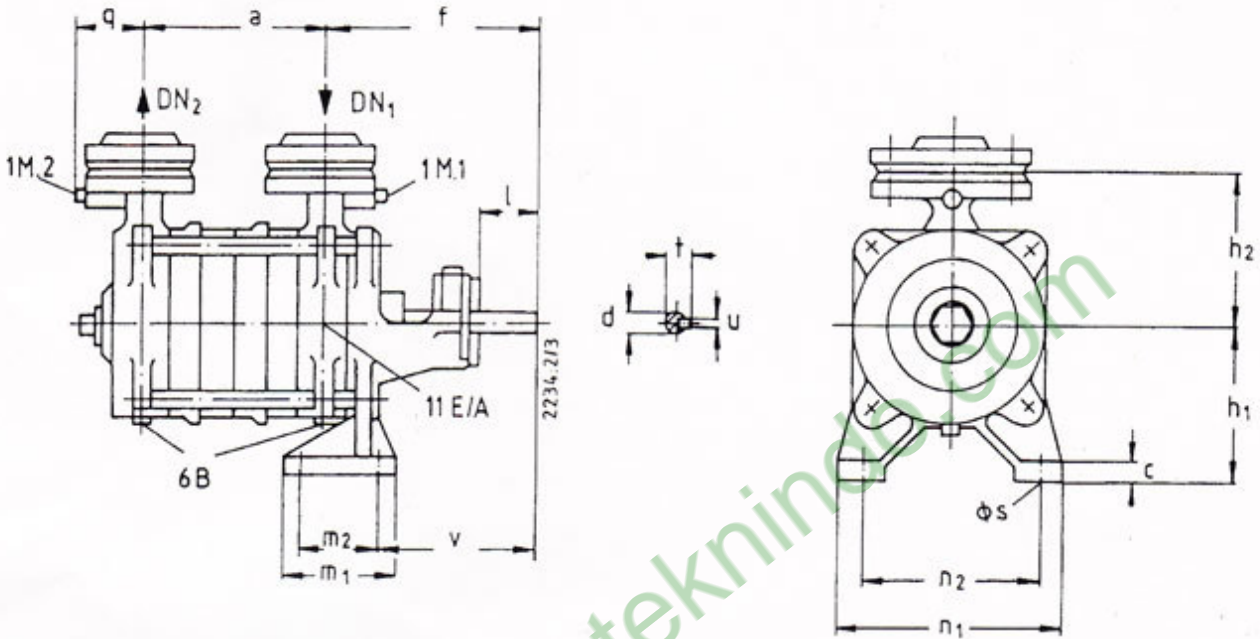
## Mechanical seal materials

	G 11	
Rotating seal ring	carbon	silicon carbide
Stationary seal ring	cast chrome	silicon carbide
O-ring	EPDM-FPM-FPM/ double coated with PTFE	
Spring	1.4571	
Other metal parts	1.4571	

Code acc.to DIN 24 960 :

Carbon	B
Ceramics	V
Silicon carbide	Q <sub>12</sub> /Q <sub>1</sub>
Ethylene -Propylene (EPDM)	E
Fluoro-rubber FPM	V
FPM, double coated with PTFE	M <sub>1</sub>

## Dimension Table of SOH



### Pump dimensions

Dimensions in mm

Pump size	Pump dimensions													Shaft end			
	DN <sub>1</sub> DN <sub>2</sub>	a	f	h <sub>1</sub>	h <sub>2</sub>	q	m <sub>2</sub>	m <sub>1</sub>	v	n <sub>2</sub>	n <sub>1</sub>	c	s	d k6	l	u	t
111	25	78	154	90	90	45	50	80	136	120	150	12	13	12	39	4	13.8
112		112															
113		46															
114		180															
221	32	83	178	112	112	50	70	106	128	160	195	12	14	16	51	5	18
222		123															
223		163															
224		203															
331	40	83	178	112	112	50	70	106	128	160	195	12	14	16	51	5	18
332		123															
333		163															
334		203															

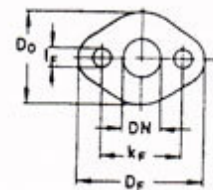
### Flange dimensions

with pipe thread acc. to ISO 228

Dimensions in mm

Pump size	Connection	Flange dimensions				
		DN <sub>1</sub> DN <sub>2</sub>	D <sub>i</sub>	D <sub>o</sub>	k <sub>f</sub>	l <sub>f</sub>
110	G 1	25	100	65	75	14
220	G 1 1/4	32	118	75	85	14
330	G 1 1/2	40	118	75	85	14

Oval flange PN 16

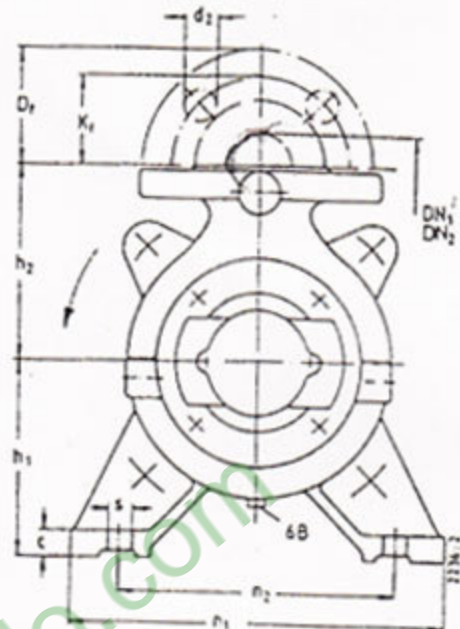
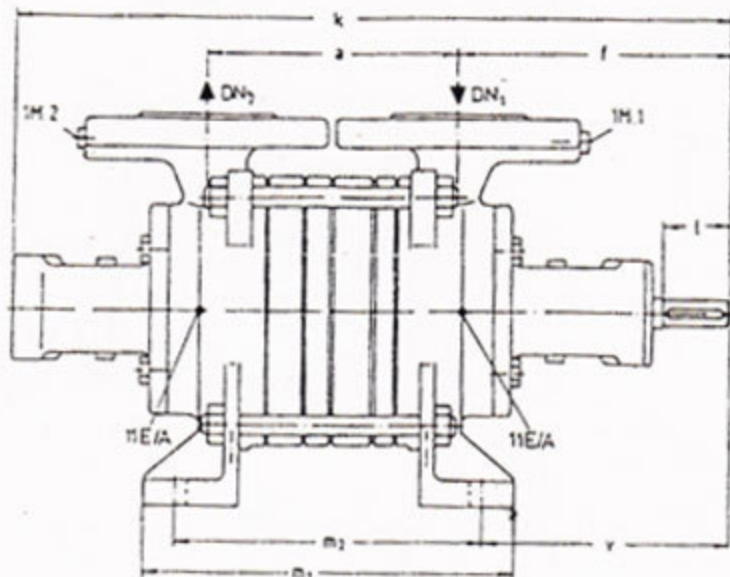


### Auxiliary connections

- 1M.1/2 = Pressure gauge G 1/4
- 6B = Drainage of medium handled G 1/4
- 11E/A = Flusing liquid inlet/outlet G 1/8



## Dimension Table of SRH



### Pump dimensions

Dimensions in mm

Pump size	DN <sub>1</sub> DN <sub>2</sub>	Pump dimensions a, m <sub>1</sub> , m <sub>2</sub> , and k for the number of stages below							Pump dimensions								Shaft end			
			1	2	3	4	5	6	f	n <sub>1</sub>	n <sub>2</sub>	c	h <sub>1</sub>	h <sub>2</sub>	v	s°	d <sub>16</sub>	l	t	u
110	25	a	120	120	154	188	222		145	156	120	13	90	100	132	13	11	25	12,6	4
		m <sub>1</sub>	182	182	216	250	284													
		m <sub>2</sub>	146	146	180	214	248													
		k	382	382	416	450	484													
220	32	a	145	145	185	225	265	305	159	218	160	15	112	112	142	13	16	40	18,1	5
		m <sub>1</sub>	214	214	254	294	334	374												
		m <sub>2</sub>	178	178	218	258	298	338												
		k	420	420	460	500	540	580												
330	32	a	145	145	185	225	265	305	159	218	160	15	112	112	142	13	16	40	18,1	5
		m <sub>1</sub>	214	214	254	294	334	374												
		m <sub>2</sub>	178	178	218	258	298	338												
		k	420	420	460	500	540	580												
440	40	a	155	210	265	320	375	430	205	218	160	20	132	132	203	13	19	45	21,5	6
		m <sub>1</sub>	195	250	305	360	415	470												
		m <sub>2</sub>	159	214	269	324	379	434												
		k	523	578	633	688	743	798												
550	50	a	170	245	320	395	470	545	217	218	160	20	150	140	210	13	24	50	26,9	8
		m <sub>1</sub>	220	295	370	445	520	595												
		m <sub>2</sub>	185	260	335	410	485	560												
		k	558	633	708	783	858	933												

### Flange dimensions

Flanges acc.to DIN 2501, PN 25

Dimensions in mm

Pump size	DN <sub>1</sub> /DN <sub>2</sub>	Flange dimensions			
		D <sub>f</sub>	k <sub>f</sub>	d <sub>2</sub>	z <sub>f</sub>
110	25	115	85	14	4
220	32	140	100	18	4
330	32	140	100	18	4
440	40	150	110	18	4
550	50	165	125	18	4

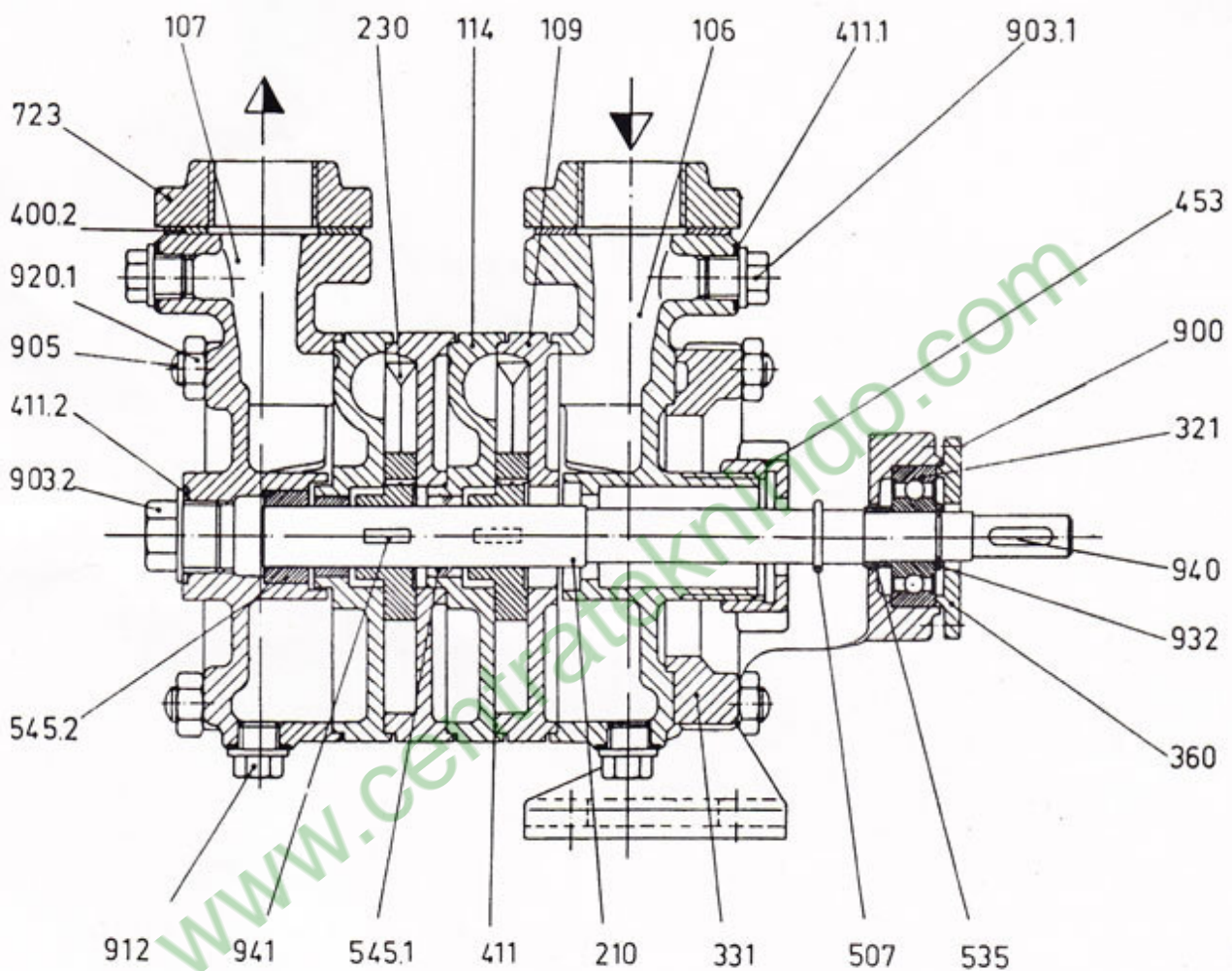
z<sub>f</sub> = number of holes

### Auxiliary connections

- 1M.1/2 = Pressure gauge G 1/4
- 6B = Drainage of medium handled G 1/4
- 11E/A = Flusing liquid inlet/outlet G 1/8



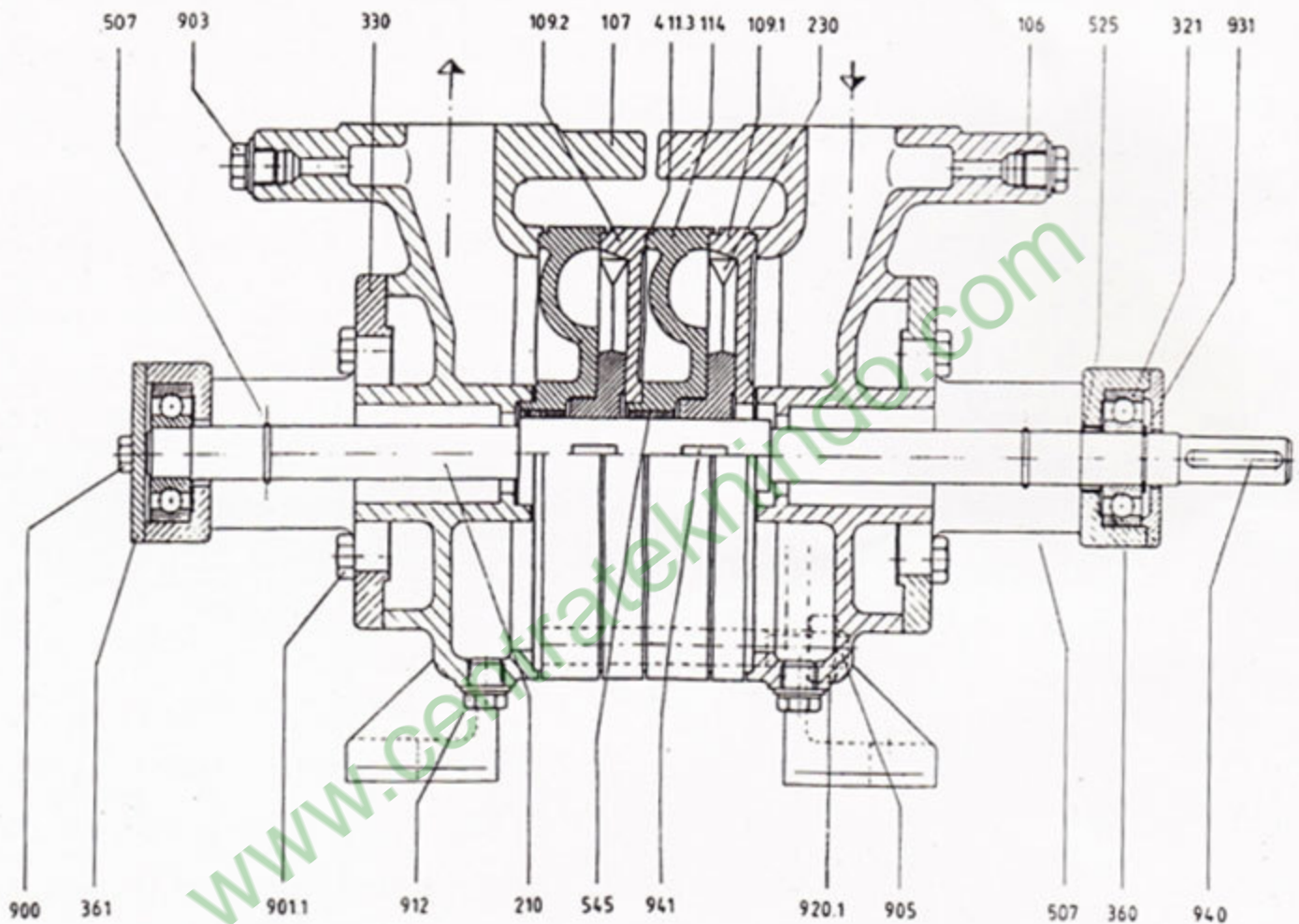
## General Drawing with List of Component of SOH



When ordering spare parts, please always specify the type series, size, serial No. (stamped on the nameplate and on the flange of the suction nozzle), year of construction, quantity, part No., designation, material, medium handled, sectional drawing No. and mode of dispatch.

Part No.	Designation	Scope of supply
106	Suction casing	with pipe union 731.1
107	Discharge casing	with gasket 411.2, bearing bush 545.2, pipe, union 731.1, threaded plug 903.2
109.1/2	Stage casing	
114	Regenerative pump casing	With bearing bush 545.1
210	Shaft	with spacer sleeve 525, safety device 930.1, key 940, woodruff key 941.1
230	Impeller	
321	Deep-groove ball bearing	
331	Bearing Block	
360	Bearing cover	with hex. head bolt 901.2
411.3	Gasket	set for max. number of stages
453	Gland nut	
507	Thrower	
723	Counterflange	With Gasket 411.5, disc 550.2, hex. head bolt 901.1, hex.nut 920.2
905	Tie bolt	with disc 550.1, hex. nut 920.1

# General Drawing with List of Component of SRH



When ordering spare parts, please always specify the type series, size, serial No. (stamped on the nameplate and on the flange of the suction nozzle), year of construction, quantity, part No., designation, material, medium handled, sectional drawing No. and mode of dispatch.

Part No.	Designation	Scope of supply
106	Casing (suction side)	with pipe union 731.1
107	Casing (discharge side)	with pipe union 731.1
109.5	Stage casing	
114	Regenerative pump casing	with bearing bush 545.1
210	Shaft	with spacer sleeve 525, safety device 930.1, key 940, woodruff key 941
230	Impeller	
321	Deep-groove ball bearing	
330	Bearing bracket	with hex. head bolt 901.1
360	Bearing cover	with hex. head bolt 901.2
361	Bearing end cover	with hex. head bolt 901.2
411.3	Gasket	set for max. number of stages
507	Thrower	
905	Tie bolt	with disc 550.1, hex. nut 920.1



## Pump Sizes of SOH

Sizes	Number of stages			
	1	2	3	4
110	x	x	x	x
220	x	x	x	x
330	x	x	x	x

## Technical Data

	Unit	Pump size		
		110	220	330
Impeller diameter (cannot be trimmed)	mm	104,7	131,7	131,7
Number of stages	pcs.	1 - 4	1 - 4	1 - 4
Shaft diameter				
in the stuffing box chamber	mm	16	22	22
in the mechanical seal area	mm	16	22	22
at the antifriction bearings	mm	15	20	20
NPSH	m	see individual characteristic curve, please note safety margin at 15%!		
Max. operating pressure	bar	see diagram on page 3		
Max. test pressure	bar	1.3 times the max. admissible pump discharge pressure		
Stuffing box				
bore diameter	mm	30	39	39
length of stuffing box chamber	mm	48	55	55
packing ring dimensions	mm	16/30 x 7	22/39 x 8.5	22/39 x 8.5
number of packing rings				
variant S11	pcs	6	6	6
variant S13, S14	pcs	1+3	1+3	1+3
Bearing size (deep-groove ball bearing acc to DIN 625)	No.	6302 2RS	6304 2RS	6304 2RS
Bearing lubrication		initial grease fill ex works for approx. 10.000 operating hours		
Pressure and temperature limits		see diagram on page 4		

## Pump Sizes of SRH

Sizes	Number of stages					
	1	2	3	4	5	6
110	x	x	x	x	x	x
220	x	x	x	x	x	x
330	x	x	x	x	x	x
440	x	x	x	x	x	x
550	x	x	x	x	x	x

## Technical Data

	Unit	Pump size				
		110	220	330	440	550
Impeller diameter (cannot be trimmed)	mm	104,7	131,7	131,7	147.5	163.5
Max. number of stages	pcs.	5	6	6	6	6
Shaft diameter						
in the stuffing box chamber	mm	14	18	18	24	28
in the mechanical seal area	mm	14	18	18	24	28
at the antifriction bearings	mm	12	17	17	20	25
NPSH	m	see individual characteristic curve, please note safety margin at 15%!				
Max. operating pressure	bar	see diagram				
Max. test pressure	bar	1.3 times the max. admissible pump discharge pressure				
Stuffing box						
bore diameter	mm	26	33	33	39	44
length of stuffing box chamber	mm	43	52	52	51	55
packing ring dimensions	mm	14/26 x 6	18/33 x 7.5	18/33 x 7.5	24/39 x 7,5	28/44 x 8
number of packing rings						
variant S11	pcs	8	6	6	6	6
variant S12, S13, S14	pcs	6	4	4	4	4
Bearing size (deep-groove ball bearing acc to DIN 625)	No.	6301 2RS	6303 2RS	6303 2RS	6304 2RS	6305 2RS
Bearing lubrication		initial grease fill ex works for approx. 10.000 operating hours				
Pressure and temperature limits		see diagram on page 4				