

Specialty Pumps & Controllers

Innovation has become a cornerstone for the High Pressure Equipment pump group. In recent years HiP has introduced several industry-first products that address customer needs. The PT2020 Automated Pressure Testing Controller, eTensifier Electric Pump System and e710 Supercritical CO₂ Extraction Pump System all feature patented, first-of-its-kind technology. Complementing these new pump products are our Hydraulic Intensifiers and manually operated High Pressure Generators.



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PT2020

Automated Pressure Testing Controller

High Pressure Equipment Company introduces the first-of-its-kind Automated Controller System for air-driven high pressure hydraulic pumps. The new PT2020 Triple Pump Controller is designed to provide automated pressure control for a wide range of hydrostatic testing, including test benches that utilize three different pumps for specific operations in their pressure testing. Operators simply setup their test, press start and walk away... the PT2020 will automatically run the test, give a pass/fail reading and generate a test certification report.

The plug'n play PT2020 is an easy-to-use upgrade for any existing test bench using up to three manual pneumatic intensifier pumps and comes in five pressure ratings up to 75,000 psi. The PT2020 features an intuitive touch screen interface making test setup fast and easy. HiP's new pump controller is highly accurate and will save you money by freeing personnel to do other tasks while conducting hydrostatic tests.



PT2020 Features

- Industry-first automated controller for air-driven hydraulic pumps
- Automated pressure control for hydrostatic test benches
- Controls up to three different pumps simultaneously - pump 1 fill (on/off), pump 2 pressure control and pump 3 pressure control
- Pressure cycle testing allows for multiple pressure cycles on a part from low to high pressure
- Plug'n play upgrade for any pneumatic intensifier pump
- Five pressure classes: 10,000 psi • 25,000 psi, 40,000 psi • 60,000 psi • 75,000 psi
- Automated test certification reports
- Easy-to-use touch screen interface
- Simply setup test, hit start and walk away
- Highly accurate
- Control for a dump and isolation valve
- FTP functionality allows PC to pull files from controller
- Pressure alarm

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PT2020 Automated Pressure Testing

Manual Pressure Test

Simply select target pressure and ratio of pump and controller regulates air volume sent to pump and completes test



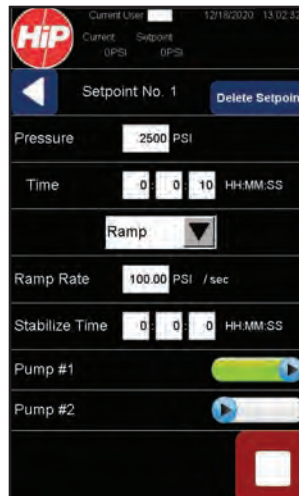
3 Pump Controller Test

New Triple Pump Function allows for control of pressure test benches using 3 pumps (see typical application below)



Precision Ramp Test

Ramp test allows for a pressure test to rise at a precise rate, such as increasing pressure at 500 psi/second



Pressure Cycle Test

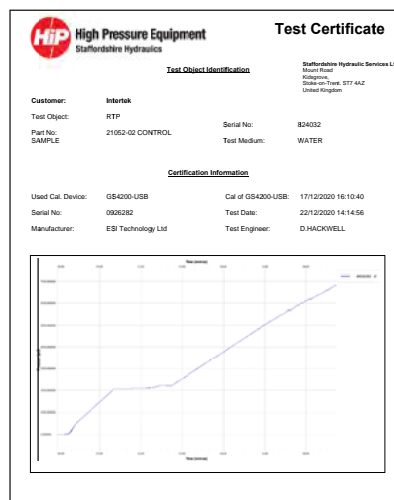
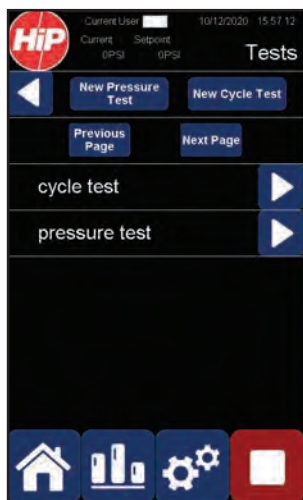
Automated life cycle test running multiple pressure cycles from low to high pressure



Reporting & Test Certificate

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Predefine and store up to 100 unique pressure tests and controller will give automated pass/fail for test. Downloadable reports provide documentation and certification of test.



Typical 3 Pump Hydrostatic Test Bench Application

In order to maximize efficiency and prolong the service life of high pressure hydraulic pumps, test benches often utilize multiple pumps for specific functions. The Triple Pump PT2020 allows operator to program a test using three pumps and walk away. The controller will run the test and provide a pass/fail report.

- Pump 1 – Low pressure pump used to fill the item being tested
- Pump 2 – Medium pressure pump drives the pressure to a specific setting
- Pump 3 – High pressure pump delivers final test pressure



PT2020 Ordering Information & Dimensions

PT2020 Single Pump Controller

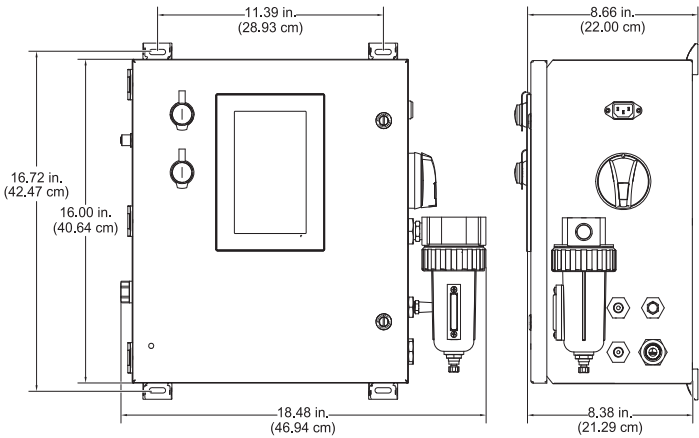
Part Number	Pump Size (psi)	Cord Set (Region)
25N950	10,000	US
25N951	25,000	
25N952	40,000	
25N953	60,000	
25N954	75,000	
25D815	10,000	UK
25D816	25,000	
25D817	40,000	
25D818	60,000	
25D819	75,000	
25D820	10,000	EU
25D821	25,000	
25D822	40,000	
25D823	60,000	
25D824	75,000	
25D825	10,000	AU
25D826	25,000	
25D827	40,000	
25D828	60,000	
25D829	75,000	

PT2020 Triple Pump Controller

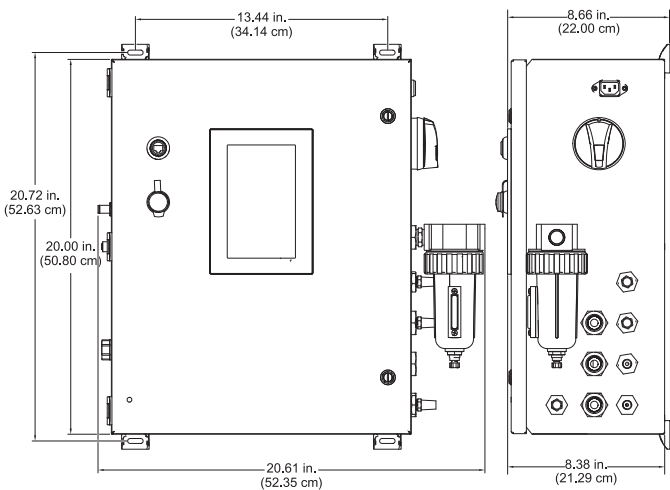
Part Number	Pump Size (psi)	Cord Set (Region)
25S015	10,000	US
25S016	25,000	
25S017	40,000	
25S018	60,000	
25S019	75,000	
25S000	10,000	UK
25S001	25,000	
25S002	40,000	
25S003	60,000	
25S004	75,000	
25S005	10,000	EU
25S006	25,000	
25S007	40,000	
25S008	60,000	
25S009	75,000	
25S010	10,000	AU
25S011	25,000	
25S012	40,000	
25S013	60,000	
25S014	75,000	

Dimensions

Single Pump Controller



Three Pump Controller



eTensifier

Electric Pump System

Now there's a high pressure hydraulic pump system that simply plugs into a wall outlet and doesn't require an air compressor. The eTensifier represents new technology introduced by three industry leaders... patent protected motors and controls from Graco, proven hydraulic pumps from Sprague and high pressure components and customer service from HiP.

The eTensifier will deliver pressures to 36,500 psi with a quiet electric motor, a smoother flow rate from zero to full pressure and controls that include an industry-first pressure test mode that allows you to set a defined pressure and walk away. In addition, the eTensifier features a new quick-connect system for exchanging pump lowers to facilitate routine maintenance without taking the whole pump out of commission.

High Pressure Electric Power

- Up to 36,500 psi
- Needs no air compressor, plugs into wall outlet

3 Industry Leaders Combined Expertise

- Designed for Global conditions
- Lightweight, portable unit
- Integral pressure transducer



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Smart Control

- Pressure knob feature for standard jobs
- Pressure test mode – set it and forget it
- Cycle counter for routine maintenance planning



ProConnect

- First-of-its-kind quick change Sprague pump lower
- Install a spare lower to finish your job



Smooth/Quiet Hydraulic/Liquid Intensifier

- Smoother flow rate from zero to full pressure
- Electric motor quieter than air powered pumps

2 Year Warranty

- Two year warranty on motor and controls

ETL and CE Approved

- 240 V option is CE marked as a commitment to our world class quality

Pressure Transducer and Safety Head Included

- No need to purchase the items separately

eTensifier	Maximum Pressure		Flow Rate at Pressure	
Model	psi	bar	in ³ /min	lpm
46	4,600	315	59	0.9
60	6,000	420	53	0.8
87	8,750	605	45	0.7
100	10,000	685	39	0.6
125	12,500	860	32	0.5
160	16,000	1,100	26	0.4
237	23,750	1,635	18	0.3
365	36,500	2,515	12	0.2

Build Your eTensifier Pump System

1

Select Your Working Pressure

- 8 fluid modules give you the combination of pressure and flow you need

2

Choose Your Seals

- Nitrile, Viton or EPR

3

Pick Your Power

- 120 V 50/60 HZ, 15 amps
- 240 V 50/60 Hz, 9 amps

4

Need a Component? Tell Us Your Pressure, Seals and Power

- Pump lower
- Pump lower repair kit
- Fluid outlet module
- Pump drive and controller

5

Add Remote Control

- Ideal for small spaces or hazardous materials
- 12 ft. cord length
- PN25E250

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Need Any High Pressure Accessories

- Valves
- Tubing
- Adapters



e710 Supercritical CO₂

Extraction Pump System

In response to the burgeoning market demand for environmentally friendly extraction processes for a wide range of natural oils and foods, High Pressure Equipment Company has developed the e710 supercritical CO₂ extraction pump system. This ATEX, FM, and IECEx certified system features an electric CO₂ extraction pump specifically designed for CO₂ circulation to recover 100% of the CO₂ vapor when used with recovery tank cooling. The e710 offers a small footprint (17.0" x 20.4" base x 58" high) with the electric motor providing quiet operation.

HiP's patented pump/drive technology is the industry's first high pressure electric pump system that does not require an air compressor and uses an explosion-proof motor rated for C1D1 areas. The e710 pump can provide a continuous 100% duty cycle for 24/7 operation with constant pressure or constant flow control. The system is designed to process liquid condensation without damage and to pull vacuum back through the pump when evacuating a system.

e710 Features

- Environmentally friendly extraction process
- Ideal extraction process for natural oils, foods and cannabis
- ATEX, FM and IECEx Certified supercritical CO₂ extraction pump system
- Positive displacement CO₂ extraction pump
- Designed specifically for CO₂ circulation
- Recovers 100% of CO₂ vapor when used with recovery tank cooling
- Pull vacuum back through the pump when evacuating a system
- Passes liquid condensation without damage
- Explosion-proof motor rated for C1D1 areas
- Control technology drives the pump to a constant pressure or flow
- Three-phase and single-phase models available
- Continuous 100% duty cycle - run 24/7
- No air compressor needed
- Patented pump drive technology
- Stall under pressure without damage
- Start against full load and pressure
- No driving air used, cannot leak air into the system
- Maximum pumping pressure output and/or flow is adjustable
- No lubrication in the pump heads; no contamination of product
- Compliant with ATEX, FM and IECEx standards or C1D1 motors
- Meets Class 1 Division 1 hazardous area facility requirements (when installed correctly)
- PLC control for remote operation



Dura Flo Pump			
E Flo DC Motor	240 VAC	220 cc	145 cc
		1.16 GPM @ 2030 psi 4.4 LPM @ 140 bar	0.77 GPM @ 3040 psi 2.9 LPM @ 210 bar
	480 VAC	1.16 GPM @ 2741 psi 4.4 LPM @ 189 bar	0.77 GPM @ 4104 psi 2.9 LPM @ 284 bar



C1D1 Certifications

- ATEX/FM/IECEx

Motor Controls

- Constant Pressure
- Constant Cycle Rate/Flow

Motor User Interface

- Basic (knobs)
- Advanced (pendant or PLC)

Motor Output Options

- 240 VAC Eflo DC
- 2520 lbf • 20 cpm
- 480 VAC Eflo DC
- 3392 lbf (1.35x) • 20 cpm

Fluid Pump

- Dura Flo 2-Ball Piston
- Sizes: 145, 220 cc
 - Packings: PTFE/UHMWPE
 - Check Seat: Tungsten Carbide
 - Check Ball: 440 SST
 - Rod: 17-4 PH SST w/Hard Chrome
 - Cylinder: 304 SST w/Hard Chrome
 - Housings: 17-4 PH SST

Hydraulic Intensifiers

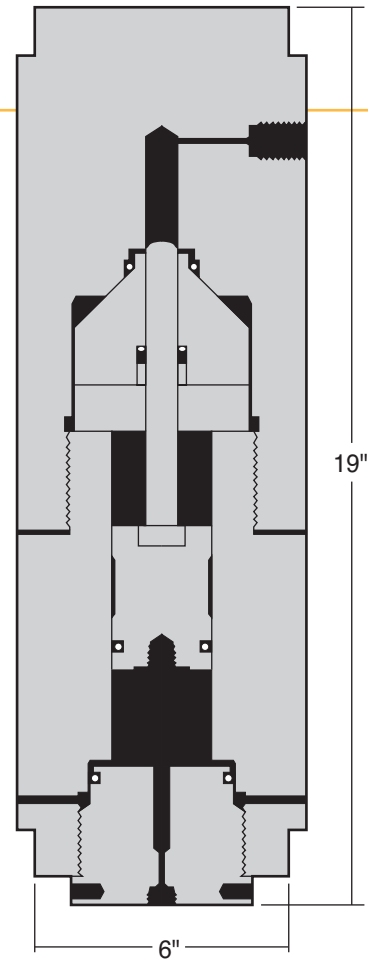
150,000 psi

The 150,000 psi Hydraulic Intensifier is designed with a ratio of areas on the two pistons of 10 to 1. Consequently, pressures up to 150,000 psi can be achieved by using a commercially available lower pressure (15,000 psi) pump.

Material of construction for the pressure containing parts is 4340 alloy steel (or equivalent) properly heat treated for use at elevated pressures. Only non-corrosive type fluids should be used. The high pressure packing is housed in a separate removable stuffing box. This design permits improved concentricity and facilitates close tolerance machining of the packing area.

Capacity per stroke at the high pressure end is 1.2 cubic inches. Capacity at the low pressure end is 12.6 cubic inches per stroke. Piston travel is 4 inches. Weight is approximately 150 pounds.

Standard connections are for 1/4" O.D. tubing (HF4) on the low pressure end and 3/8" O.D. x 1/16" I.D. tubing (XF6) on the high pressure end.



High Pressure Generators

The HiP High Pressure Generator is a manually operated piston screw pump. It is designed for any application where a liquid* is to be compressed within a small volume to develop pressure.

Pressure Ranges

0-5,000 psi • 0-10,000 psi • 0-15,000 psi • 0-30,000 psi
0-60,000 psi • 0-75,000 psi • 0-100,000 psi

All wetted parts are of 316 stainless steel and 17-4PH stainless steel. Parker Poly Pak® is standard.

The High Pressure Generator is easily mounted to a work bench and maximum pressures may be obtained with a minimum amount of effort by the operator.

The standard connection is a High Pressure coned-and-threaded (HF4) opening for 1/4" O.D. tubing up to 60,000 psi and XF4 connections for pressures above 60,000 psi. Adapters are available with optional Teflon packing at no additional cost for other type connections including pipe.

Typical Applications

- Testing of instruments, gauges, component parts
- Pressure measurement studies
- Injection of liquid catalysts
- Pressurizing chemicals
- A convenient source of high pressure in the laboratory

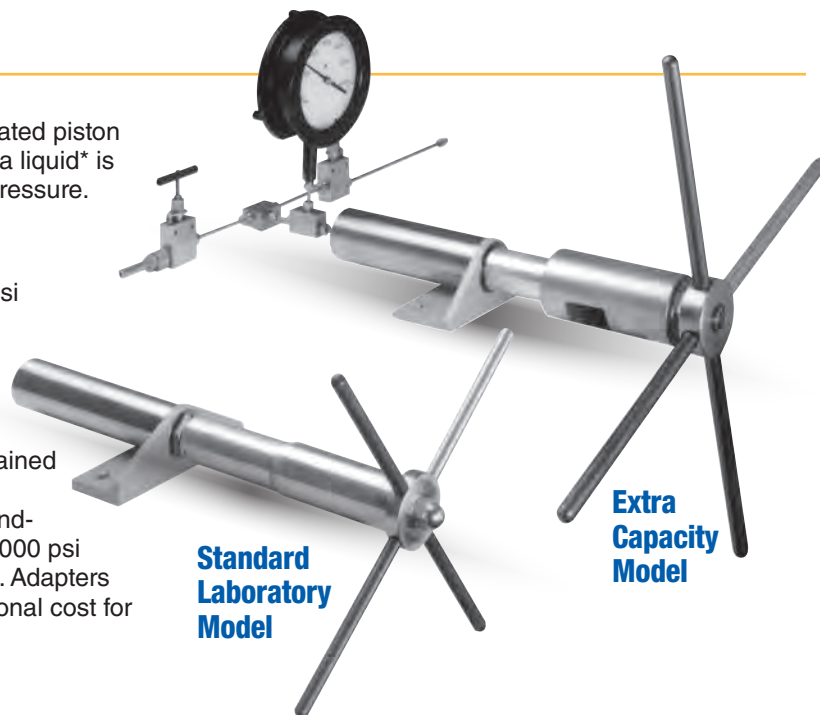
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The schematic illustrates a very basic layout for using a Pressure Generator. A reservoir (R) is shown connected by means of valves and fittings to a component (C) that is to be pressurized. A gauge has been included for determining pressure.

With valve "B" closed and valve "A" open, the handle of the Pressure Generator is rotated counter-clockwise to draw fluid from the reservoir into the cylinder body of the Pressure Generator. Valve "A" is then closed and valve "B" is opened. By rotating the Pressure Generator handle clockwise, the piston will now compress the fluid to develop pressure in the component that is to be pressurized.

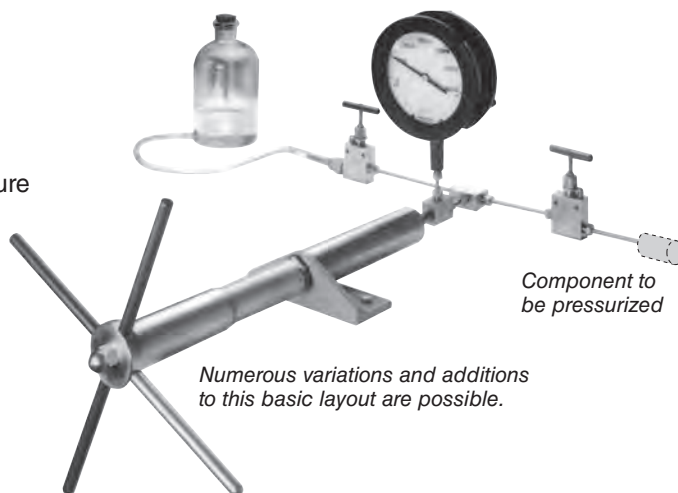
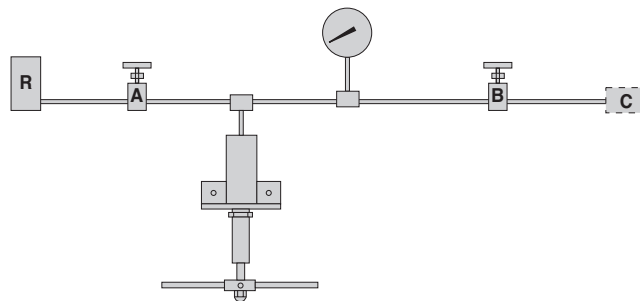
If sufficient pressure is not reached in one stroke, the system can be "recycled." Valve "B" can be closed in order to maintain pressure in the components. Valve "A" is then opened, and fluid is again drawn into the Pressure Generator from the reservoir. Closing Valve "A" and opening Valve "B" will now allow the Pressure Generator to be operated to develop increased pressure in the component.

Pressure in the component can be vented by opening both valves.



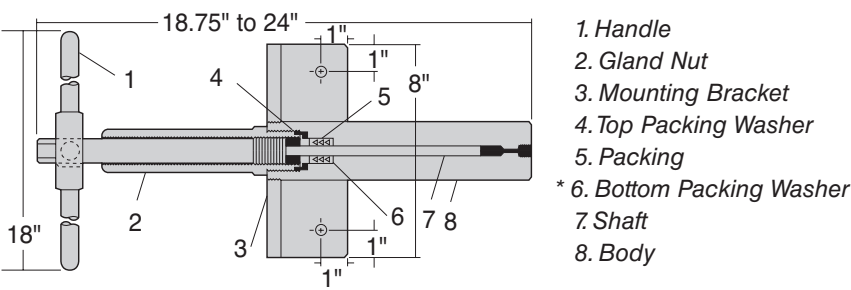
Vernier Indicators as shown in the photo at left are available as an accessory on all of the Standard Laboratory Models. These indicators provide controlled measurement of column displacement with an accuracy of ± 0.003 " movement of stroke.

*** If required for GAS application, please consult factory.**



Numerous variations and additions to this basic layout are possible.

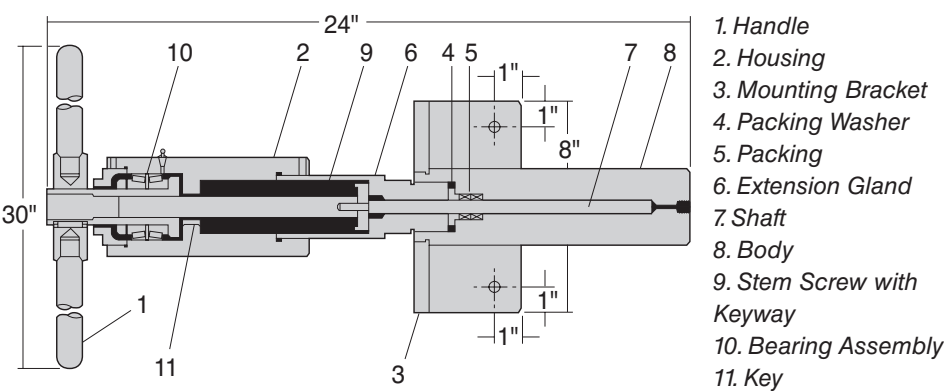
Standard Laboratory Models



Model	Presure Rating psi	Capacity Per Stroke	Shaft Diameter
87-6-5	5,000	60 mL	7/8"
62-6-10	10,000	30 mL	5/8"
50-6-15	15,000	20 mL	1/2"
37-6-30	30,000	11 mL	3/8"

Length of stroke: 6 inches. 14 revolutions of handle produces one inch travel of shaft.
 * Use item six only with optional Chevron Teflon packing.

Extra Capacity Models



Model	Presure Rating psi	Capacity Per Stroke	Shaft Diameter
112-5.75-5	5,000	93 mL	1-1/8"
81-5.75-10	10,000	48 mL	13/16"
68-5.75-15	15,000	35 mL	11/16"
50-5.75-30	30,000	18 mL	1/2"
37-5.75-60	60,000	10 mL	3/8"
31-5.75-75	75,000	7 mL	5/16"
25-5.75-100	100,000	4.5 mL	1/4"

Length of stroke: 5-3/4 inches. 14 revolutions of handle produces one inch travel of shaft.