

DATA SHEET

3 FRAME PLUNGER PUMPS



Stainless Steel Models: 231, 241, 271

Nickel Aluminum Bronze Models: 237, 247, 277



Model 277 Shown
(Shaft protector and rails
sold separately)

FEATURES

- Triplex design offers high-efficiency and low-pulsation.
- Nickel Aluminum Bronze and 316 Stainless Steel models available to suit a range of high-salinity sea water or chemicals.
- 316 Stainless Steel is stronger and aids in corrosion resistance with aggressive liquids and sea water.
- Belt-driven option provides precision flow setting.
- Compact direct-drive with bell housing and flexible coupler assembly. NEMA or IEC electric motor or SAE hydraulic options available.
- Pump comes standard with NBR seals. Alternative seal materials are available for higher temperature or chemical compatibility.

COMMON

SPECIFICATIONS	U.S.	Metric
Bore	0.709"	18 mm
Inlet Pressure Range	Flooded to 60 psi	Flooded to 4.1 bar
Max. Liquid Temperature (NBR)	160° F	71° C
Alternative seals available for higher temperatures up to 200° F		
Crankcase Capacity	15 oz	0.44 l
Inlet Ports (2)	½" NPT(F)	½" NPT(F)
Discharge Ports (2)	⅜" NPT(F)	⅜" NPT(F)
Shaft Diameter	0.650"	16.5 mm
Pulley Mounting	Either Side	Either Side
Weight	13.4 lbs	6.1 kg
Dimensions	10.28 x 8.78 x 5.35"	261 x 223 x 136 mm

SPECIFICATIONS

	U.S. Measure	Metric Measure
231, 237		
Flow	2.3 gpm	8.7 lpm
Pressure Range	100–1500 psi	6.9–103 bar
Pump RPM*	1725 rpm	1725 rpm
Stroke	0.287"	7.3 mm
241, 247		
Flow	3.6 gpm	13.6 lpm
Pressure Range	100–1200 psi	6.9–82 bar
Pump RPM*	1725 rpm	1725 rpm
Stroke	0.433"	11 mm
271, 277		
Flow	3.5 gpm	13.2 lpm
Pressure Range	100–1500 psi	6.9–103 bar
Pump RPM*	1420 rpm	1420 rpm
Stroke	0.500"	12.7 mm

ALTERNATE SPECIFICATIONS

271, 277		
Flow	4.2 gpm	15.9 lpm
Pressure Range	100–1000 psi	6.9–69 bar
Pump RPM*	1725 rpm	1725 rpm

* Pump minimum is 100 RPM.

ALTERNATIVE SEAL CONFIGURATION

MATERIAL	SUFFIX CODE	MAXIMUM TEMPERATURE
NBR	—	160° F (71° C)
FPM	.0110	180° F (82° C)
EPDM	.0220	160° F (71° C)
IPFE	.0770	200° F (93° C)
HT	.3000	180° F (82° C)
STHT	.3400	190° F (88° C)

See **Tech Bulletin 002** for inlet conditions and RPM at higher temperatures.

DETERMINING THE PUMP RPM

$$\frac{\text{Rated gpm}}{\text{Rated rpm}} = \frac{\text{Desired gpm}}{\text{Desired rpm}}$$

DETERMINING THE REQUIRED HP

$$\frac{\text{hp}}{\text{(Electric Brake)}} = \frac{\text{gpm} \times \text{psi}}{1460}$$

DETERMINING MOTOR PULLEY SIZE

$$\frac{\text{Motor Pulley OD}}{\text{Pump rpm}} = \frac{\text{Pump Pulley OD}}{\text{Motor rpm}}$$

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

PARTS LIST

ITEM	PART NUMBER 231, 241, 271	MATL	PART NUMBER 237, 247, 277	MATL	DESCRIPTION	QTY
5	92538	S	92538	S	Screw, Sems HHC (M6 x 16) (See Tech Bulletin 074)	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 Assembly (See Tech Bulletin 074)	3
25	46946	FCM	46946	FCM	Crankshaft, Dual End – 231, 237 (M7.3)	1
	46951	FCM	46951	FCM	Crankshaft, Dual End – 241, 247 (M11)	1
	108062	FCM	108062	FCM	Crankshaft, Dual End – 271, 277 (M12.7)	1
32	43211	ABS	43211	ABS	Cap, Oil Filler	1
33	14177	NBR	14177	NBR	O-Ring, Oil Filler Cap–70D	1
37	92241	PC	92241	PC	Gauge, Oil Bubble with Gasket–80D	1
38	44428	NBR	44428	NBR	Gasket, Flat, Oil Gauge–80D	1
40	92542	S	92542	S	Screw, Sems HHC (M6 x 20) (See Tech Bulletin 074)	6
48	25625	STCP	25625	STCP	Plug, Drain (1/4" x 19 BSP)	1
49	23170	NBR	23170	NBR	O-Ring, Drain Plug–70D	1
50	48772	AL	48772	AL	Cover, Rear (See Tech Bulletin 104)	1
51	48773	NBR	48773	NBR	O-Ring, Rear Cover (See Tech Bulletin 104)	1
53	128354	AL	128354	AL	Crankcase (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	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 x 10)	3
90	43901	CC	43901	CC	Plunger (M18 x 43)	3
95	126550	STCP R	126550	STCP R	Stud, Plunger Retainer (M6 x 43)	3
96	43235	PTFE	43235	PTFE	Backup Ring, Plunger Retainer	3
97	17399	NBR	17399	NBR	O-Ring, Plunger Retainer–80D	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 with SS-Spring	3
110	46425	SS	44052	NAB	Manifold, Inlet	1
116	15847	S	15847	S	Lockwasher (M10)	2
117	87950	S	87950	S	Screw, HSH (M10 x 35)	2
125	44652	SNG	44652	SNG	Seal, HPS with SS	3
139	45156	SS	44563	NAB	Plug, Inlet [1/2" NPT(M)]	1
143	17547	NBR	17547	NBR	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
155	26089	NBR	26089	NBR	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
164	44058	SS	44058	SS	Seat	6
165	44001	NBR	44001	NBR	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 (M10 x 55)	4

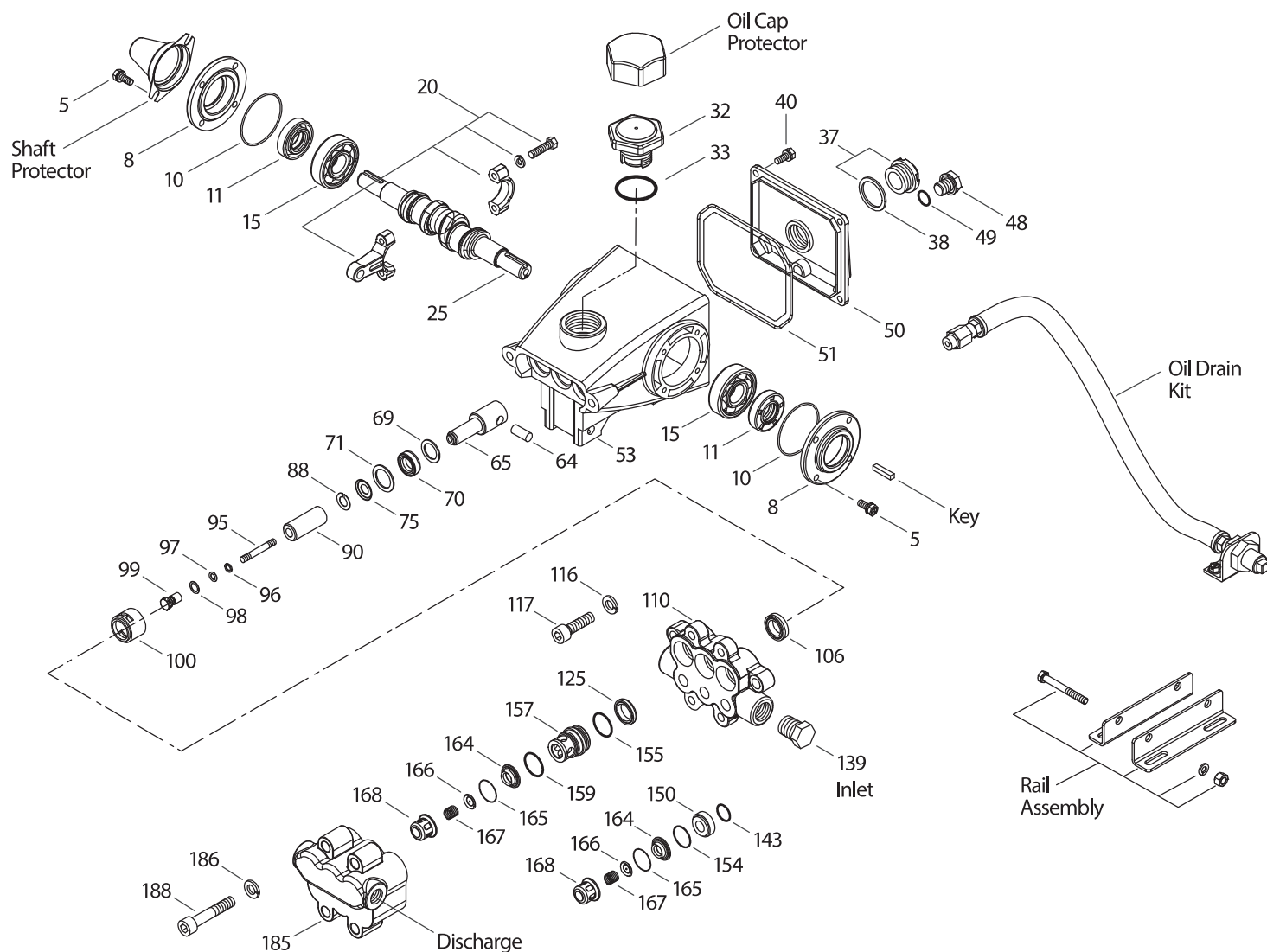
Bold print part numbers are unique to a particular pump model.

Italics are optional items. ♦ Silicone oil/grease required. R components comply with RoHS Directive.

*Review individual parts in each kit for material code identification. For additional technical information see www.catpumps.com/literature/tech-bulletins.

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) PC=Poly Carbonate PE=Polyethylene PTFE=Pure Polytetrafluoroethylene PVDF=Polyvinylidene Fluoride S=304SS SS=316SS SFTA=Special Blend PTFE SNG=Special Blend (Buna) SSZZ=316SS/Zamak ST2=Special PTFE2 ST4=Special PTFE4 STCP=Steel/Chrome Plated STL=Steel STZP=Steel/Zinc Plated TNM= Special High-Strength

EXPLODED VIEW



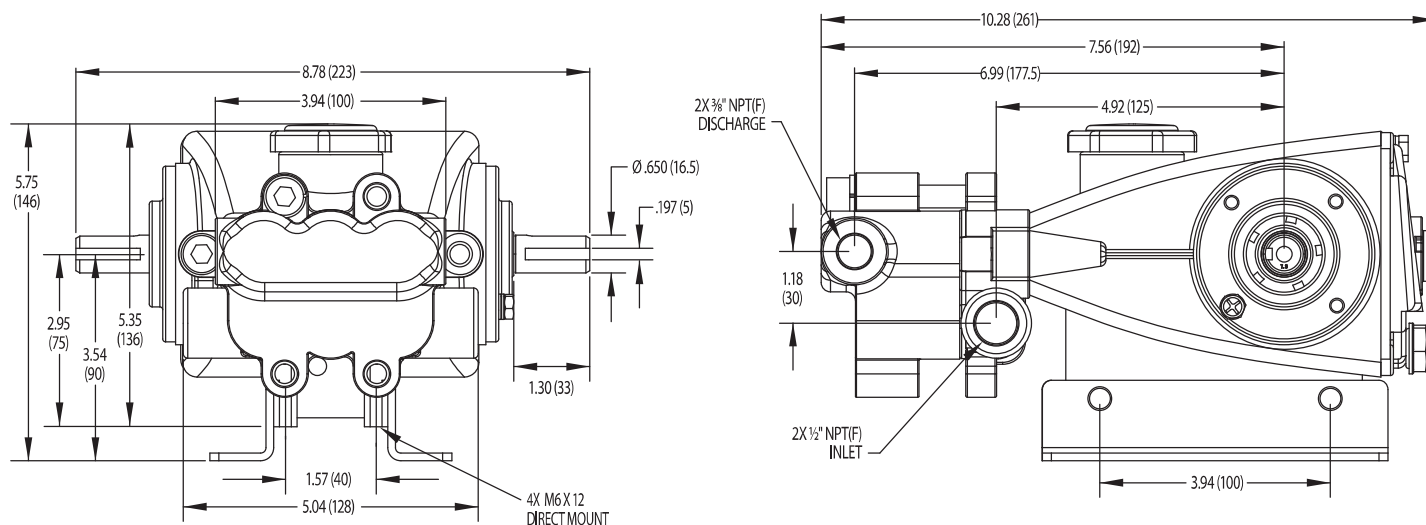
Models
Stainless Steel – 231, 241, 271
Nickel Aluminum Bronze – 237, 247, 277
March 2021

OPTIONAL PARTS AND ACCESSORIES

PART	DESCRIPTION	QTY
30047	Key, M5 x 5 x 24	1
30612	Mount, Rail Assembly	1
30651	Mount, Assembly	1
30243	Mount, Direct	1
828710	Protector, Oil Cap	1
25130	Protector, Shaft	1
34334	Kit, Oil Drain	1
30246	5" Pulley with Key	1

SERVICE PARTS

PART	DESCRIPTION	QTY
30983	Kit, Seal – Standard NBR	1
30982	Kit, Valve – Standard NBR	1
6107	Oil, Bottle (21 oz) ISO 68 Hydraulic (Fill to specified crankcase capacity prior to start-up)	1
6124	Gasket, Liquid (3 oz)	1
6119	Lubricant, Anti-Seize (2 oz)	1
814823	Head, Complete with NBR Seals & O-Rings (Models 231, 241, 271)	1
815262	Head, Complete with NBR Seals & O-Rings (Models 237, 247, 277)	1



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

SEAL KITS One (1) seal kit required per pump

PUMP MODELS	NBR (STD)	FPM (.0110)	EPDM (.0220) ♦	IPFE (.0770)	HT (.3000)	STHT (.3400)
231, 237, 241, 247, 271, 277	30983	33609	33914 *	76660	33915	30735

ITEM (Included in Seal Kits)							DESCRIPTION	QTY
97	17399	14160	46204	701715	17399	17399	O-Ring, Plunger Retainer	3
106	44053	44926	46651	702390	44053	76243	Seal, LPS with SS-Spring	3
125	44652	44925	46652	701382	46652	46652	Seal, High-Pressure	3
143	17547	11685	46648	703308	17547	17547	O-Ring, Inlet Valve Adapter, Rear	3
154	43893	44927	46649	703307	43893	43893	O-Ring, Inlet Valve Adapter, Front	3
155	26089	11377	46647	703244	26089	26089	O-Ring, Discharge Valve Adapter, Rear	3
159	26089	11377	46647	703244	26089	26089	O-Ring, Discharge Valve Adapter, Front	3
165	44001	44928	46650	703309	44001	44001	O-Ring, Seat	6

♦ Silicone Oil/Grease required

VALVE KITS One (1) valve kit required per pump

PUMP MODELS	NBR (STD)	FPM (0.0110)	EPDM (0.0220) ♦	IPFE (.0770)	HT (.3000)	STHT (.3400)
231, 237, 241, 247, 271, 277	30982	31216	31217	76690	30982	30982

ITEM (Included in Valve Kits)							DESCRIPTION	QTY
143	17547	11685	46648	703308	17547	17547	O-Ring, Inlet Valve Adapter, Rear	3
154	43893	44927	46649	703307	43893	43893	O-Ring, Inlet Valve Adapter, Front	3
155	26089	11377	46647	703244	26089	26089	O-Ring, Discharge Valve Adapter, Rear	3
164	44058	44058	44058	44058	44058	44058	Seat	6
165	44001	44928	46650	703309	44001	44001	O-Ring, Seat	6
166	44057	44057	44057	44057	44057	44057	Valve	6
167	44056	44056	44056	44056	44056	44056	Spring	6
168	44055	44055	44055	44055	44055	44055	Retainer, Spring	6

♦ Silicone Oil/Grease required

⚠ 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 Accessory Data sheet. CAUTIONS and WARNINGS can also be viewed online at www.catpumps.com/dynamic-literature/cautions-and-warnings or can be requested directly from Cat Pumps.

WARRANTY

View the Limited Warranty on-line at www.catpumps.com/literature/cat-pumps-limited-warranty

CAT PUMPS 1681 94th Lane N.E., Minneapolis, MN 55449-4324 P: (763) 780-5440 F: (763) 780-2958 E: techsupport@catpumps.com www.catpumps.com

©2021 Cat Pumps Inc. All rights reserved. All data contained in this document are based on the latest product information available at the time of publication. Cat Pumps reserves the right to make changes at any time without notice.