



(Rails and Shaft Protector Sold Separately)

## 3 Frame Plunger Pump

**Stainless  
Steel  
Models**

**231,241,271**

**Nickel Aluminum  
Bronze  
Models**

**237,247,277**

### FEATURES

- Triplex design delivers high efficiency and a smooth, low-pulsation flow.
- Nickel Aluminum Bronze for added compatibility in intermittent duty sea water.
- 316 Stainless Steel for added strength and corrosion resistance with aggressive liquids and sea water.
- Installation flexibility with compact direct-drive or belt-drive.
- Optional FPM, EPDM, IPFE, PTFE seals and o-rings for liquid compatibility.

### COMMON SPECIFICATIONS

Bore.....	0.709"	(18 mm)
Inlet Pressure Range .....	Flooded to 60 psi	(Flooded to 4 bar)
Crankcase Capacity .....	15 oz.	(.45 L)
Maximum Liquid Temperature .....	160°F	(71°C)
Above 130°F call CAT PUMPS for inlet conditions and elastomer recommendations.		
Inlet Ports (2) .....	1/2" NPTF	(1/2" NPTF)
Discharge Ports (2).....	3/8" NPTF	(3/8" NPTF)
Pulley Mounting.....	Either Side	(Either Side)
Shaft Diameter.....	0.650"	(16.5 mm)
Weight .....	13.4 lbs.	(6.1 kg)
Dimensions.....	10.24 x 8.78 x 5.35"(260 x 223 x 136 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

#### MODELS 231 AND 237

Flow.....	2.3 gpm	(8.7 l/m)
Pressure Range.....	100 to 1500 psi	(7 to 105 bar)
RPM.....	1725 rpm	(1725 rpm)
Stroke.....	0.276"	(7 mm)

#### MODELS 241 AND 247

Flow.....	3.6 gpm	(13.6 l/m)
Pressure Range.....	100 to 1200 psi	(7 to 85 bar)
RPM.....	1725 rpm	(1725 rpm)
Stroke.....	0.433"	(11 mm)

#### MODELS 271 AND 277

Flow.....	3.5 gpm	(13.2 l/m)
Pressure Range.....	100 to 1500 psi	(7 to 105 bar)
RPM.....	1420 rpm	(1420 rpm)
Stroke.....	0.500"	(12.7 mm)

### ELECTRIC HORSEPOWER REQUIREMENTS

MODEL	FLOW		PRESSURE			MOTOR PULLEY SIZE Using 1725 RPM Motor & Std. 5.0" Pump Pulley O.D.	
	U.S. gpm	l/m	psi 1000 bar 70	psi 1200 bar 85	psi 1500 bar 105	rpm	Pulley O.D.
271, 277	3.5	13.2	2.4	2.9	3.6	1420	4.1
	3.0	11.4	2.1	2.5	3.1	1240	3.5
231, 237	2.3	8.7	1.6	1.9	2.4	1725	Direct Drive
241, 247	3.6	13.6	2.5	3.0	N/A	1725	Direct Drive

**DETERMINING  
THE PUMP R.P.M.**

Rated gpm = "Desired" gpm  
Rated rpm = "Desired" rpm

**DETERMINING  
THE REQUIRED H.P.**

gpm x psi = Electric Brake  
1460 = H. P. Required

**DETERMINING  
MOTOR PULLEY SIZE**

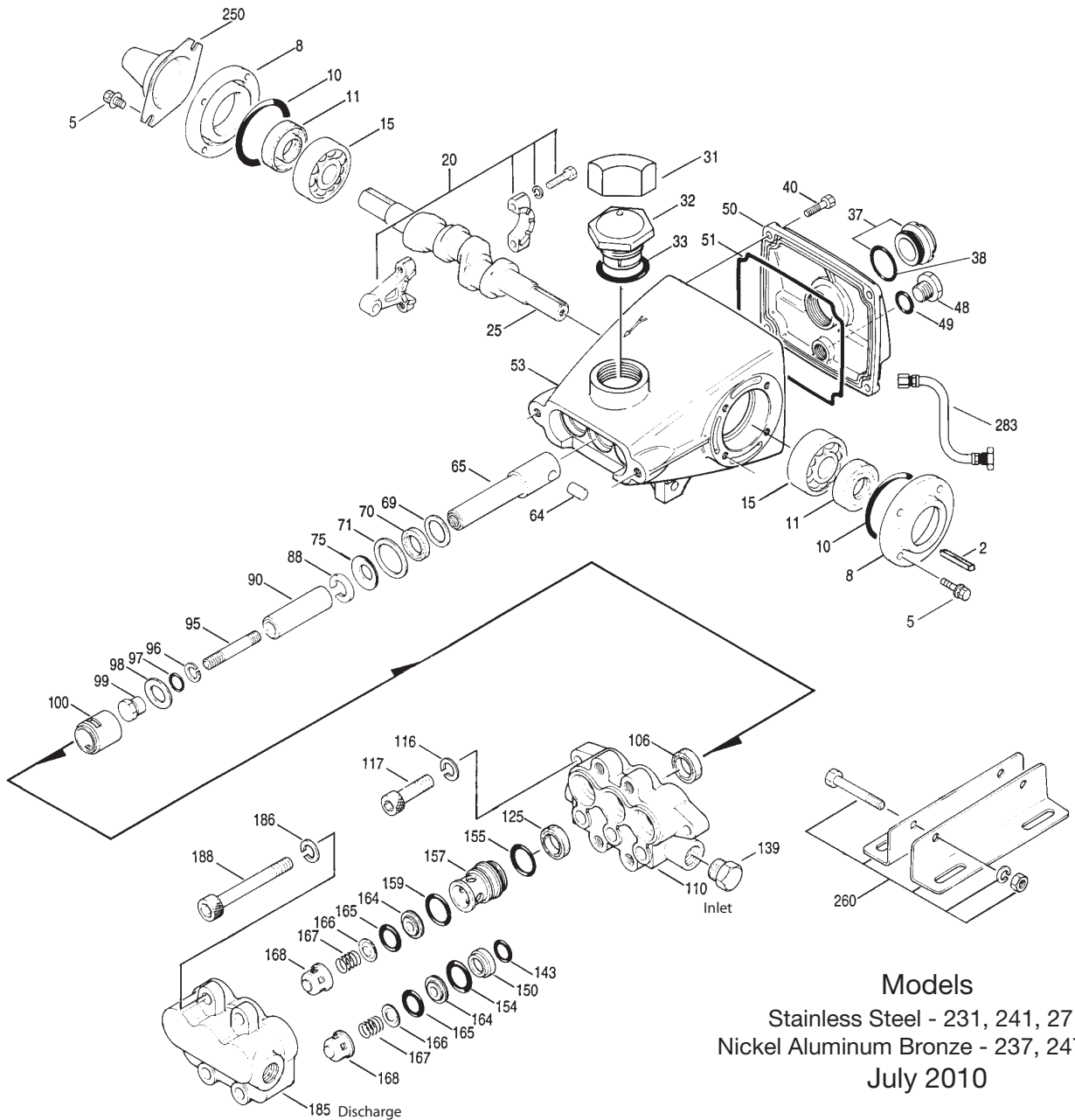
Motor Pulley O.D. = Pump Pulley O.D.  
Pump rpm Motor rpm

See complete Drive Packages [Incls: Pulleys, Belts, Hubs, Key] Tech Bulletin 003.  
Refer to pump **Service Manual** for repair procedure and additional technical information.

*"Customer confidence is our greatest asset"*

# PARTS LIST

ITEM	PART NUMBER		DESCRIPTION	QTY
	<b>231</b>	<b>237</b>		
	<b>241</b>	<b>247</b>		
	<b>271</b>	<b>277</b>		
	<b>MATL</b>	<b>MATL</b>		
2	30047	30047	Key (M5x5x24)	1
5	92538	92538	Screw, Sems HHC (M6x16)	8
8	27950	27950	Cover, Bearing	2
10	26536	26536	O-Ring, Bearing Cover - 70D	2
11	24159	24159	Seal, Oil	2
15	14487	14487	Bearing, Ball	2
20	48867	48867	Rod, Connecting Assy	3
25	<b>46946</b>	<b>46946</b>	Crankshaft, Dual End - 231, 237 (M7)	1
	<b>46951</b>	<b>46951</b>	Crankshaft, Dual End - 241, 247 (M11)	1
	<b>108062</b>	<b>108062</b>	Crankshaft, Dual End - 271, 277 (M12.7)	1
31	828710	828710	Protector, Oil Cap w/Foam Gasket	1
32	43211	43211	Cap, Oil Filler	1
33	14177	14177	O-Ring, Oil Filler Cap - 70D	1
37	92241	92241	Gauge, Oil Bubble w/Gasket - 80D	1
38	44428	44428	Gasket, Flat, Oil Gauge - 80D	1
40	92542	92542	Screw, Sems HHC (M6x20)	6
48	25625	25625	Plug, Drain (1/4"x19BSP)	1
49	23170	23170	O-Ring, Drain Plug - 70D	1
50	48772	48772	Cover, Rear [07/08] (See Tech Bulletin 104)	1
51	48773	48773	O-Ring, Rear Cover [07/08] (See Tech Bulletin 104)	1
53	128354	128354	Crankcase [07/08] (See Tech Bulletin 104)	1
64	16948	16948	Pin, Crosshead	3
65	45114	45114	Rod, Plunger	3
69	126259	126259	Washer, Oil (M24)	3
70	25301	25301	Seal, Oil - 80D	3
71	126189	126189	Washer, Oil Seal	3
75	43900	43900	Slinger, Barrier	3
88	45697	45697	Washer, Keyhole (M18)	3
90	43901	43901	Plunger (M18x43)	3
95	126550	126550	Stud, Plunger Retainer (M6x43)	3
96	43235	43235	Back-up-Ring, Plunger Retainer	3
97	17399	17399	O-Ring, Plunger Retainer - 80D	3
	14160	14160	O-Ring, Plunger Retainer - 80D	3
	◆ 46204	◆ 46204	O-Ring, Plunger Retainer - 70D	3
	701715	701715	O-Ring, Plunger Retainer	3
98	44041	44041	Gasket, Plunger Retainer (M12.5)	3
99	44031	44031	Retainer, Plunger (M6)	3
100	28597	28597	Retainer, Seal	3
106	44053	44053	Seal, LPS w/SS-Spg	3
	44926	44926	Seal, LPS w/SS-Spg	3
	◆ 46651	◆ 46651	Seal, LPS w/SS-Spg	3
	702390	702390	Seal, LPS w/SS-Spg	3
110	<b>46425</b>	<b>44052</b>	Manifold, Inlet	1
116	15847	15847	Lockwasher (M10)	2
117	87950	87950	Screw, HSH (M10x35)	2
125	44652	44652	Seal, HPS w/SS	3
	44925	44925	Seal, HPS w/SS	3
	46652	46652	Seal, HPS w/SS, 2-Pc w/S - support	3
	701382	701382	Seal, HPS w/SS	3
139	<b>45156</b>	<b>44563</b>	Plug, Inlet (1/2" NPT)	1
143	17547	17547	O-Ring, Inlet Valve Adapter, Rear - 85D	3
	11685	11685	O-Ring, Inlet Valve Adapter, Rear - 85D	3
	◆ 46648	◆ 46648	O-Ring, Inlet Valve Adapter, Rear - 70D	3
	703308	703308	O-Ring, Inlet Valve Adapter, Rear - 85D	3
150	44060	44060	Adapter, Inlet Valve	3
154	43893	43893	O-Ring, Inlet Valve Adapter, Front - 80D	3
	44927	44927	O-Ring, Inlet Valve Adapter, Front	3
	◆ 46649	◆ 46649	O-Ring, Inlet Valve Adapter, Front - 80D	3
	703307	703307	O-Ring, Inlet Valve Adapter, Front - 80D	3
155	26089	26089	O-Ring, Discharge Valve Adapter, Rear - 80D	3
	11377	11377	O-Ring, Discharge Valve Adapter, Rear - 80D	3
	◆ 46647	◆ 46647	O-Ring, Discharge Valve Adapter, Rear - 80D	3
	703244	703244	O-Ring, Discharge Valve Adapter, Rear - 80D	3
157	44059	44059	Adapter, Discharge Valve	3
159	26089	26089	O-Ring, Discharge Valve Adapter, Front - 80D	3
	11377	11377	O-Ring, Discharge Valve Adapter, Front - 80D	3
	◆ 46647	◆ 46647	O-Ring, Discharge Valve Adapter, Front - 80D	3
	703244	703244	O-Ring, Discharge Valve Adapter, Front - 80D	3
164	44058	44058	Seat	6
165	44001	44001	O-Ring, Seat - 80D	6
	44928	44928	O-Ring, Seat - 80D	6
	◆ 46650	◆ 46650	O-Ring, Seat - 80D	6
	703309	703309	O-Ring, Seat - 80D	6
166	44057	44057	Valve	6
167	44056	44056	Spring	6
168	44055	44055	Retainer, Spring	6
185	<b>46427</b>	<b>44054</b>	Manifold, Discharge	1
186	15847	15847	Lockwasher (M10)	4
188	87952	87952	Screw, HSH (M10x55)	4
250	25130	25130	Protector, Shaft	1
260	30612	30612	Rail, Angle Assy	1
265	30651	30651	Mount, Assy (30612,30246,25130)	1
270	30246	30246	Pulley & Key Assy (Incls: 30032,30047) [Tech Bulletin 003]	1
277	34121	34121	Bell Housing Assy (56C, 2.0 Hp)	1
	34126	34126	Bell Housing Assy (182TC-184TC, 3.0 Hp)	1
278	8215	8215	Flexible Coupling Assy (M16.5 to 5/8")	1
	8220	8220	Flexible Coupling Assy (M16.5 to 1-1/8")	1
283	34334	34334	Kit, Oil Drain (3/8"x24") (See Tech Bulletin 077)	1



**Models**  
 Stainless Steel - 231, 241, 271  
 Nickel Aluminum Bronze - 237, 247, 277  
 July 2010

	<b>231</b>		<b>237</b>			
	<b>241</b>		<b>247</b>			
	<b>271</b>	<b>MATL</b>	<b>277</b>	<b>MATL</b>		
290	6124	—	6124	—	<i>Liquid Gasket (3 oz.)</i>	1
299	<b>814823</b>	<b>SS</b>	<b>815262</b>	<b>NAB</b>	<i>Head, Complete</i>	1
300	30983	NBR	30983	NBR	<i>Kit, Seal (Incls: 97,106,125,143,154,155, 159,165)</i>	1
	33609	FPM	33609	FPM	<i>Kit, Seal (Incls: 97,106,125,143,154,155,159,165)</i>	1
	◆ 33914	EPDM*	◆ 33914	EPDM*	<i>Kit, Seal (Incls: 97,106,125,143,154,155,159,165)</i>	1
	33915	HT	33915	HT	<i>Kit, Seal, Hi Temp (Incls: 97,106,125,143,154,155,159,165)</i>	1
	76660	IPFE	76660	IPFE	<i>Kit, Seal (Incls: 97,106,125,143,154,155,159,165)</i>	1
310	30982	NBR	30982	NBR	<i>Kit, Valve (Incls: 143,154,155,164,165,166,167,168)</i>	1
	31216	FPM	31216	FPM	<i>Kit, Valve (Incls: 143,154,155,164,165,166,167,168)</i>	1
	◆ 31217	EPDM	◆ 31217	EPDM	<i>Kit, Valve (Incls: 143,154,155,164,165,166,167,168)</i>	1
	76690	IPFE	76690	IPFE	<i>Kit, Valve (Incls: 143,154,155,164,165,166,167,168)</i>	1
350	30696	STZP	30696	STZP	<i>Pliers, Reverse</i>	1
390	711500	—	711500	—	<i>C.A.T. (Inlet pressure stabilizer for R.O. and boosted inlet Applications)</i>	1
391	711502	—	711502	—	<i>Adapter (2 per C.A.T.) (See Data Sheet for complete selection)</i>	2
392	701818	SS	701818	SS	<i>Elbow Assy used with adapter Assy 711502</i>	1
—	6575	—	6575	—	<i>Plunger Pump Service DVD</i>	1
—	6107	—	6107	—	<i>Oil, Bottle (21 oz.) ISO 68 Hydraulic</i>	1
					<i>(Fill to specified crankcase capacity prior to start-up)</i>	

**Bold print part numbers are unique to a particular pump model. Italics are optional items. ◆ Silicone oil/grease required.**

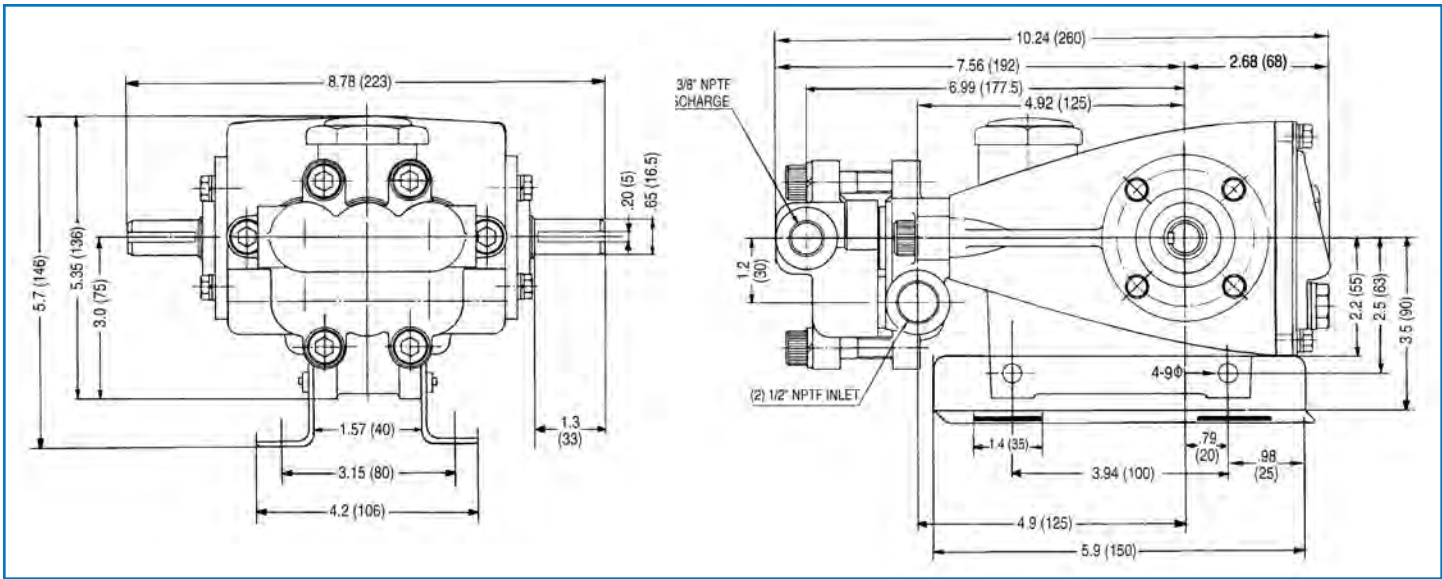
R components comply with RoHS Directive. \*Review individual parts in each kit for material code identification.

View Tech Bulletins 002, 003, 008, 024, 033, 034, 036, 043, 047, 049, 052, 053, 067, 073, 074, 077, 083 and 104 for additional information.

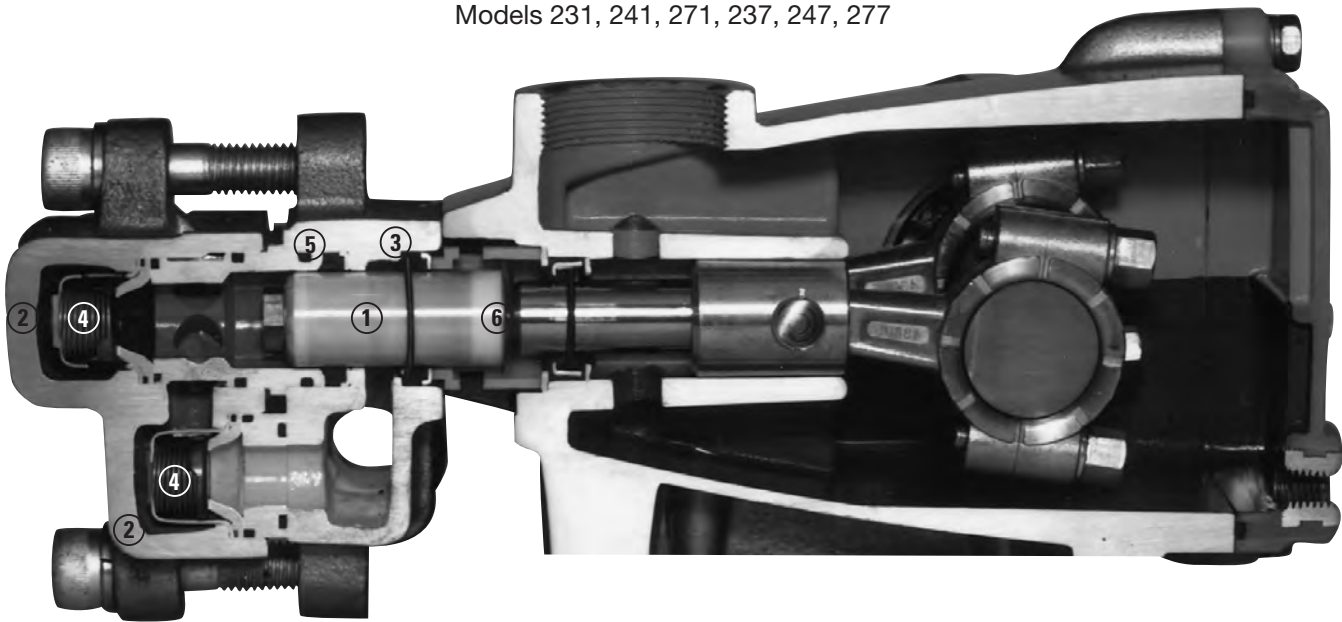
**C.A.T. highly recommended for pressurized inlet, R.O. and Industrial applications.**

MATERIAL CODES (Not Part of Part Number): ABS=ABS Plastic AL=Aluminum CC=Ceramic CM=Chrome-Moly

EPDM=Ethylene Propylene Diene Monomer FCM=Forged Chrome-moly FPM=Fluorocarbon HT=Hi-Temp Special IPFE= I-Perfluoroelastomer PTFE (EPDM Alternative)  
 NAB=Nickel Aluminum Bronze NBR=Medium Nitrile (Buna-N) PTFE=Pure Polytetrafluoroethylene PVDF=Polyvinylidene Fluoride S=304SS SS=316SS SFTA=Special Blend PTFE SNG=Special Blend (Buna) SSZZ=316SS/Zamak STCP=Steel/Chrome Plated STL=Steel STZP=Steel/Zinc Plated TNM= Special High-Strength



Models 231, 241, 271, 237, 247, 277



- 1 Special concentric, high density, polished, solid ceramic **plungers** provide a true wear surface and extended seal life
- 2 **Manifolds** are a high tensile strength nickel aluminum bronze or 316 stainless steel for long term, continuous duty.
- 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, ultimate seating and extended life.
- 5 Specially formulated, CAT PUMP exclusive, **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

**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