

Motor and Regulator must be purchased separately.

Stainless Steel Direct-Drive Plunger Pump

Models 2SF05SEEL
2SF10SEEL
2SF25SEEL
2SF29SEEL
2SF35SEEL

PUMP FEATURES

- UNIFLOW design provides continuous liquid flow forward through the pump, reduces cavitation risk and increases pump life.
- Unique spring loaded Inlet Valves and flow through ceramic plungers assure smooth, consistent liquid flow through pump.
- 316L Stainless Steel Manifolds for strength and corrosion resistance.
- OPTIONAL Stainless Steel Regulator for system pressure control and pump protection.
- Ultra compact and lightweight.

COMMON SPECIFICATIONS

Inlet Pressure Range	Flooded to 60 PSI	(Flooded to 4 BAR)
Shaft Diameter	5/8"	(15.9 mm)
Bore.....	0.709"	(18 mm)
Max. Liquid Temperature	160°F	(71°C)
Crankcase Capacity	12.0 oz.	(0.36 L)
Inlet Port (1).....	3/8" NPTF	(3/8" NPTF)
Discharge Ports (2).....	3/8" NPTF	(3/8" NPTF)
By-Pass Port (1)	1/4" NPTF	(1/4" NPTF)
Weight (Pump Only)	10.6 lbs.	(4.8 kg)
Dimensions (Pump Only).....	8.3x7.5x6.3"	(213x191x160 mm)

⚠ WARNING

All systems require both a primary pressure regulating device (i.e., regulator, unloader) and a secondary pressure safety relief device (i.e., pop-off valve, safety valve). Failure to install such relief devices could result in personal injury or damage to the pump or to system components. CAT PUMPS does not assume any liability or responsibility for the operation of a customer's high pressure system.

SPECIFICATIONS

U.S. Measure Metric Measure

MODEL 2SF05SEEL

Flow.....	0.5 GPM	(1.9 L/M)
Discharge Pressure Range.....	100-1200 PSI	(7-85 BAR)
RPM	1725 RPM	(1725 RPM)
Stroke.....	0.067"	(1.7 mm)

MODEL 2SF10SEEL

Flow.....	1.0 GPM	(3.8 L/M)
Discharge Pressure Range.....	100-1200 PSI	(7-85 BAR)
RPM	1725 RPM	(1725 RPM)
Stroke.....	0.122"	(3.1 mm)

MODEL 2SF25SEEL

Flow.....	2.5 GPM	(9.5 L/M)
Discharge Pressure Range.....	100-1200 PSI	(7-85 BAR)
RPM	1725 RPM	(1725 RPM)
Stroke.....	0.287"	(7.3 mm)

MODEL 2SF29SEEL

Flow.....	2.85 GPM	(10.8 L/M)
Discharge Pressure Range.....	100-1200 PSI	(7-85 BAR)
RPM	1725 RPM	(1725 RPM)
Stroke.....	0.335"	(8.5 mm)

MODEL 2SF35SEEL

Flow.....	3.5 GPM	(13.2 L/M)
Discharge Pressure Range.....	100-1200 PSI	(7-85 BAR)
RPM	1725 RPM	(1725 RPM)
Stroke.....	0.402"	(10.2 mm)

Refer to pump Service Manual for repair procedures and additional technical information.

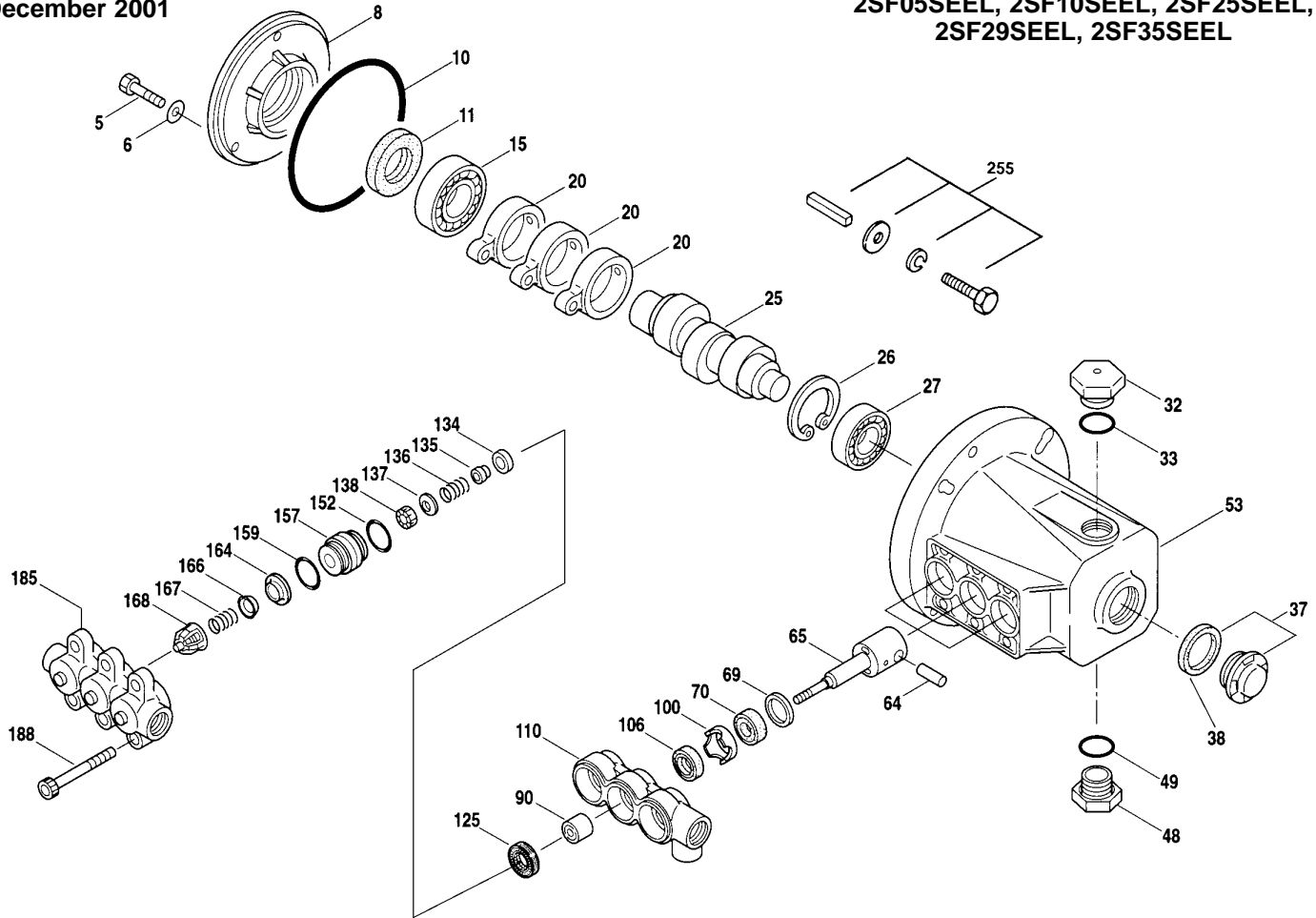
“Customer confidence is our greatest asset”

EXPLODED VIEW

December 2001

SF PLUNGER PUMP MODELS

2SF05SEEL, 2SF10SEEL, 2SF25SEEL,
2SF29SEEL, 2SF35SEEL



PARTS LIST

ITEM	P/N	MATL	DESCRIPTION	MODEL USED	QTY	ITEM	P/N	MATL	DESCRIPTION	MODEL USED	QTY	
5	543686	S	Screw, HHC Sems (M6x16)	All	3	135	543689	SS	Spacer	All	3	
6	150810	NBR	Washer, Seal (M6)	All	3	136	543690	SS	Spring, Inlet Valve	All	3	
8	44857	AL	Cover, Bearing	All	1	137	88575	S	Washer, Conical (M6)	All	3	
10	14044	NBR	O-Ring, Bearing Cover	All	1	138	543692	SS	Nut (M6)	All	3	
11	44859	NBR	Seal, Oil, Crankshaft	All	1	152	26089	NBR	O-Ring, Adapter Spacer, Inner - 80D	All	3	
15	14488	STL	Bearing, Ball	All	1		11377	FPM	O-Ring, Adapter Spacer, Inner - 80D	All	3	
20	45876	HS	Rod, Connecting	All	3	157	544700	SS	Spacer, Discharge Valve	All	3	
25	543135	FCM	Crankshaft, 1.7mm	05SEEL	1	159	26089	NBR	O-Ring, Adapter Spacer, Outer - 80D	All	3	
	46109	FCM	Crankshaft, 3.1mm	10SEEL	1		11377	FPM	O-Ring, Adapter Spacer, Outer - 80D	All	3	
	544693	FCM	Crankshaft, 7.3mm	25SEEL	1	164	544293	SS	Seat	All	3	
	45426	FCM	Crankshaft, 8.5mm	29SEEL	1	166	543669	SS	Valve	All	3	
	544694	FCM	Crankshaft, 10.2mm	35SEEL	1	167	543700	SS	Spring	All	3	
26	12385	STL	Ring, Retaining, Bearing	All	1	168	44565	PVDF	Retainer, Spring	All	3	
27	15710	STL	Bearing, Ball	All	1	● 185	544227	SSL	Manifold, Discharge	All	1 ●	
32	45690	RTP	Cap, Oil Filler	All	1	188	544701	S	Screw, HSH (M8x80)	All	6	
33	14179	NBR	O-Ring, Oil Filler Cap - 70D	All	2	255	30517	STZP	Kit, Bolt Mount	All	1	
37	92241	AL	Gauge, Oil w/Gasket - 80D	All	1		30980	STZP	Washer, Flat (3/8")	All	4	
38	44428	NBR	Gasket, Flat, Oil Gauge - 80D	All	1		30921	STZP	Lockwasher, Split (3/8")	All	4	
48	44842	NY	Plug, Drain	All	1		34100	STZP	Screw, HH (3/8"-16x1-3/8")	All	4	
49	14179	NBR	O-Ring, Drain Plug - 70D	All	1		6106		Lubricant, Antiseize	All	1	
● 53	45702	AL	Crankcase	All	1 ●	30050	STL	Key (3/16"x3/16"x1-1/4" HD)	All	1		
64	16948	CM	Pin, Crosshead	All	3	285	80228	STL	Screw (M8-1.25x80)	All	1	
65	544695	SSZZ	Rod, Plunger	All	3	300	34973	NBR	Kit, Seal (Incls: 106, 125, 152, 159)	All	1	
69	20017	STZP	Washer, Oil Seal	All	3		33453	FPM	Kit, Seal (Incls: 106, 125, 152, 159)	All	1	
70	25461	NBR	Seal, Oil Crankcase - 80D	All	3	310	34972	NBR	Kit, Valve (Incls: 152, 159, 164, 166, 167, 168)	All	1	
90	544697	CC	Plunger, Ceramic (M18x18)	All	3		33454	FPM	Kit, Valve (Incls: 152, 159, 164, 166, 167, 168)	All	1	
100	44869	PVDF	Retainer, Seal	All	3	311	34974	NBR	Kit, Inlet Valve (Incls: 134, 135, 136, 137, 138, 152, 159)	All	1	
106	545938	NBR	Seal, LPS w/SS-Spg	All	3		33460	FPM	Kit, Inlet Valve (Incls: 134, 135, 136, 137, 138, 152, 159)	All	1	
	545192	FPM	Seal, LPS w/SS-Spg	All	3		352	44050	STZP	Tool, Oil Gauge Removal	All	1
● 110	544698	SSL	Manifold, Inlet	All	1 ●		6107		Oil, Bottle (21 oz) ISO 68 Multi-Viscosity Hydraulic (Fill to specified crankcase capacity prior to start-up)	All	1	
125	44652	SNG	Seal, HPS w/SS	All	3							
	46652	HT	Seal, Hi-Temp (190° Max)	All	3							
134	33873	NY	Valve, Inlet (Hi-Temp) [4/00]	All	3							
	543691	SS	Valve, Inlet [4/00]	All	3							

● Industrial Discount. *Italics are optional items.* [] Date of latest production change. See Tech Bulletins 036, 043, 055, 064, 070, 073 and 074 for additional information.

NOTE: Discard Key that may come standard with most motors and engines and use only the key included in Bolt kit.

MATERIAL CODES (Not Part of Part Number): AL=Aluminum CC=Ceramic CM=Chrome-Moly FCM=Forged Chrome-moly FPM=Fluorocarbon (Viton®) HS=High Strength HT=Hi-Temp (EPDM Alternative) NBR=Medium Nitrile (Buna-N) NY=Nylon PVDF=Fluoroplastic (High Strength) RTP=Reinforced Composite S=304SS SNG=Special Blend (Buna) SS=316SS SSL=316SS/Low Carbon SSZZ=316SS/Zamak STL=Steel STZP=Steel/Zinc Plated

OPTIONAL PRESSURE REGULATOR/RELIEF VALVE

Models 7070, 7077

SPECIFICATIONS

U.S. Measure Metric Measure

MODEL 7070

Flow Range1.0-12.0 GPM (3.8-45 L/M)
 Pressure Range600-1000 PSI (40-70 BAR)

MODEL 7077

Flow Range0.5-5.0 GPM (1.9-19 L/M)
 Pressure Range50-500 PSI (3.45-35 BAR)

COMMON SPECIFICATIONS

Maximum Temperature180°F (82°C)
 Inlet Port1/4" NPTF (1/4" F NPTF)
 By-Pass Port3/8" NPTF (3/8" F NPTF)
 Weight1.2 lbs. (0.55 kg)
 Dimensions6.2 x 2.5" (158 x 64 mm)

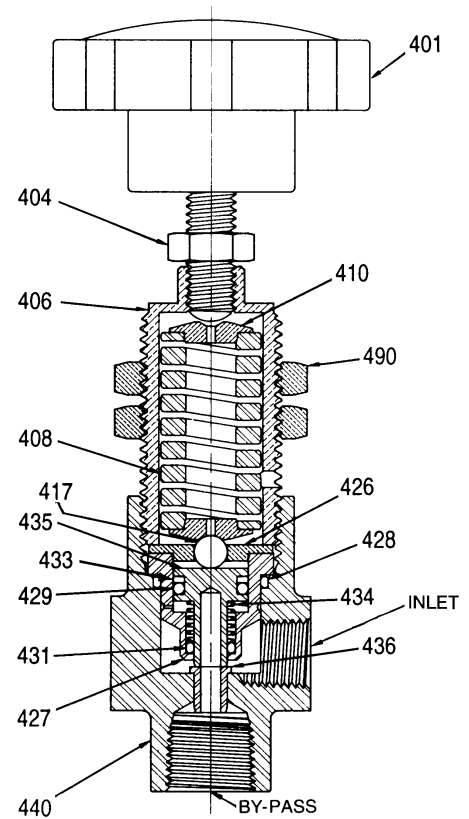
OPERATION

This pump does not come standard with a regulating device. Determine the system pressure and flow and select one of the above pressure regulators. The optional Stainless Steel Regulator will set and maintain system pressure. It offers pump protection by going into by-pass with any obstruction in the discharge line.

This pump is designed for use in saltwater reverse osmosis systems. **A fresh water flush is recommended prior to any dormant cycle** to eliminate stagnant water sitting in the pump and premature wear.

EXPLODED VIEW

Models 7070, 7077



PARTS LIST

ITEM	PN	MATL	DESCRIPTION	QTY
401	33963	NY	Handle, Adjusting Assy (7070)	1
	34295	NYSS	Handle, Adjusting Assy (7077)	1
404	30933	S	Nut, Lock	1
406	—	BBCP	Body, Upper	1
408	32106	S	Spring - 1000 PSI (7070)	1
	34293	S	Spring - 500 PSI (7077)	1
410	—	BB	Retainer	2
417	34001	SSSS	Ball, Seat	1
426	—	BB	Guide	1
427	—	SS	Insert	1
428	—	FPM	O-Ring	1
429	—	FPM	O-Ring	1
431	—	FPM	O-Ring	1
433	—	PTFE	Back-up-Ring	1
434	34012	S	Spring, Piston	1
435	32109	SS	Piston	1
436	32102	SS	Seat	1
440	—	SS	Body, Lower	1
468	32140	FPM	Kit, O-Ring (Incls: 428,429,431,433)	1
490	34090	STL	Mount, Panel	1

Italics are optional items.

MATERIAL CODES (Not Part of Part Number): BB=Brass
 BBCP=Brass/Chrome Plated FPM=Fluorocarbon (Viton®) NY=Nylon
 PTFE=Pure Teflon® S=304SS SS=316SS STL=Steel SSSS=440SS

MOTOR SPECIFICATIONS

Model 8059

Horsepower.....	0.75
Shaft Diameter.....	5/8"
Max. Volts.....	115
FULL LOAD AMPS.....	5.4-5.2/10.4
RPM.....	1725
Weight.....	35 lbs.
Phase.....	Single
Frame Size.....	56-C TEFC
Hertz.....	60
Service Factor.....	1.15

Model 8060

Horsepower.....	1.5
Shaft Diameter.....	5/8"
Max. Volts.....	115/230
FULL LOAD AMPS.....	14.0/7.0
RPM.....	1725
Weight.....	48.10 lbs.
Phase.....	Single
Frame Size.....	56-C TEFC
Hertz.....	60
Service Factor.....	1.20

Model 8060.050

Horsepower.....	1.5
Shaft Diameter.....	5/8"
Max. Volts.....	110/220
FULL LOAD AMPS.....	18.2/9.1
RPM.....	1425
Weight.....	42 lbs.
Phase.....	Single
Frame Size.....	56-C TEFC
Hertz.....	50
Service Factor.....	1.00

Model 8062

Horsepower.....	2.0
Shaft Diameter.....	5/8"
Max. Volts.....	115/230
FULL LOAD AMPS.....	17.0/8.5
RPM.....	1725
Weight.....	55 lbs.
Phase.....	Single
Frame Size.....	56-C TEFC
Hertz.....	60
Service Factor.....	1.15

Model 8062.050

Horsepower.....	2.0
Shaft Diameter.....	5/8"
Max. Volts.....	220
FULL LOAD AMPS.....	17.0/8.5
RPM.....	1425
Weight.....	46 lbs.
Phase.....	Single
Frame Size.....	56-C TEFC
Hertz.....	50
Service Factor.....	1.00

Common Motor Specifications

Max. Ambient Temp.....	104°F
Capacitor Start.....	Yes
Thermal Overload-Manual Reset.....	Yes
U.L. Construction Reference.....	E44549
U.L. Insulation Reference.....	E37878
CSA Reference.....	LR4642

Note: Motor Start-Up AMPS may vary, then settle within FULL LOAD AMPS rating after initial run in time.

★ ★ Before mounting pump on motor, apply P.N. 6106 Antiseize Lubricant to pump shaft. ★ ★ Refer to Tech Bulletin 055 for instructions on removing pump from electric motor. For warranty consideration contact CAT PUMPS for the local **Authorized Service Center**. If you are uncertain as to the cause of failure (Pump or Motor), secure **Returned Goods Authorization number** and return complete assembly **PREPAID** to CAT PUMPS for evaluation.

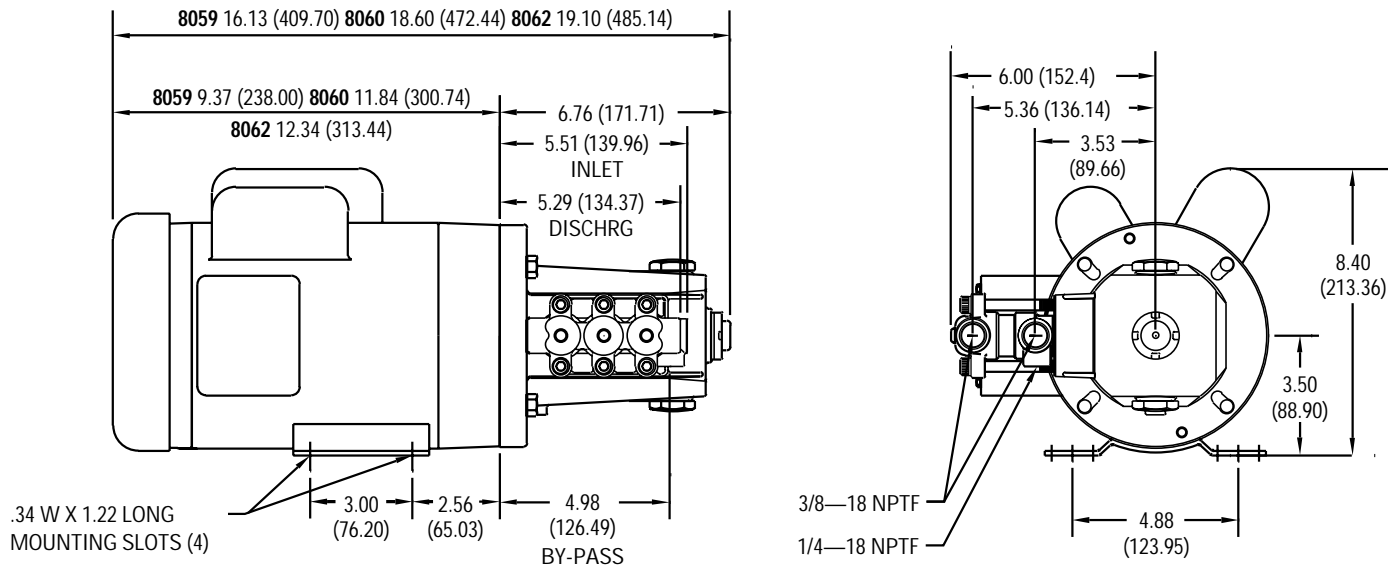
HORSEPOWER REQUIREMENTS

FLOW		PRESSURE PSI (BAR)			PUMP RPM
U.S. GPM	Metric L/M	700 (50)	1000 (70)	1200 (85)	
0.5	1.9	.24	.35	.41	1725
1.0	3.8	.47	.68	.82	1725
2.5	9.5	1.19	1.71	2.05	1725
2.85	10.8	1.36	2.0	2.3	1725
3.5	13.2	1.67	2.39	2.87	1725

DETERMINING THE REQUIRED H.P.

$$\frac{\text{GPM} \times \text{PSI}}{1460} = \text{Electric Brake H.P. Required}$$

2SF05SEEL, 2SF10SEEL, 2SF25SEEL, 2SF29SEEL, 2SF35SEEL DIMENSIONAL



Products described hereon are covered by one or more of the following U.S. patents 3558244, 3652188, 3809508, 3920356, 3930756 and 5035580

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