

Motor and Relief Valve sold separately.

## Stainless Steel Direct-Drive Plunger Pump

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

### FEATURES

- Triplex design provides smoother liquid flow.
- 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 Unloader/Relief Valve for system pressure control and pump protection.
- Ultra compact, lightweight direct-drive design.

### 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)
Maximum Liquid Temperature .....	160°F	(71°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 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 2SF15SEEL

Flow.....	1.5 GPM	(5.7 L/M)
Discharge Pressure Range.....	100-1200 PSI	(7-85 BAR)
RPM .....	1725 RPM	(1725 RPM)
Stroke.....	0.177"	(4.5 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.....	0.278"	(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

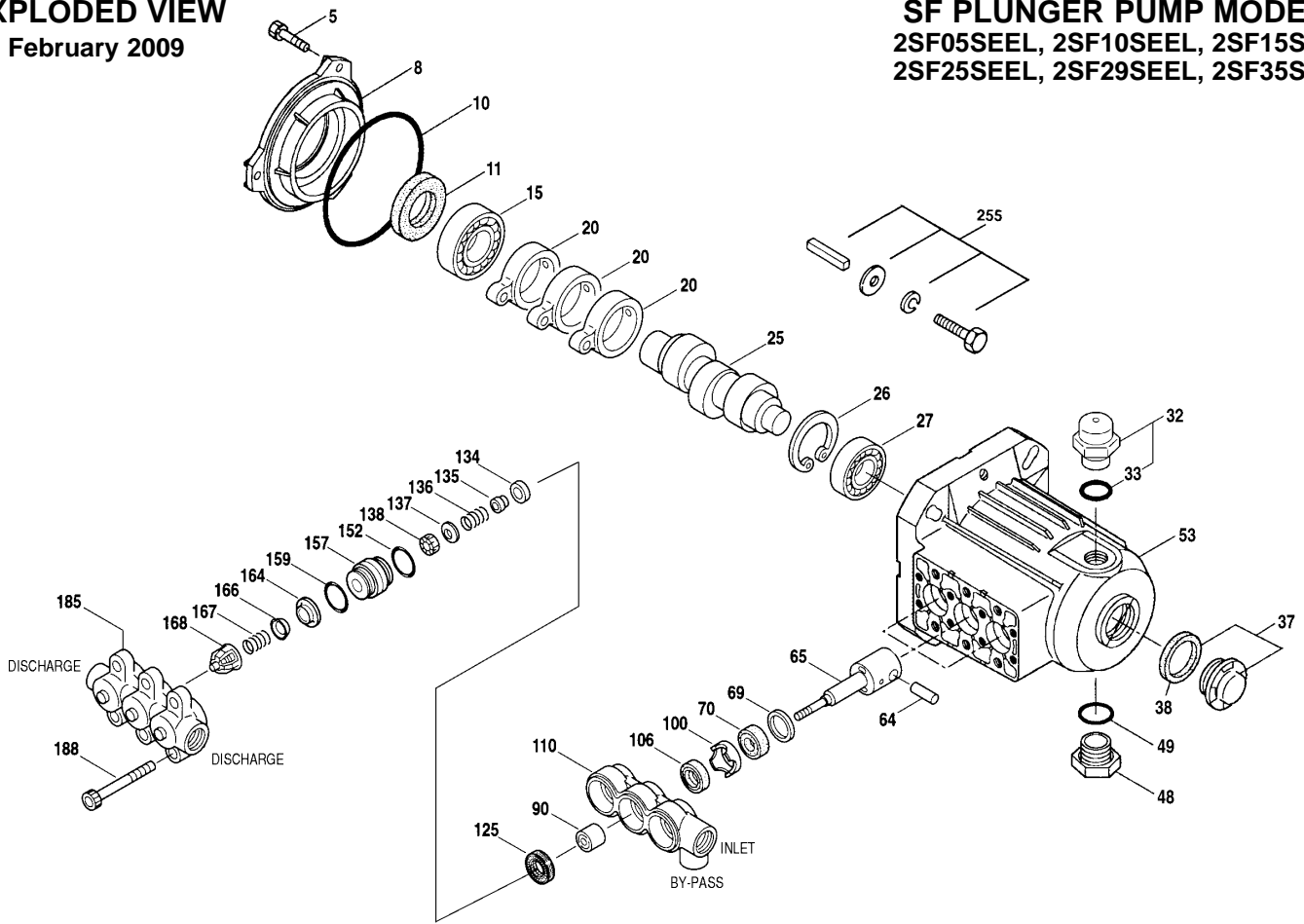
Flow.....	3.5 GPM	(13.2 L/M)
Discharge Pressure Range.....	100-1200 PSI	(7-85 BAR)
RPM .....	1725 RPM	(1725 RPM)
Stroke.....	0.402"	(10.2 mm)

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

*“Customer confidence is our greatest asset”*

# EXPLODED VIEW

February 2009



# SF PLUNGER PUMP MODELS

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

## 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	136	543690	SS	Spring, Inlet Valve	All	3
8	547153	AL	Cover, Bearing [3/03]	All	1	137	88575	S	Washer, Conical (M6)	All	3
10	14041	NBR	O-Ring, Bearing Cover - 70D [3/03]	All	1	138	543692	SS	Nut (M6)	All	3
11	55337	NBR	Seal, Oil, Crankshaft - 70D [3/03]	All	1	152	† 26089	NBR	O-Ring, Adapter Spacer, Inner - 80D	All	3
15	14488	STL	Bearing, Ball - Inner	All	1	11377	FPM	O-Ring, Adapter Spacer, Inner - 80D	All	3	
20	547046	TNM	Rod, Connecting	All	3	46647	EPDM	O-Ring, Adapter Spacer, Inner - 80D	All	3	
25	<b>543135</b>	FCM	Crankshaft, 1.7mm	05SEEL	1	157	544700	SS	Spacer, Discharge Valve	All	3
	<b>46109</b>	FCM	Crankshaft, 3.1mm	10SEEL	1	159	† 26089	NBR	O-Ring, Adapter Spacer, Outer - 80D	All	3
	<b>44931</b>	FCM	Crankshaft, 4.5mm	15SEEL	1	11377	FPM	O-Ring, Adapter Spacer, Outer - 80D	All	3	
	<b>544693</b>	FCM	Crankshaft, 7.3mm	25SEEL	1	46647	EPDM	O-Ring, Adapter Spacer, Outer - 80D	All	3	
	<b>45426</b>	FCM	Crankshaft, 8.5mm	29SEEL	1	164	544293	SS	Seat	All	3
	<b>544694</b>	FCM	Crankshaft, 10.2mm	35SEEL	1	166	543669	SS	Valve	All	3
26	12385	STL	Ring, Retaining, Bearing	All	1	167	543700	SS	Spring	All	3
27	15710	STL	Bearing, Ball - Outer	All	1	168	44565	PVDF	Retainer, Spring	All	3
32	547961	RTP	Cap, Oil Filler w/O-Ring	All	1	185	547705	SSL	Manifold, Discharge	All	1
33	14179	NBR	O-Ring, Oil Filler Cap - 70D	All	2	188	544701	S	Screw, HSH (M8x80)	All	6
37	92241	—	Gauge, Oil w/Gasket - 80D	All	1	255	30517	STZP R	Assy, Bolt Mount	All	1
38	44428	NBR	Gasket, Flat, Oil Gauge - 80D	All	1	283	990394	—	Kit, Oil Drain (Not Shown)	All	1
48	44842	NY	Plug, Drain	All	1	285	80228	STL	Screw (M8-1.25x80) (Motor Removal)	All	2
49	14179	NBR	O-Ring, Drain Plug - 70D	All	1	300	34973	NBR	Kit, Seal (Incls: 106, 125, 152, 159)	All	1
53	547285	AL	Crankcase [3/03]	All	1	33453	FPM	Kit, Seal (Incls: 106, 125, 152, 159)	All	1	
64	16948	CM	Pin, Crosshead	All	3	30536	EPDM*	Kit, Seal (Incls: 106, 125, 152, 159)	All	1	
65	544695	SSZZ	Rod, Plunger	All	3	310	34972	NBR	Kit, Valve (Incls: 152, 159, 164, 166, 167, 168)	All	1
69	126259	STCP R	Washer, Oil Seal	All	3	33454	FPM	Kit, Valve (Incls: 152, 159, 164, 166, 167, 168)	All	1	
70	25461	NBR	Seal, Oil Crankcase	All	3	30546	EPDM	Kit, Valve (Incls: 152, 159, 164, 166, 167, 168)	All	1	
90	544697	CC	Plunger, Ceramic (M18x18)	All	3	311	39668	NBR	Kit, Inlet Valve w/SS-I.V. (Incls: 134-138, 152, 159)	All	1
100	44869	PVDF	Retainer, Seal	All	3	34974	NBR	Kit, Inlet Valve w/Nylon I.V. (Incls: 134-138, 152, 159)	All	1	
106	547683	NBR	Seal, LPS w/SS-Spg	All	3	33460	FPM	Kit, Inlet Valve (Incls: 134-138, 152, 159)	All	1	
	545192	FPM	Seal, LPS w/SS-Spg	All	3	30556	EPDM	Kit, Inlet Valve (Incls: 134-138, 152, 159)	All	1	
	546507	EPDM	Seal, LPS w/SS-Spg	All	3	352	44050	STZP	Tool, Oil Gauge Removal	All	1
110	547704	SSL	Manifold, Inlet	All	1	400	7501	SS	Unloader (See Indiv. Data Sheet)	All	1
125	44652	SNG	Seal, HPS w/SS	All	3	7501.100	SS	Relief Valve (See Indiv. Data Sheet)	All	1	
	46652	HT*	Seal, Hi-Temp, 2-Pc w/S-Support	All	3	—	6107	—	Oil, Bottle (21 oz) ISO-68 Hydraulic	All	1
134	543691	SS	Valve, Inlet [4/02]	All	3	—	6575	—	(Fill to specified crankcase capacity prior to start-up)	All	1
	33873	NY	Valve, Inlet (Hi-Temp) [4/02]	All	3	—	6119	—	Plunger Pump Service DVD	All	1
135	543689	SS	Spacer	All	3	—	6119	—	Lubricant, Antiseize (1 oz.)	All	1

**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.

See 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 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 SSL=316SS/Low Carbon SSZZ=316SS/Zamak STL=Steel STCP=Steel/Chrome Plated STZP=Steel/Zinc Plated TNM=Special High Strength

# MOTOR SPECIFICATIONS

## Model 8059

Horsepower.....	<b>0.75</b>
Shaft Diameter.....	5/8"
Max. Volts.....	<b>115/208-230</b>
FULL LOAD AMPS.....	10.4/5.4-5.2
RPM.....	<b>1745</b>
Weight.....	35 lbs.
Phase.....	Single
Frame Size.....	56-C TEFC
Hertz.....	60
Service Factor.....	1.15
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

## Model 8062

Horsepower.....	<b>2.0</b>
Shaft Diameter.....	5/8"
Max. Volts.....	<b>115/230</b>
FULL LOAD AMPS.....	17.0/8.5
RPM.....	<b>1725</b>
Weight.....	45.65 lbs.
Phase.....	Single
Frame Size.....	56-C TEFC
Hertz.....	60
Service Factor.....	1.15
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

## Model 8060

Horsepower.....	<b>1.5</b>
Shaft Diameter.....	5/8"
Max. Volts.....	<b>115/230</b>
FULL LOAD AMPS.....	14.0/7.0
RPM.....	<b>1725</b>
Weight.....	42 lbs.
Phase.....	Single
Frame Size.....	56-C TEFC
Hertz.....	60
Service Factor.....	1.20
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

## Model 8062.050

Horsepower.....	<b>1.75</b>
Shaft Diameter.....	5/8"
Max. Volts.....	<b>220</b>
FULL LOAD AMPS.....	8.5
RPM.....	<b>1425</b>
Weight.....	45.65 lbs.
Phase.....	Single
Frame Size.....	56-C TEFC
Hertz.....	50
Service Factor.....	1.00
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

## Model 8060.050

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

## Model 8082

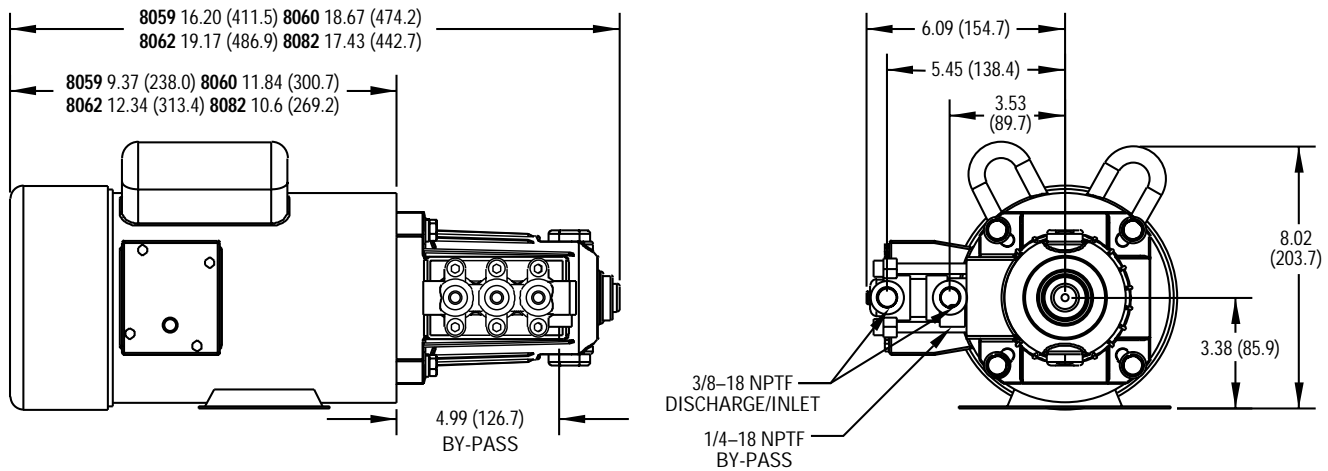
Horsepower.....	<b>2</b>
Shaft Diameter.....	5/8"
Max. Volts.....	<b>208-230/460</b>
FULL LOAD AMPS.....	5.8/2.9
RPM.....	<b>1725</b>
Weight.....	40 lbs.
Phase.....	Three
Frame Size.....	56HC TEFC
Hertz.....	60
Service Factor.....	1.15
Max. Ambient Temp.....	104°F

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

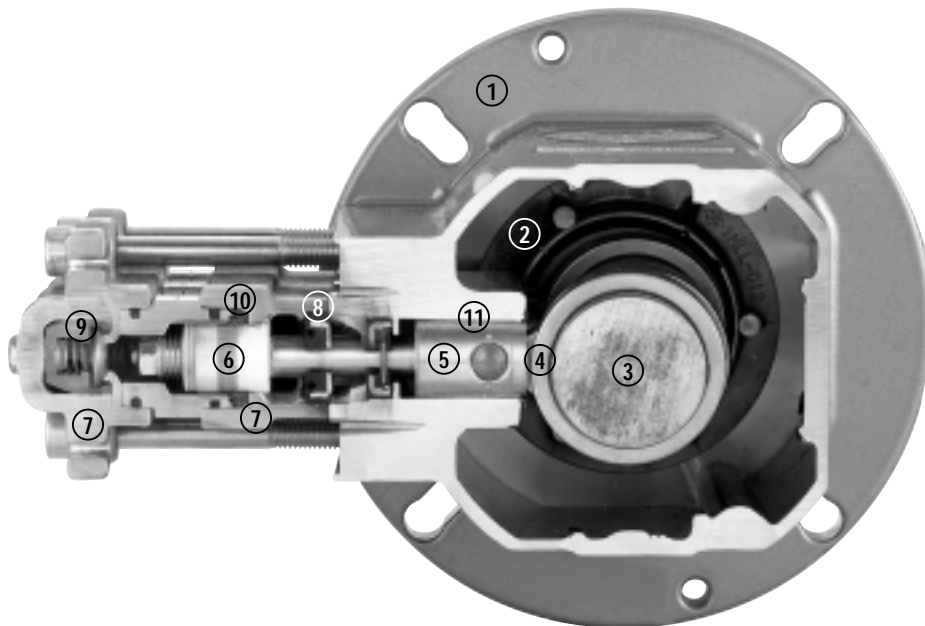
★ ★ Before mounting pump on motor, apply P.N. 6106 Antiseize Lubricant to pump shaft. ★ ★ Refer to Tech Bulletin 055 for instructions on removing pump from electric motor. For warranty consideration contact CAT PUMPS for the local **Authorized Service Center**. If you are uncertain as to the cause of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

<b>ELECTRIC HORSEPOWER REQUIREMENTS</b>					
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

<b>DETERMINING THE REQUIRED H.P.</b>	
$\frac{\text{GPM} \times \text{PSI}}{1460}$	= Electric Brake H.P. Required



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



- |   |   |   |
|---|---|---|
| <p>1 Die cast flange-style aluminum <b>crankcase</b> provides high strength, lightweight, and excellent tolerance control.</p> <p>2 Heavy-duty dual crankshaft <b>bearings</b> provide extended drive-end life.</p> <p>3 Chrome-moly <b>crankshaft</b> provides unmatched strength and surface hardness for long life.</p> <p>4 Matched oversized TNM <b>connecting rods</b> noted for superior tensile strength and bearing quality.</p> | <p>5 Special high strength stainless steel <b>plunger rods</b> for high load bearing and longevity.</p> <p>6 Special concentric, high-density, polished, solid ceramic <b>plungers</b> provide a true wear surface and extended seal life.</p> <p>7 <b>Manifolds</b> are 316L stainless steel for long term continuous duty and corrosion resistance.</p> <p>8 100% wet <b>seal</b> design adds to service life by allowing pumped liquids to cool and lubricate on both sides.</p> | <p>9 Stainless steel <b>valves, seats and springs</b> provide corrosion-resistance, positive seating and long life.</p> <p>10 Unique design and specially formulated <b>Hi-Pressure Seals</b> offer unmatched performance and seal life.</p> <p>11 <b>Crossheads</b> are 360° supported for uncompromising alignment.</p> |
|---|---|---|

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

### 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.

Heiveldkens 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