

CIRCOR

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# SUBMERSIBLE ELEVATOR SCREW PUMPS

ALLIFT® THE PRODUCT OF DECADES OF OPTIMIZATION

Power & Industry Products & Services

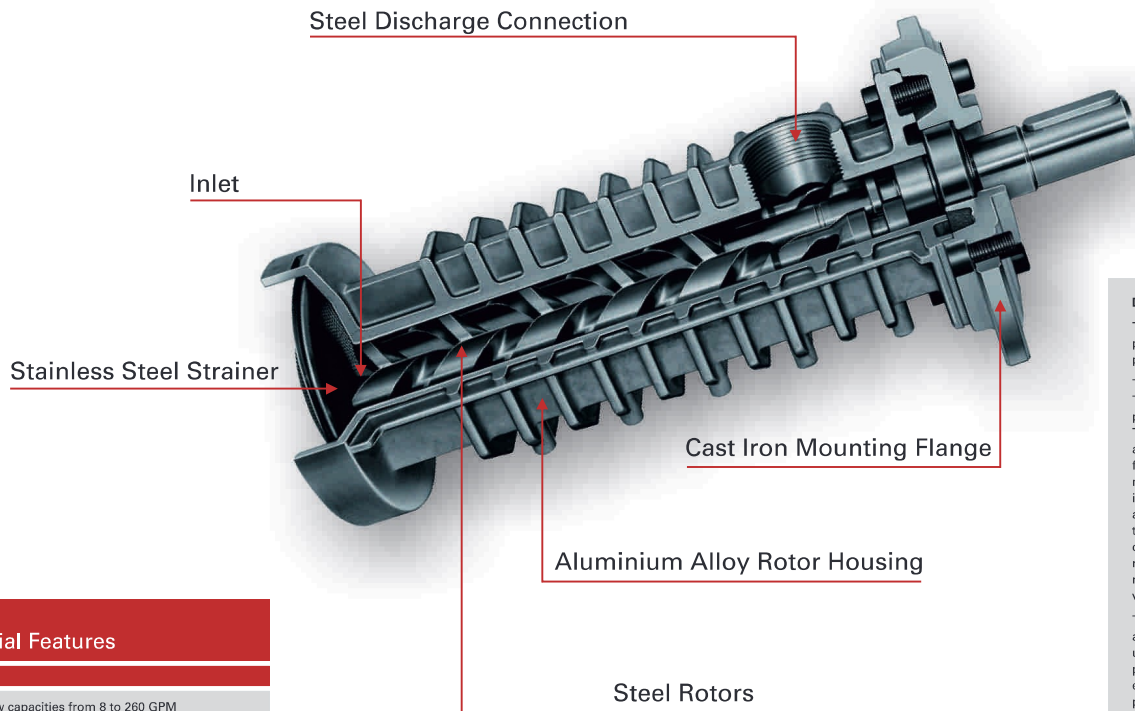
ALLWEILER® HOUTTUIN™ IMO® WARREN®

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**ALLIFT®**  
**FULLY-OPTIMIZED PUMP WITH VERY LOW OPERATING AND MAINTENANCE COSTS**

Proven over decades of use:  
 ALLIFT® guarantees a quiet and uniform  
 delivery and high performance. No  
 maintenance will be required over a long  
 time due to no gasket and other wearing  
 parts.  
 ALLIFT® provides the highest performance at  
 the best price.



### ALLIFT® Special Features

- Nineteen different flow capacities from 8 to 260 GPM
- Aluminium alloy rotor housing with steel discharge connection for extra strength, reliability and superior performance
- Common shaft and mounting dimensions for the most popular sizes, providing flexibility and interchangeabilities with motors
- Pumps can be utilized with any various submersible motor
- Light weight for ease of handling

### Design and Operation

The ALLWEILER® three-rotor screw pump is a positive displacement rotary pump with an axial flow design.

There are only three moving parts. The main screw is the only driven part which extends outside the case. The idler screws act as sealing parts and are turned hydraulically by the fluid being pumped. Thus, the mechanical action between the screws is negligible. There is only a rolling action between the drive screw and the idler screws. The outside diameter of the idler screw is the same as the root diameter of the drive screw. The rolling action eliminates noise and vibration.

The double lead screw design provides a continuous non-pulsating flow. An unobstructed axial flow through the pump results in low velocity and excellent suction capabilities. Discharge pressure is spread evenly over the length of the screw from suction to discharge.

The ALLWEILER® three-rotor screw pump is balanced both axially and radially. The double lead drive screw results in symmetrical pressure loading which centers the drive screw in the bore eliminating radial loads. The axial load created by the discharge pressure is balanced by means of microfinished stop faces at the discharge of the pump.

**ALLIFT®**  
**ALLWEILER® SUBMERSIBLE ELEVATOR SCREW PUMPS**  
**3400 RPM, 150 SSU**

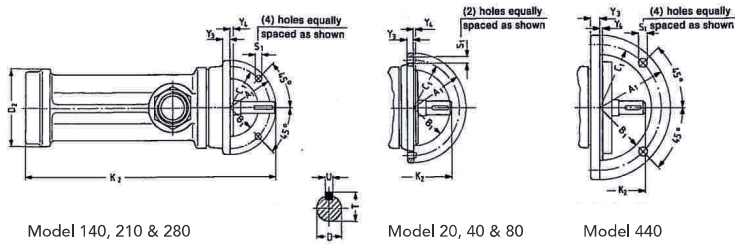
ALLIFT®: High performance screw pumps operating at a very low noise level for hydraulic lifts, lifting platforms, stages and other hydraulic machines.  
 For mineral oil-based hydraulic oils or synthetic hydraulic fluids and similar liquids.

Model		Pressure at Pump Discharge						
		200 PSI	250 PSI	300 PSI	350 PSI	400 PSI	425 PSI	450 PSI
20-38	GPM	8.6	8.5	8.4	8.3	8.2	8.2	8.2
	HP	1.7	2.0	2.3	2.5	2.8	2.9	3.1
20-50	GPM	13.6	13.4	13.3	13.2	13.0	12.9	12.9
	HP	2.1	2.5	2.9	3.3	3.7	3.9	4.1
20-56	GPM	16.0	15.8	15.7	15.6	15.4	15.4	15.3
	HP	2.6	3.1	3.6	4.2	4.7	4.9	5.2
40-41	GPM	18.5	18.2	18.0	17.7	17.5	17.4	17.3
	HP	3.6	4.3	4.9	5.5	6.1	6.4	6.7
40-49	GPM	25	24	24	24	23	23	23
	HP	4.4	5.3	6.1	6.9	7.7	8.1	8.5
80-36	GPM	33	32	32	32	31	31	31
	HP	5.8	6.8	7.9	8.9	9.9	10.5	11.0
80-42	GPM	39	39	39	38	38	38	38
	HP	6.7	8.0	9.2	10.5	11.7	12.4	13.0
80-46	GPM	47	46	46	46	45	45	45
	HP	7.6	9.0	10.5	12.0	13.5	14.2	15.0
140-39	GPM	61	61	60	60	59	59	59
	HP	10.6	12.5	14.5	16.4	18.3	19.3	20.3
140-43	GPM	70	69	68	68	67	67	67
	HP	11.8	14.0	16.2	18.4	20.7	21.8	22.9
140-46	GPM	80	79	78	78	77	77	76
	HP	12.9	15.4	18.0	20.5	23.0	24.2	25.5
210-40	GPM	97	96	96	95	94	94	94
	HP	16.4	19.4	22.4	25.4	28.4	29.9	31.4
210-43	GPM	105	104	104	103	102	102	101
	HP	17.6	20.9	24.2	27.6	30.9	32.5	34.2
210-46	GPM	122	121	120	119	118	118	117
	HP	19.5	23.3	27.1	30.8	34.6	36.5	38.4
280-43	GPM	142	141	140	139	138	137	137
	HP	24.3	28.8	33.3	37.7	42.2	44.4	46.7
280-46	GPM	163	162	160	159	158	158	157
	HP	26.7	31.8	36.9	41.9	47.0	49.5	52.0
280-51	GPM	185	183	181	180	178	178	177
	HP	29.9	35.8	41.6	47.5	53.3	56.3	59.2
440-40	GPM	202	201	200	198	197	197	196
	HP	34.6	40.9	47.1	53.4	59.6	62.7	65.9
440-46	GPM	258	256	255	253	252	251	250
	HP	41.5	49.5	57.5	65.5	73.5	77.5	81.5

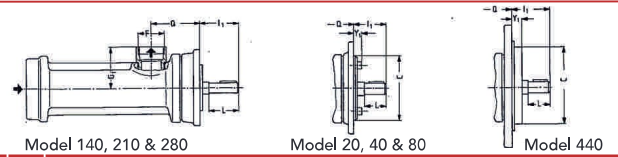
Above ratings based on Hydraulic Institute Standards (Horsepower - Maximum, Flow - Minimum). All pumps will meet or exceed above ratings. Consult ALLWEILER® for higher pressure and capacity applications.

Model		Pressure at Pump Discharge						
		500 PSI	550 PSI	600 PSI	700 PSI	800 PSI	900 PSI	1000 PSI
20-38	GPM	8.1	8.0	7.9	7.8	7.7	7.6	7.5
	HP	3.4	3.6	3.9	4.5	5.0	5.6	6.1
20-50	GPM	12.7	12.6	12.5	12.2	12.0	11.7	11.5
	HP	4.6	5.0	5.4	6.2	7.1	7.9	8.7
20-56	GPM	15.2	15.1	15.0	14.8	14.6	14.4	14.2
	HP	5.7	6.2	6.7	7.7	8.7	9.8	10.8
40-41	GPM	17.0	16.8	16.7	16.3	16.0	15.7	15.4
	HP	7.3	7.9	8.6	9.8	11.0	12.2	13.5
40-49	GPM	23	23	22	22	21	21	21
	HP	9.3	10.1	10.9	12.6	14.2	15.8	17.4
80-36	GPM	31	31	31	30	30	29	29
	HP	12.0	13.0	14.0	16.2	18.3	20.3	22.4
80-42	GPM	37	37	37	36	36	35	35
	HP	14.3	15.5	16.8	19.3	21.9	24.4	26.9
80-46	GPM	45	44	44	43	43	43	42
	HP	16.4	17.9	19.4	22.4	25.3	28.3	31.3
140-39	GPM	59	58	58	57	56	56	55
	HP	22.2	24.2	26.0	29.9	33.8	37.7	41.5
140-43	GPM	66	66	65	64	63	63	62
	HP	25.1	27.3	29.5	34.0	38.4	42.9	47.3
140-46	GPM	76	75	75	74	73	72	72
	HP	28.0	30.5	33.0	38.0	43.0	48.0	53.1
210-40	GPM	93	93	92	91	90	90	89
	HP	34.5	37.5	40.5	46.5	52.6	58.6	64.6
210-43	GPM	101	100	99	98	97	96	95
	HP	37.5	40.8	44.2	50.8	57.5	64.1	70.8
210-46	GPM	117	116	115	114	113	112	111
	HP	42.2	46.0	49.8	57.4	65.0	72.6	80.2
280-43	GPM	136	135	135	133	132	130	129
	HP	51.1	55.6	60.0	69.0	77.9	86.8	95.7
280-46	GPM	157	156	155	153	152	151	150
	HP	57.1	62.1	67.2	77.3	87.4	97.6	107.7
280-51	GPM	176	174	173	171	169	167	165
	HP	65.0	70.9	76.7	88.5	100.2	111.9	123.6
440-40	GPM	195	194	193	192	190	189	187
	HP	72.1	78.4	84.6	97.1	109.6	122.1	134.6
440-46	GPM	249	248	247	244	242	240	239
	HP	89.5	97.5	105.4	121.4	137.4	153.3	169.3

**ALLIFT®**  
**ALLWEILER® SUBMERSIBLE ELEVATOR SCREW PUMP**  
**DIMENSIONAL DRAWING SERIES SUB**



**ALLWEILER® Submersible Elevator Screw Pumps**  
**Plunger Speed (feet per minute) For RAM Displacement**  
**3400 RPM, 350 PSI, 150 SSU**



Model	Pump				Shaft				Discharge	
	D <sub>2</sub>	I <sub>1</sub>	K <sub>2</sub>	Q	D	L	T	U	F	G <sub>1</sub>
20-..	3.15	2.28	11.14	2.28	.74785 .74702	1.38	.85	.2362 .2350	1/2" NPT	2.54
40-..	4.45	2.28	12.40	2.64	.74785 .74702	1.38	.85	.2362 .2350	1" NPT	2.95
80-..	4.45	2.28	13.90	2.83	.74785 .74702	1.38	.85	.2362 .2350	1 1/2" NPT	3.03
140-..	5.59	4.25	18.46	3.98	1.25955 1.25856	3.15	1.38	.3937 .3923	2" NPT	3.94
210-..	6.30	4.25	20.24	4.17	1.25955 1.25856	3.15	1.38	.3937 .3923	2" NPT	3.74
280-..	6.30	4.25	21.46	4.17	1.25955 1.25856	3.15	1.38	.3937 .3923	2" NPT	3.94
440-..	7.48	4.02	27.13	5.75	1.25955 1.25856	2.56	1.38	.3937 .3923	3" NPT	4.84

Model	Flange								Weight (LBS.)	
	A <sub>2</sub>	B <sub>1</sub>	C	C <sub>1</sub>	S <sub>1</sub>	Y <sub>1</sub>	Y <sub>2</sub>	Y <sub>3</sub>	NET	
20-..	6.1018 6.1002	4.33	-	5.31	.35	.16	.39	-	6	
40-..	6.1018 6.1002	4.33	4.33	5.31	.35	.55	.39	.08	9	
80-..	6.1018 6.1002	4.33	4.33	5.31	.35	.55	.39	.08	13	
140-..	7.09	4.3744 4.3736	-	6.26	.31	-	.47	.20	27	
210-..	7.09	4.3744 4.3736	-	6.26	.31	-	.47	.20	34	
280-..	7.09	4.3744 4.3736	-	6.26	.31	-	.47	.20	41	
440-..	11.50	8.6614 8.6603	-	10.24	.69	-	.71	.20	76	

Notes: 1. Made in metric, shown in decimal equivalents (Inches). 2. Rotation: Clockwise, viewed from drive end. 3. Alteration of dimensions reserved. 4. Loose hexagon head bolts and flatwashers supplied with pump. Models 20, 40, 80 (2) 5/16-18 x 1 UNC; models 140, 210, 280 (4) 1/2-20x 1 1/2 UNC; model 440 (4) M 16 x 45 DIN 933.

Model	GPM	Plunger diameter (Inches)															
		3 1/2	4	4 1/2	4 7/8	4 7/2	5	5 1/2	5 7/8	6	6 1/2	7	7 1/2	8	8 1/2	9	10
20-38	8.3	14	13	11	10	10	8	7									
20-50	13.2	22	20	17	16	16	13	11	9								
20-56	15.6	25	24	20	19	19	15	13	11								
40-41	17.7	29	27	23	22	21	17	15	12	10							
40-49	24	39	37	31	30	29	24	20	16	14	12						
80-36	32	52	49	41	40	39	31	27	22	19	16	14					
80-42	38	62	58	49	47	46	37	32	26	22	19	17	15				
80-46	46	75	70	59	57	56	45	39	31	27	23	20	18	16			
140-39	60	98	92	77	75	73	59	51	50	41	35	30	26	23	20	18	
140-43	68	111	104	87	85	82	67	58	56	46	39	34	30	26	23	21	17
140-46	78	127	119	100	97	94	76	66	65	53	45	39	34	30	26	24	19
210-40	95	155	146	122	118	115	93	81	79	65	55	48	41	36	32	29	23
210-43	103	168	158	132	128	125	101	87	85	70	60	52	45	39	35	31	25
210-46	119	194	182	152	148	144	117	101	99	81	69	60	52	46	40	36	29
280-43	139	227	213	178	173	168	136	118	115	95	81	70	61	53	47	42	34
280-46	159		244	204	198	192	156	135	132	108	92	80	69	61	54	48	39
280-51	180			230	224	218	176	153	149	123	104	90	78	69	61	54	44
440-40	198				246	240	194	168	164	135	115	99	86	76	67	60	49
440-46	253						248	215	210	172	147	127	110	97	86	77	62