

Motorized pump unit 2SF42SEEL251 Shown

## Stainless Steel Direct-Drive Plunger Pump

**Models** **2SF05SEEL**  
**2SF10SEEL, 2SF15SEEL**  
**2SF25SEEL, 2SF29SEEL**  
**2SF35SEEL, 2SF42SEEL**

### FEATURES

- Rugged 316SS design engineered for SWRO high duty cycles.
- High efficiency triplex design with unique spring loaded inlet valves and flow through plungers for smooth low pulsation flow.
- 56C direct-drive 50/60 Hz motor satisfies international power requirements.
- Compact motor-pump units provide the smallest possible footprint for challenging spaces.

### COMMON SPECIFICATIONS

Inlet Pressure Range.....	Flooded to 60 psi	(Flooded to 4 bar)
Shaft Diameter .....	5/8"	(15.9 mm)
RPM.....	1725 rpm	(1725 rpm)
Bore.....	0.709"	(18 mm)
Bore (2SF42SEEL Only) .....	0.787"	(20 mm)
Maximum Liquid Temperature .....	160°F	(70°C)
Above 130°F call CAT PUMPS for inlet conditions and elastomer recommendations.		
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 Return Port (1) .....	1/4" NPTF	(1/4" NPTF)
Weight (Pump Only) .....	8.9 lbs.	(4 kg)
Dimensions (Pump Only).....	6.8 x 8.7 x 5.2"	(173 x 221 x 133 mm)

#### **⚠ CAUTIONS AND WARNINGS**

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

Read all CAUTIONS and WARNINGS before commencing service or operation of any high pressure system. The CAUTIONS and WARNINGS are included in each service manual and with each Data sheet. CAUTIONS and WARNINGS can also be viewed online at [www.catpumps.com/cautions-warnings](http://www.catpumps.com/cautions-warnings) or can be requested directly from CAT PUMPS.

#### **WARRANTY**

View the Limited Warranty on-line at [www.catpumps.com/warranty](http://www.catpumps.com/warranty).

### SPECIFICATIONS

U.S. Measure                      Metric Measure

#### **MODEL 2SF05SEEL**

Flow (60 Hz-1725 rpm).....	0.5 gpm	(1.9 l/m)
Flow (50 Hz-1450 rpm).....	0.42 gpm	(1.6 l/m)
Discharge Pressure Range.....	100-1200 psi	(7-85 bar)
Stroke .....	0.067"	(1.7 mm)

#### **MODEL 2SF10SEEL**

Flow (60 Hz-1725 rpm).....	1.0 gpm	(3.8 l/m)
Flow (50 Hz-1450 rpm).....	0.84 gpm	(3.1 l/m)
Discharge Pressure Range.....	100-1200 psi	(7-85 bar)
Stroke .....	0.122"	(3.1 mm)

#### **MODEL 2SF15SEEL**

Flow (60 Hz-1725 rpm).....	1.5 gpm	(5.7 l/m)
Flow (50 Hz-1450 rpm).....	1.26 gpm	(4.8 l/m)
Discharge Pressure Range.....	100-1200 psi	(7-85 bar)
Stroke .....	0.177"	(4.5 mm)

#### **MODEL 2SF25SEEL**

Flow (60 Hz-1725 rpm).....	2.5 gpm	(9.5 l/m)
Flow (50 Hz-1450 rpm).....	2.1 gpm	(7.9 l/m)
Discharge Pressure Range.....	100-1200 psi	(7-85 bar)
Stroke .....	0.287"	(7.3 mm)

#### **MODEL 2SF29SEEL**

Flow (60 Hz-1725 rpm).....	2.85 gpm	(10.8 l/m)
Flow (50 Hz-1450 rpm).....	2.4 gpm	(9.1 l/m)
Discharge Pressure Range.....	100-1200 psi	(7-85 bar)
Stroke .....	0.335"	(8.5 mm)

#### **MODEL 2SF35SEEL**

Flow (60 Hz-1725 rpm).....	3.5 gpm	(13.2 l/m)
Flow (50 Hz-1450 rpm).....	2.9 gpm	(11.0 l/m)
Discharge Pressure Range.....	100-1200 psi	(7-85 bar)
Stroke .....	0.402"	(10.2 mm)

#### **MODEL 2SF42SEEL**

Flow (60 Hz-1725 rpm).....	4.2 gpm	(15.9 l/m)
Flow (50 Hz-1450 rpm).....	3.5 gpm	(13.2 l/m)
Discharge Pressure Range.....	100-1000 psi	(7-70 bar)
Stroke .....	0.402"	(10.2 mm)

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

*"Customer confidence is our greatest asset"*

# PARTS LIST

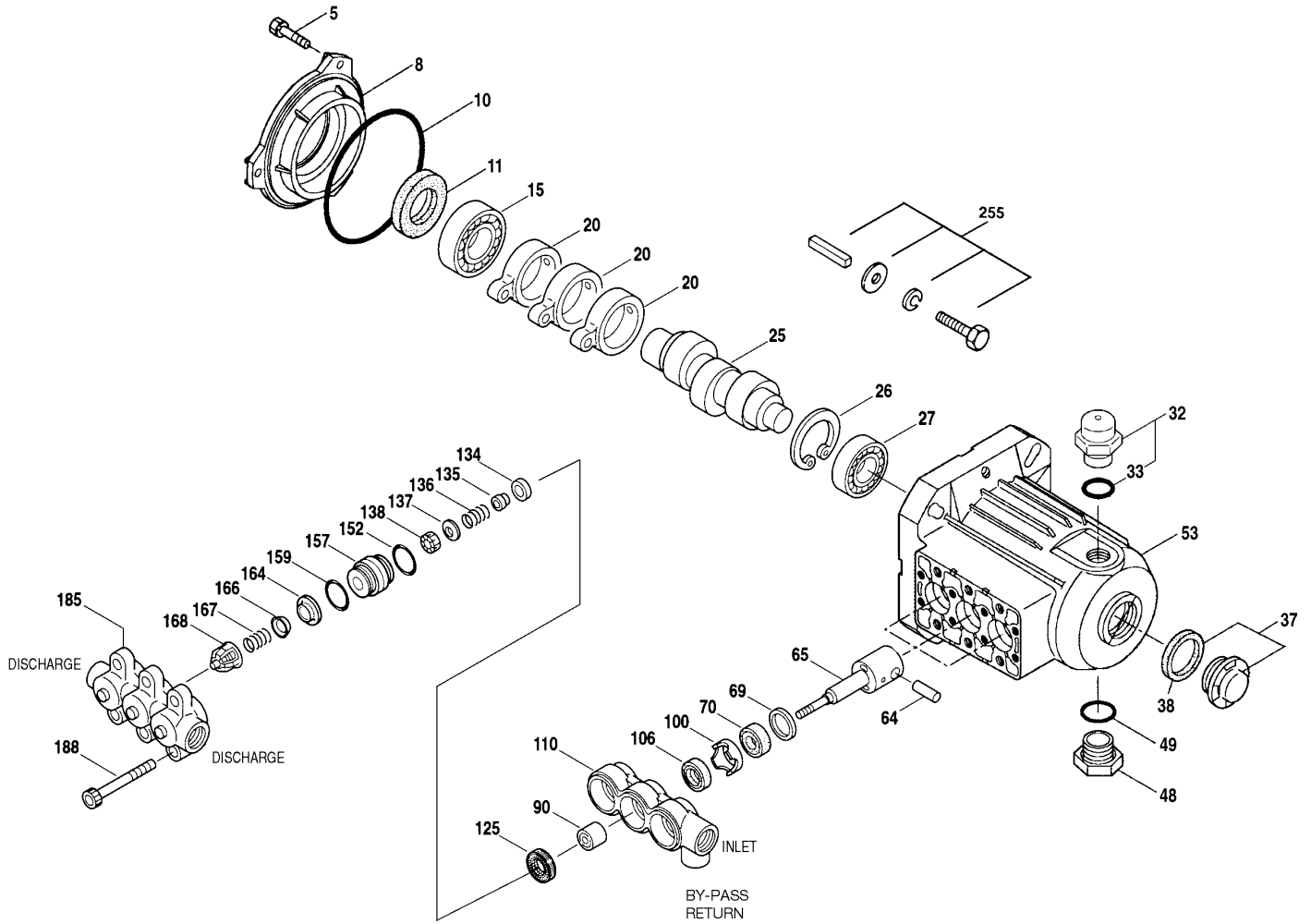
ITEM	P/N	MATL	DESCRIPTION	MODEL USED	QTY	ITEM	P/N	MATL	DESCRIPTION	MODEL USED	QTY
5	547445	S	Screw, HHC Sems (M6x14) [3/03]	All	3	157	<b>544700</b>	SS	Adapter, Valve	05-35SEEL	3
8	547153	AL	Cover, Bearing [3/03]	All	1		<b>831289</b>	SS	Adapter, Valve	42SEEL	3
10	14041	NBR	O-Ring, Bearing Cover-70D [3/03]	All	1	159	† 26089	NBR	O-Ring, Adapter Spacer, Outer-80D	All	3
11	55337	NBR	Seal, Oil, Crankshaft -70D [3/03]	All	1		11377	FPM	O-Ring, Adapter Spacer, Outer-80D	All	3
15	14488	STL	Bearing, Ball - Inner	All	1		46647	EPDM	O-Ring, Adapter Spacer, Outer-80D	All	3
20	547046	TNM	Rod, Connecting	All	3	164	544293	SS	Seat	All	3
25	<b>543135</b>	FCM	Crankshaft, 1.7mm	05SEEL	1	166	543669	SS	Valve	All	3
	<b>46109</b>	FCM	Crankshaft, 3.1mm	10SEEL	1	167	543700	SS	Spring	All	3
	<b>44931</b>	FCM	Crankshaft, 4.5mm	15SEEL	1	168	44565	PVDF	Retainer, Spring	All	3
	<b>544693</b>	FCM	Crankshaft, 7.3mm	25SEEL	1	185	547705	SS	Manifold, Discharge	All	1
	<b>45426</b>	FCM	Crankshaft, 8.5mm	29SEEL	1	188	544701	S	Screw, HSH (M8x80)	All	6
	<b>544694</b>	FCM	Crankshaft, 10.2mm	35SEEL, 42SEEL	1	255	30517	STZP R	Assy, Bolt Mount	All	1
26	12385	STL	Ring, Retaining, Bearing	All	1	283	990394	-	Kit, Oil Drain	All	1
27	15710	STL	Bearing, Ball - Outer	All	1	285	80228	STL	Screw (M8-1.25x80) (Motor Removal) (Not Shown)	All	2
32	547961	RTP	Cap, Oil Filler w/O-Ring	All	1	300	<b>34973</b>	NBR	Kit, Seal (Incls: 106, 125, 152, 159)	05-35SEEL	1
33	14179	NBR	O-Ring, Oil Filler Cap - 70D	All	2		<b>33453</b>	FPM	Kit, Seal (Incls: 106, 125, 152, 159)	05-35SEEL	1
37	92241	-	Gauge, Oil w/Gasket - 80D	All	1		<b>30536</b>	EPDM	Kit, Seal (Incls: 106, 125, 152, 159)	05-35SEEL	1
38	44428	NBR	Gasket, Flat, Oil Gauge - 80D	All	1		<b>76973</b>	NBR	Kit, Seal (Incls: 106, 125, 152, 159)	42SEEL	1
48	44842	NY	Plug, Drain	All	1		<b>76955</b>	FPM	Kit, Seal (Incls: 106, 125, 152, 159)	42SEEL	1
49	14179	NBR	O-Ring, Drain Plug - 70D	All	1		<b>76996</b>	EPDM	Kit, Seal (Incls: 106, 125, 152, 159)	42SEEL	1
53	547285	AL	Crankcase [3/03]	All	1	310	<b>34972</b>	NBR	Kit, Valve (Incls: 152,159,164,166,167,168)	05-35SEEL	1
64	16948	CM	Pin, Crosshead	All	3		<b>33454</b>	FPM	Kit, Valve (Incls: 152,159,164,166,167,168)	05-35SEEL	1
65	544695	SSZZ	Rod, Plunger	All	3		<b>30546</b>	EPDM	Kit, Valve (Incls: 152,159,164,166,167,168)	05-35SEEL	1
69	126259	STCP R	Washer, Oil Seal	All	3		<b>76972</b>	NBR	Kit, Valve (Incls: 152,159,164,166,167,168)	42SEEL	1
70	25461	NBR	Seal, Oil Crankcase	All	3		<b>76445</b>	FPM	Kit, Valve (Incls: 152,159,164,166,167,168)	42SEEL	1
90	<b>544697</b>	CC	Plunger, Ceramic (M18x18)	05-35SEEL	3		<b>76446</b>	EPDM	Kit, Valve (Incls: 152,159,164,166,167,168)	42SEEL	1
	<b>831290</b>	CC	Plunger, Ceramic (M20x18)	42SEEL	3	311	<b>39668</b>	NBR	Kit, Inlet Valve w/SS-IV (Incls:134-138,152,159)	05-35SEEL	1
100	44869	PVDF	Retainer, Seal	All	3		<b>34974</b>	NBR	Kit, Inlet Valve w/NY-IV (Incls:134-138,152,159)	05-35SEEL	1
106	547683	NBR	Seal, LPS w/SS-Spg	All	3		<b>33460</b>	FPM	Kit, Inlet Valve w/NY-IV (Incls:134-138,152,159)	05-35SEEL	1
	545192	FPM	Seal, LPS w/SS-Spg	All	3		<b>30556</b>	EPDM	Kit, Inlet Valve w/NY-IV (Incls:134-138,152,159)	05-35SEEL	1
	546507	EPDM	Seal, LPS w/SS-Spg	All	3		<b>76668</b>	NBR	Kit, Inlet Valve w/SS-IV (Incls:134-138,152,159)	42SEEL	1
110	<b>547704</b>	SS	Manifold, Inlet	05-35SEEL	1		<b>76465</b>	FPM	Kit, Inlet Valve w/SS-IV (Incls:134-138,152,159)	42SEEL	1
	<b>831288</b>	SS	Manifold, Inlet	42SEEL	1		<b>76466</b>	EPDM	Kit, Inlet Valve w/SS-IV (Incls:134-138,152,159)	42SEEL	1
125	<b>44652</b>	SNG	Seal, HPS w/SS	05-35SEEL	3	352	44050	STPZ	Tool, Oil Gauge Removal	All	1
	<b>46652</b>	HT*	Seal, Hi-Temp, 2-Pc w/S-Support	05-35SEEL	3	-	6107	-	Oil, Bottle (21 oz) ISO-68 Hydraulic (Fill to specified crankcase capacity prior to start-up)	All	1
	<b>44649</b>	SNG	Seal, HPS w/SS	42SEEL	3		6575	-	Plunger Pump Service DVD	All	1
	<b>44936</b>	FPM	Seal, HPS w/SS	42SEEL	3		6119	-	Lubricant, Antiseize (1 oz.)	All	1
	<b>46667</b>	HT*	Seal, Hi-Temp, 2-Pc w/S-Support	42SEEL	3						
134	<b>543691</b>	SS	Valve, Inlet [4/02]	05-35SEEL	3						
	<b>33873</b>	NY	Valve, Inlet [4/02]	05-35SEEL	3						
	<b>831400</b>	SS	Valve, Inlet	42SEEL	3						
135	543689	SS	Spacer	All	3						
136	543690	SS	Spring, Inlet Valve	All	3						
137	88575	S	Washer, Conical (M6)	All	3						
138	543692	SS	Nut (M6)	All	3						
152	† 26089	NBR	O-Ring, Adapter Spacer, Inner-80D	05-35SEEL	3						
	<b>11377</b>	FPM	O-Ring, Adapter Spacer, Inner-80D	05-35SEEL	3						
	<b>46647</b>	EPDM	O-Ring, Adapter Spacer, Inner-80D	05-35SEEL	3						
	<b>549539</b>	NBR	O-Ring, Adapter Spacer, Inner	42SEEL	3						
	<b>129977</b>	FPM	O-Ring, Adapter Spacer, Inner	42SEEL	3						
	<b>129978</b>	EPDM	O-Ring, Adapter Spacer, Inner	42SEEL	3						

**Bold print part numbers are unique to a particular pump model. Italics are optional items.** [ ] Date of latest production change. † Production parts are different than repair parts. R Components comply with RoHS Directive. \*Review individual parts in each kit for material code identification.

View Tech Bulletins 002, 036, 043, 055, 064, 070, 073, 074, 091, 092 and 095 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 EPDM=Ethylene propylenedienemonamer FCM=Forged Chrome-moly FPM=Fluorocarbon HT=Hi-Temp (EPDM Alternative) NBR=Medium Nitrile (Buna-N) NY=Nylon PVDF=Polyvinylidene Fluoride RTP=Reinforced Composite S=304SS SNG=Special Blend (Buna) SS=316SS SSZZ=316SS/Zamak STL=Steel STCP=Steel/Chrome Plated STZP=Steel/Zinc Plated TNM=Special High Strength

# EXPLODED VIEW APRIL 2010



## MOTOR SPECIFICATIONS

MODEL	8105	8175	8110	8060	8062	8082	8125
HorsePower	0.5	0.75	1.0	1.5	2.0	2.0//1.5	2.5
Phase	Single	Single	single	Single	Single	Three	Single
RPM	1750	1745	1750	1725	1725	1725//1425	1750//1450
Frame Size	56C TEFC	56C TEFC	56C TEFC	56C TEFC	56C TEFC	56HC TEFC	56HC TEFC
Shaft Diameter (inches)	5/8	5/8	5/8	5/8	5/8	5/8	5/8
Maximum Volts	115/208-230	115/208-230	115/208-230	115/230	115/230	208-230/460 190/380	115/230 110/220
FULL LOAD AMPS	7.4/3.6-3.7	10.6/5.2-5.3	14/6.8-7.0	14.0/7.0	17.0/8.5	5.9-5.6/2.8 5.2/2.6	21/11.5 23.6/11.8
Hertz	60	60	60	60	60	60/50	60/50
Service Factor	1.15	1.15	1.15	1.2	1.15	1.15	1.2//1.0
Max. Ambient Temp. (°F)	104	104	104	104	104	104	104
Capacitor Start	Yes	Yes	Yes	Yes	Yes	No	Yes
Thermal Overload-Manual Reset	No	Yes	No	Yes	Yes	No	No
Weight (lbs.)	25	28	34	42	45.7	40	52.9

## DETERMINING REQUIRED H.P.

$$\frac{\text{gpm} \times \text{psi}}{1460} = \text{Electric Brake H.P. Require}$$

## ELECTRIC HORSEPOWER REQUIREMENTS

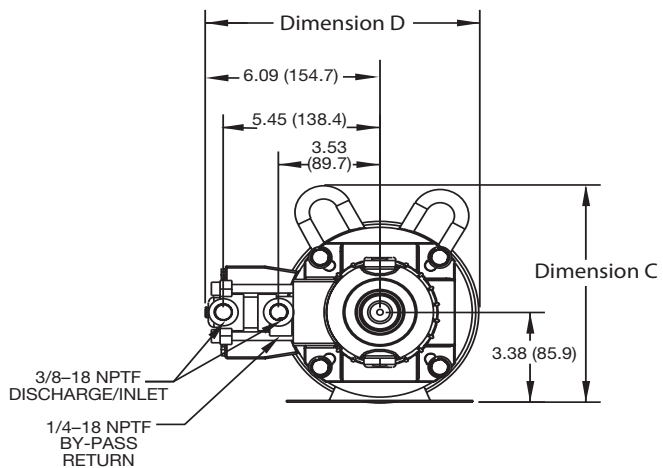
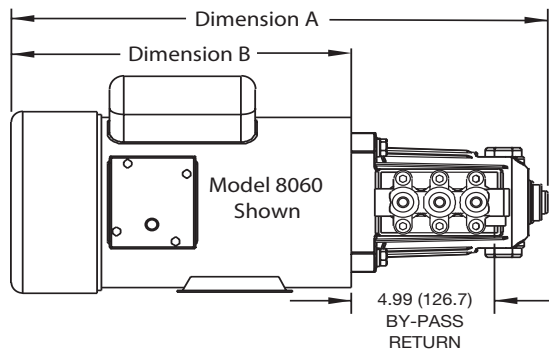
FLOW		PRESSURE psi (bar)			PUMP rpm
U.S. gpm	Metric l/m	700 (50)	1000 (70)	1200 (85)	
0.5	1.9	.24	.35	.41	1725
1.0	3.8	.47	.68	.82	1725
1.5	5.7	.72	1.03	1.23	1725
2.5	9.5	1.19	1.71	2.05	1725
2.85	10.8	1.36	2.0	2.3	1725
3.5	13.2	1.67	2.39	2.87	1725
4.2	15.9	2.01	2.88	N/A	1725

★ ★ Before mounting pump on motor, apply P.N. 6106 Antiseize Lubricant to pump shaft.

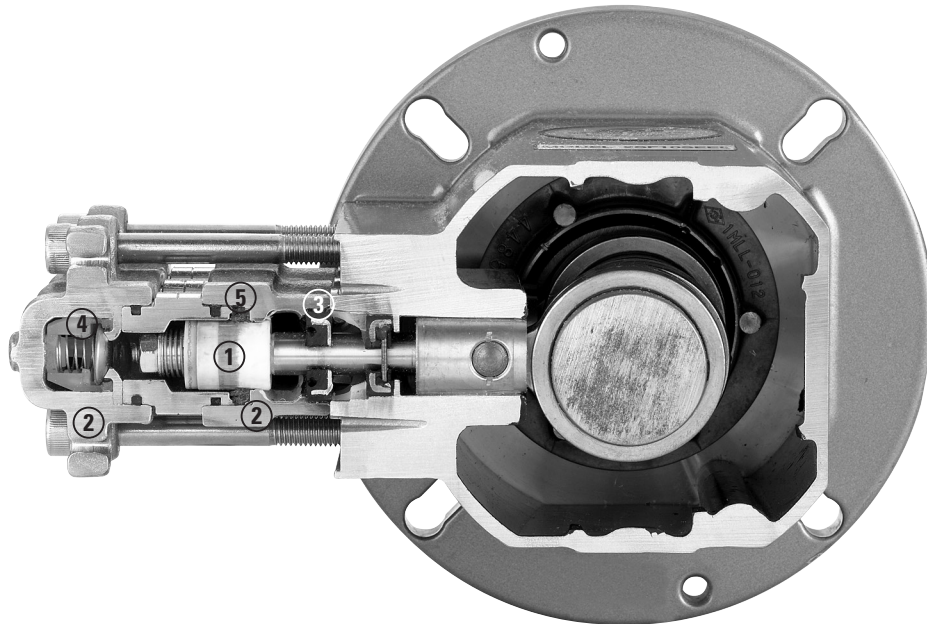
Refer to Tech Bulletin 055 for instructions on removing pump from electric motor.

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.

MODEL	8105	8175	8110	8060	8062	8082	8125
Dimension A	15.9	15.9	17.1	18.7	19.2	18.0	19.0
Dimension B	9.0	9.0	10.2	11.8	12.3	11.2	12.2
Dimension C	8.2	8.2	8.2	8.1	8.1	6.9	9.6
Dimension D	9.1	9.1	9.1	9.5	9.5	9.5	9.7



Models 2SF05SEEL, 2SF10SEEL, 2SF15SEEL, 2SF25SEEL, 2SF29SEEL, 2SF35SEEL, 2SF42SEEL



- 1 Special concentric, high-density, polished, solid ceramic **plungers** provide a true wear surface and extended seal life.
- 2 **Manifolds** are 316 stainless steel for long term continuous duty and corrosion resistance.
- 3 100% wet **seal** design adds to service life by allowing pumped liquids to cool and lubricate on both sides.
- 4 Stainless steel **valves, seats and springs** provide corrosion-resistance, positive seating and long life.
- 5 Unique design and specially formulated **Hi-Pressure Seals** offer unmatched performance and seal life.

### World Headquarters

Cat Pumps

1681 - 94th Lane N.E. Minneapolis, MN 55449 - 4324

Phone (763) 780-5440 — FAX (763) 780-2958

e-mail: techsupport@catpumps.com

www.catpumps.com

### International Inquiries

FAX (763) 785-4329

e-mail: intlsales@catpumps.com



The Pumps with Nine Lives

### CAT PUMPS (U.K.) LTD.

1 Fleet Business Park, Sandy Lane, Church Crookham

FLEET, Hampshire, GU52 8BF, England

Phone Fleet 44 1252-622031 — Fax 44 1252-626655

e-mail: sales@catpumps.co.uk www.catpumps.co.uk

### N.V. CAT PUMPS INTERNATIONAL S.A.

Heiveldekens 6A, B-2550 Kontich, Belgium

Phone 32-3-450.71.50 — Fax 32-3-450.71.51

e-mail: cpi@catpumps.be www.catpumps.be

### CAT PUMPS DEUTSCHLAND GmbH

Buchwiese 2, D-65510 Idstein, Germany

Phone 49 6126-9303 0 — Fax 49 6126-9303 33

e-mail: catpumps@t-online.de www.catpumps.de