ROTOR

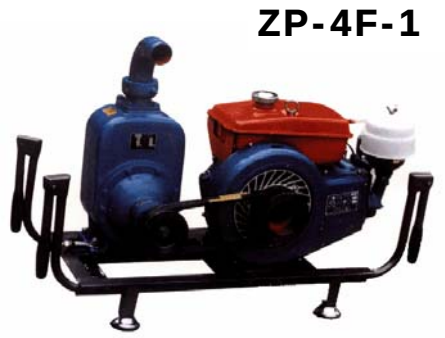
BPZ Self-Priming Pump

General

Type BPZ self-priming pumps, with a recessed impeller design that may be driven by diesel engine and motor, are designed for sprinkling applications. Ideal for pumping clean water or similar liquids in agricultural, municipal and industrial water supply and drainage. Liquid Temperature shall not be allowed to exceed 80℃.

Performance Data
Of Diesel Engine Driven Sprinkler Units

ZP—12N—5



ZP-4F-1

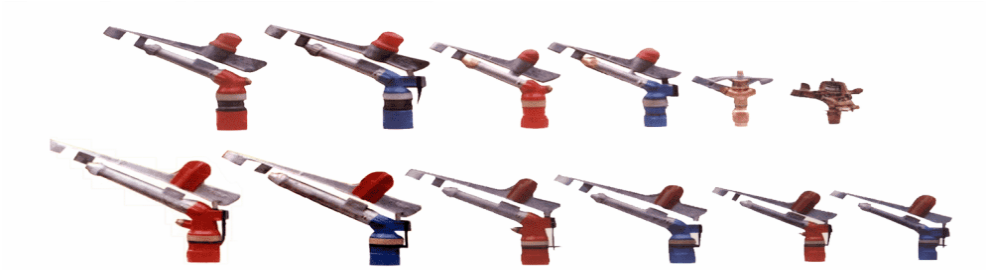
Model of Sprinkler Unit	Model of Driving Engine	Water Pump				Sprinkler Nozzle			
		Model	Speed r/min	Head m	Flow Rate m3/h	Model	Qty	Range m	Capacity（mm/h)
1.5FCP-2S	160F	40BPZ-18	2900	18	12	10PYZ	16	11.2	1.78
2.2FCP-2S	165F	50BPZ$_X$-35	3100	40	10	30PY2H	1	25.5	4.05
						10PYZ	10	12.1	2.06
2.9FCP-2S	170F	50BPZ-35II	2900	35	15	40PY2H	1	28	5.8
						10PYZ	14	12.1	2.06
3.7FCP-2S	175F	50BPZ-35II	3200	40	22	40PY2H	1	28	5.8
						10PYZ	20	12.1	2.06
4.4NCP-2S	R175FN	50BPZ$_{CZ}$-45II	2600	45	22	40PY2H	1	28	5.8
						10PYZ	18	12.1	2.06
5.5SCP-2S	R175	50BPZ-45II	2900	45	22	40PY2H	1	30.5	5.8
						10PYZ	20	12.5	2.06
8.8SCP-2G	S195	65BPZ-55II	2900	55	35	50PY2H	1	38	6.15
8.8NCP-5	S195N	80BPZ-40	2900	40	48	40PY2H	3	30.5	5.58
11SCP-5	1100	80BPZ-40	3200	50	50	50PY2H	2	36.5	5.52
						20PY2H	16	19	3.51
22FCP-5	295F	4TCD-40	3000	40	100	50PY2H	6	36.5	5.52

Performance Data Charts

Pump Model	Capacity	Head	Speed	Effi.	Priming	Hydr Power	NPSHr (Suc Lift)	Driving HP
	(m^3/h)	(m)	(r.p.m.)	(%)	(s/5m)	KW	(m)	KW(ps)
100ZB8-2.9C	75	8	1450	66	200	2.9	3.7	2.9
100ZB10-4.4C	100	10	1750	63	180	4.4	4.5	4.4
100B18-8.8C	120	18	2200	66	180	8.8	5	8.8
4TCD-14 (4TCD-40)	72	14	1800	72	120	3.82	(5)	5.88(8)
	100	17	2000	69	120	5.92	(5)	8.82(12)
	100	40	3000	70	120	15.57	(5)	22.06(30)
3TCD-15	45	15	2900	68	180	1.56	(6.5)	2.21(3)
40BPZ-18	12	18	2900	57.5	90	1.02	(7)	1.47(2)
2TCD-20	18	20	2900	60	160	1.64	(6.5)	2.21(3)
50BPZ$_X$-35	15	35	2900	59	100	2.57	(8)	2.94(4)
50BPZ-35I	14	35	2900	52	60	2.57	(8)	2.94(4)
50BPZ$_X$-35I	10	40	3100	52	60	2.1	(8)	2.21(3)
50BPZ-35II	15	35	2900	59	100	2.42	3	2.94(4)
50BPZ-40	22	40	2900	61	100	3.93	3.8	4.41(6)
80BPZ-40I	48	40	2900	62	60	8.44	(6.5)	11.03(15)
80BPZ-40II	50	40	2900	68	120	11	(7)	11
50BPZ-45I	15	45	2700	51	60	3.61	(7)	4.41(6)
50BPZ$_{CZ}$-45I	20	45	2600	51	60	3.61	(7)	4.41(6)
50BPZ-45II	20	45	2600	60	100	4.09	3.2	4.41(6)
50BPZ$_{CZ}$-45II	20	45	2600	60	100	4.09	3.2	4.41(6)
50BPZ-46	26	46	2900	58	100	5.61	3.2	5.88(8)
65BPZ-55I	24	55	2900	53	90	6.79	(7)	8.82(12)
65BPZ-55II	35	55	2900	61	120	8.77	3.5	8.82(12)
80BPZ-65I	48	65	2900	58	90	14.66	(6.5)	17.65(24)

Performance Data

Sprinkler Nozzles

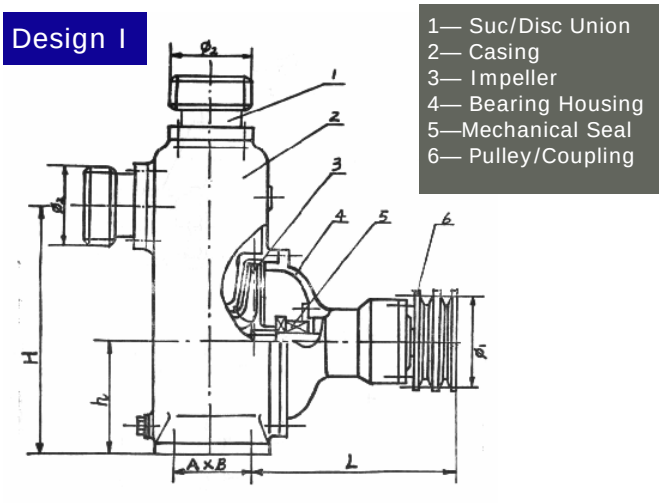


Model	Inlet Dimension		Diameter of nozzle mm	Rated working pressure Mpa	Water capacity m^3/h	Range m	Sprinkling Density mm/h
	Nominal Diameter mm	Actual Dimension in					
10PYZ	10		4	0.15	0.7	11.2	1.78
				0.3	0.98	12.1	2.06
XP10SH	10		4.0×2.4	0.15	1.11	12.3	2.34
				0.25	1.41	12.6	2.83
15PYH	15		5	0.2	1.26	14.5	1.91
				0.3	1.54	15.5	2.04
15PY2H	15		?5.0×3.0	0.2	1.71	14.5	2.59
				0.3	2.1	15.5	2.78
20PYH	20	RP1	7	0.3	3.02	19	2.66
				0.4	3.49	20.5	2.64
20PY2H	20	RP1	7.0×4.0	0.3	4.01	19	3.54
				0.4	4.63	20.5	3.51
30PYH	30		10	0.3	6.17	23.5	3.56
				0.4	7.12	25.5	3.49
30PY2H	30		10.0×4.0	0.3	7.16	23.5	4.13
				0.4	8.27	25.5	4.05
40PYH	40	RP2	14	0.35	13.06	29.5	4.78
				0.45	14.82	32	4.61
40PY2H	40	RP2	14.0×4.5	0.35	14.28	28	5.8
				0.45	16.3	30.5	5.58
50PYH	50		18	0.4	23.09	36.5	5.52
				0.5	25.82	39.5	5.27
50PY2H	50		18.0×5.5	0.4	24.97	35	6.49
				0.5	27.89	38	6.15
10PYS2	10		4.0×2.5	0.15	1.12	11.5	2.69
			4.0×2.5	0.3	1.47	12.5	3
15PYS2	15	RP1	5.0×3.0	0.2	1.71	14.5	2.59
			5.0×3.0	0.3	2.1	15.5	2.78
20PYS2	20	RP1	6.0×3.0	0.2	2.25	15.8	2.87
			6.0×3.0	0.3	2.77	20.5	2.1

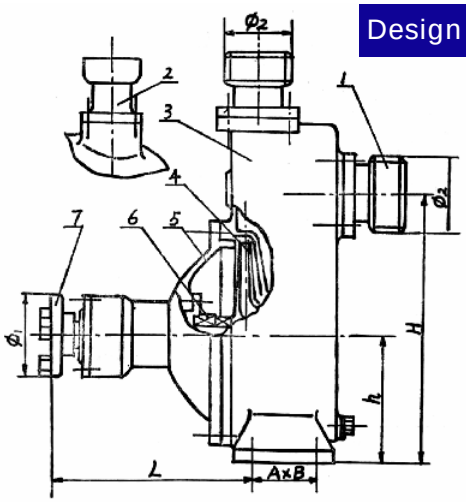
Configuration Drawings

& Installation Dimensions

Design I



Design II



Model	A	B	L	h	H	ϕ1	ϕ2
40BPZ-18	80	150	207	105	230	90	M64x2
50BPZx-35I		180	219	128	273	100	M76x3
50BPZ-35I							
50BPZ-35II							
50BPZ-40						90. 6	
50BPZcz-45I	70	199	224	140	290	90	
50BPZcz-45II							
50BPZ-45I			239			82	
50BPZ-45II							
65BPZ-55I	80	220	285	153	303	140	M85x3
65BPZ-55II					303		
80BPZ-40I			318	150	330		M100x3
80BPZ-65I		230	388	166	351	150	
80BPZ-65	84	280	365		162		80
100BP-65	100	260	354		190		100
100BP-95	120	345	345		210		M76x3

Instructions

for Operation and Maintenance

Proper operation and maintenance is very important to keep the pump working normally without troubles for a long working life. The following instructions must be carefully read before starting the pump:

1. In case of transmission by the V-belt, the main shaft of the motor must be parallel with that of the pump, the pulley also in accord. The distance between the centers of the pulleys mustn't be less than twice the diameters of the two pulleys. In case of direct coupling, the motor and the pump must share the same base plate and adopt flexible coupling . Make sure that the shafts of the two are in concentricity.
2. The pump must be mounted 1-2 meters lower than the critical suction vacuum height (height above water level of pond and centerline of pump). The ground on which the machine is mounted must be solid and firm so as to avoid collapsing or caving in.
3. The installation of the suction pipe must be carefully done so that no leakage of air will occur. The filter grid should be submerged into water entirely and away from the pond bottom and the pond walls in order to prevent air or sand or mud from entering the suction pipe.
4. On starting , make sure that the pump shaft is rotating evenly in the correct direction without any abnormal noise.
5. For the self-priming pump, enough water should be put into the body before starting so as to make its suction all right. Its is strictly forbidden to run the machine without water in the body in order to prevent from burning the sealing parts.
6. Stop the pump if it does not discharge any water under specified revolution speed for three minutes after starting.
7. Stop the pump at once in case that any abnormal phenomena such as noise, vibration, decrease of water discharge while working . Notice that the temperature of the bearing which must be lower than 75.
8. When the pump is to be laid off for a long period of time, the water in the body must be drained and the whole pump must be examined, cleaned and coated with grease; the openings shall be wrapped up with paper to avoid entrance of foreign matters. The pump should be stored in a dry place away from acid ,alkali and high temperature.

Instructions

for Operation and Maintenance

9. After 1,000 hours operation , the bearing units should be detached , cleaned and re-greased.
10. Be careful while mounting the mechanical seal parts. Keep the mechanical seal surface of moving or static rings clean.

Trouble shooting Chart

Trouble	Cause	Remedy
No discharge of water	1. Not enough water stored in the body of self-priming pump	1. Put more water into the body
	2. Leakage in the suction pipe or the seals	2. Check and repair the suction pipe; adjust or change the seals
	3.Wrong direction of rotation	3.Correct the direction
	4.Low revolution speed	4.Adjust the revolution speed
	5.Suction height larger than specified	5.Lower the suction height
Less water discharged	1.Blockage of the filter grid or the impeller	1. Take off the blocking matters
	2.Low revolution speed	2. Adjust the revolution speed
	3. Leakage of water around the ring on the impeller	3. Add a ring
	4.Delivery lift too high	4. Shorten it
Increase of hydraulic power	1. The speed too high	1.Decrease the speed
	2.Bend of the shaft	2. Straighten it or change a new one
	3. Bearings seriously worn	3. Chang new bearings
Noise or wild vibration	1. Suction height too high	1. Lower the suction head
	2. The base unstable	2. Fasten it
	3. Bearings seriously worn	3. Change new ones
	4. Bend of the shaft	4. Straighten it or change a new one
Bearing over-heated	1.Over-greased or under-greased	1.Make it normal
	2.Bend of the shaft	2.Straighten it or change a new one
	3.The belt over-tightened	3.Adjust it to proper tightness