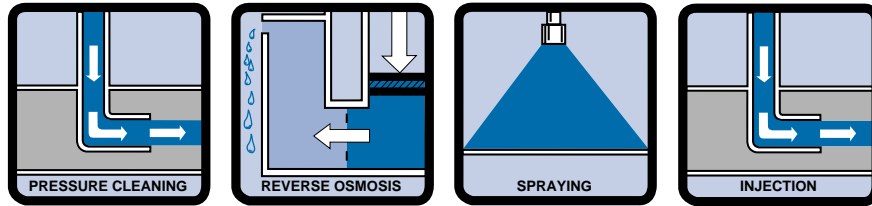
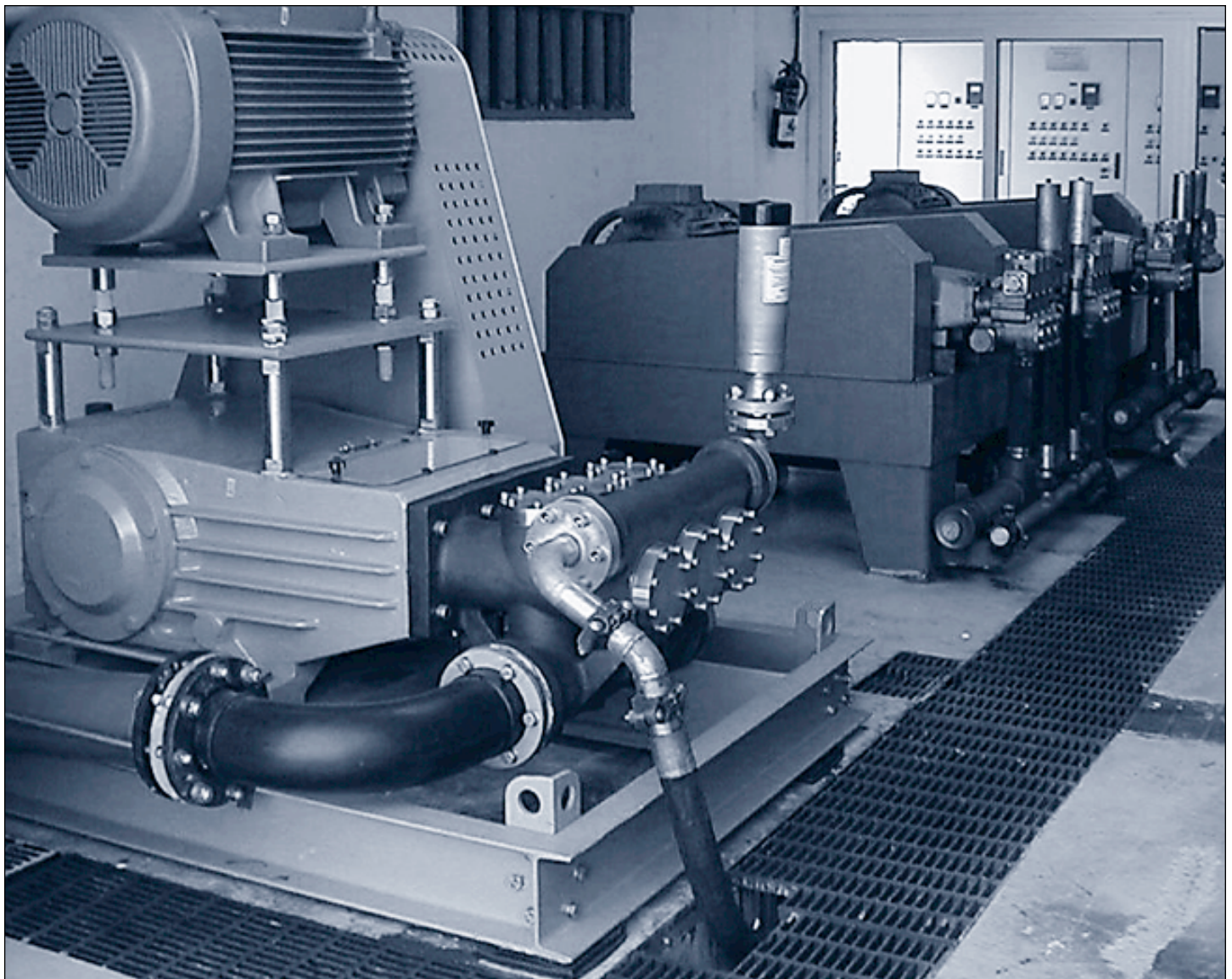


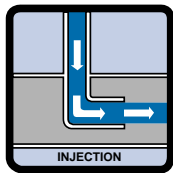
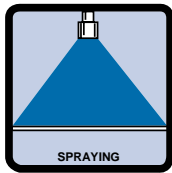
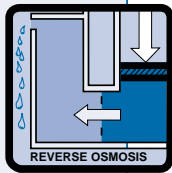


*The Pumps with Nine Lives*



# OILFIELD, GAS, PETROCHEM AND SEAWATER DESALINATION PUMPS





## Proven Design and Quality Components Assure Long-term Performance In Demanding Applications

CAT PUMPS are constructed of the highest quality materials manufactured under close tolerance control and fully tested before leaving the factory. No other pump offers such consistently high standards.

### Unlimited Application Versatility 100-7,000 PSI, 1-320 GPM

Select the pump model best suited for your industrial needs. Special 316 stainless steel construction, direct-drive options or complete custom designed gas, diesel, electric or hydraulic Power Units.

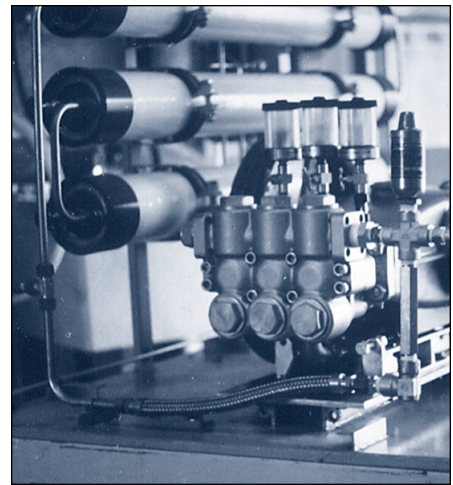
- Reverse Osmosis / Seawater Desalination
- Waste Water Injection
- BOP-Accumulator Charging
- Rig Washdown
- Wet Sandblasting
- Equipment Wash
- Fire Prevention System
- Seal Gland Flushing
- Surface Preparation, Phosphatizing
- Fracking
- Positive Displacement Metering
- Tank Cleaning
- Spraying / Misting / Odor Control
- Water Flooding
- Oil Transfer
- Anti-Rust Injection
- Hydrostatic Testing
- Gas Turbine Inlet Fogging
- High Pressure Chemical Injection
- Water Jetting



### ■ WASHDOWN

High pressure cleaning saves time and energy and can reduce safety hazards and maintenance problems. Grease and oil which has accumulated on cat walks, stairs, etc. can be quickly and effectively removed. Routine washdown of machines can be easily accomplished. Keeping machines clean prevents excessive wear caused by dirt in seals and bearings and makes it easier to spot potential problems before they become major breakdowns. The efficient CAT PUMP is a vital part of any washdown system.

By adding a simple wet sandblasting attachment, you can win the saltwater battle. This wet sandblasting is dust-free, which eliminates health hazards and dust-coated equipment.



### ■ SEAWATER DESALINATION

Fresh water is essential to ships' crews, offshore platform workers or for those in remote areas where access to quality water is limited. Supplying fresh clean water can be difficult and costly. The reverse osmosis membrane technology, filters and high pressure desalination pumps offers an efficient, cost-effective way to obtain sufficient quantities of good tasting water at remote locations.

You can stop worrying about pump breakdowns when your reverse osmosis system includes a CAT PUMP. When continuous performance is critical, you need the proven "Nine Lives" of the heavy-duty triplex reciprocating pump and built-in quality features which assure "minimum downtime". CAT PUMPS' all 316L Stainless Steel and Duplex SS construction assure long-term performance.



### ■ OIL TRANSFER PUMP

24 hour duty under adverse conditions is demanded of a pump in this crude oil transfer application. Liquid compatibility is also a critical factor to efficient operation.

The CAT PUMPS' 316L stainless steel triplex reciprocating pump design and proven long-life are ideal. CAT PUMPS are also very compact and can be easily fitted into the piping system. Single pumps up to 320 GPM or multiple pumps can be installed for larger transfer applications.

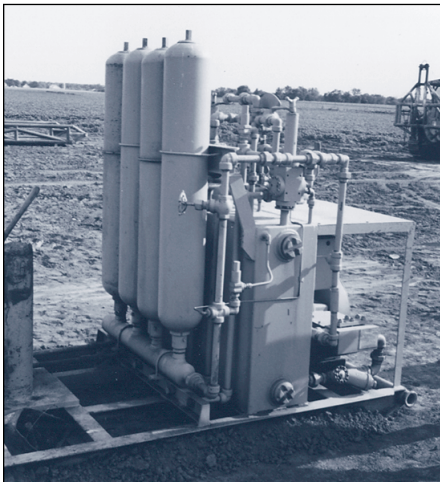


### ■ FIRE PROTECTION

Six large engine compressors used to pressurize natural gas are protected against fire or overheating by the 60 GPM, 1000 PSI system with a Model 6020 CAT PUMP.

The installation also provides a six-station central cleaning system which makes it easier to clean oil spills, grease and dirt and improve worker safety.

This combination of a fail-safe, effective fire protection system and high pressure central cleaning system results in a safer, cleaner plant—with lower insurance costs!



### ■ ACCUMULATOR CHARGING

Reliable safety devices are a critical component at a well site. The long life, continuous-duty performance of the CAT PUMP and its high pressure capabilities make it ideal for this hydrostatic application.

Blow-off preventors are installed at each well site. They are activated by accumulators which have been charged by the CAT PUMP to the well head pressure and held in readiness for a possible blow-off emergency. Single or multiple accumulators may be charged to meet the pressure demands of the well head and close the preventor in the event a well blows.



### ■ WASTEWATER RE-INJECTION

Heavy-duty pumps capable of pumping contaminated liquids at high pressure to overcome ground pressures are required for this wastewater injection system.

High maintenance costs, from frequent breakdowns and difficulty securing parts, plus high energy costs, due to excessive horsepower were two critical obstacles to overcome in this application.

Dual 60 GPM CAT PUMPS replaced a single large centrifugal pump and now operate on-demand, conserving energy when full capacity is not needed. The high quality materials and proven performance of the CAT PUMP eliminated frequent breakdowns and costly maintenance. With the dual system, scheduled maintenance can be done on one pump while the other continues to run, so there is no interruption in the re-injection process.



### ■ FRACKING

In the process of pumping oil from the ground, a paraffin build-up occurs in the well casing. Periodically this must be removed to keep operation efficient.

The CAT PUMP is capable of delivering 180-190°F hi-temp water to break down this paraffin. This system is also used for cleaning and degreasing the entire pumping module prior to maintenance.



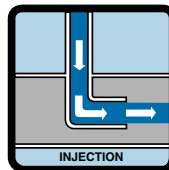
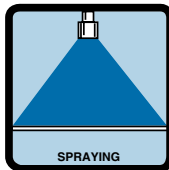
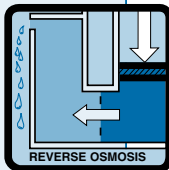
### ■ SEAL GLAND FLUSHING

Some oil production sites require the disposal of hundreds of gallons of wastewater. In this particular application a large can-type pump (vertical turbine multiple stage centrifugal pump) running at 350-400 GPM is required to inject the wastewater back into the ground.

The goal was to eliminate the costly downtime and servicing often experienced with centrifugal pumps. Abrasives in the water become trapped in the seal area causing wear and premature failure of the seal glands. To overcome the situation, a CAT PUMP was installed to flush the seal area. Since the centrifugal pump was operating near 2000 PSI, a pump capable of continuous duty and overcoming the high pressure was essential. The CAT PUMP satisfied both these requirements perfectly.

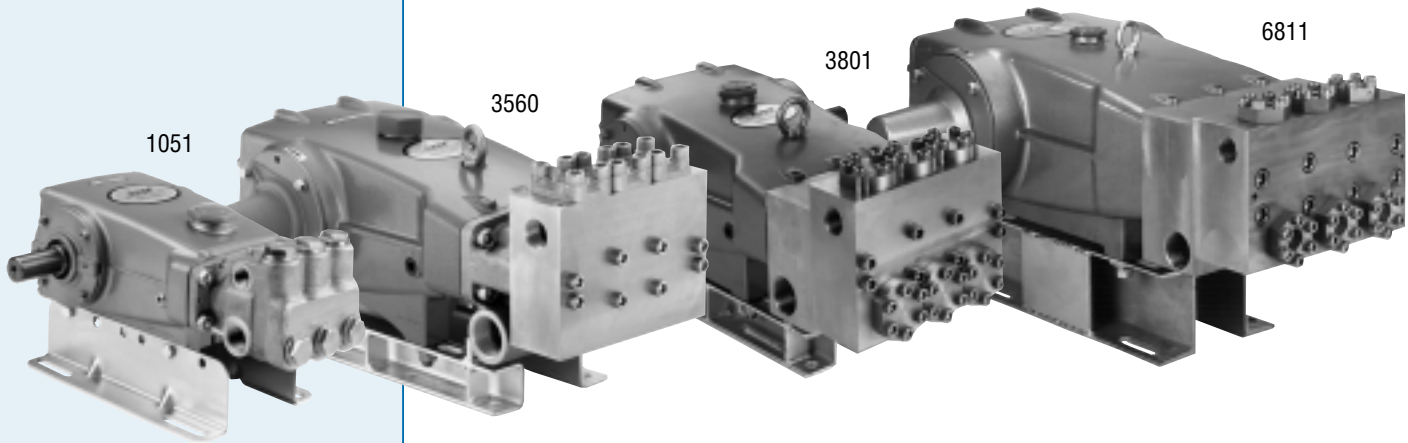
The CAT PUMPS' compact size allowed it to fit conveniently into the system. The seal glands are positioned just below the stuffing box to seal off the liquid from the shaft. Salt water and abrasive material in the pumped liquid can attack these seals quickly. The CAT PUMP is capable of injecting high pressure water into the stuffing box to flush any impurities from the seal glands and eliminate costly and troublesome failures. The regulator on the system assures constant pressure. With the addition of the CAT PUMP injection system, the seal gland life has improved from two to three months without flushing to approximately one year with flushing.

Multiple model 157R060 pumps each delivering 100 GPM @ 2700 are used for these wastewater re-injection and well stimulation applications.



## OILFIELD, GAS, PETROCHEM AND SEAWATER DESALINATION PUMPS

[www.catpumps.com](http://www.catpumps.com)



### 15 Frame Pumps

Up to 18 GPM, Up to 620 bbl/d  
Up to 3000 PSI, Up to 21 HP

High pressure industrial triplex plunger pumps with reliable pressure and flow.

### 25-35 Frame Pumps

Up to 45 GPM, Up to 1545 bbl/d  
Up to 5000 PSI, Up to 55 HP

Oilfield triplex high pressure pumps designed for continuous-duty and hydrostatic pressure.

### 38-68 Frame Pumps

Up to 70 GPM, Up to 2400 bbl/d  
Up to 7000 PSI, Up to 75 HP

Industrial block-style plunger pumps feature 316L heads for strength and corrosion resistance.

### 150 Frame R-Series Pumps

Up to 320 GPM, Up to 10,970 bbl/d  
Up to 2700 PSI, Up to 185 HP

Heavy-duty high pressure chemical injection and process pumps feature duplex stainless steel liquid-end and require no packing adjustment.

### TRIPLEX PLUNGER PUMP SELECTION

PUMP MODEL	Flow GPM (L/M)	Barrels Per Day BBL/D	Pressure PSI (BAR)	Manifold	Horsepower HP (kW)	RPM
<b>15 Frame</b>						
650	7.0 (27.0)	240	100 to 3000 (7 to 210)	NAB	14.4 (10.7)	1000
661	10.0 (38.0)	343	100 to 3000 (7 to 210)	SSD	20.6 (15.4)	1429
1051	10.0 (38.0)	343	100 to 2200 (7 to 155)	SS	15.1 (11.3)	958
<b>25 Frame</b>						
2511	20.0 (76.0)	686	100 to 1500 (7 to 105)	SS	20.6 (15.4)	1450
<b>35 Frame</b>						
3507	9.0 (34.0)	309	100 to 5000 (7 to 345)	NAB	30.8 (23.0)	800
3517	14.0 (53.0)	480	100 to 3000 (7 to 210)	NAB	28.8 (21.5)	800
3527	23.0 (87.0)	789	100 to 2000 (7 to 140)	NAB	31.6 (23.6)	800
3560	20.0 (76.0)	686	100 to 4000 (7 to 275)	Brass/SS	54.8 (40.9)	1160
<b>38 Frame</b> K=Flushed Inlet Manifold						
3801 / 3801K	9.0 (34.0)	309	100 to 5000 (7 to 345)	SSL / SSL Flushed	30.8 (23.0)	800
3811 / 3811K	14.0 (53.0)	480	100 to 3000 (7 to 210)	SSL / SSL Flushed	28.8 (21.5)	800
3821 / 3821K	23.0 (87.0)	789	100 to 2000 (7 to 140)	SSL / SSL Flushed	31.6 (23.6)	800
3831 / 3831K	36.0 (136.0)	1234	100 to 1200 (7 to 85)	SSL / SSL Flushed	29.7 (22.1)	800
3841 / 3841K	45.0 (170.0)	1543	100 to 1000 (7 to 70)	SSL / SSL Flushed	30.9 (23.1)	765
<b>68 Frame</b> K=Flushed Inlet Manifold						
6811 / 6811K	15.0 (57.0)	514	100 to 5000 (7 to 345)	SSL / SSL Flushed	51.5 (38.4)	600
<b>150 Frame</b> + API performance rating						
152R100	260.0 (984.0)	8914	100 to 1000 (7 to 70)	Duplex Stainless	178.1 (132.8)	295
152R100 +	240.0 (905.0)	8229	100 to 1000 (7 to 70)	Duplex Stainless	164.0 (122)	270
157R060	100.0 (379.0)	3429	100 to 2700 (7 to 190)	Duplex Stainless	184.9 (137.9)	310

Detailed Data Sheets are available for each model at [www.catpumps.com/data sheets](http://www.catpumps.com/data sheets).

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The Pumps with Nine Lives

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