

# ChemGrout®

## Heavy Construction

Void filling

Slurry Trenches & Walls

Undersealing

Cables

Tie-backs

Tendons

Slabjacking

Ground Anchors

## Marine / Offshore

Bridges & Foundations

Dam grouting

Underwater

Grouting

Erosion protection

## Mining & Tunneling

Anchor, Cable & Rock Bolts

Void filling

Waterproofing

Roof Bolts

Grouting



## Colloidal Grouting Equipment

Featuring  
ChemGrout's  
"TurboMix"  
Colloidal mixer



## ChemGrout's "TurboMix" Colloidal Mixers

Specially designed tanks and mixing pumps make ChemGrout colloidal mixing efficient and profitable for the owner. Water and solid materials are drawn through the high speed diffuser type pump rotating at speeds of up to 2,000 RPM to prevent flocculation and achieve complete particle wetness. Mixing time is significantly reduced by the high shear action of the colloidal mixing pump, aided by a unique powered bridge breaker device which enhances flow rates through the pump. These high shear colloidal mixers have been shown to increase apparent fluidity of slurry mixes by 20% over paddle mixers, an important advantage for dam, rock and soil grouting where the ability to penetrate tight formations is necessary. For very sensitive applications such as post tension grouting, the highly efficient colloidal mixer makes possible water to cement ratios down to 0.35 by weight, resulting in very high strength grouts with little or no bleed water release.



## Materials

- Neat cements – all types
- Ultra/Micro-fine cements
- Bentonite slurries
- Flyash
- Lime dust
- Post tension grouts



## CG-600 Colloidal Grout Plant

### 20 gpm

The CG-600 is a heavy duty, high volume colloidal grout plant favored for heavy construction projects such as dams and tunnels, as well as for precision post tension grouting. This unit features a high speed mixing pump that thoroughly wets each particle and discharges the mixed material into a 13 cubic foot capacity agitating holding tank. A direct coupled progressing cavity pump delivers slurries at a rate of up to 20 GPM and pressures of up to 261 PSI. The unit easily mixes and pumps slurries of portland cement, flyash, bentonite, and lime flour. All controls are conveniently located on the operator platform for easy one man control. Power options are air, hydraulic, electric/hyd or diesel/hyd.

## Specifications

### PUMPS

Grout Pump	3CL6 progressing cavity
Colloidal Mixing Pump	2 X 3 X 6 diffuser-type centrifugal

### PHYSICAL SPECIFICATIONS

#### Air

Weight	~1550 lbs.
Size	90"L x 60"W x 74"H
Power Required	300 cfm, 100 psi

#### Hydraulic

Weight	~1550 lbs.
Size	90"L x 60"W x 65"H
Power Required	Dual circuit 12/12 gpm, 2400 psi

#### Electric/Hydraulic

Weight	~2600 lbs.
Size	90"L x 60"W x 72"H
Power Required	25 HP, several voltages available

#### Diesel/Hydraulic

Weight	~2650 lbs.
Size	86"L x 34"W x 41"H
Power Required	27 HP, Diesel/electric start



**CG-680 Series**

CG-6880 shown above

**CG-680 & CG-6880  
Large Colloidal Grout Plants**

**44 gpm; single or double pump models**

Specially designed as a highly mobile or portable high capacity plant, the CG-680 series machines are ideal for large, heavy construction sites. The double pump model (CG-6880) minimizes downtime and enhances efficiency with a reserve second pump for emergency standby, which may (upon request) be configured as a water testing pump. Both units utilize a 17 c.f. mix tank, with cleanout, as well as a 17 c.f. paddle agitating holding tank. The skid mounted models are available with hydraulic or electric power.



**Specifications**

**PUMPS**

Grout Pump 680	3L8 single pump, progressing cavity
Grout Pump 6880	3L8 dual pump, progressing cavity
Colloidal Mixing Pump	2 X 3 X 12 diffuser-type centrifugal
Output/Pressure	Dual Speed 22 & 44 gpm, 261 psi

**PHYSICAL SPECIFICATIONS: CG6803L8**

<b>Hydraulic</b>	
Weight	~2100 lbs.
Size	97"L x 60"W x 72"H
Power Required	Dual circuit 12/16 gpm, 2400 psi

<b>Electric/Hydraulic</b>	
Weight	~3600 lbs.
Size	97"L x 60"W x 72"H
Power Required	40 HP, several voltages available

<b>Diesel/Hydraulic</b>	
Weight	~3300 lbs.
Size	109"L x 60"W x 72"H
Power Required	37 HP, Diesel/electric start

**PHYSICAL SPECIFICATIONS: CG68803L8**

<b>Hydraulic</b>	
Weight	~2520 lbs.
Size	97"L x 60"W x 74"H
Power Required	Dual circuit 12/16 gpm, 2400 psi

<b>Electric/Hydraulic</b>	
Weight	~4000 lbs.
Size	97"L x 60"W x 74"H
Power Required	40 HP, several voltages available

<b>Diesel/Hydraulic</b>	
Weight	~3720 lbs.
Size	121"L x 60"W x 74"H
Power Required	37 HP, Diesel/electric start





## CG-600 Compact Colloidal Series

The CG600/8CF combines the latest advances in colloidal grouting in a compact design. These field proven grout plants feature ChemGrout's 8 cubic foot capacity "Turbomixer", along with a rotating bridge breaker, nine cubic foot capacity vertical shaft paddle agitator, and a 3-stage size 6 closed throat progressive cavity pump. Mixer and pump are mounted on a single skid (transportable by pick-up truck) for quick, easy set-up and immediate operation.

### Specifications

#### PUMP

Pump Type	3L6 progressing cavity
Output/Pressure	20 gpm, 261 psi

#### COLLOIDAL MIXER

Mix Tank	8 c.f. with bottom cleanout
Mixing Pump	2 x 3 x 6 diffuser-type centrifugal
Holding Tank	9 c.f. or 13 c.f. paddle agitating

#### PHYSICAL SPECIFICATIONS

##### Air

Weight	~1200 lbs.
Size	88"L x 34"W x 59"H
Power Required	250 cfm, 100 psi (air)

##### Hydraulic

Weight	~1200 lbs.
Size	88"L x 34"W x 59"H
Power Required	Dual Circuits, 12/12 gpm, 2000 psi

#### POWER PACKS

##### Electric/Hydraulic

Weight	Varies
Size	Varies by Voltage
Power Required	25 HP, several voltages available

##### Diesel/Hydraulic

Weight	~1750 lbs.
Size	74"L x 34"W x 37"H
Power Required	27 HP Diesel/electric start

## CG-625 Colloidal Grout Plant 20 gpm; trailer mount

Mounted on a heavy-duty, highway ready trailer, this unit was originally designed for highway pavement undersealing. It is also useful for slabjacking or other grouting projects requiring cementitious slurries. It features an 8 cubic foot colloidal mixer and an 9 or 13 cubic foot holding hopper with a two stage, open throat pump. The trailer is highway ready. Available in diesel power only.

### Specifications

#### PUMP

Pump Type	2C6 progressing cavity
Output/Pressure	Variable up to 20 gpm, 174 psi

#### COLLOIDAL MIXER

Mix Tank	8 c.f. with bottom cleanout
Mixing Pump	2 x 3 x 6 diffuser-type centrifugal
Holding Tank	9 or 13 c.f. paddle agitating

#### DRIVE POWER

Model	Three cylinder air cooled 37 HP diesel engine
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#### PHYSICAL SPECIFICATIONS

Trailer Mount Dimensions	132"L x 72"W x 72"H
Trailer Mount Weight	~4200 pounds



## CG-600(HP) High Pressure Grout Plant Colloidal Mixer

As with the CG-600 Series rotary pump models, the CG-600HP features the same high efficiency 13 cubic foot colloidal mixer and a matching 13 cubic foot agitating holding tank. The holding tank discharges directly into the suction port of ChemGrout's time-tested HP-2 or HP-3 double acting high pressure plunger pump. Using only a few parts, the pump can be field modified from one configuration to another with ease.

### Specifications

#### PUMP

Pump type	Double acting plunger CG2x8, or CG3x8
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#### PHYSICAL SPECIFICATIONS

<b>Air</b>	
Weight	~2100 lbs.
Size	97"L x 60"W x 68"H
Power Required	375 cfm, 100 psi

<b>Hydraulic</b>	
Weight	~1800 lbs.
Size	97"L x 60"W x 68"H
Power Required	Dual circuit 12/16 gpm, 2400 psi

<b>Electric/Hydraulic</b>	
Weight	~2600 lbs.
Size	97"L x 60"W x 68"H
Power Required	30 HP, several voltages available

<b>Diesel/Hydraulic</b>	
Weight	~3150 lbs.
Size	121"L x 60"W x 72"H
Power Required	37 HP, Diesel/electric start



## CG680(HP) High Pressure, High Capacity Colloidal Series

Mixes and pumps slurries of cement, fly ash, bentonite and lime flour. Commonly used in tunneling, mining, dam foundations, soil compaction and encasements. Units feature both a 17 cubic foot colloidal mixer and agitating storage tank.

### Specifications

#### PUMP

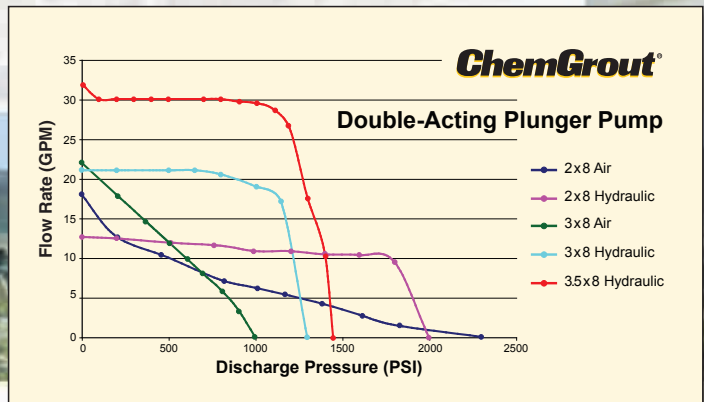
Pump type	3.5 x 8 Double acting plunger
Output pressure	32 gpm/1500 psi

#### PHYSICAL SPECIFICATIONS

<b>Electric/Hydraulic</b>	
Weight	~3200 lbs.
Size	109"L x 60"W x 70"H
Power Required	40 HP, several voltages avail.

<b>Diesel/Hydraulic</b>	
Weight	~3800 lbs.
Size	121"L x 60"W x 79"H
Power Required	48 HP, Diesel/electric start

ChemGrout offers both manual and automatic pressure controls (pictured above) on the CG680 Series.



## Custom Colloidal



This is an example showing the custom capabilities available from ChemGrout. The fully automated CG690/ES was designed for the Cachi Hydroelectric Dam Project in Costa Rica. Drawing on over 50 years of experience, this unique design provides high shear colloidal mixing, high material outputs, and extremely accurate mix ratios. This high mix ratio accuracy is achieved by isolating the load cells off the frame and avoiding false readings due to vibration. It is exclusive features like this, along with the ability to collaborate with multi-disciplined project engineers, that continues to make ChemGrout the place to go for custom grouting equipment.



### CG690ES Features:

- Cement Dosifier - 700 lbs/min
- Cement Holding Hopper - 3000 lb capacity
- Colloidal Mix Tank - 17cf (480 liters)
- High Shear Mixing - 1800 rpm
- Two Agitator Tanks - 128 gallon capacity
- Two High Pressure Plunger Pumps - 53 gpm, 800 psi each
- Additive Dosifier - measures admixtures
- Automatic Dosification System - PLC controls batch system
- Data Registration System - Includes two magnetic flow meters
  - Two pressure transducers
  - Data logger controls flow/pressure meters



### CG-620 Colloidal Mixer

The CG-620 is a stand-alone colloidal mixer, usually used with other ChemGrout agitating/pumping equipment, such as the CG-500 grout plant. These skid mounted units all feature the ChemGrout "TurboMix" colloidal mixing pump, and are available in three convenient sizes, from 8 cubic feet, suitable for applications where space is at a premium, to 13 cubic feet for general applications, through 17 cubic feet for high volume applications.

### CG-630 Colloidal Mixer/Agitator

The CG-630 is a combination colloidal mixer teamed with an appropriately sized agitating reservoir tank, both mounted on a common skid frame. These units feature the same ChemGrout "TurboMix" mixing pumps described above, and are available in the same mixer sizes as the CG-620. The vertical shaft paddle agitators are sized to accept the product of the mixers, and are configured to supply grout to a variety of different pumping units.

## Specifications

### COLLOIDAL MIXER 620

Mixing Tank	Mixing Pump
620 8 c.f.	2 x 3 x 6
620 13 c.f.	2 x 3 x 6
620 17 c.f.	2 x 3 x 12

### COLLOIDAL MIXER 630

Mixing Tank	Mixing Pump	
630 8 c.f.	2 x 3 x 6	Holding Tank 10 c.f.
630 13 c.f.	2 x 3 x 6	Holding Tank 13 c.f.
630 17 c.f.	2 x 3 x 12	Holding Tank 17 c.f.

DRIVE POWER	620	630	
Air*	185	250	(cfm, 100 psi)
Hydraulic	12/17	12/17	(gpm, 2000 psi)
Electro/Hydraulic/3-Phase			15/20 HP

Contact factory for specifics on Gasoline or Diesel power options.

\*Not available for 17c.f. units.

### PHYSICAL SPECIFICATIONS

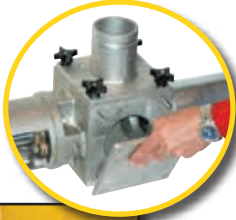
Dimensions (620)	56"- 69"L x 42"W x 50"H
Weight (620)	~1050 pounds
Dimensions (630)	72"- 92"L x 48"W x 48"H
Weight (630)	~950 pounds

## Pump Options

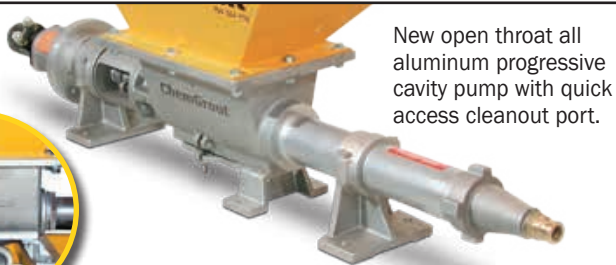
### Progressive Cavity Pumps

- 3CL6 - 20 GPM, 261 PSI
- 3L8 - 44 GPM, 261 PSI

Higher pressures available



ChemGrout's closed throat aluminum alloy progressive cavity pump provides easy access to all four sides of suction housing, providing easy clean-up and maintenance.



New open throat all aluminum progressive cavity pump with quick access cleanout port.



### High Pressure Plunger Pumps

- 3.5 x 8 - 32 GPM, 1500 PSI
- 3 x 8 - 20 GPM, 1000 PSI
- 2 x 8 - 15 GPM, 2000 PSI

ChemGrout HP Plunger Pumps deliver a unique combination of high flow and high pressure.



### Colloidal Mix Pumps

- 2 x 3 x 6
- 2 x 3 x 12
- diffuser-type centrifugal



2 x 3 x 6 Mixer pump

2 x 3 x 12 Mixer pump

### Power Options



Electric/Hydraulic



Diesel/Hydraulic

- Air • Hydraulic • Electric/Hydraulic • Diesel/Hydraulic

Power packs shown mounted on separate skids.

## How to select a Colloidal Grouting System:

### Step 1

Think about your application and the materials you plan to use. Normally colloidal mixers are used with neat cements and bentonite products. Sand may be added to the agitated storage tank; adding sand to the colloidal mixer will prematurely wear your colloidal mix pump.

### Step 2

Determine the maximum volume or flow rate (gpm) and grouting discharge pressures (psi) needed for your application.

### Step 3

Select the best grout pump based on your flow rate and pressure requirements.

- 3L6 Progressing Cavity Pump = 20 gpm, 261 psi
- 3L8 Progressing Cavity Pump = 44 gpm, 261 psi
- 3.5x8 Plunger Pump = 32 gpm, 1500 psi
- 3x8 Plunger Pump = 20 gpm, 1000 psi
- 2x8 Plunger Pump = 12 gpm, 2000 psi

### Step 4

Select the size of your colloidal mixer and agitating storage tank. The production rates for typical 1:1 water to cement ratio (by weight) grout mix using bagged cement and a 50 gpm water metering system are:

- 13 cubic foot system = 8 cu yd/hr = 26 gpm
- 17 cubic foot system = 12 cu yd/hr = 40 gpm

### Step 5

Select your power system. The power options are Air, Hydraulic, Electric/Hydraulic and Diesel/Hydraulic. Most of the larger systems require Electric/Hydraulic or Diesel/Hydraulic power systems. Power packs are also available mounted on separate skids. This reduces the noise and vibration for the operator and helps keep the power pack clean.

### Step 6

Select the Model Number (example CG600/3L6/EH)

The first part is the mixing system:

- CG600 = 13 CF Mixing Tanks
- CG680 = 17 CF Mixing Tanks

The second part is the pump:

- 3L6 Progressing Cavity Pump = 20 gpm, 261 psi
- 3L8 Progressing Cavity Pump = 44 gpm, 261 psi
- 3.5x8 Plunger Pump = 32 gpm, 1500 psi
- 3x8 Plunger Pump = 20 gpm, 1000 psi
- 2x8 Plunger Pump = 12 gpm, 2000 psi

The third part is the power system:

- A = Air Powered (requires an Air Compressor)
- H = Hydraulic (requires an external hydraulic power source)
- EH = Electric/Hydraulic (requires 3 phase current, various voltages and frequencies)
- DH = Diesel/Hydraulic (self-contained)

# ChemGrout®

## **ChemGrout:** ***We keep it simple for your success***

After spending decades in the field, we've learned that in a world of complex technology, keeping things simple can be a good thing.

That's why ChemGrout equipment is engineered to be user-friendly and trouble-free. Every ChemGrout system incorporates all the technological advances you need to deliver maximum efficiency even in the most difficult job environment—without ever compromising ease of operation or maintenance.

It's this philosophy that has made ChemGrout a leading name in grouting equipment and accessories for virtually every application. Our standard and custom-built grouting equipment handles a diverse range of materials with capacities from 1 to 75 GPM and pressures from 50 to 2000 PSI. All can be skid or trailer mounted and are available with air, gasoline, diesel, electric or hydraulic power.

Our patented high pressure pumps handle pressures to 2000 PSI and flows to 50 GPM. Look to ChemGrout for all your grout pump needs:

- Progressive cavity pumps
- Double-acting plunger pumps
- Piston pumps
- Colloidal mix pumps

In addition to our ChemGrout line of equipment, we carry a full inventory of standard parts and accessories to give you a one-stop support for all your grouting needs. Looking to service your existing system? Our expert service technicians will keep you up and running.

For the best grouting equipment, service and accessories available the choice is simple.

**ChemGrout. Simple solutions to your most complex grouting needs.**

## **OUR PROMISE TO YOU...**

When you purchase ChemGrout, you purchase uncompromising quality. ChemGrout, Inc., guarantees that our equipment is free from defects in material, workmanship or components.\*

This warranty is limited to the replacement of components that have been proven to be faulty. No claims for consequential damages will get recognized. We proudly give you a full 90 day warranty from the date of purchase.

\*All normal wear resulting from the mixing and pumping of abrasive slurries, or any damage to the equipment resulting from improper use is excluded from this warranty.



# **ChemGrout®**

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