

OPTIMIZE FLUID PROCESSING

CONSTANT FLOW SCREW PUMPS FOR HIGH-VISCOSITY LIQUIDS

**CURTISS-
WRIGHT**

CURTISSWRIGHTDS.COM



**TRUSTED
PROVEN
LEADER**

+ Products + Capabilities + Solutions



TRAIN TILTING



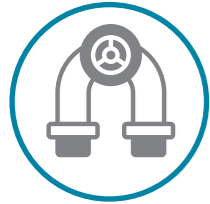
CAMERA CRANE
STABILIZATION



HIGH VISCOSITY
PUMPS

Dispense High-Viscosity Fluids Accurately

Ensure an accurate and constant flow of high-viscosity fluids with robust and reliable screw pumps from Curtiss-Wright Drive Technology. Our constant flow SUP screw pumps are engineered and manufactured to enable a continuous distribution of paste-like fluids. They are ideal for any manufacturing application where high-viscosity liquids must be distributed across several stages in a production line, including the processing of:



▶ Food (chocolate mixtures, including those with nut pieces, fats, licorice, food oils, and syrups)

▶ Cosmetics (with self-lubricating properties)

▶ Machine oils

Every system we deliver is configured to address the unique technical and environmental requirements of the specific manufacturing operation it will be integrated in. For example, our constant flow screw pump is certified for food manufacturing in accordance with the "Declaration of conformity for food processing machinery."

Optimize Manufacturing Operations

Our screw pumps are engineered to provide years of unmatched levels of precision and reliability processing high-viscosity fluids with self-lubricating properties.

Pumps are available in multiple sizes and configurations to handle a variety of liquids and a wide range of viscosities, operating pressures, and flows. All pumps are optimized for quiet operation and to deliver a smoother and more consistent flow of high-viscosity fluids compared to centrifugal pumps.

To streamline operations, flow is maintained at a constant, pre-configured rate as fluid is moved axially through processing lines. The constant flow reduces backpressure and turbulence in the production process, and eliminates foaming as liquid is moved through multiple manufacturing stages. Constant flow also reduces mechanical vibration in the pump and in connected systems. This prolongs the life of all connected fluid transfer components, including pipes, hoses, and seals.



In addition, the double-walled heating jacket enables the temperature of the pumped fluid to be controlled with steam or hot water.

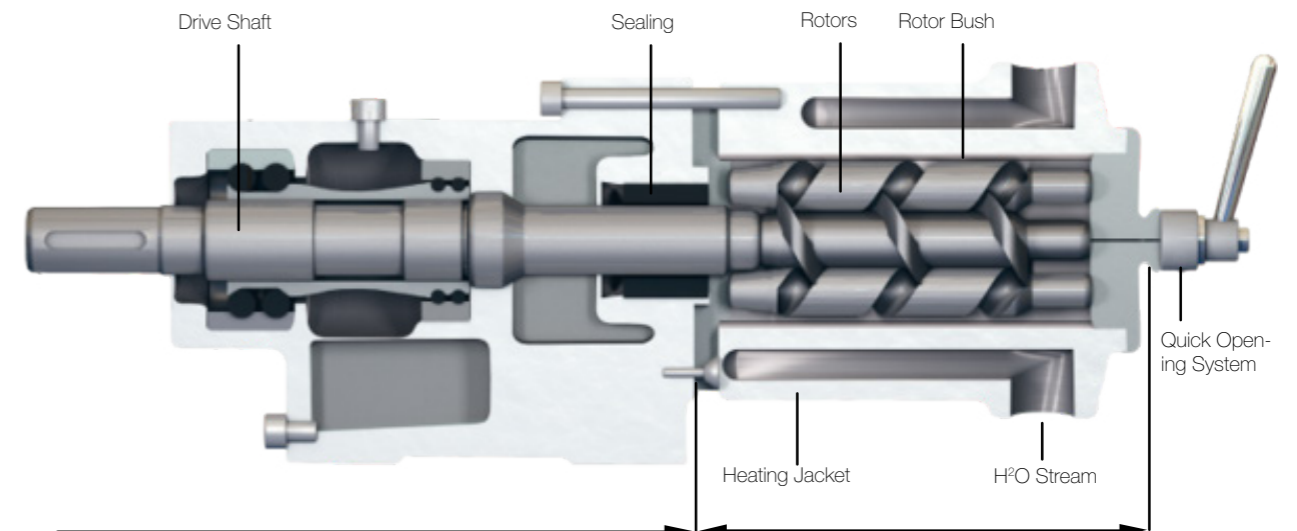
Precision-Engineered for Worry-Free Operation

With only four moving parts, our constant flow pumps are precision-engineered for continuous and virtually maintenance-free long-term operation. They have been field-proven over more than 70 years of reliable operation in manufacturing centers around the world.



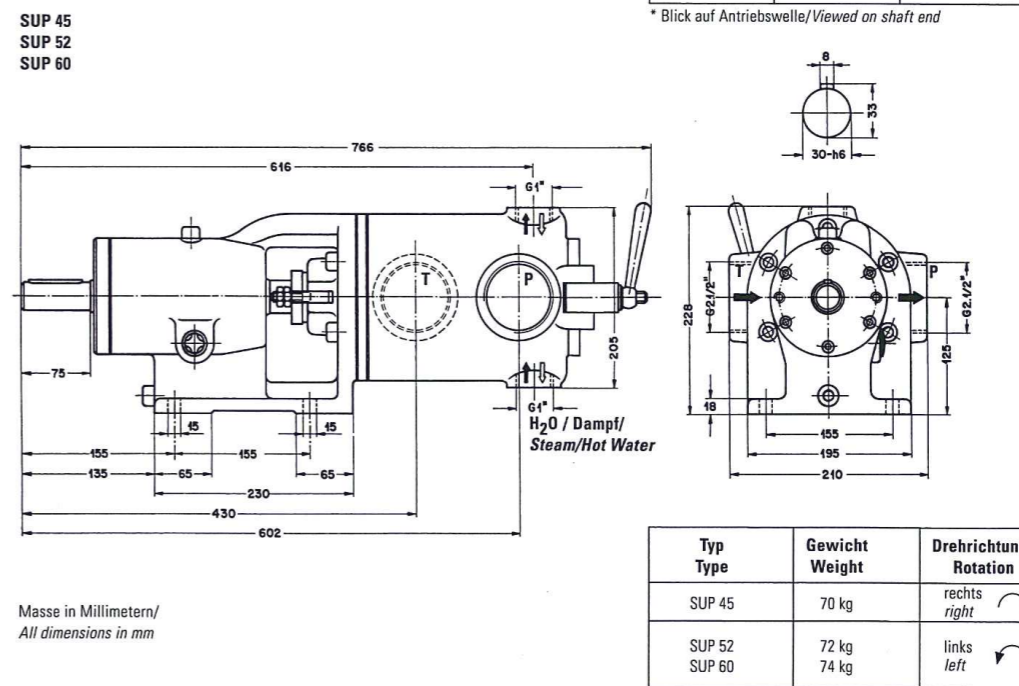
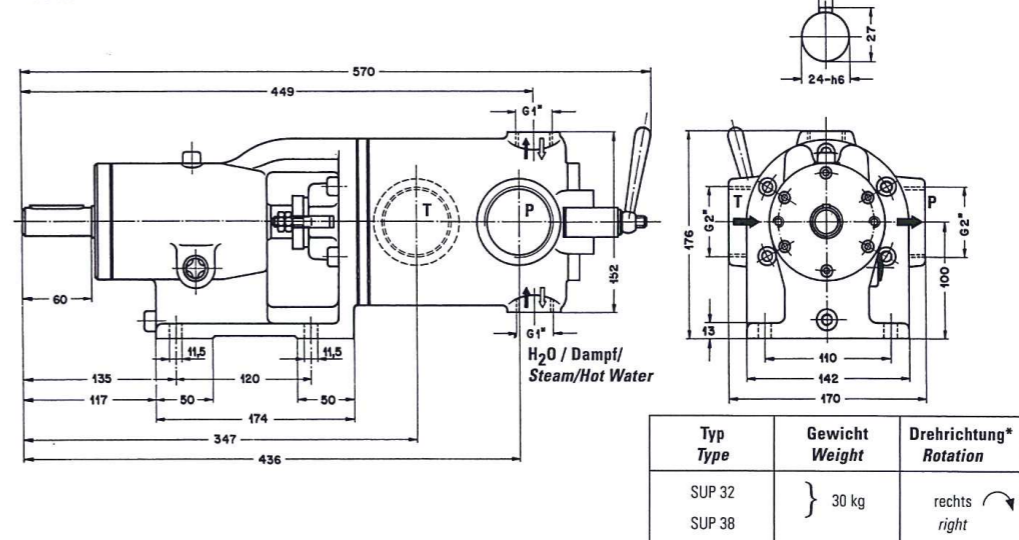
How it works:

Curtiss-Wright Drive Technology SUP screw pumps are comprised of three rotors: a center rotor, which is driven by a drive shaft, and two idling side rotors driven by the center rotor. These rotors are encased in a closely fitting rotor bush.



SUP 32
SUP 38

Drive Section Pumping Section



Masse in Millimetern/
All dimensions in mm

Designed for Reliable Long-Term Service

Our precision-engineered SUP screw pump:

- ▶ Offers flexible configuration for a variety of applications
- ▶ Provides high working pressure up to 15 bar maximum output
- ▶ Delivers a smoother, consistent, and continuous flow of high-viscosity fluids
- ▶ Enables an adjustable flow within a dynamic range of viscosity
- ▶ Ensures reliability because there are fewer parts to maintain

Simplifies cleaning and maintenance operations with a fast-opening system that makes it easier to access and replace parts when needed

This unique pump rotor design enables a constant and exceptional medium flow of any high-viscosity liquid. Interlocking the rotors creates sealed chambers through which the pumped liquid is conveyed. The sealed chambers keep liquid processing and pump lubrication separate at all times so neither liquid is contaminated.

When the center rotor is rotated by the drive shaft, the sealed chambers receive the liquid to be pumped at the suction side of the pump and convey it in an even stream to the delivery side, at which point it is subjected to the system pressure for the application.

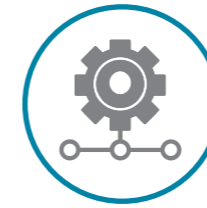
This unique design makes the SUP more efficient and reliable compared to comparable gear, lobe, and diaphragm pumps on the market, making it ideal for complex pumping applications where long pipe lengths must be considered.



Specifications

Material	The main components of the pump are made of special cast iron and steel. Rotors, rotor bushing, and the cover are specially "machine tool" hardened.
Mounting	Horizontal
Driving component	An electric motor fitted with a flexible coupling (both supplied as additional items). A pulley or geared drive is available on request.
Direction of rotation	Size of pump: SUP 32, 38, 45 right* Size of pump: SUP 52, 60 left* * when viewed from the drive shaft end
Working pressure	Maximum working pressure of the pumped medium: 15 bar Short-time maximum pressure: 30 bar Heating jacket (steam or water): 5 bar
Viscosity range	Normal operating area: 500 - 22,800 cSt Depends on the pumped medium, speed of rotation, pressure, and input pipe work layout - Viscosities up to 200,000 cSt may be possible.
Pump capacity	See Performance Table
Normal operating speed range	Normal operating speed range 500 - 1,500 min ⁻¹ * * depending on the condition of the pumped medium viscosity, pump size, input pipe work, etc.
Absolute suction height	Maximum 0.7 bar* * when the pump is in "flooded" condition and the pumped medium has low viscosity. For mediums with high-viscosity, positive pressure of supply is required.
Heating Jacket	Pumping section equipped with a double-walled heating jacket, to be operated with steam or hot water, at 5 bar.
Operating temperature	Up to 80° Celsius

Configured for a Variety of Applications



Our flexible SUP screw pumps can be configured for a variety of high-viscosity applications. Choose the pump that is right for your needs from the tables below. We can also work with you to configure a pump for your specific manufacturing process.

Note that due to the physical differences of liquids that can be handled, the performance specifications below are to be considered as average values only. Our engineering team will work with you to ensure you get the performance that best fits your manufacturing operation.

Size	Pressure bar	50 Hz drive										60 Hz drive										
		Speed n = 730 min ⁻¹										Speed n = 880 min ⁻¹										
		760 cSt		1'520 cSt		3'800 cSt		7'600 cSt		22'800 cSt		760 cSt		1'520 cSt		3'800 cSt		7'600 cSt		22'800 cSt		
	kW	L/min	kW	L/min	kW	L/min	kW	L/min	kW	L/min	kW	L/min	kW	L/min	kW	L/min	kW	L/min	kW	L/min		
SUP 32	0,5	0,36	20,0	0,44	20,3	0,55	18,5	0,77	16,5	1,39	12,5	0,40	24,5	0,47	24,8	0,58	23,0	0,88	21,0	1,55	17,0	
	5,0	0,68	18,3	0,81	18,6	1,08	16,6	1,45	14,9	2,21	11,0	0,77	22,8	0,92	23,0	1,25	21,2	1,72	19,4	2,42	15,5	
	10,0	0,99	16,5	1,18	16,8	1,61	14,7	2,13	13,3	3,01	9,5	1,14	21,0	1,39	21,3	1,91	19,3	2,57	17,8	3,61	14,0	
	15,0	1,30	14,8	1,54	15,0	2,15	12,8	2,81	11,7	3,82	8,0	1,51	19,3	1,87	19,5	2,57	19,5	3,42	16,2	4,78	12,5	
SUP 38	0,5	0,58	33,0	0,66	33,5	0,74	31,0	0,95	28,0	1,54	22,5	0,66	40,5	0,77	41,0	0,88	38,5	1,17	35,5	1,61	30,0	
	5,0	0,95	31,0	1,12	31,5	1,41	29,0	1,81	26,5	2,57	21,0	1,10	38,3	1,28	38,8	1,65	36,5	2,13	34,0	2,87	28,5	
	10,0	1,32	29,0	1,58	29,5	2,09	27,0	2,64	25,0	3,61	19,5	1,54	36,0	1,80	36,5	2,46	34,5	3,09	32,5	4,12	27,0	
	15,0	1,69	27,0	2,04	27,5	2,77	25,0	3,49	23,5	4,63	18,0	1,98	33,8	2,31	34,3	3,23	32,5	4,04	31,0	5,37	25,5	
SUP 45	0,5	0,92	54,0	0,99	55,0	1,11	52,0	1,47	49,0	2,13	41,0	1,14	65,0	1,25	66,0	1,36	63,0	1,80	60,0	2,57	54,0	
	5,0	1,41	50,0	1,63	51,0	2,02	49,0	2,57	46,5	3,53	39,0	1,69	61,5	1,98	62,0	2,35	59,5	2,89	57,5	4,04	52,0	
	10,0	1,91	46,0	2,28	47,0	2,94	46,0	3,68	44,0	4,93	37,0	2,24	58,0	2,68	58,0	3,38	56,0	4,19	55,0	5,52	51,0	
	15,0	2,41	42,0	2,92	43,0	3,86	43,0	4,78	41,5	6,32	35,0	2,79	54,5	3,42	54,0	4,37	52,5	5,37	52,5	6,99	49,5	
SUP 52	0,5	1,61	82,0	1,76	83,0	1,95	80,0	2,72	76,0	4,04	66,5	2,06	99,0	2,21	100,0	2,39	97,0	3,23	93,0	4,48	86,0	
	5,0	2,21	78,5	2,51	79,5	3,03	77,0	3,86	73,5	5,29	64,5	2,72	95,0	3,05	96,0	3,60	94,0	4,48	91,5	5,81	84,0	
	10,0	2,79	75,0	3,23	76,0	4,12	74,0	5,00	71,0	6,55	62,5	3,38	91,0	3,90	92,0	4,85	91,0	5,74	88,0	7,13	82,0	
	15,0	3,38	71,5	3,97	72,5	5,21	71,0	6,14	68,5	7,80	60,5	3,97	87,0	4,74	88,0	6,09	88,0	6,99	85,5	8,46	80,0	
SUP 60	0,5	2,64	121,0	2,79	112,0	3,09	118,0	4,19	114,0	6,18	103,0	3,27	146,0	3,38	147,0	3,71	143,0	4,78	139,0	6,32	130,0	
	5,0	3,34	115,5	3,75	116,5	4,45	113,5	5,63	110,0	7,65	100,0	4,04	141,0	4,48	142,0	5,22	139,0	6,32	135,5	8,02	126,0	
	10,0	4,04	110,0	4,71	111,0	5,81	109,0	7,06	106,0	9,12	97,0	4,85	136,0	5,55	137,0	6,69	135,0	7,87	132,0	9,71	122,0	
	15,0	4,74	104,5	5,66	105,5	7,17	104,5	8,50	102,0	10,59	94,0	5,66	131,0	6,64	132,0	8,16	131,0	9,42	128,5	11,41	118,0	
SUP 32		Speed n = 980 min ⁻¹										Speed n = 1'170 min ⁻¹										
		760 cSt		1'520 cSt		3'800 cSt		7'600 cSt		22'800 cSt		760 cSt		1'520 cSt		3'800 cSt		7'600 cSt		22'800 cSt		
		kW	L/min	kW	L/min	kW	L/min	kW	L/min	kW	L/min	kW	L/min	kW	L/min	kW	L/min	kW	L/min	kW	L/min	
		0,5	0,44	27,2	0,51	27,4	0,62	25,0	0,99	22,8	1,69	18,0	0,51	33,4	0,58	33,7	0,74	31,3	1,10	29,1	1,84	23,0
5,0	0,82	25,6	1,03	25,9	1,39	23,5	1,93	21,7	2,87	17,0	0,95	31,7	1,21	32,1	1,65	29,8	2,28	28,0	3,38	22,0		
10,0	1,21	24,0	1,54	24,3	2,17	22,0	2,87	20,5	4,04	16,0	1,39	30,0	1,84	30,4	2,57	28,3	3,45	26,8	4,93	21,0		
15,0	1,60	22,4	2,06	22,8	2,94	20,5	3,81	19,4	5,22	15,0	1,84	28,3	2,46	28,8	3,49	26,8	4,63	25,7	6,47	20,0		
SUP 38		0,5	0,74	45,5	0,88	46,0	0,99	43,0	1,32	39,0	2,06	31,5	0,84	54,5	1,03	55,0	1,17	52,5	1,61	49,0	2,87	42,0
		5,0	1,21	43,3	1,43	43,8	1,84	41,0	2,37	37,5	3,38	30,0	1,39	52,3	1,65	53,0	2,17	50,5	2,79	47,5	3,75	40,0
		10,0	1,69	41,0	1,98	41,5	2,68	39,0	3,42	36,0	4,71	28,5	1,95	50,0	2,28	51,0	3,16	48,5	3,97	46,0	5,37	38,0
		15,0	2,17	38,8	2,53	39,3	3,53	37,0	4,47	34,5	6,03	27,0	2,50	47,8	2,91	49,0	4,15	46,5	5,15	44,5	6,99	36,0
SUP 45		0,5	1,25	73,0	1,39	74,0	1,54	70,0	2,02	66,0	2,79	58,0	1,50	87,0	1,72	88,0	1,87	84,0	2,42	80,0	4,12	72,0
		5,0	1,87	69,0	2,17	70,0	2,61	66,5	3,29	63,0	4,41	55,0	2,21	83,5	2,57	84,5	3,07	80,5	3,82	77,0	5,59	69,0
		10,0	2,50	65,0	2,94	66,0	3,68	63,0	4,56	60,0	6,03	52,0	2,91	80,0	3,42	81,0	4,26	77,0	5,22	74,0	7,06	66,0
		15,0	3,12	61,0	3,71	62,0	4,74	59,5	5,83	57,0	7,65	49,0	3,61	76,5	4,26	77,5	5,46	73,5	6,62	71,0	8,53	63,0
SUP 52		0,5	2,35	110,0	2,50	111,0	2,72	107,0	3,56	102,0	5,07	92,0	2,91	131,0	3,09	132,0	3,27	128,0	4,23	124,0	5,88	115,5
		5,0	3,05	106,0	3,42	107,0	4,04	103,5	4,98	99,0	6,62	89,0	3,69	127,0	4,12	128,0	4,76	124,5	5,94	121,0	7,94	112,0
		10,0	3,75	102,0	4,34	103,0	5,37	100,5	6,40	96,0	8,16	86,0	4,48	123,0	5,15	124,0	6,25	121,0	7,65	118,0	10,01	108,5
		15,0	4,45	98,0	5,26	99,0	6,69	96,5	7,82	93,0	9,71	83,0	5,24	119,0	6,18	120,0	7,74	117,5	9,36	115,0	12,07	105,0
SUP 60		0,5	3,68	162,0	3,82	163,0	4,15	159,0	5,22	153,0	7,06	142,0	4,45	195,0	4,63	196,0	4,93	192,0	5,96	187,0	7,51	177,5
		5,0	4,56	156,5	4,96	157,5	5,72	154,0	6,90	149,0	8,91	138,5	5,46	190,0	5,88	191,0	6,66	187,0	7,94	183,0	9,93	173,5
		10,0	5,44	151,0	6,11	152,0	7,28	149,0	8,61	145,0	10,74	135,0	6,47	185,0	7,13	186,0	8,39	182,0	9,93	179,0	12,36	169,5
		15,0	6,32	145,5	7,24	146,5	8,85	144,0	10,30	141,0	12,58	131,5	7,48	180,0	8,39	181,0	10,12	177,0	11,92	175,0	14,79	165,5

Partner With an End-To-End Provider

At Curtiss-Wright Drive Technology, we take a complete life cycle approach to industrial system solution development and support, from project conception to reliable field operation. We are your single source for:



- ▶ Expert engineering services
- ▶ Complete commissioning services
- ▶ Obsolescence management services
- ▶ Maintenance, repair, and operations (MRO) services



RELY ON SWISS QUALITY AND PRECISION



As a Swiss company, our strong focus on quality, reliability, and environmental protection allows us to tackle the toughest industrial system solution requirements. Curtiss-Wright Drive Technology is certified to ISO 9001:2015, as well as to EN 9100:2018, and we achieve the highest possible quality standards through the use of:

Sophisticated test equipment

Compliance to the Restriction of the use of certain Hazardous Substances directive (RoHS) and the regulation on Registration, Evaluation, Authorization, and Restriction of Chemicals (REACH)

Model-based software development in accordance with EN 61508



LEVERAGE A LEGACY OF TRUST AND INNOVATION



Curtiss-Wright Drive Technology has been a part of Curtiss-Wright Defense Solutions since 1999. As the trusted, proven leader in comprehensive, rugged, mission-critical solutions for the defense and aerospace industries for more than 80 years, Curtiss-Wright Defense Solutions understands how to deliver exceptionally reliable solutions that reduce program risk.

From innovative COTS modules to highly engineered subsystems and fully integrated systems, Curtiss-Wright Defense Solutions provides technology insights, engineering innovation, application experience, and regulatory knowledge that are trusted by defense departments, commercial avionics companies, and systems integrators worldwide.

A PIONEERING SPIRIT

The spirit of innovation at Curtiss-Wright Corporation (NYSE:CW) reaches back to the first flight of the Wright Flyer by Wilbur and Orville Wright at Kitty Hawk, NC, and the American aviation and motorcycling pioneer, Glenn Curtiss.



Today, as a global corporation with thousands of employees worldwide, we continue to apply the spirit of our founders to everything we do, pressing forward in the quest to achieve feats of scientific achievement and technology advancement once thought impossible.

At the Curtiss-Wright Drive Technology facility in Switzerland, we employ more than 100 people who are dedicated to upholding the legacy and core values of Curtiss-Wright in every aspect of our operations.





With engineering, manufacturing, and program support capabilities in the US, Canada, UK, Switzerland and Ireland, Curtiss-Wright is uniquely positioned to meet regional requirements, such as ITAR or non-ITAR content restrictions, and support initiatives like the Government of Canada's Industrial Technological Benefits and Value Proposition (ITB/VP) program.

Find Your Sales Representative

 curtisswrightds.com
 ds@curtisswright.com

Technical Support

 curtisswrightds.com/support
 support@curtisswright.com



Additional Contact Details

Curtiss-Wright Defense Solutions
20130 Lakeview Center Plaza, Suite 200
Ashburn, VA 20147
+1 (703) 779-7800