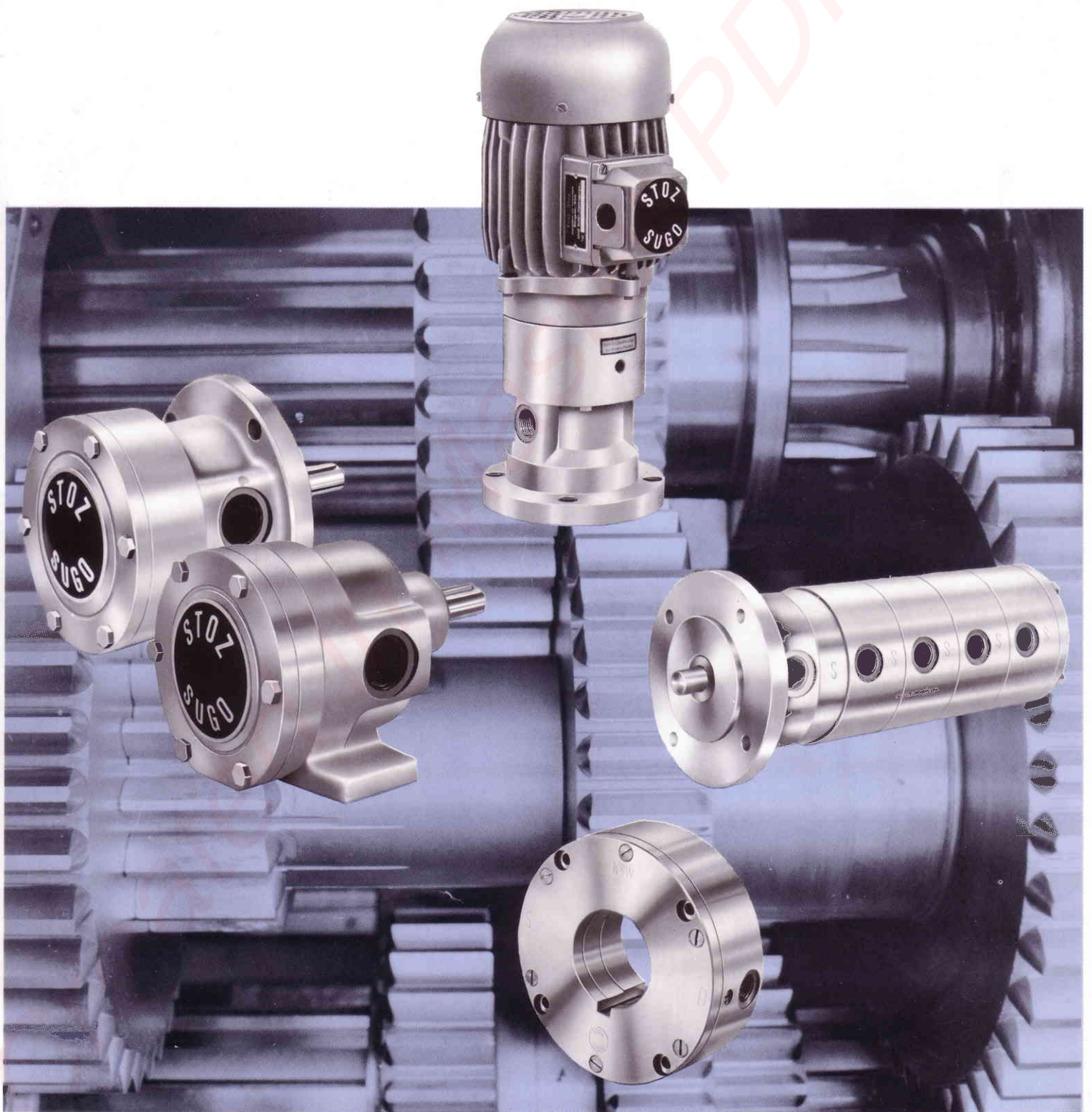


# STOZ

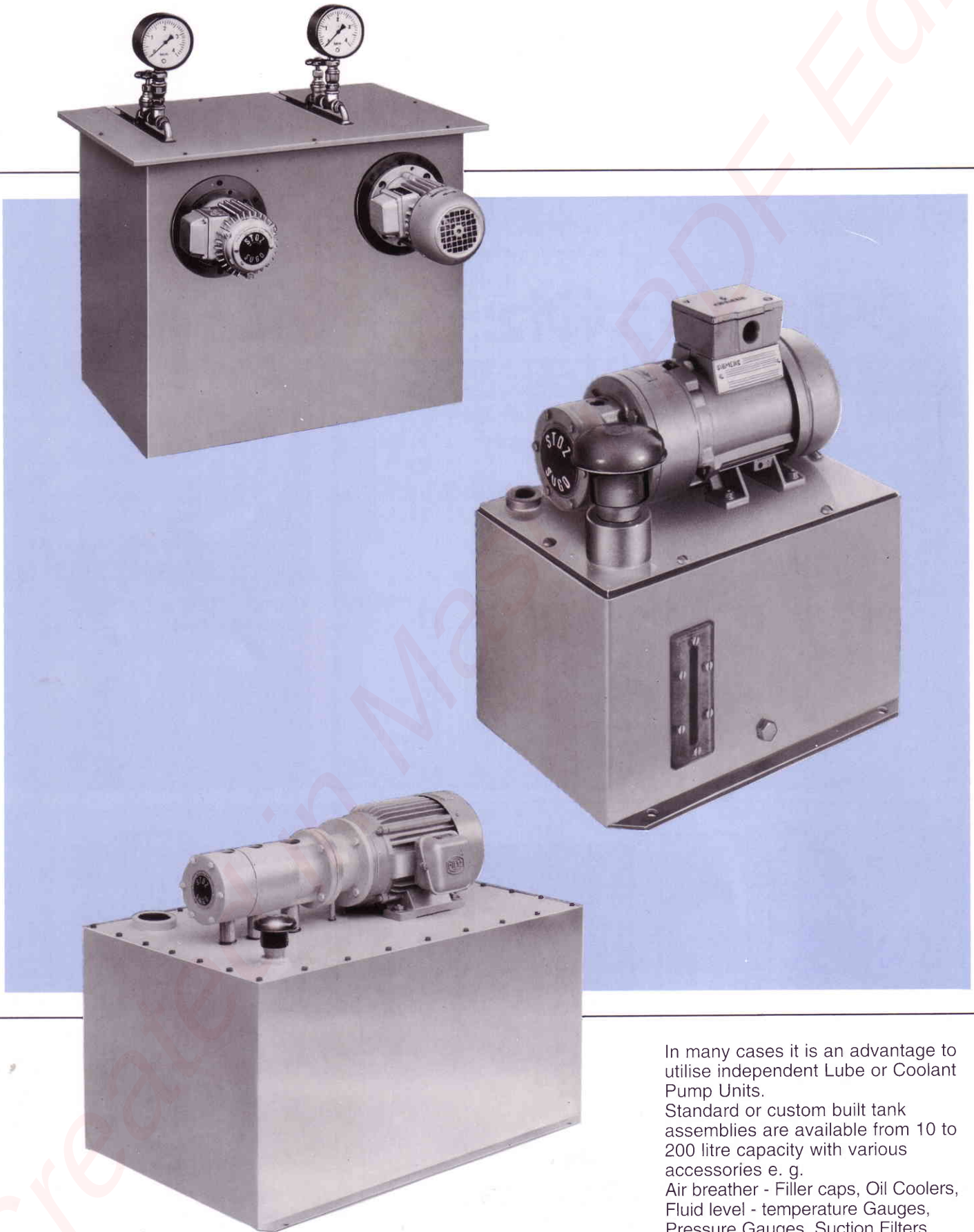
## PUMPENFABRIK

STOZ SUGO pumps ensure trouble free circulation of all lubricating and cooling liquids



# STOZ SUGO Motorised Pump Assemblies

single or multicircuit  
types  
ready for connection, mounted  
on oil or coolant container



In many cases it is an advantage to utilise independent Lube or Coolant Pump Units.

Standard or custom built tank assemblies are available from 10 to 200 litre capacity with various accessories e. g.

Air breather - Filler caps, Oil Coolers, Fluid level - temperature Gauges, Pressure Gauges, Suction Filters and Valves. Tank Fittings.



The STOZ SUGO multicircuit pump is composed of a combination of flange and Shaft mounted Annular pumps. Their special feature is that the single lubrication points can be supplied independently from each other with **equal or differing quantities required and pressure.**

The delivery flows of the single pumps can be designed from 1–50 dm<sup>3</sup>/min.

The direction of flow can also be carried out differently, necessary for instance with the combination of a delivery and suction pump.

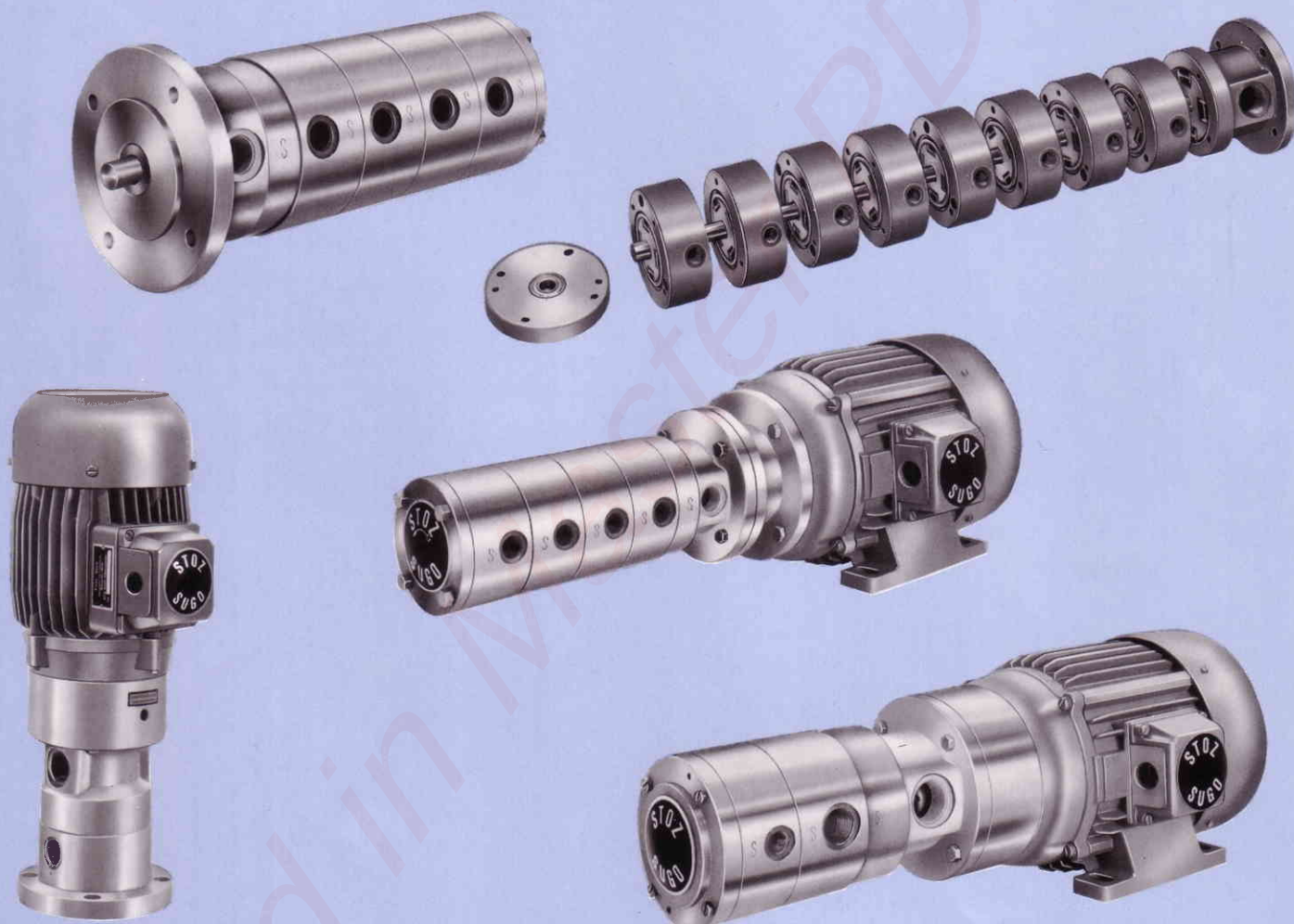
When using oils of different viscosity or with varied operating pressures at the lube points, the single pumps are sealed between each other.

The pumps are supplied with or without driving motors.

The design of the STOZ SUGO multicircuit pumps is adapted to specific requirements and supplied to individual dimension sheet.

In construction and operation the multicircuit pumps correspond to the STOZ SUGO pumps that have stood the test of time owing to their operating dependability and long service life.

## STOZ SUGO multicircuit pump



The electric motors used are manufactures of leading German manufacturers.

Beside the normal range of voltage 220/380 volts, 50 Hz the can also be supplied:

in all usual special voltages to CSA regulation or explosion proof up to ignition group T 4

or airtight enclosed

also for single phase alternating current, or direct current.

The performance data and references to the performance data lie within the range of the tables and information on pages 6 and 7.

# STOZ SUGO Pumps Type N and KSW

STOZ SUGO pumps are self priming cell pumps

### Fields of application

see pages 2, 3, 4 and 5, as oil lubricating and coolant pumps

### Type of construction

with flange, foot mounted flange mounted

### Type N

Oil lubricating and coolant pump for fixed direction of rotation, other direction of rotation-reversed direction of flow, delivery remains constant.

### Type KSW

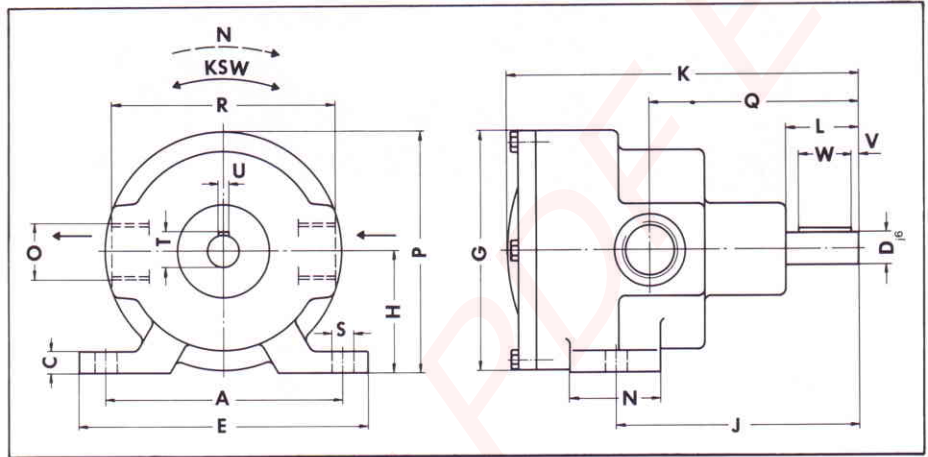
Oil lubricating pump for changing direction of rotation with constant direction of flow, without reversing valve.

### Installation

horizontally and "vertically mounted pump, shaft upward"



Foot

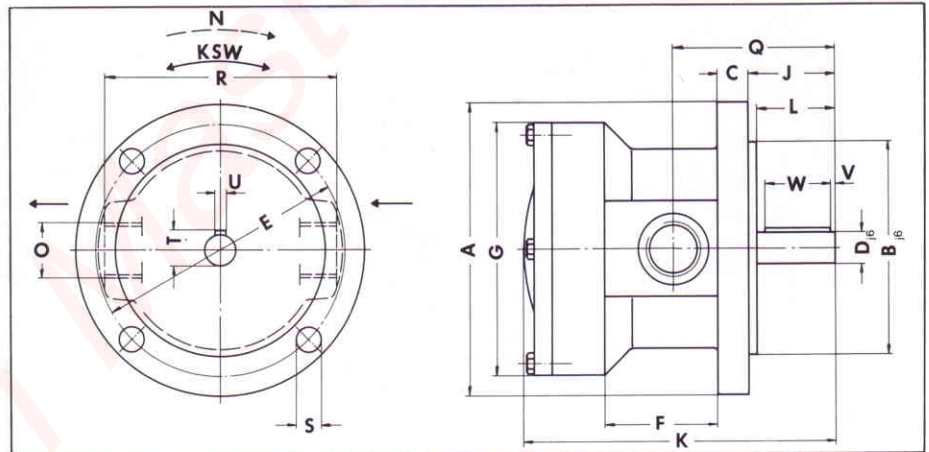


Dimension table type N and KSW foot

Size	A	C	D <sub>6</sub>	E	G	H	J	K	L	N	O	P	Q	R	S	T	U	V	W
0	85	8	12	105	79	44	93	125	28	30	R 1/2"	83	83	74	8.5	13.5	4	3	20
1	90	8	12	110	91	46	93	134	28	35	R 1/2"	91	80	84	8.5	13.5	4	3	20
2	90	8	12	110	91	46	101	146	28	35	R 1/2"	91	85	83	8.5	13.5	4	3	20
3	104	9	15	130	117	60	120	171	35	60	R 1"	119	90	107	11	17	5	4	25



Flange



Dimension table type N and KSW flange

Size	A	B <sub>6</sub>	C	D <sub>6</sub>	E	F	G	J	K	L	O	Q	R	S	T	U	V	W
0	100	60	10	12	83	29	79	28	94	25	R 1/2"	50	73	6.5	13.5	4	2	20
1	110	80	11	12	95	43	96	33	119	30	R 1/2"	62	88	9.5	13.5	4	2	25
2	110	80	11	12	95	45	96	33	131	30	R 3/4"	67	87	9.5	13.5	4	2	25
3	140	100	12	15	120	70	117	38	171	35	R 1"	93	108	10.5	17	5	4	25
4	160	120	12	20	140	-	120	38	209	35	R 1 1/2"	125	109	10.5	22.5	6	4	25

Performance table type N and KSW, foot and flange

size	speed rpm	flow Q normal dm <sup>3</sup> /min	flow Q as required dm <sup>3</sup> /min	Power required KW	P appr. weight kilos foot	weight kilos flange
0		6	1-5	0.25	2.2	2.2
1		15	9-14	0.37	2.5	3.5
2	1500	24	18-22	0.55	2.8	3.8
3		50	30-45	1.1	6.3	8.2
4		100	55-90	2.2	-	11.0

The data of the performance table refer to:  
Tubes with inside diameter according to BSP tube thread  
Suction height 0.75 m  
Lubricant ISO VG 32 (cSt/40° C)  
Ambient temperate 293 K (20° C)  
Pressure 3 bar

**Please state in all cases operating data or particular operating conditions other than above see data on page 7.**

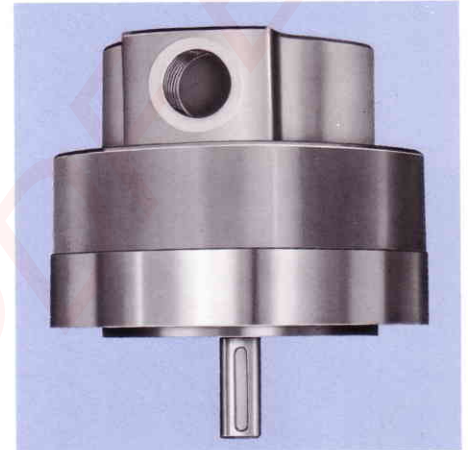
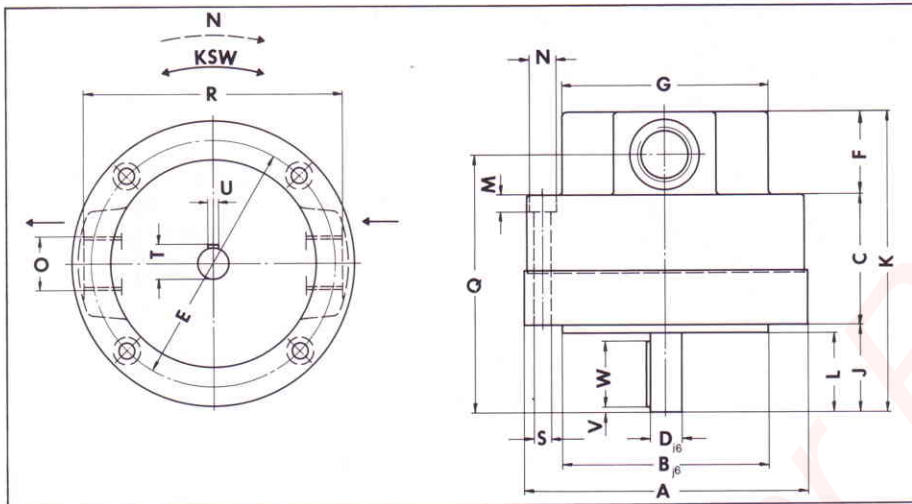
# STOZ SUGO Pumps Type N and KSW Model "V"

## Installation

"vertically mounted pump, shaft downward" and horizontal  
Connection dimensions for fixing and drive, delivery flow and power required similar to flange types N and KSW

## Exception

Size 4 Flange mounted Type works in any mounting position.



Model "V"



Type KSW (exploded view)

## Dimensions table Flange Types N and KSW model "V"

Size	A	B <sub>ø</sub>	C	D <sub>ø</sub>	E	F	G	J	K	L	M	N	O	Q	R	S	T	U	V	W
0	100	60	45	12	83	27	70	28	100	25	6	10,5	R 1/2"	86	89	6,5	13,5	4	2	20
1	110	80	50	12	95	32	80	33	115	30	6	10,5	R 1/2"	99	101	6,5	13,5	4	2	25
2	110	80	54	12	95	43	80	33	130	30	6	10,5	R 3/4"	107	100	6,5	13,5	4	2	25
3	140	100	74	15	120	50	100	38	162	35	8	13,5	R 1"	134	126	8,5	17	5	4	25

Data of output capacity in relation to speed, pressure, oil viscosity and suction height.

## Output Capacity

- as per performance table  $\pm 10\%$
- varies according to oil, number of revolutions and suction height see characteristic curve page 9
- up to 1,500 rpm. linear, then constant

## Oil viscosity

- up to 10,000 mm<sup>2</sup>/s (cSt)

## Drive Speed

- minimum 100 rpm. at maximum suction height of 300 mm
- maximum 3,000 rpm with size 0-2
- from 2,000 rpm with special bearings dimension K is cover side ca. 10 mm longer

## Suction height

- 2 m at 1,500 rpm. otherwise depending upon number of revolutions and oil viscosity

## Pressure

- 3 bar
- with special bearings for up to 10 bar dimension K is cover side ca. 10 mm longer

## Temperature

- up to 373 K (100° C)
- special models for up to 473 K (200° C)

## Vibration

- screwed parts secured

## Maintenance

- not required because all pumps are designed for self lubrication by the pumped lubricant



# STOZ SUGO Shaft Mounted Annular Pumps Type N and KSW

STOZ SUGO Annular Shaft mounted pumps are self priming cell lubrication pumps "without shaft" as per construction designs approved and known for decades.

**Typical application**  
see pages 2, 3, 4 and 5  
as an oil lubricating pump

**Type of Drive**

Direct mounting on available shaft the rotor is driven by a suitable key or stud see Dim: L

**Mounting**

Either by fixing to a machined face or via a mating spigot in the shaft bore

**Mounting position**

horizontal or vertical the pump cover must be below when mounted

**Mounting**

with light sliding fit not keyed on

**Type N**

for fixed direction of rotation, other direction of rotation reverses direction of flow, delivery volume remains the same

**Type KSW**

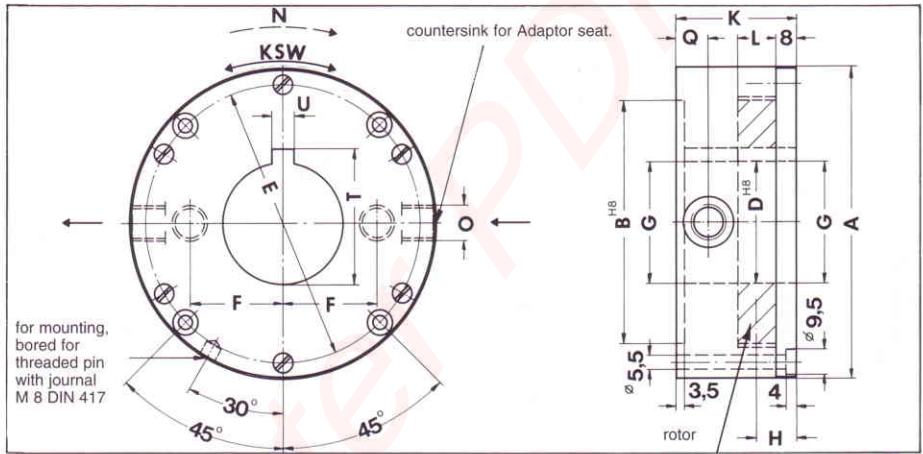
for changing direction of rotation with constant flow direction, without reversing valves

**Standard type**

without seals (internal fitting within the gear box or machine)



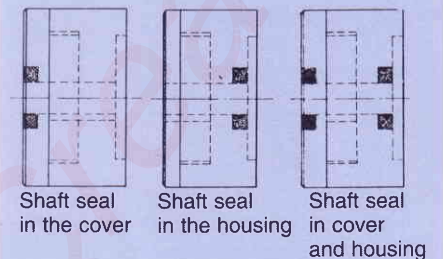
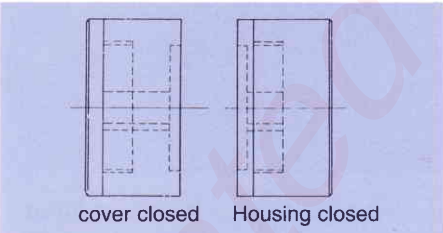
Normal type for internal Mounting



Normal type opened

**Performance and dimensions table Types N and KSW**

size	bore dia Housing outside dia		rpm		normal dm <sup>3</sup> /min with normal rpm as per requirements	Power required P KW	weight appr. kilos	A	B <sup>H8</sup>	D <sup>H8</sup>	E	F	G	H	K	L	O	Q	T	U
	normal	maximum	normal	maximum																
0	15/85	1500	2400			2.0	85	60	15	73	20	15.2							18	5.2
	30/100	1200	1900	6	1.5	0.25	2.2	100	75	30	88	27	30.2	15	45	14	R <sup>1/2</sup> "	12	35	8.2
	45/115	1000	1500				2.6	115	90	45	103	35	45.2						50	8.2
1	60/130	800	1300				3.2	130	105	60	118	43	60.2						65	8.2
	15/105	1500	1800				3.2	105	75	15	93	27	15.2						18	5.2
	30/120	1200	1500	15	9-14	0.37	4.0	120	90	30	108	35	30.2	15.5	55	15	R <sup>1/2</sup> "	18	35	8.2
	45/135	1000	1300				5.1	135	105	45	123	42	45.2						50	8.2
2	60/150	800	1100				6.3	150	120	60	138	50	60.2						65	8.2
	15/105	1500	1800				4.1	105	75	15	93	27	15.2						18	5.2
	30/120	1200	1500	24	18-22	0.55	5.1	120	90	30	108	35	30.2	20	70	24	R <sup>1/2</sup> "	20	35	8.2
	45/135	1000	1300				6.5	135	105	45	123	42	45.2						50	8.2
	60/150	800	1100				7.8	150	120	60	138	50	60.2						65	8.2



**Bore diameter**

can be increased by up to 5 mm without modification of the diameter, Keyway depth 2,5 mm

**Bore diameter**

Larger than 65 mm see dimension sheet 3.03.000

**Threaded Ports plane side**

Dimension F, where utilized the internal spigot is omitted, locate pump j 6 ground outside diameter

**External mounting**

closed version or with shaft seal, as per margin sketches  
Shaft seal in the cover = Dimensions K, H and B are respectively 5 mm larger

Corer fastening with hexagonal screws.

Fastening bore without lowering.

The data of the performance table refer to: Tubes with inside diameter according to BSP tube thread

Suction height 0.75 m

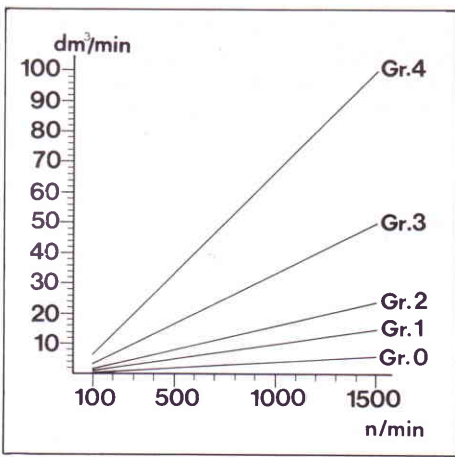
Lubricant ISO VG 32 (cSt/40° C)

Ambient temperature 293 K (20° C)

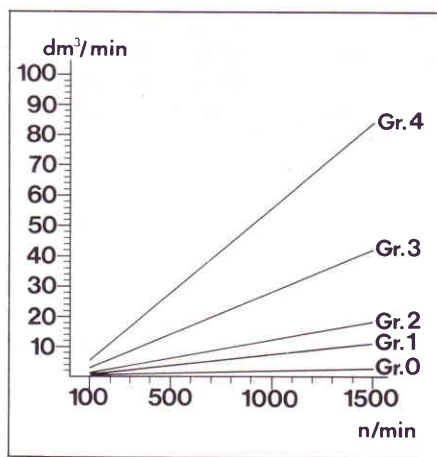
Pressure 3 bar

**Please state in all cases operating data or particular operating conditions other than above. See data on Page 7.**

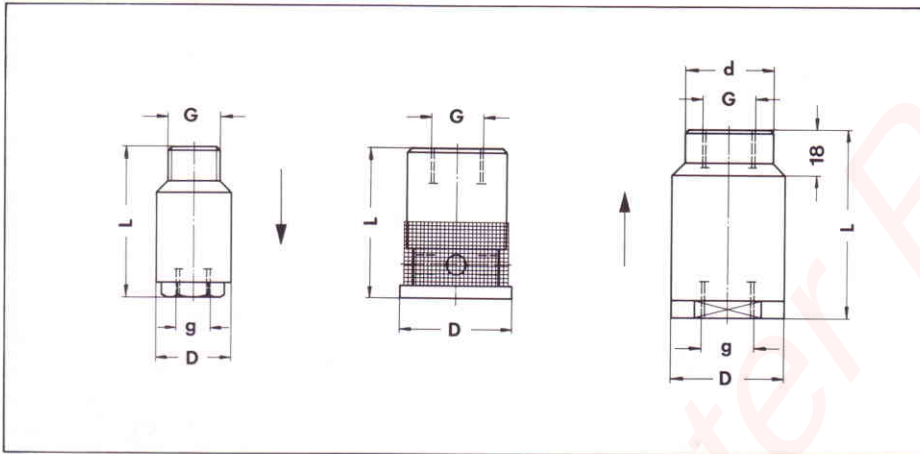
Delivery quantities of STOZ SUGO Pumps Type N and KSW with different oil viscosities



With oil ISO VG 32 (cSt/40° C), pressure 3 bar  
Suction height 0.75 m as from 250 rpm  
Ambient temperature 293 K (20° C)



With oil ISO VG 150 (cSt/40° C), pressure 3 bar  
Suction height 0.75 m as from 250 rpm  
Ambient temperature 293 K (20° C)



**Relief pressure valve**

Size	D	G	g	L
0	30	R 1/2"	R 1/2"	60
1	30	R 1/2"	R 1/2"	60
2	30	R 3/4"	R 1/2"	60
3	50	R 1"	R 1/2"	100
4	50	R 1 1/4"	R 3/4"	100

**Suction foot valve**

Size	D	G	L
0	45	R 1/4"	60
1	45	R 1/2"	60
2	45	R 3/4"	60
3	65	R 1"	100
4	65	R 1 1/4"	100

**Suction non return valve**

Size	D	d	G=g	L
0	45	35	R 1/4"	75
1	45	35	R 1/2"	75
2	45	35	R 3/4"	75
3	65	60	R 1"	100
4	65	60	R 1 1/4"	100



These valves are required according to operating conditions i. e. with low number of revolutions or high suction heights and for limitation of the pressure. Size of valves and connection threads correspond to sizes of pumps.

**Pressure Relief Valves**

- spring loaded
- mounting position optional
- direction of flow as per sketch
- used where closure of pressure pipe is possible
- return pipe required from Relief valve

**By pass valve**

- fitted into the pump cover
- for pressure relief whilst regulating the output flow
- only suitable where partial closure of the pressure line occurs
- where direction of rotation and flow differs from sketch 6, details must be stated on ordering

**Suction valves**

- ball loaded
- vertical mounting only

**Suction foot valve**

- for incorporation in the oil sump

**Suction non-return valve**

- for incorporation in the suction line at any point
- direction of flow as per sketch

**Suction filter**

- same dimensions as suction valves
- width of mesh 0.75 mm<sup>2</sup>

**STOZ SUGO Pumps Types N et KSW**

with integral by pass valve

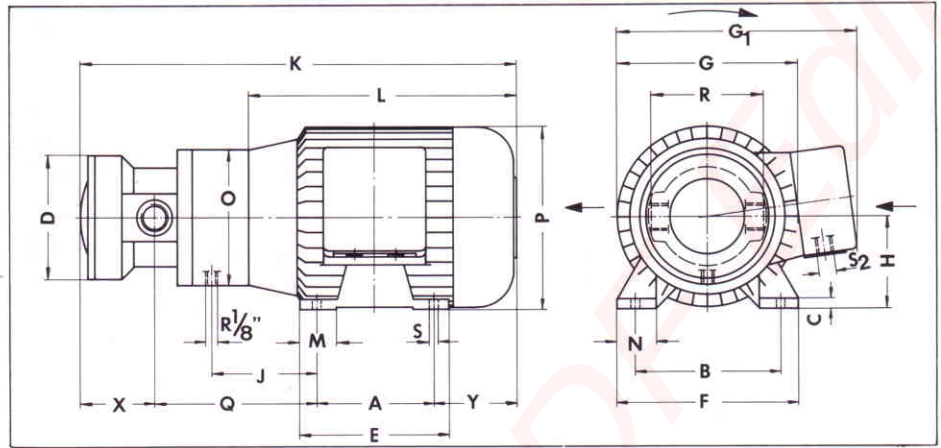
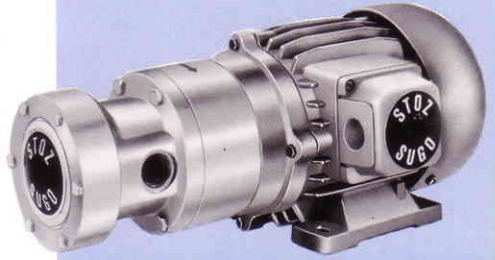


# STOZ SUGO Motorised Pumps Type EF

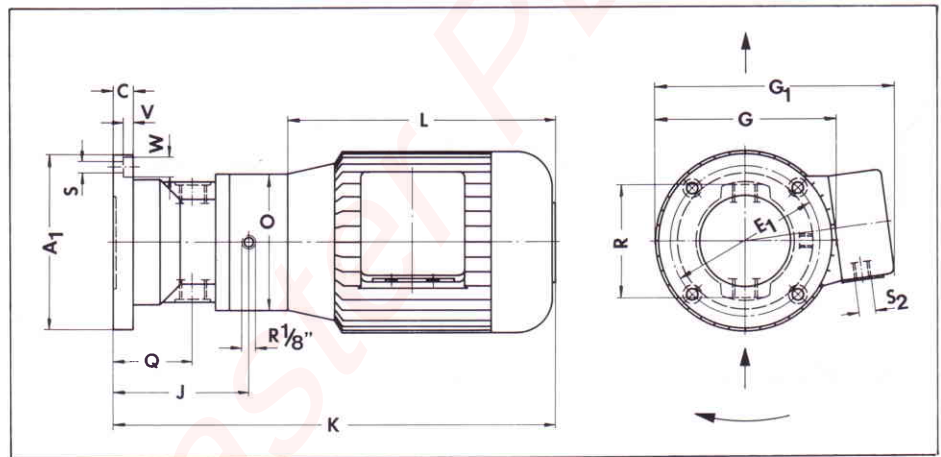
Pump types EF in 6 different sizes and 3 designs provide a range of delivery from 1–100 dm<sup>3</sup>/min for delivery of oil and from 1–24 dm<sup>3</sup>/min also for coolant.

As motorised pumps with independent drive these designs are particularly advantageous, in that they deliver a guaranteed constant oil delivery.

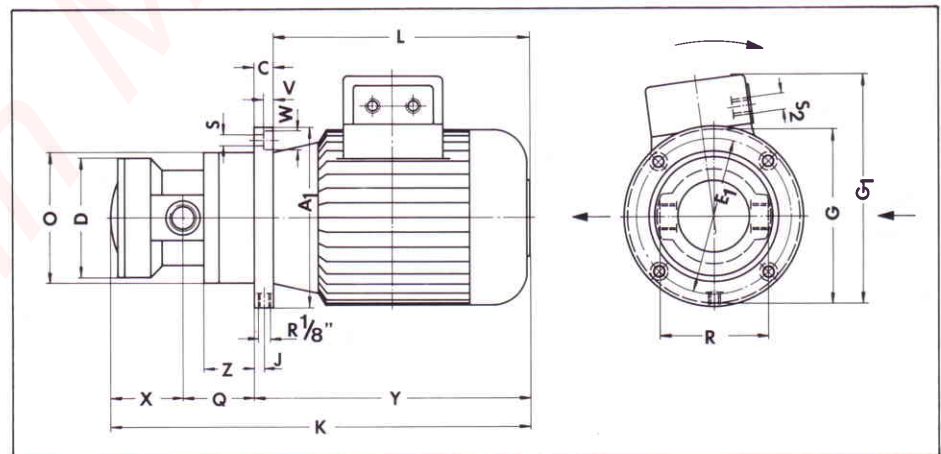
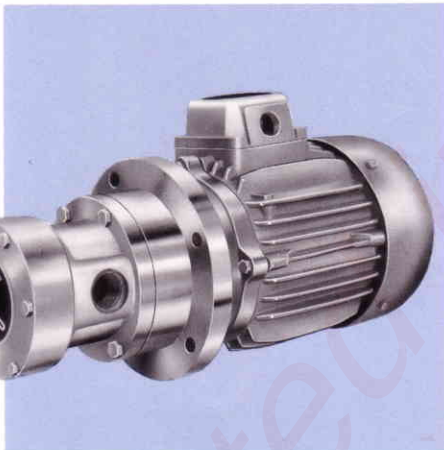
Standard:  
terminal box at the top



Type EF-N



Type EF-A



Type EF-V

## Characteristics of motors

### Standard type

from 0.18 to 3.0 KW in the multiple current  
220-255/380-440 volts, 50 Hz  
220-280/380-480 volts, 60 Hz  
safe voltage variations: ± 5%  
tropical insulation protection IP 54  
Isolation "F"

### Special Versions

all usual voltages to CSA-regulation explosion  
proof up to ignition group T 4 air tight enclosed

### higher driving capacity

required with lubricant as from  
ISO VG 100 (cSt/40° C) or pressure of more  
than 3 bar after drawing SK 4.809-811



The data of the performance table refer to:  
 Tubes with inside diameter according to BSP tube thread  
 Suction height 0.75 m  
 Lubricant ISO VG 32 (cSt/40° C)  
 Ambient temperature 293 K (20° C)  
 Pressure 3 bar

Please state in all cases when ordering or enquiring, operating data or particular operating conditions such as different oil viscosity, higher pressure, ambient or oil temperature and, for example if machine vibrations are present or likely.

# STOZ SUGO Electropumps Type EF

## Performance and dimensions table type EF

Type	EF			EF			EF			EF			EF			EF		
	N-00	A-00	V-00	N-0	A-0	V-0	N-1	A-1	V-1	N-2	A-2	V-2	N-3	A-3	V-3	N-4	A-4	V-4
Suction and pressure connection	R 1/4"			R 1/4"			R 1/2"			R 3/4"			R 1"			R 1 1/4"		
Pressure bar	3			3			3			3			3			3		
Delivery flow Q normally dm <sup>3</sup> /min	6			6			15			24			50			100		
as per requirement dm <sup>3</sup> /min	1-5			1-5			9-14			18-22			30-45			55-90		
Power delivery KW	0,18			0,25			0,37			0,55			1,1			2,2		
Current consumption A with 380 volts, 50 Hz	0,5			0,8			1,1			1,55			2,8			4,9		
Number of revolutions/min	1500			1500			1500			1500			1500			1500		
Weight appr. kilos	7			11			13			16			24			50		
A, A <sub>1</sub>	71	115	145	90	115	145	90	135	145	100	135	160	100	160	180	140	180	210
B	90			112			112			125			140			160		
C	8,5	16	16	9	16	16	9	16	16	10	16	16	10	16	16	12	26	20
D	78			78			95			95			117			120		
E, E <sub>1</sub>	90	95	125	115	95	125	115	115	125	125	115	140	130	140	160	175	150	185
F	110			138			138			156			170			197		
G	110	110	110	143	143	143	143	143	143	160	160	160	178	178	178	198	198	198
G <sub>1</sub>	147	147	147	183	183	183	183	183	183	199	199	199	228	228	228	252	252	252
H	56			71			71			80			90			100		
J	61	86	8	75	86	8	59	120	8	80	116	8	87	163	8	103	211	10
K	273	279	273	311	323	317	331	341	337	369	379	375	438	437	438	556	556	556
L	168	168	168	201	207	207	201	207	207	227	233	233	242	242	242	305	305	305
M	25			28			28			30			32			40		
N	23			30			30			35			35			40		
O	105	105	105	105	105	105	105	105	105	120	120	120	140	140	140	160	160	160
P	111			141			141			159			179			199		
Q	101	46	49	115	46	54	118	61	57	128	68	62	173	77	101	230	85	147
R	72	72	72	72	72	72	88	88	88	87	87	87	108	108	108	109	109	109
S	6	9,5	9,5	7	9,5	9,5	7	9,5	9,5	9	9,5	9,5	9	9,5	9,5	11,5	11	11
S <sub>2</sub>	1 x PG 9			2 x PG 11			2 x PG 11			2 x PG 11			2 x PG 16			2 x PG 16		
V	8			8			8			8			8			11		
W	14,5			14,5			14,5			14,5			14,5			18,5		
X	40			40			57			57			64			64		
Y	61			184			66			223			66			223		
Z	33			38			39			39			58			72		

The data on page 7 are, if any, also applicable.

### Technical Data

#### Drive

via flexible coupling

#### Direction of rotation

marked by red arrows

#### Direction of flow

marked by S + D, must not be changed

#### Leakage oil bore

R 1/8", marked by adhesive label, when mounting this must be at the lowest point, in order to prevent any leakage oil from the pumps from entering the motor.

#### Installation

in any position

with vertical configuration pump must be below

The dimensions of the motors refer to make "Bauknecht". With other makes of motors the non standardised dimensions may vary slightly.

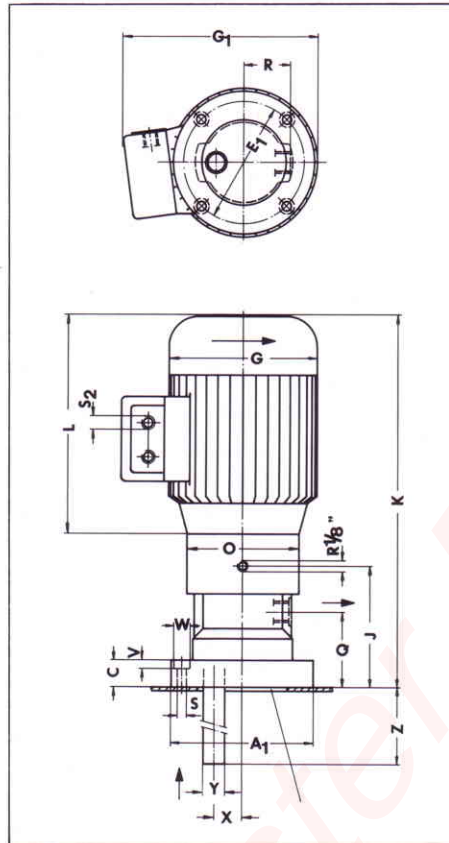
# STOZ SUGO Immersion pressure pumps Type STD

Type STD is a self priming motorised pump available in 5 different sizes for delivery of oil or coolant ranging from 1–50 dm<sup>3</sup>/min.

It serves for removing swarf laden coolant by pressure or to supply

remote cooling and lubricating points via narrow tubes.

The Pump is mounted directly on the reservoir with the suction tube of up to 500 mm entering the tube tank.



**Performance and dimension table Type STD**

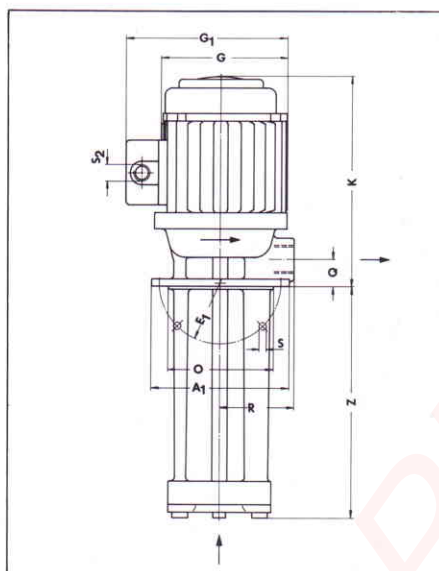
Type	STD 00	STD 0	STD 1	STD 2	STD 3
Suction and pressure connection	R 1/4"	R 1/4"	R 1/2"	R 3/4"	R 1"
Pressure bar	3	3	3	3	3
Delivery flow Q normally dm <sup>3</sup> /min	6	6	15	24	50
as per requirement dm <sup>3</sup> /min	1–5	1–5	9–14	18–22	30–45
Power delivery KW	0,18	0,25	0,37	0,55	1,1
Current consumption A with 380 volts, 50 Hz	0,5	0,8	1,1	1,55	2,8
Number of revolutions/min	1500	1500	1500	1500	1500
Weight appr. kilos	7,5	11,5	13,5	16,5	24,5
A <sub>1</sub>	115	115	135	135	160
C	26	26	26	26	32
E <sub>1</sub>	95	95	115	115	140
G	110	143	143	160	178
G <sub>1</sub>	147	183	183	199	228
J	96	96	130	126	179
K	289	333	351	389	453
L	168	207	207	233	243
O	105	105	105	120	140
Q	56	56	71	78	93
R	36	36	44	44	54
S	9,5	9,5	9,5	9,5	9,5
S <sub>2</sub>	1 x PG 9	2 x Pg 11	2 x Pg 11	2 x Pg 11	2 x Pg 16
V	8	8	8	8	8
W	14,5	14,5	14,5	14,5	14,5
X	21,5	21,5	27	27	34
Y	13,5	13,5	21,5	27	33,5
Z	200 250 300	200 250 300	200 250 300	200 250 300	200 250 300

All other data are as type EF, pages 10 and 11.

STOZ SUGO coolant pump with standard dimensions as per DIN 5440 offer, owing to their quality, the guarantee for reliable coolant supply of machine tools.

Pumps with larger delivery, larger immersion depth, higher pressure or for higher temperatures are available on request.

## STOZ SUGO coolant pumps to DIN 5440



Immersion pumps Types TB 25, TB 63, TB 250

### Performance and dimension table Types TB 25, TB 63, TB 250

Type	TB 25 /90/120/170/220/270	TB 63 /90/120/170/220/270	TB250 /200/270/350
Pressure connection	R 3/4"	R 3/4"	R 1"
Head HJ maximum	4 m	6 m	12 m
Delivery flow Q with head of 2 m and coolant ISO VG 2 (cSt/40° C)	30 dm <sup>3</sup> /mn	75 dm <sup>3</sup> /mn	250 dm <sup>3</sup> /mn
Power delivery	0.1 kW	0.21 kW	0.63 kW
Current consumption with 380 V, 50 Hz	0.22 A	0.41 A	1.5 A
Number of revolutions/min	2700	2800	2750
Weight appr. kilos	/4.2/4.4/4.6/5.0/5.5	/4.8/5.1/5.5/5.8/6.1	/12/12.5/13
A <sub>1</sub>	130	130	180
E <sub>1</sub>	115	115	160
G	91	91	138
G <sub>1</sub>	126	126	174
K	137	137	223
O	100	100	140
Q	25	25	32
R	70	70	100
S	7	7	7
S <sub>2</sub>	Pg 11	Pg 11	Pg 11
Z	/90/120/170/220/270	/90/120/170/220/270	/200/270/350

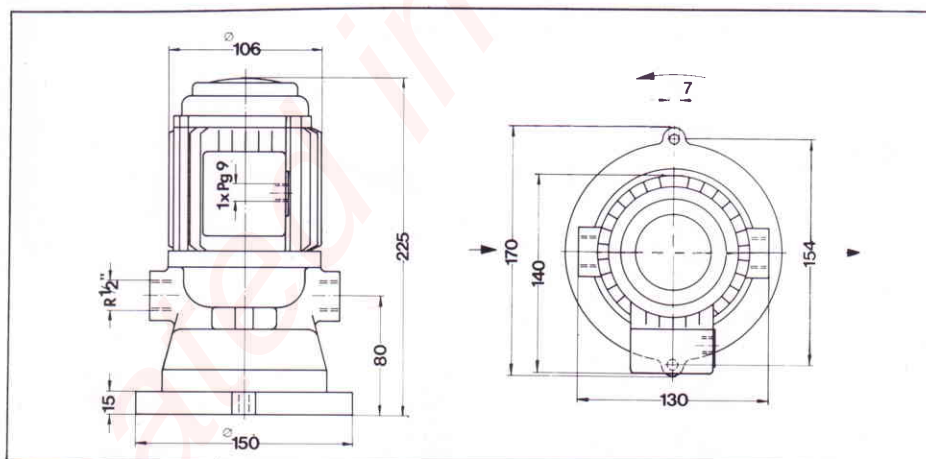
### Motor data voltage

Multiple current range 220–250 Δ / 380–440 Y volts, 50 + 60 Hz

### Insulation

Class B, tropical insulation

Protection IP 54



Suction pumps Type EV 1

### Performance table Type EV 1

Type	weight appr. kilos	Power delivery	Consumption of power with 380 V 50 Hz	rpm.	Delivery flow Q with 2 m head and coolant ISO VG 2 (cSt/40° C)	Suction height H maximum	Head H maximum
EV 1	7	0.06 kW	0.22 A	2800	30 dm <sup>3</sup> /min	0.3 m	5 m

**Before first using,  
please do filling.**



# STOZ SUGO Pumps for any mounting conditions

On request the pumps can be widely adapted to the specific local conditions, for this purpose a mounting sketch is required.

The pumps shown below illustrate a small selection of "custom built" units where customers' specific requirements regarding drive and

mounting methods, as well as dimensions, output and duty were met, thereby eliminating many earlier design, installation and functional problems.

Due to continual developments, we reserve the right to make changes in design, dimensions and weight.



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