



(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 or can be requested directly from CAT PUMPS.

WARRANTY

View the Limited Warranty on-line at 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	
	U.S. gpm	l/m	psi 1000 bar 70	psi 1200 bar 85	psi 1500 bar 105	Using 1725 RPM Motor & Std. 5.0" Pump Pulley O.D. 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

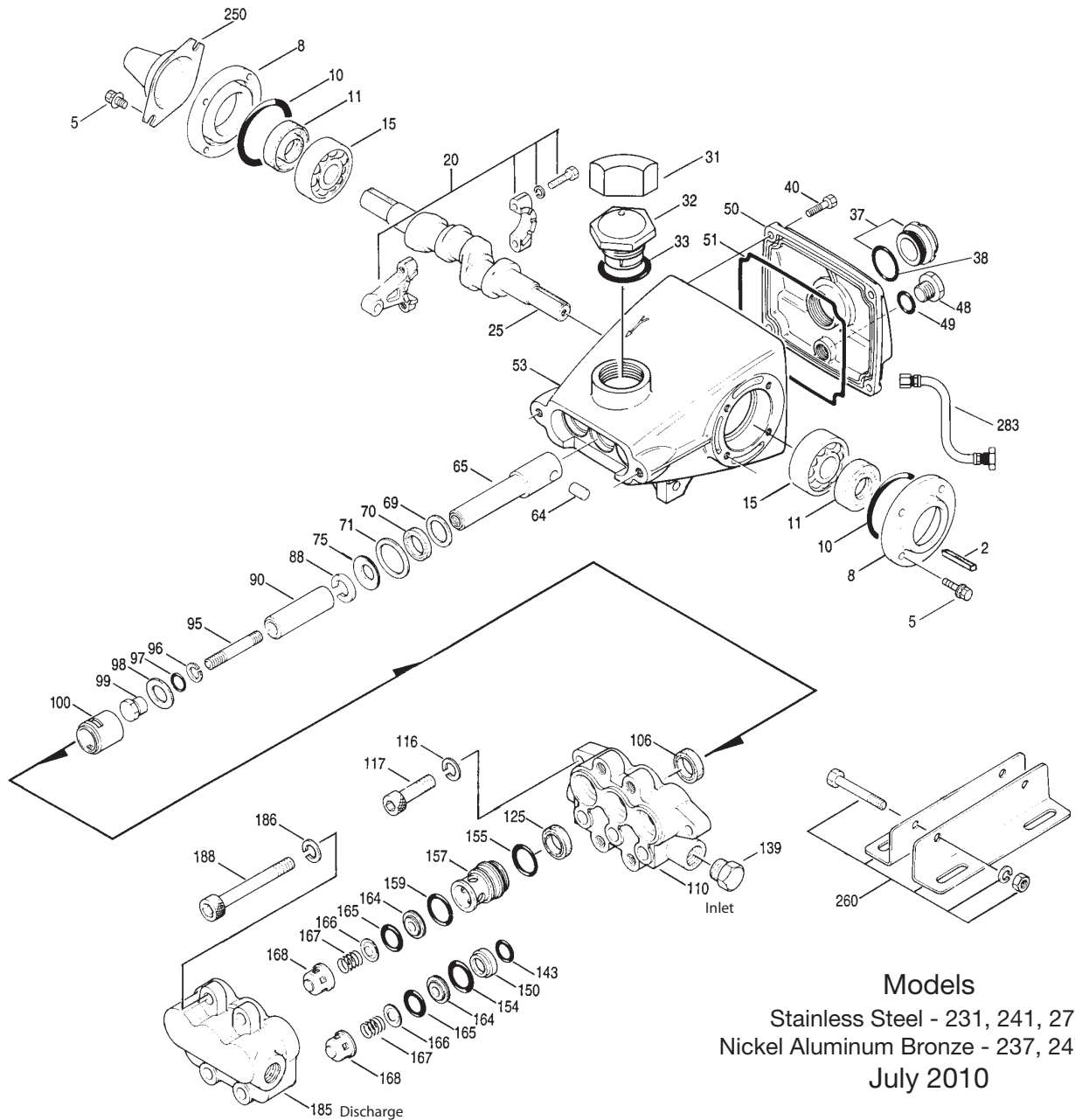
Motor rpm

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

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

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.

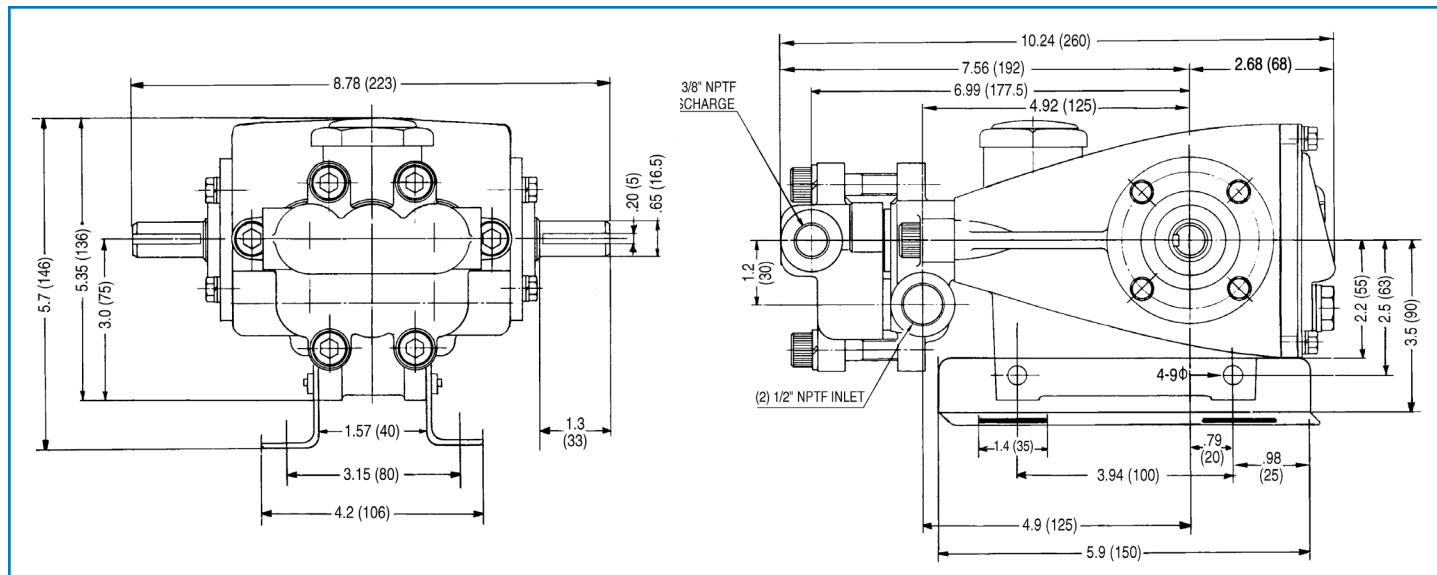
C.A.T. highly recommended for pressurized inlet, R.O. and Industrial applications.

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

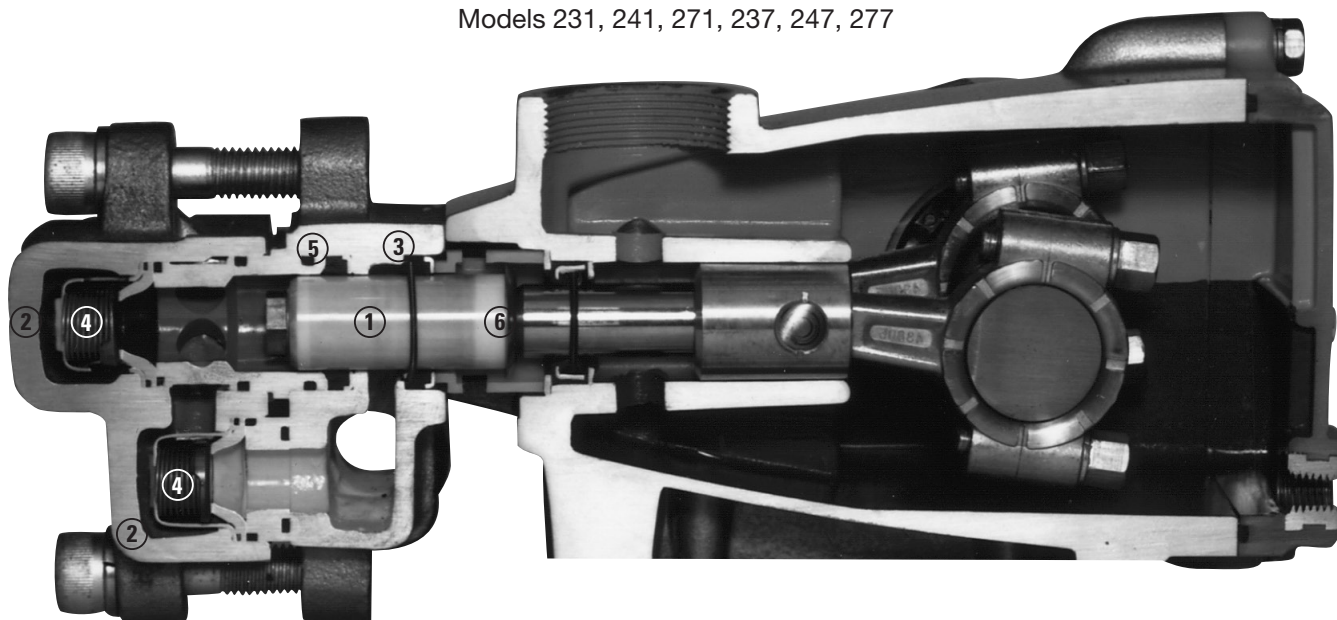
EPDM=Ethylene Propylene Diene Monomer FCM=Forged Chrome-moly FPM=Fluorocarbon HT=Hi-Temp Special IPFE=I-Perfluoroelastomer PTFE (EPDM Alternative)

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.

