



# FIRE FIGHTING PUMP SYSTEMS



## FIREGUARD GLOBAL LTD.

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F5546607



Fire Pumps are used for supply water for automatic sprinkler systems, standpipes or fire hydrant systems. NEPA 20 classifies fire pumps as split case, vertical turbine, end suction or in-line design. Our end suction pumps are rated from 100 to 750GPM and split case and vertical turbine pumps ranges from 150 to **8000GPM**.

All the **FIREGUARD** pumps meet NEPA/UL/EM requirements:

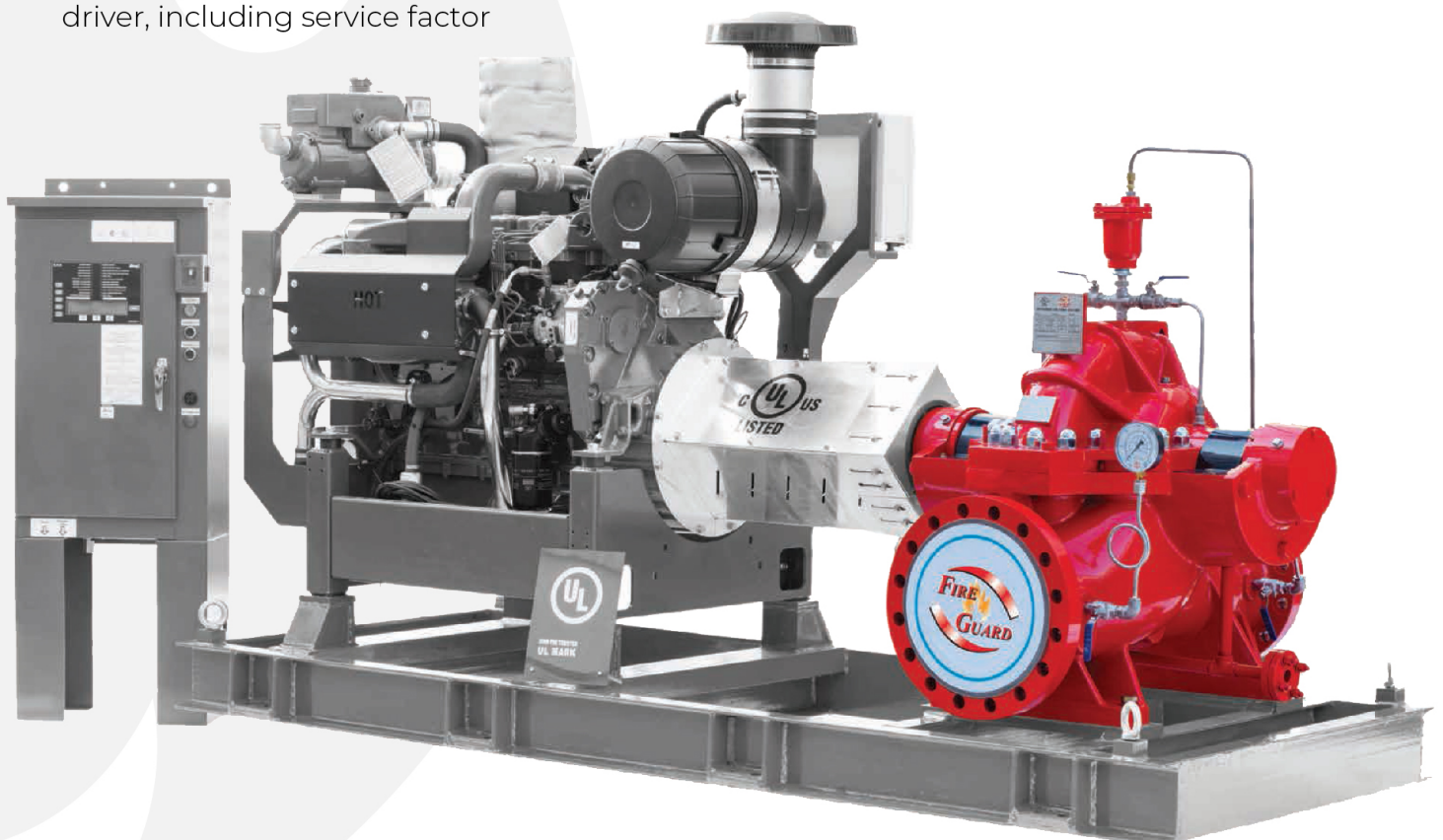
1. Each pump is tested hydrostatically for no less than 5 minutes with the testing pressure of no less than 5 times the max. working pressure.
2. Pumps shall develop no less than 65% of rated total head when discharging at 15 times rated capacity. The max. net pressure shall not exceed 140% of rated head.
3. The max. pump brake horsepower shall not exceed the HP rating of its driver, including service factor

### Motors:

all fire pump motors are rated for continuous duty and shall not be used at voltage in excess of 110% of rated voltage. At rated voltage and frequency, the full load ampere rating shall not be exceed (except as allowed by the service factor on motor nameplate) under any pumping condition.

### Engines:

Our engines have HP rating listed by both UL/EM. A deduction of 3% of the power shall be made for each 1000 feet rise in altitude above 300ft. and 1% for each 10 Fahrenheit above 77 Fahrenheit ambient temperature. Our engines are all equipped with the controllers UL approved.



## HORIZONTAL SPLIT CASE PUMP

**from 300 GPM up to 8000 GPM**

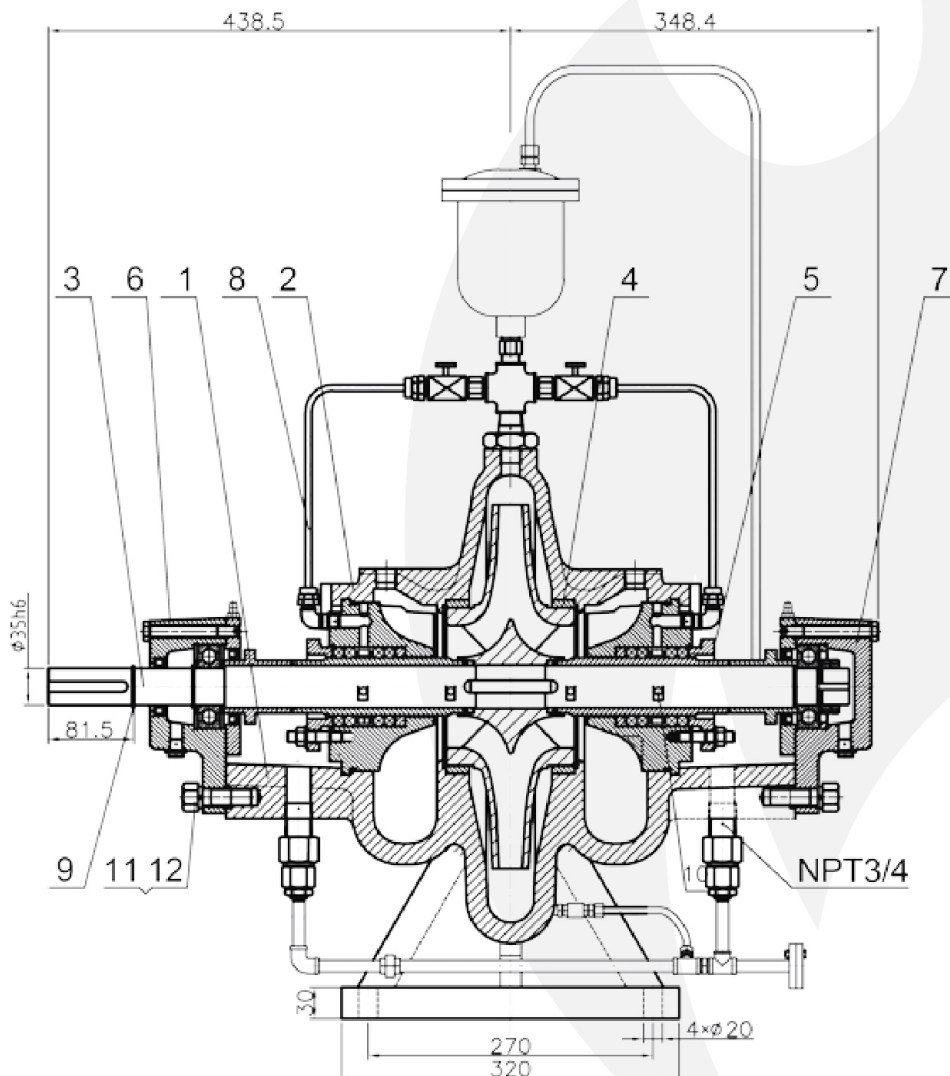
A horizontal split case pump is a unique type of Centrifugal Pump whose casing is divided into two distinct chambers, which is different from end Suction pumps that are assembled with the suction nozzle, discharge nozzle and casing in one chamber.

**FIREGUARD** offers FGSF series state-of-the-art Split Case Pumps with Diesel Engine or Electric Motor driven pumps.

**FIREGUARD PUMPS** are engineered with fully enclosed double suction impellers. Minimal axial thrust due to double entry impeller. In-line axially split design which permits removed of the complete rotor without removing the pipe and driver. Split Case Pumps are better when the water source is located above ground providing a positive suction pressure.

**FIREGUARD PUMPS** are typically used in firefighting applications for supplying water to the fire hose reels, fire hydrants or sprinkler systems.

**FIREGUARD PUMPS** have a FLOW ranges from 300 to 8000 US GPM and Pressure ratings from 80 PSI up to 300 PSI





## HORIZONTAL END SUCTION PUMP

from 50 GPM to 750 GPM

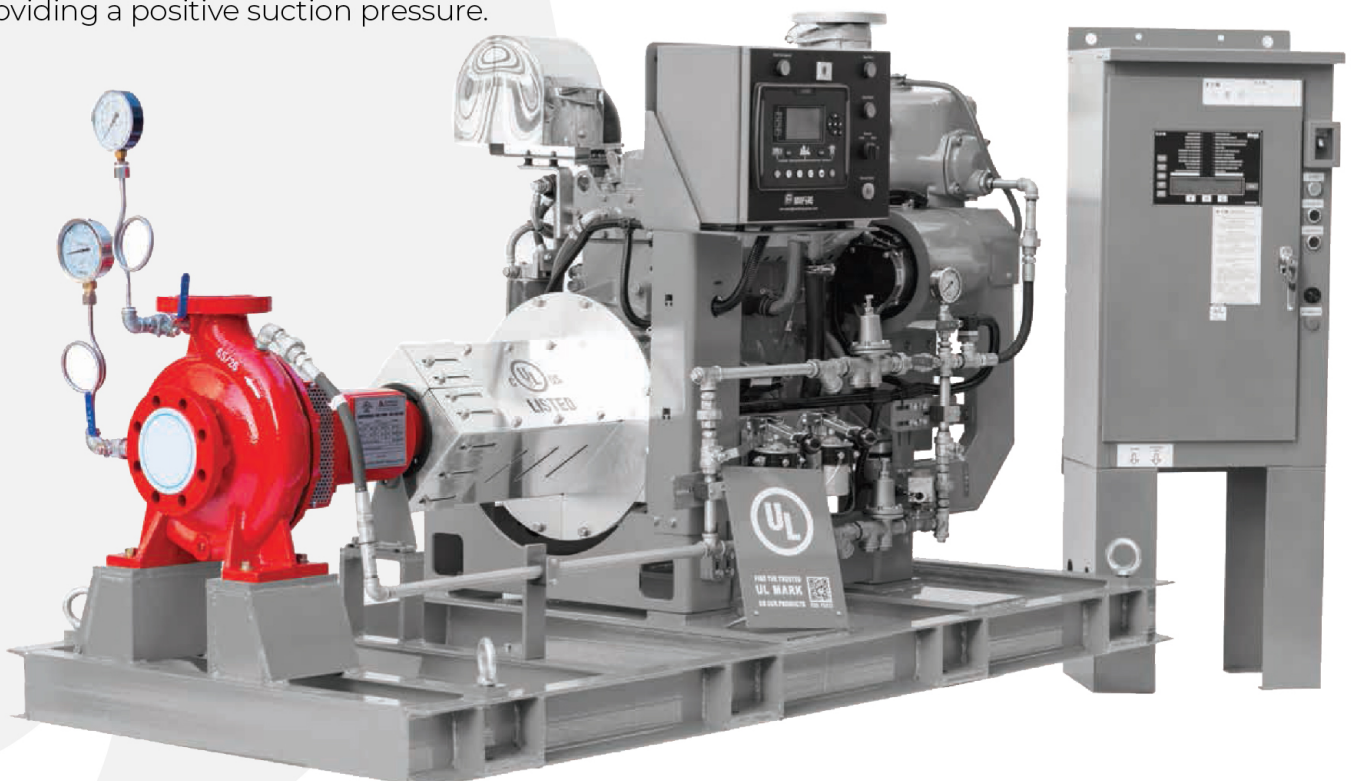
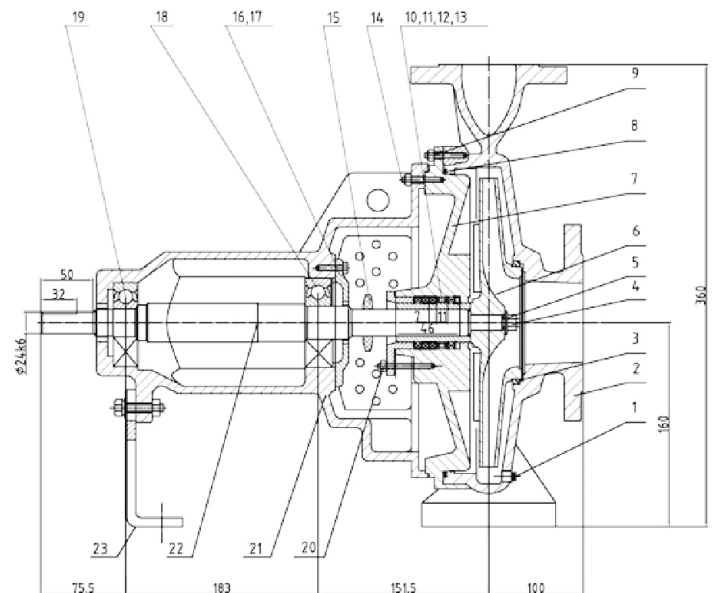
NFPA 20 - Standard for the installation of Stationery Pumps for Fire Protection defines End suction pumps as follows: "A single suction pump having its suction nozzle on the opposite side of the casing from the stuffing box and having the face of the Suction nozzle perpendicular to the longitudinal axis of the shaft" The water flowing through an End Suction pump makes a 90 degree radial turn from Suction to discharge.

**FIREGUARD** offers FGES series state-of-the-art End Suction Pumps with Diesel Engine or Electric Motor driven single stage pumps.

**FIREGUARD PUMPS** are engineered with a dynamically balanced and enclosed Impeller. The complete bearing assembly including Impeller and casing cover can be dismantled without removing the volute casing from the pipe system. End Suction Pumps are better when the water source is located above ground providing a positive suction pressure.

**FIREGUARD PUMPS** are typically used in fire fighting applications for supplying water to the fire hose reels, fire hydrants or sprinkler systems.

**FIREGUARD PUMPS** have a FLOW ranges from 50 to 750 US GPM and Pressure ratings from 80 PSI up to 300 PSI



## DIESEL ENGINES

**CLARKE** fire engines has the worlds largest range of UL/FM approved diesel fire pump drivers. Clarke Fire Engine covers UL /FM pump requirements from 31 kw to 764 kw with operating speeds from 1470 RPM to 3000 RPM

All Clarke engines are supplied with a standard 24 month manufacturer's warranty

Clarke Fire engine has innovative and patented Pressure Limited Driver diesel engine which protects the sprinkler system from over pressurization by varying engine RPM

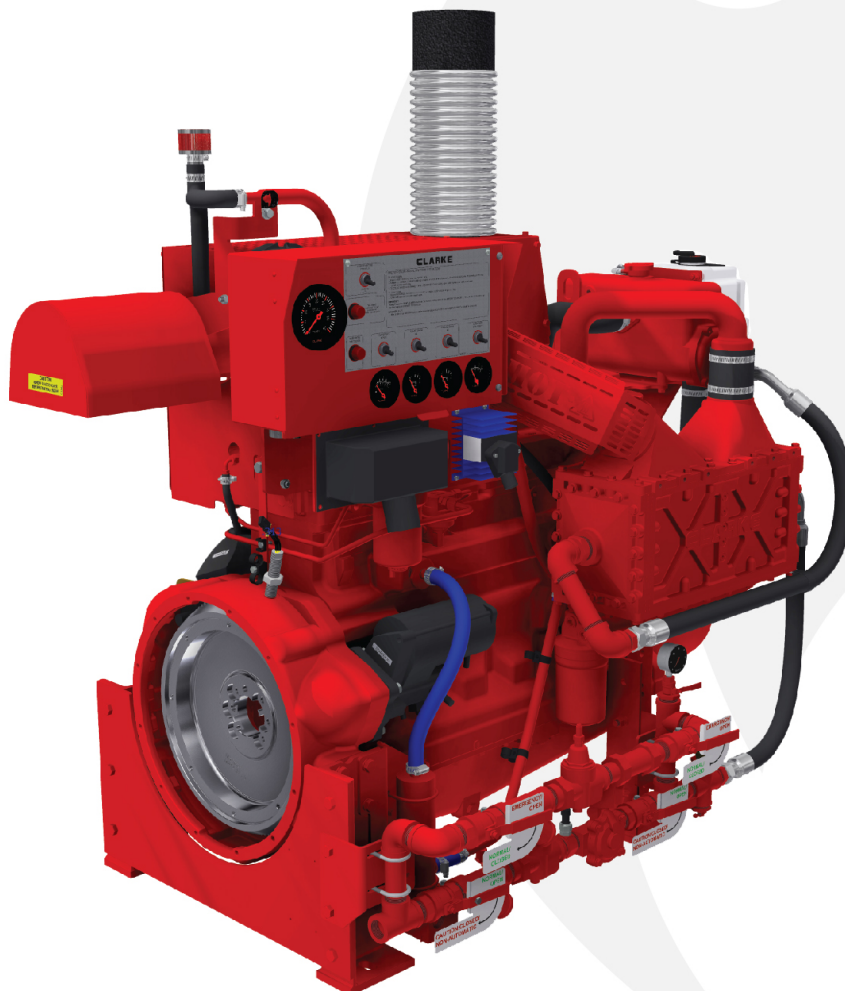
Clarke fire engine has dual starting technology as well as the technology for dual ECM electronic injection engines. Both increased diesel engine reliability and performance. Its driveshaft style couplings solved field alignment problems, and significantly reduced the time needed for engine/fire pump installation and maintenance.

Clarke has implemented an exciting, ongoing and continuous product improvement program which will provide even more high quality Clarke engine models to meet and exceed the demands. A deduction of 3% of the power is made for each 1000 feet rise in altitude above 300 feet and 1% for each 10 DegC above 77 DegC ambient temperature.

Minimum instrumentation and control including adjustable speed governor, over speed shutdown device set approximate 20 above rated engine speed, tachometer with hour meter, oil pressure gauge and temperature gauge.

Most diesel engines models work seamlessly with FIREGUARD fire pumps. Working together, they deliver the most efficient and reliable fire pump solutions. Our integrated diesel pump units make us stand out in the market.

Optional: NM Fire Engine , Kirloskar



## ELECTRIC MOTORS

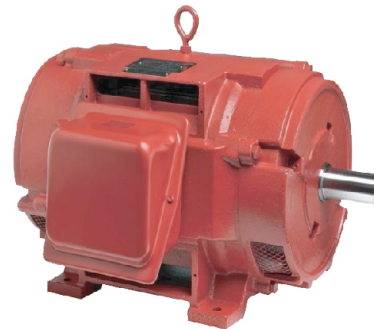
**Marathon** electric motors are setup in **FIREGUARD** fire pump solution.

Marathon Motors has been leader in providing high quality motors with wide range of UL listed Fire pump drip-proof totally enclosed fan cooled TEFC / ODP. The features of Marathon fire pump motor included horse power range of 3 to 450 HP, 2 and 4 pole capabilities, Cast iron construction, ball bearings, red painted and 60/50 hz ratings, NEMA design B, Code G or less, EP Act efficiency.

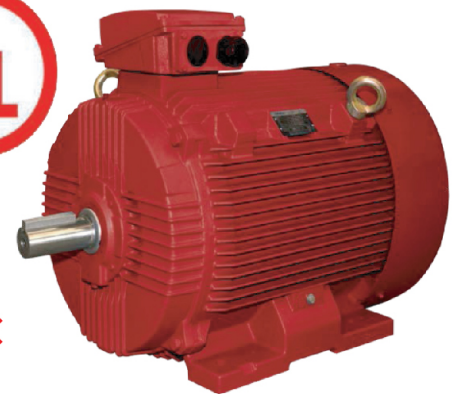
Marathon Fire pump motors meet NFPA 20 standards and are fully compliant with federal motor efficiency requirements as described in the energy independence and security act of 2007 also known as EISA

**FIREGUARD** also provides customization service to our customers. Customers can specify different motor brands on their own.

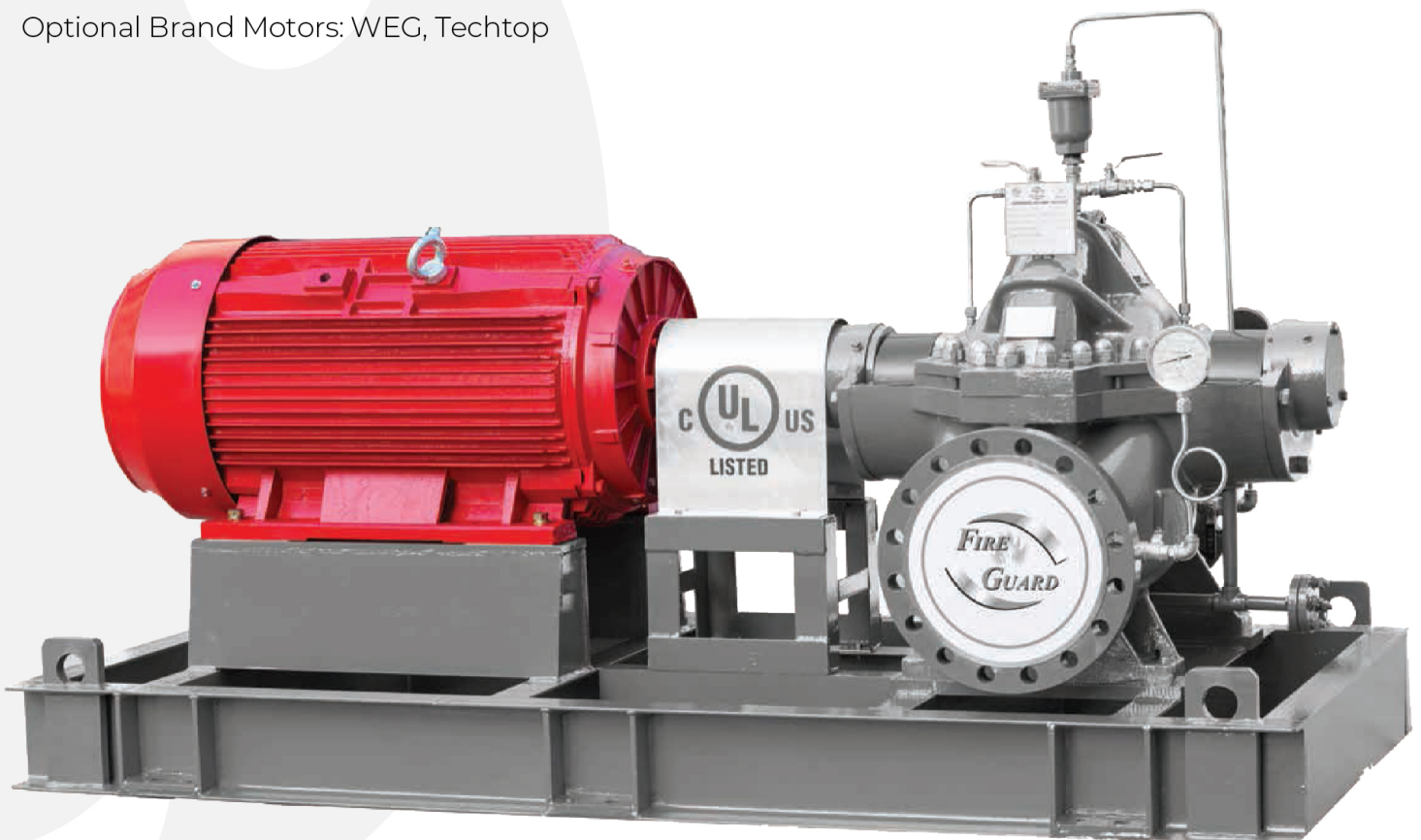
Optional Brand Motors: WEG, Techtop



**ODP**



**TEFC**





# FIRE PUMP CONTROLLERS

**Tornatech** specializes in the conception and manufacturing of fire pump controllers listed by UL and approved by FM and in accordance with the widely recognized NFPA 20 standard. In addition, controllers are developed to meet various local standards and approvals such as A2P (France) and LPCB (UK), to name a few.

We thrive on using modern technology, innovation and market-leading designs to ensure that Fireguard Systems always provide cost-effective and reliable solutions to a wide range of fire detection and protection applications.

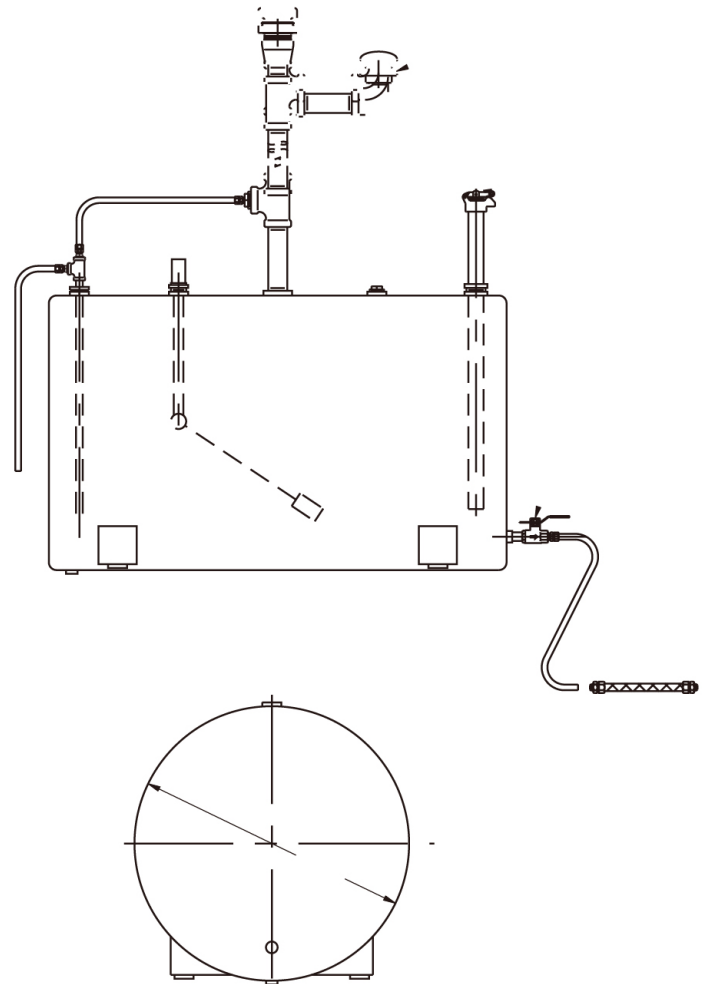
All **FIREGUARD** approved pumps are equipped with Tornatech controllers. **FIREGUARD** branded jockey pumps can also be supplied with Tornatech jockey controllers as additional feature.





# FUEL SYSTEM TANK

**FIREGUARD** single wall or double wall standard construction fire pump fuel system tanks. Tanks and opening are fabricated and tested to the highest standard. Standard NPT fittings and leg brackets configuration as specified. C3 standard painting suitable for residential and commercial environment. High standard C4 painting is optional.



Achieving excellent fire protection performance

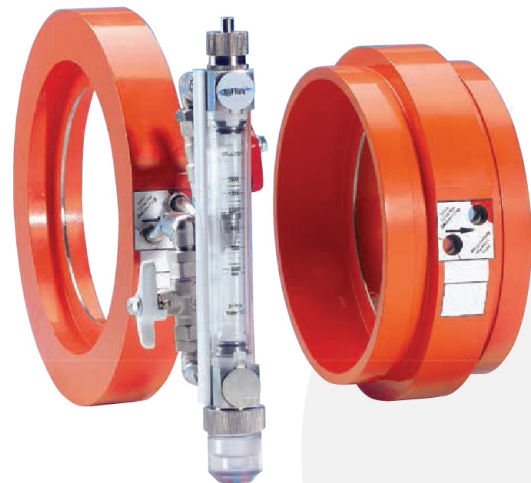
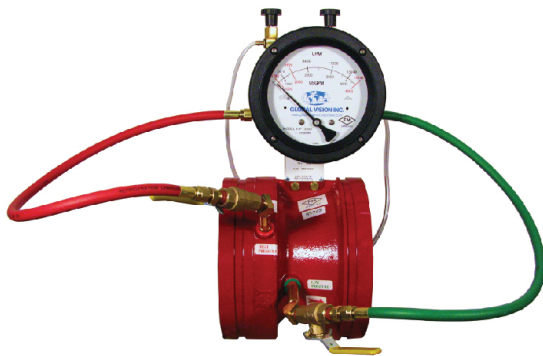




## FLOWMETERS

**FIREGUARD** has wide range of well engineered flowmeters able to meet the specific needs of different customers.

A comprehensive, approved range of innovative and reliable flowmeters are available for use in Fire Pump Testing from GVI and INFLUX are available.



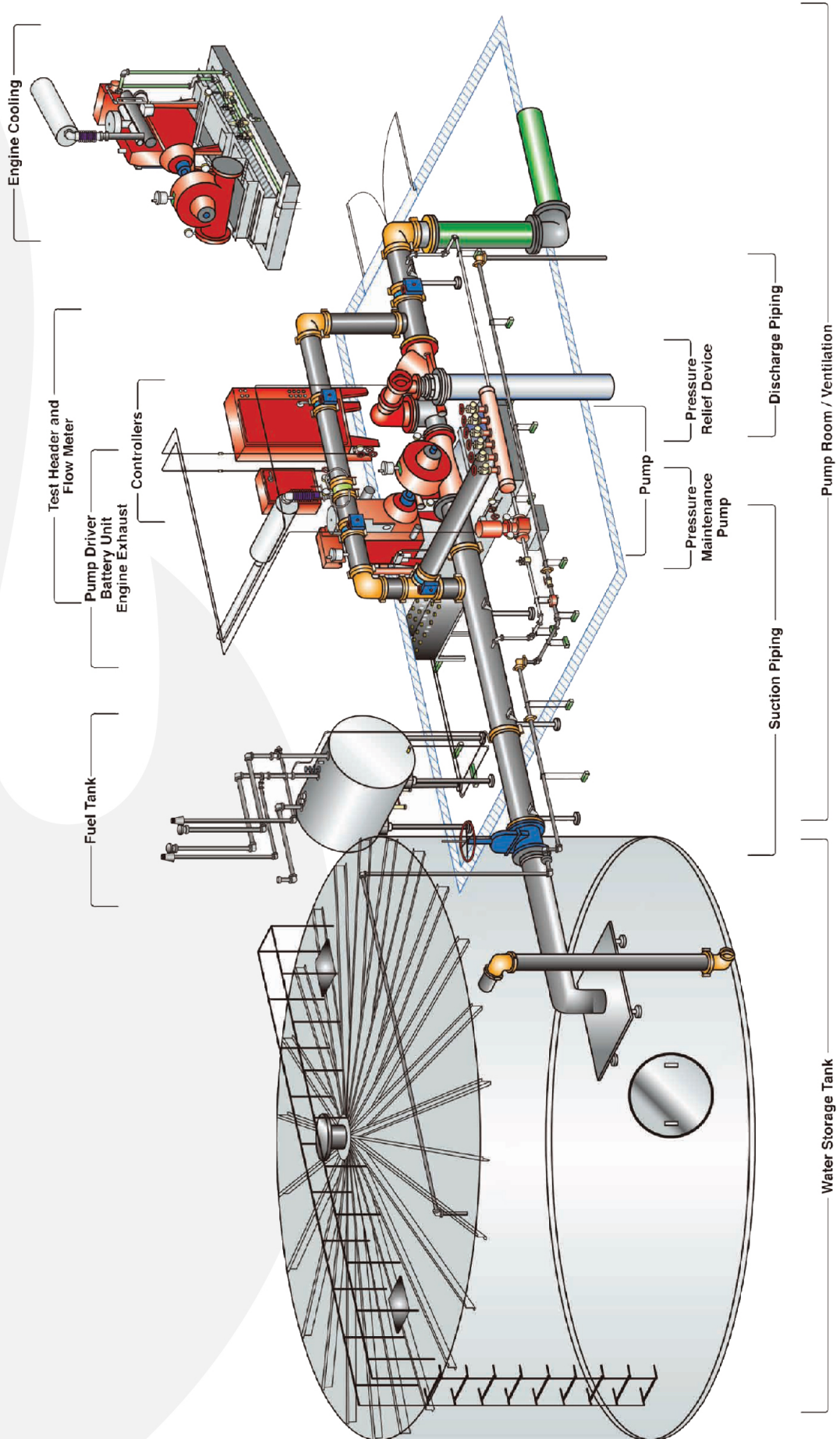
## AUTOMATIC CONTROL VALVES

**CLA-VAL** has been a leading manufacturer of automatic control valves, serving waterworks, fire protection, aviation fueling and industrial customers throughout the world.

**Main relief valve** is designed to relieve excess pressure in a fire protection system, while eliminating the damaging effects of cavitation. The valve features an adjustable pressure setting, fast opening to maintain steady line pressure, and gradual closing for surge free operation.

**Casing relief valve** is typically used in a fire protection system to trim water pressure, thus preventing pressure build-up whenever line pressure exceeds the setting of the spring. It will relieve excess pressure to atmosphere to prevent damage to the distribution network.







### Centrifugal Fire Pumps, End Suction

| Rated Capacity GPM | Size In.    | Model      | Rated Net Pressure Range psi | Approx Speed RPM | Max Working Pressure psi |
|--------------------|-------------|------------|------------------------------|------------------|--------------------------|
| 50                 | 2-1/2x1-1/2 | FGEF 40/20 | 76-111                       | 2980             | 232                      |
| 100                | 2-1/2x1-1/2 | FGEF 40/20 | 72-109                       | 2980             | 232                      |
| 50                 | 2-1/2x1-1/2 | FGEF 40/20 | 108-157                      | 3550             | 232                      |
| 100                | 2-1/2x1-1/2 | FGEF 40/20 | 105-157                      | 3550             | 232                      |
| 100                | 2-1/2x1-1/2 | FGEF 40/26 | 100-138                      | 2980             | 232                      |
| 200                | 2-1/2x2     | FGEF 50/26 | 105-140                      | 2980             | 232                      |
| 250                | 2-1/2x2     | FGEF 50/26 | 99-136                       | 2980             | 232                      |
| 250                | 3x2-1/2     | FGEF 65/26 | 119-147                      | 2980             | 239                      |
| 300                | 3x2-1/2     | FGEF 65/26 | 119-147                      | 2980             | 239                      |
| 400                | 3x2-1/2     | FGEF 65/26 | 119-141                      | 2980             | 239                      |
| 450                | 3x2-1/2     | FGEF 65/26 | 114-138                      | 2980             | 239                      |
| 500                | 3x2-1/2     | FGEF 65/26 | 111-135                      | 2980             | 239                      |
| 500                | 4x3         | FGEF 80/26 | 116-138                      | 2980             | 232                      |
| 750                | 4x3         | FGEF 80/26 | 105-132                      | 2980             | 232                      |
| 200                | 2-1/2x2     | FGEF 50/20 | 72-99                        | 2980             | 232                      |
| 250                | 2-1/2x2     | FGEF 50/20 | 69-99                        | 2980             | 232                      |
| 200                | 2-1/2x2     | FGEF 50/20 | 102-142                      | 3550             | 232                      |
| 250                | 2-1/2x2     | FGEF 50/20 | 101-141                      | 3550             | 232                      |
| 250                | 3x2-1/2     | FGEF 65/20 | 86-107                       | 2980             | 232                      |
| 300                | 3x2-1/2     | FGEF 65/20 | 86-107                       | 2980             | 232                      |
| 400                | 3x2-1/2     | FGEF 65/20 | 83-104                       | 2980             | 232                      |
| 450                | 3x2-1/2     | FGEF 65/20 | 80-102                       | 2980             | 232                      |
| 500                | 3x2-1/2     | FGEF 65/20 | 77-99                        | 2980             | 232                      |
| 250                | 3x2-1/2     | FGEF 65/20 | 113-152                      | 3550             | 232                      |
| 300                | 3x2-1/2     | FGEF 65/20 | 112-152                      | 3550             | 232                      |
| 400                | 3x2-1/2     | FGEF 65/20 | 108-150                      | 3550             | 232                      |
| 450                | 3x2-1/2     | FGEF 65/20 | 105-148                      | 3550             | 232                      |
| 500                | 3x2-1/2     | FGEF 65/20 | 101-145                      | 3550             | 232                      |
| 500                | 4x3         | FGEF 80/20 | 90-100                       | 2980             | 232                      |
| 750                | 4x3         | FGEF 80/20 | 87-98                        | 2980             | 232                      |
| 500                | 4x3         | FGEF 80/20 | 129-142                      | 3550             | 232                      |
| 750                | 4x3         | FGEF 80/20 | 127-142                      | 3550             | 232                      |



## Centrifugal Fire Pumps, Split Case

| Rated Capacity (GPM) | Size (in.) | Model       | Rated Net Pressure Range (psi) | Approx Speed (rpm) | Max Working Pressure (psi) |
|----------------------|------------|-------------|--------------------------------|--------------------|----------------------------|
| 300                  | 5x3        | FGSF5-3X10  | 83-136                         | 2950               | 280                        |
| 300                  | 5x3        | FGSF5-3X10  | 120-196                        | 3550               | 280                        |
| 300                  | 5x4        | FGSF5-4X13  | 123-195                        | 2980               | 400                        |
| 300                  | 5x4        | FGSF5-4X13  | 176-279                        | 3550               | 400                        |
| 400                  | 5x3        | FGSF5-3X10  | 82-135                         | 2950               | 280                        |
| 400                  | 5x3        | FGSF5-3X10  | 120-196                        | 3550               | 280                        |
| 400                  | 5x4        | FGSF5-4X13  | 120-189                        | 2980               | 400                        |
| 400                  | 5x4        | FGSF5-4X13  | 173-274                        | 3550               | 400                        |
| 450                  | 5x3        | FGSF5-3X10  | 80-134                         | 2950               | 280                        |
| 450                  | 5x3        | FGSF5-3X10  | 119-196                        | 3550               | 280                        |
| 450                  | 5x4        | FGSF5-4X13  | 119-187                        | 2980               | 400                        |
| 450                  | 5x4        | FGSF5-4X13  | 172-272                        | 3550               | 400                        |
| 500                  | 5x3        | FGSF5-3X10  | 79-133                         | 2950               | 280                        |
| 500                  | 5x3        | FGSF5-3X14G | 172-257                        | 2980               | 261                        |
| 500                  | 5x3        | FGSF5-3X10  | 118-195                        | 3550               | 280                        |
| 500                  | 5x4        | FGSF5-4X13  | 117-184                        | 2980               | 400                        |
| 500                  | 5x4        | FGSF5-4X13  | 170-269                        | 3550               | 400                        |
| 500                  | 6x5        | FGSF6-5X10  | 117-162                        | 2980               | 310                        |
| 500                  | 6x5        | FGSF6-5X13  | 137-207                        | 2980               | 370                        |
| 500                  | 6x5        | FGSF6-5X16  | 208-283                        | 2980               | 370                        |
| 500                  | 6x5        | FGSF6-5X10  | 137-230                        | 3550               | 310                        |
| 500                  | 6x5        | FGSF6-5X10S | 130-185                        | 3550               | 290                        |
| 500                  | 6x5        | FGSF6-5X13  | 196-294                        | 3550               | 370                        |
| 750                  | 5x3        | FGSF5-3X10  | 108-120                        | 2950               | 280                        |
| 750                  | 5x3        | FGSF5-3X14G | 169-251                        | 2980               | 261                        |
| 750                  | 5x3        | FGSF5-3X10  | 105-185                        | 3550               | 280                        |
| 750                  | 6x4        | FGSF6-4X13  | 138-198                        | 2980               | 202                        |
| 750                  | 5x4        | FGSF5-4X13  | 104-163                        | 2980               | 400                        |
| 750                  | 5x4        | FGSF5-4X13  | 157-247                        | 3550               | 400                        |
| 750                  | 6x5        | FGSF6-5X10  | 114-160                        | 2980               | 310                        |



|      |       |              |         |      |     |
|------|-------|--------------|---------|------|-----|
| 750  | 6x5   | FGSF6-5X10   | 138-230 | 3550 | 310 |
| 750  | 6x5   | FGSF6-5X13   | 132-203 | 2980 | 370 |
| 750  | 6x5   | FGSF6-5X13   | 191-291 | 3550 | 370 |
| 750  | 6x5   | FGSF6-5X16   | 203-277 | 2980 | 370 |
| 750  | 8x6   | FGSF8-6X17   | 272-367 | 2950 | 460 |
| 1000 | 6x4   | FGSF6-4X13   | 130-191 | 2980 | 202 |
| 1000 | 8x6   | FGSF8-6X13   | 119-237 | 2980 | 350 |
| 1000 | 8x6   | FGSF8-6X13   | 175-286 | 3550 | 370 |
| 1000 | 6x5   | FGSF6-5X10   | 103-151 | 2980 | 310 |
| 1000 | 6x5   | FGSF6-5X13   | 121-192 | 2980 | 370 |
| 1000 | 6x5   | FGSF6-5X16   | 192-265 | 2980 | 370 |
| 1000 | 6x5   | FGSF6-5X10   | 130-225 | 3550 | 310 |
| 1000 | 6x5   | FGSF6-5X13   | 182-283 | 3550 | 370 |
| 1000 | 8x6   | FGSF8-6X17   | 260-359 | 2950 | 460 |
| 1250 | 8x5   | FGSF8-5X13   | 116-190 | 2980 | 187 |
| 1250 | 8x5   | FGSF8-5X15   | 118-177 | 2200 | 261 |
| 1250 | 8x6   | FGSF8-6X13   | 112-230 | 2980 | 350 |
| 1250 | 8x6   | FGSF8-6X13   | 168-281 | 3550 | 370 |
| 1250 | 8x6   | FGSF8-6X10   | 83-149  | 2950 | 330 |
| 1250 | 8x6   | FGSF8-6X10   | 133-225 | 3550 | 330 |
| 1250 | 8x6   | FGSF8-6X17   | 241-346 | 2950 | 460 |
| 1500 | 8x6   | FGSF8-6X18   | 115-181 | 1800 | 275 |
| 1500 | 8x6   | FGSF8-6X13   | 109-221 | 2980 | 350 |
| 1500 | 8x6   | FGSF8-6X13   | 158-269 | 3550 | 370 |
| 1500 | 8x6   | FGSF8-6X10   | 122-216 | 3500 | 330 |
| 2000 | 8x6   | FGSF8-6X18   | 118-175 | 1800 | 275 |
| 2000 | 8x6   | FGSF8-6X14   | 107-190 | 2950 | 310 |
| 2000 | 10x8  | FGSF10X20S   | 118-186 | 1800 | 320 |
| 2000 | 10x8  | FGSF10-8X20S | 149-234 | 2000 | 320 |
| 2000 | 10x8  | FGSF10-8X15  | 123-239 | 2980 | 362 |
| 2500 | 10x8  | FGSF10-8X15  | 114-227 | 2980 | 362 |
| 2500 | 10x8  | FGSF10-8X17  | 138     | 1800 | 275 |
| 2500 | 10x8  | FGSF10-8X20S | 110-176 | 1800 | 320 |
| 2500 | 10x8  | FGSF10-8X20S | 141-225 | 2000 | 320 |
| 2500 | 10x8  | FGSF10-8X17  | 125-190 | 2100 | 275 |
| 3000 | 12x10 | FGSF12-10X25 | 176-249 | 1480 | 330 |





|      |       |              |         |      |     |
|------|-------|--------------|---------|------|-----|
| 3000 | 12x10 | FGSF12-10X20 | 120-154 | 1480 | 330 |
| 3000 | 10x8  | FGSF10-8X20  | 121-179 | 1760 | 340 |
| 3000 | 10x8  | FGSF10-8X20  | 162-238 | 2000 | 340 |
| 3000 | 10x8  | FGSF10-8X17  | 144-187 | 2100 | 275 |
| 3500 | 12x10 | FGSF12-10X25 | 169-242 | 1480 | 330 |
| 3500 | 12x10 | FGSF12-10X20 | 117-152 | 1480 | 330 |
| 3500 | 10x8  | FGSF10-8X20  | 136-170 | 1760 | 340 |
| 3500 | 12x10 | FGSF12-10X19 | 119-189 | 1800 | 290 |
| 3500 | 10x8  | FGSF10-8X20  | 154-229 | 2000 | 340 |
| 4000 | 12x10 | FGSF12-10X20 | 114-148 | 1480 | 330 |
| 4000 | 12x10 | FGSF12-10X25 | 162-233 | 1480 | 330 |
| 4000 | 14x10 | FGSF14-10X25 | 138-217 | 1480 | 300 |
| 4000 | 12x10 | FGSF12-10X19 | 114-185 | 1800 | 290 |
| 4000 | 12x10 | FGSF12-10X20 | 125-225 | 1800 | 330 |
| 4500 | 12x10 | FGSF12-10X20 | 109-145 | 1480 | 330 |
| 4500 | 14x10 | FGSF14-10X25 | 136-216 | 1480 | 300 |
| 4500 | 16x14 | FGSF16-14X25 | 129-196 | 1480 | 315 |
| 4500 | 12x10 | FGSF12-10X19 | 153-181 | 1800 | 290 |
| 4500 | 12x10 | FGSF12-10X20 | 121-222 | 1800 | 330 |
| 5000 | 14x10 | FGSF14-10X25 | 134-214 | 1480 | 300 |
| 5000 | 16x14 | FGSF16-14X25 | 127-194 | 1480 | 315 |
| 5000 | 12x10 | FGSF12-10X20 | 134-218 | 1800 | 330 |
| 5500 | 16x14 | FGSF16-14X25 | 124-192 | 1480 | 315 |
| 6000 | 14x10 | FGSF14-10X25 | 127-209 | 1480 | 300 |
| 6000 | 16x14 | FGSF16-14X25 | 120-190 | 1480 | 315 |
| 6500 | 14x10 | FGSF14-10X25 | 205     | 1480 | 300 |
| 6500 | 16x14 | FGSF16-14X25 | 116-186 | 1480 | 315 |
| 7000 | 14x10 | FGSF14-10X25 | 201     | 1480 | 300 |
| 7000 | 16x14 | FGSF16-14X25 | 113-182 | 1480 | 315 |
| 7500 | 14x10 | FGSF14-10X25 | 195     | 1480 | 300 |
| 7500 | 16x14 | FGSF16-14X25 | 109-179 | 1480 | 315 |
| 8000 | 16x14 | FGSF16-14X25 | 117-192 | 1540 | 315 |



| Rated Capacity (GPM) | Size (in.) | Model        | No. of Stages | Rated Net Pressure Range (psi) | Approx Speed (rpm) | Max Working Pressure (psi) |
|----------------------|------------|--------------|---------------|--------------------------------|--------------------|----------------------------|
| 750                  | 8x6        | FGSF8-6X18x2 | 2             | 263-361                        | 1800               | 450                        |
| 1000                 | 8x6        | FGSF8-6X18x2 | 2             | 253-354                        | 1800               | 450                        |
| 1250                 | 8x6        | FGSF8-6X18x2 | 2             | 236-342                        | 1800               | 450                        |
| 1500                 | 8x6        | FGSF8-6X18x2 | 2             | 324                            | 1800               | 450                        |

# Fire Fighting Pump Systems



“Fireguard aims to be customer’s first choice to safeguard from hazardous fires, by designing, developing the latest technology products with high quality and reliability.”