

DuraQuench™ Pump Skid



Features

- Compact design provides a small installation footprint
- Multiple pump capacity options
- FM Approved, NFPA 20 fire pump controller (multiple voltage and frequency options)
- Optional jockey pump package
- Controller pre-wired to pump
- Skid isolation valves installed on discharge and test header outlets
- Suction and discharge pressure gauges
- Pressure regulating loop

Approvals

The pump skid is FM Approved as a component of the FM Approved Fike DuraQuench system when configured for Deluge, Wet Pipe or Pre-action system arrangements. DuraQuench systems configured with a pressure maintenance (jockey) pump are NOT FM approved.

All components used on the DuraQuench system, including commercial off-the-shelf industry accepted components shall meet the requirements of NFPA 750 and NFPA 20.

Description

The DuraQuench pump skid is a pre-engineered fire pump system designed and built using FM approved components to meet the requirements of: *NFPA 750, Standard on Water Mist Fire Protection Systems*; *NFPA 20, Standard for the Installation of Stationary Pumps for Fire Protection*; and *FM Datasheet 3-7, Fire Protection Pumps*.

The pump skid includes an FM Approved, NFPA 20 electric fire pump controller, electric motor coupled to a centrifugal pump and all necessary piping, valves and fittings to comprise a complete, compact water mist pump unit with a small footprint. All components are factory assembled and securely mounted on a steel frame and are pre-wired and tested, leaving only skid mounting, power connections, monitoring connections and pipe connections to be completed on site.

The pump skid components, excluding the pump controller and motor/pump assembly are primed and then finished with a 2 part, red epoxy paint

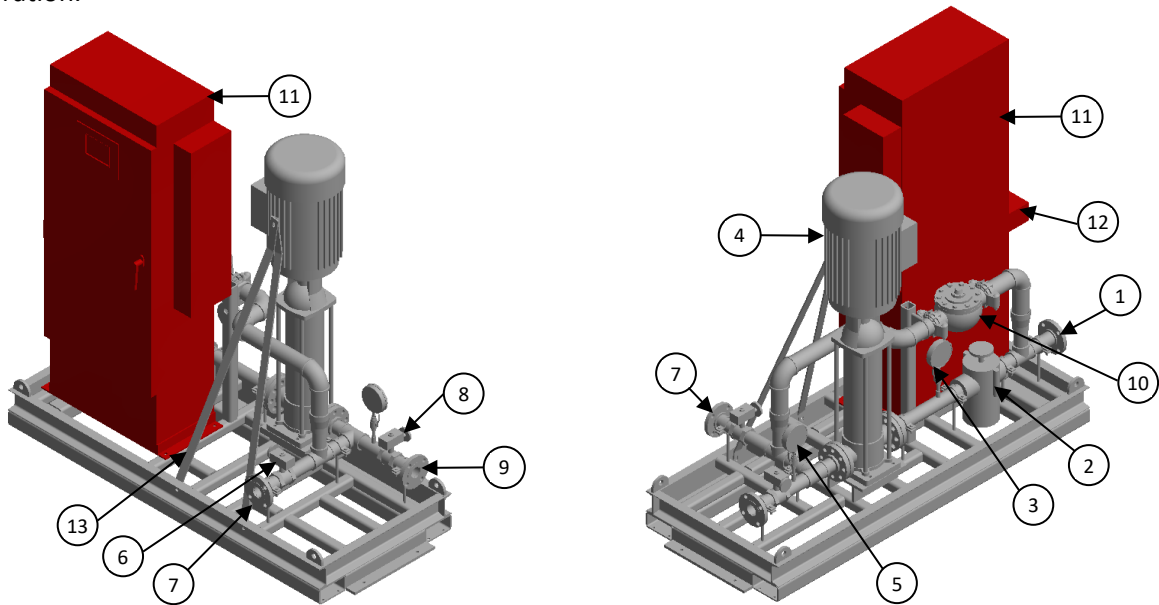
Applications

- Deluge systems for the protection of machinery and combustion turbines in enclosures. Refer to Fike document 06-791-1 for further details.
- Wet Pipe systems for the protection of Non-storage occupancies rated Hazard Category 1 (HC-1). Refer to Fike document 06-791-4 for further details.
- Wet Pipe or Preaction systems for the protection of Data Processing Equipment Rooms/Halls above and below raised floors. Refer to Fike document 06-791-7 for further details.

This document is only intended to be a guideline and is not applicable to all situations. Information is subject to Fike's full disclaimer at <http://www.fike.com/disclaimer>.

System Components

The DuraQuench pump skid unit is available in multiple configurations, including alternate pump capacities and electrical configurations to suit specific project requirements. The figure below shows a typical pump skid configuration.



Standard Pump Skid Configuration

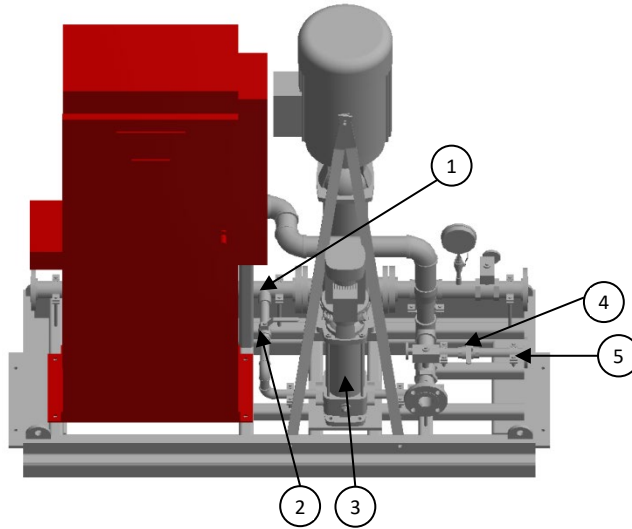
Item	Component Description	Function
1	Supply Pipe Connection	Pipe flange allows easy connection of water supply piping to pump skid. See System Piping Connections for flange size.
2	Suction Basket Strainer (Stainless Steel)	Prevents debris from entering the pump impeller. Strainer basket can be easily removed for cleaning.
3	Suction Pressure Gauge	Indicates pressure of the water supply feeding the pump inlet.
4	Centrifugal Pump and Motor	Centrifugal pump available in three different flow/pressure capacities. When activated, the pump boosts both the flow and pressure of the supplied water source to the level required by the nozzles to generate the fine water spray.
5	Discharge Pressure Gauge	Indicates pressure of the water supply being generated by the pump at its outlet.
6	Test Header Isolation Valve (butterfly)	Allows the water supply from the fire pump to be routed to a connected test header for the purpose of measuring the system flow rate during acceptance testing and during annual testing.
7	Test Header Pipe Connection	Pipe flange allows easy connection of test header piping to the pump skid. See System Piping Connections for flange sizes.
8	Discharge Isolation Valve (butterfly)	Allows the water supply to the system piping network to be turned off for service or maintenance of the pump skid unit. Valve is monitored by the releasing control panel and provides an alarm signal when the valve is not in the fully open position.
9	Discharge Pipe Connection	Pipe flange allows easy connection of system distribution piping. See System Piping Connections for flange size.
10	Relief Valve	Allows the diversion of water through the recirculation loop to limit excess pressure in the system.
11	Pump Controller (VFD controller shown)	Provides a means to start the fire pump automatically or manually in response to a fire event. Provides remote alarm connections for fire pump monitoring (i.e., pump running, AC power failure, phase reversal, etc.). Controller can be activated via a normally closed remote contact from a releasing control panel (deluge system) or via a pressure sensing line connection (wet pipe system).
12	Pressure Sensing Line Connection	Pressure switch used to actuate the pump unit when pressure in the water system piping drops to a preset level (typical of wet pipe systems)
13	Motor Bracing Strap	Provides bracing of pump motor during shipment and operation.

This document is only intended to be a guideline and is not applicable to all situations. Information is subject to Fike's full disclaimer at <http://www.fike.com/disclaimer>.

Optional Pressure Maintenance Pump

For installations where a jockey pump is required, a pressure maintenance (jockey or make-up) pump kit (P/N 02-15270) can be ordered from Fike. The kit includes a jockey pump controller dual rated for 50/60 Hz, 3.5 GPM centrifugal pump coupled to 50/60 Hz motor and required check and isolation valves. If initially ordered as part of the pump skid, the jockey pump and required check and isolation valves will be mounted directly onto to the DuraQuench pump skid as shown below. The jockey pump controller (included with the kit) must be mounted off the pump skid. The pressure sensing line and pump motor control wiring connections from the jockey pump to the jockey pump controller must be field installed in accordance with the requirements of NFPA 20.

NOTE: DuraQuench systems configured with a pressure maintenance pump are not within the scope of the DuraQuench FM approval.



Pump Skid Configuration with Factory Installed Jockey Pump

Item	Component Description	Function
1	Jockey Pump Fitting	Fitting in pump suction pipe for connection of jockey pump supply pipe.
2	Suction Isolation Valve	Allows the jockey pump to be isolated for service or maintenance. Valve is not required to be monitored but shall be secured and locked in the fully open position during normal system operation.
3	Jockey Pump and Motor	Used only on wet pipe systems were required by code to maintain the pressure in the piping network to avoid non-emergency starting of the main fire pump. Pump is activated by a dedicated jockey pump controller (not shown) via a pressure sensing line connection (not shown).
4	Discharge Isolation Valve	Allows the jockey pump to be isolated for service or maintenance. Valve is not required to be monitored but shall be secured and locked in the fully open position during normal system operation.
5	Discharge Pipe Connection	Pipe flange allows easy connection of discharge piping for the jockey pump. See System Piping Connections for flange size.
6	Jockey Pump Controller (not shown)	Provides a means to start and stop the jockey pump automatically in response to a drop in pressure in the system piping. Jockey pump controller shall be located as close as practical to the pump skid.

This document is only intended to be a guideline and is not applicable to all situations. Information is subject to Fike's full disclaimer at <http://www.fike.com/disclaimer>.

System Piping Connections

The DuraQuench pump skid is equipped with ANSI flanges for the water supply inlet, discharge outlet, test header outlet, and optional jockey pump outlet (if installed) for connection of field piping. The size of each outlet flange is shown in the table below for reference purposes. Piping connections must be made in accordance with NFPA 750, NFPA 20, and other installation codes acceptable to the authority having jurisdiction.

FIKE Part Number	Pump Description	Estimated Shipping Weight	Pump Skid Flange Connection Sizes (150# ANSI)			
			Inlet (Suction)	Outlet (Discharge)	Test Header	Jockey Pump
02-14909-1-X-(1-10)-X-X	53 gpm (200 lpm)	1,205 lbs. (546 kg)	2" NPS	2" NPS	2" NPS	1" NPS
02-14909-1-X-(21-30)-X-X		1,320 lbs. (599 kg)				
02-14909-2-X-(1-10)-X-X	53 gpm HP (200 lpm) HP	1,289 lbs. (585 kg)	2" NPS	2" NPS	2" NPS	1" NPS
02-14909-2-X-(21-30)-X-X		1,404 lbs. (637 kg)				
02-14909-3-X-(1-10)-X-X	111 gpm (420 lpm)	1,643 lbs. (745 kg)	3" NPS	2" NPS	2" NPS	1" NPS
02-14909-3-X-(21-30)-X-X		1,758 lbs. (797 kg)				
02-14909-4-X-(1-10)-X-X	75 gpm (284 lpm)	1,619 lbs. (734 kg)	3" NPS	2" NPS	2" NPS	1" NPS
02-14909-4-X-(21-30)-X-X		1,734 lbs. (787 kg)				
02-14909-5-X-(1-10)-X-X	133 gpm (503 lpm)	1,768 lbs. (802 kg)	3" NPS	2" NPS	2" NPS	1" NPS
02-14909-5-X-(21-30)-X-X		1,883 lbs. (854 kg)				

This document is only intended to be a guideline and is not applicable to all situations. Information is subject to Fike's full disclaimer at <http://www.fike.com/disclaimer>.

Skid Motor and Pump Specifications

Skid P/N	02-14909-1-X-X-X	02-14909-2-X-X-X	02-14909-3-X-X-X	02-14909-4-X-X-X	02-14909-5-X-X-X	02-15270 (Jockey)
3-Phase AC Standard Motors						
Motor Type	BALDOR	BALDOR	BALDOR	BALDOR	BALDOR	ML80CA
Rated Power – P2	7.5 kW (10 HP)	11 kW (15 HP)	18.5 kW (25 HP)	11 kW (15 HP)	18.7 kW (25 HP)	1.12 kW (1.5 HP)
Mains Frequency	60Hz	60Hz	60Hz	50Hz	50Hz	50/60Hz
Rated Voltage (V)	3 x 208-230/ 460*	3 x 208-230/ 460*	3 x 230/460*	3 x 380-415*	3 x 200/400	3 x 220-240/ 380-415 (50Hz)
						3 x 220-255/ 380-440 (60Hz)
Rated Current (A)	24.8-23.8/ 11.9	38-35/17.5	56/28	20.2-18.6	64/32	4.35/2.50 (50Hz)
						4.15-4.00/ 2.40-2.30 (60Hz)
Rated Speed (rpm)	3525	3520	3530	2930	2920	2840-2870 (50Hz)
						3420-3470 (60Hz)
Motor Locked-Rotor Code (KVA/HP)**	K (8.0-8.99)	G (5.6-6.29)	J (7.1-7.99)	H (6.3-7.09)	H (6.3-7.09)	A (0-3.14)
Grundfos Pumps						
Type	CRN10-12	CRN10-14	CRN20-10	CRN15-12	CRN32-10	CR1S-17
Pump Speed****	3,470 rpm	3,470 rpm	3,521 rpm	2,924 rpm	2,934 rpm	3,463 rpm
Rated Flow (duty point)	53.27 gpm (201.6 lpm)	53.27 gpm (201.6 lpm)	111.39 gpm (421 lpm)	74.85 gpm (283.3 lpm)	132.09 gpm (500 lpm)	4.8 gpm (18.2 lpm)
Rated Head	446.5 ft. (136 m)	512.5 ft. (156 m)	561.4 ft. (171 m)	444.9 ft. (136 m)	500.3 ft. (152.5 m)	318 ft. (97 m)
Maximum Head	577.4 ft. (176 m)	669.3 ft. (204 m)	698.8 ft. (213 m)	554.5 ft. (169 m)	638.5 ft. (194.6 m)	478.7 ft. (145.7 m)
Maximum Ambient Temperature	140°F (60°C)	104°F (40°C)	104°F (40°C)	104°F (40°C)	104°F (40°C)	140°F (60°C)
Maximum Pressure at Stated Temp	363 psi / 248°F (25 bar / 120°C)	363 psi / 248°F (25 bar / 120°C)	363 psi / 248°F (25 bar / 120°C)	363 psi / 194°F (25 bar / 90°C)	435 psi / 194°F (30 bar / 90°C)	232 psi / 248°F (16 bar / 120°C)
Maximum Inlet Pressure***	145 psi (10 bar)	145 psi (10 bar)	145 psi (10 bar)	145 psi (10 bar)	145 psi (10 bar)	145 psi (10 bar)
Liquid Temp. Range	-4 to +248 °F (-20 to +120 °C)	-4 to +248 °F (-20 to +120 °C)	-4 to +248 °F (-20 to +120 °C)	-4 to +194 °F (-20 to +90 °C)	-4 to +248 °F (-20 to +120 °C)	-4 to +248 °F (-20 to +120 °C)

*Usable at 208 Volts.

**The motor's inrush current, also known as locked-rotor amps or LRA, can be calculated by inserting the KVA/HP value into the following formula:

$$LRA = KVA/HP \times Motor\ HP \times 1000 / 1.732 \times Motor\ Voltage$$

***Current inlet pressure + churn (no flow) pressure **must** always be lower than the maximum permissible system operating pressure to prevent potential damage to the bearing in the motor or reduced life of the shaft seal.

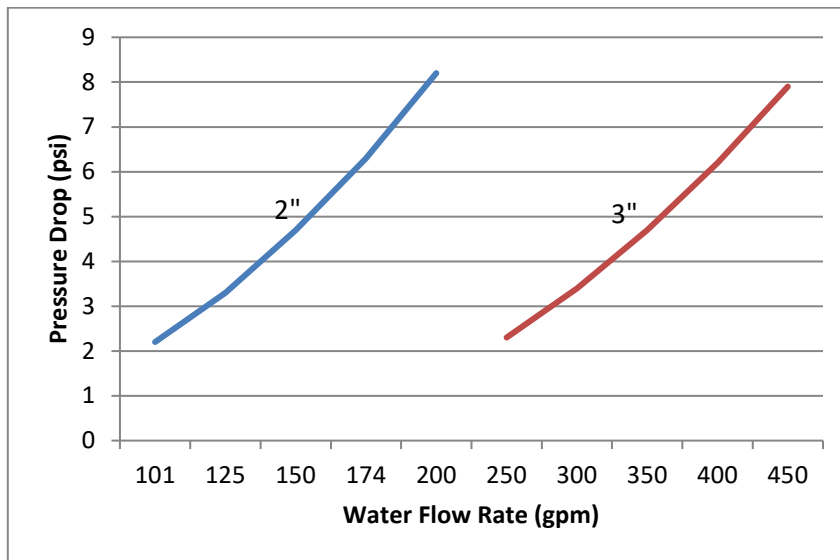
****Pump speed on which data is based.

This document is only intended to be a guideline and is not applicable to all situations.
Information is subject to Fike's full disclaimer at <http://www.fike.com/disclaimer>.

Pump Controller Specifications

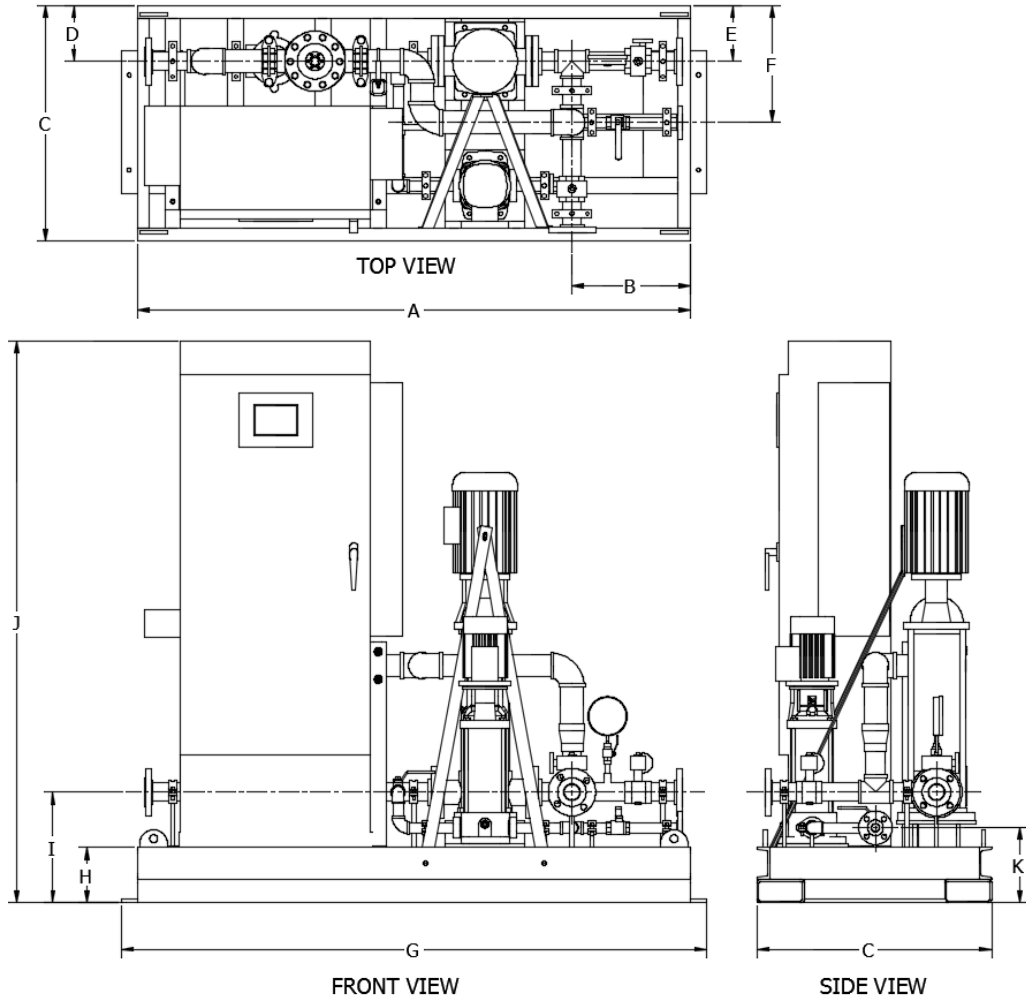
	Pump Controller (Standard and VFD)	Jockey Pump Controller
Approvals	ANSI/UL 218 and FM 1321/1323	UL
Fire Protection Standards	Complies with NFPA 20, IEC62091	Complies with NFPA 20
Voltage Rating	See Pump Skid Ordering Format (-15% and +10%)	
Short Circuit Current Rating	100,000 symmetrical RMS amps at 200 VAC to 480 VAC	
Horsepower Rating	Specific name plated motor horsepower rating	Specific name plated motor horsepower rating
Motor Service Factor	1.15 maximum	1.15 maximum
Remote Contacts	Voltage free contacts rated for 2 amps (resistive) at 30 VDC, or 1 amp (resistive) at 125 VAC	NA
Pressure Rating	300 PSI (20.7 bar) standard	300 PSI (20.7 bar) standard
Pressure Sensing Line	½" nominal, brass	¼"-18 NPT, brass
Enclosure	NEMA Type 2 with drip lip	NEMA Type 2 with drip lip
Ambient Operating Temperature	122° F (50° C) provided input and output cable has a temperature rating of 221°F (105°C) 104° F (40° C) provided input and output cable has a temperature rating of 194°F (90°C) <i>No direct sunlight allowed on the enclosure.</i>	
Electromagnetic Compatibility	Tested to comply with EN 61000-6-2 for immunity and EN 6100-6-4 for emissions	

Nominal Pressure Loss vs. Flow for System Basket Strainer



This document is only intended to be a guideline and is not applicable to all situations. Information is subject to Fike's full disclaimer at <http://www.fike.com/disclaimer>.

Standard Pump Skid Dimensional Information



Pump Skid Dimensions

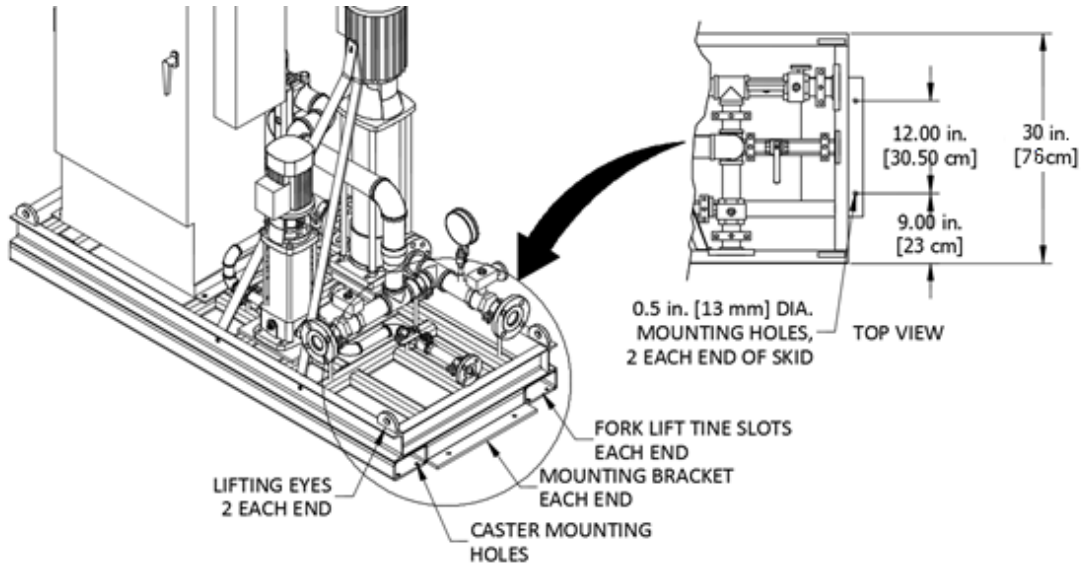
PUMP P/N	Dimensions – inches [centimeters]										
	A	B	C	D	E	F	G	H	I	J	K
02-14909-1	70 [178]	15 [38]	30 [76]	7 [18]	7 [18]	14.75 [37]	74 [188]	7 [18]	14 [36]	71 [180]	9.5 [24]
02-14909-2	70 [178]	22 [56]	30 [76]	7 [18]	7 [18]	14.75 [37]	74 [188]	7 [18]	14 [36]	71 [180]	9.5 [24]
02-14909-3	82 [208]	22 [56]	30 [76]	7 [18]	7 [18]	14.75 [37]	86 [218]	7 [18]	14 [36]	71 [180]	9.5 [24]
02-14909-4	82 [208]	22 [56]	30 [76]	7 [18]	7 [18]	14.75 [37]	86 [218]	7 [18]	14 [36]	71 [180]	9.5 [24]
02-14909-5	86 [218]	22 [56]	30 [76]	7 [18]	7 [18]	14.75 [37]	90 [229]	7 [18]	14 [36]	71 [180]	9.5 [24]

This document is only intended to be a guideline and is not applicable to all situations. Information is subject to Fike's full disclaimer at <http://www.fike.com/disclaimer>.

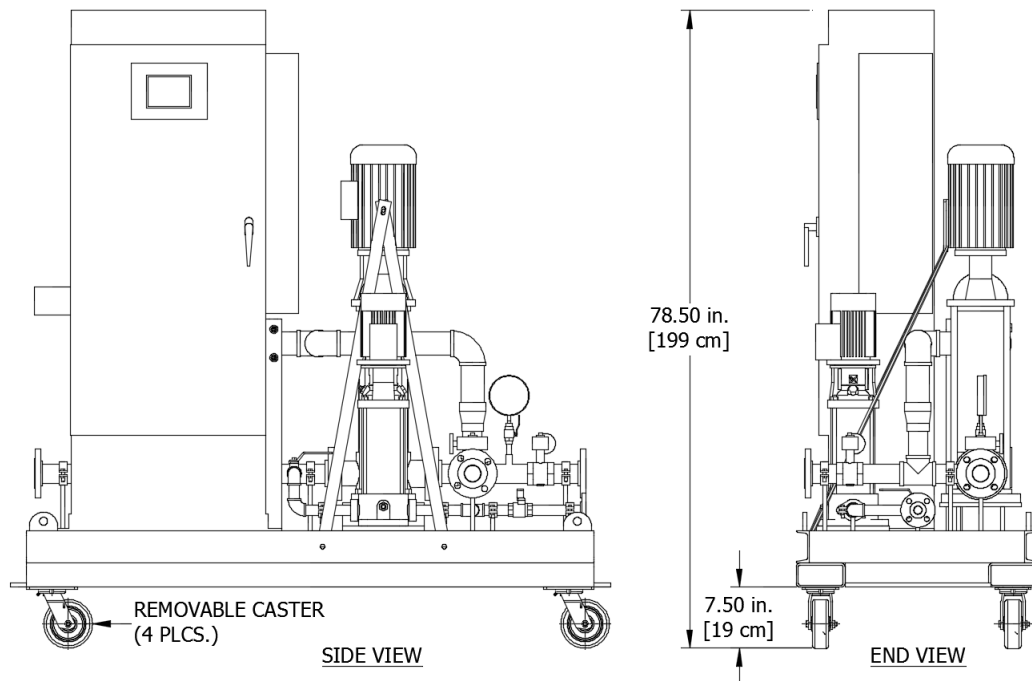
Pump Skid Lifting and Mounting

The DuraQuench pump skid is constructed with the following features that enable it to be easily maneuvered to its final installation location and secured in place:

- The skid is equipped with fork lift slots at each end of the skid to allow it to be easily lifted using a standard forklift with adjustable forks.
- Two lifting eyes are provided at each end of the skid to allow it to be lifted using lifting devices such as a crane or hoist.
- Optional rolling casters (P/N 02-15334) can be ordered and mounted to the skid in the field to allow the unit to be rolled into its mounting location. See illustration below.
- A skid mounting bracket with two through holes is provided at each end of the skid for securing the skid to the mounting surface.



Pump Skid Lifting and Mounting Points



Pump Skid with Casters Installed

This document is only intended to be a guideline and is not applicable to all situations. Information is subject to Fike's full disclaimer at <http://www.fike.com/disclaimer>.

Pump Skid Ordering Format

The DuraQuench pump skid can be ordered with different pump controller and pump combinations. When ordering the pump skid, it is extremely important to verify the voltage and frequency (50/60 Hz) of the power feed supplying the pump skid before selecting the appropriate pump skid part number. *The voltage and frequency of the pump controller and the pump selected must be compatible with the available power supply.*

The fire pump controller is available in the following configurations:

- 1) Standard single source pump controller provides across-the-line full voltage starting for the three phase motor driven pump.
- 2) Dual source pump controller incorporates a transfer switch directly into the standard pump controller enclosure. The transfer switch provides for automatic transferring of the pump load from one power source to another (self-acting).
- 3) Variable speed fire pump controller provides a variable frequency drive (VFD) built into the standard pump controller enclosure. The VFD will start, run, and control the speed of the pump by adjusting the three phase motor speed so the output pressure of the pump is constantly maintained at the “set” pressure. Transfer switch not included.

02-14909-A-B-C-D						
Pump Skid P/N	(A) Pump Capacity	(B) Frequency		(C) Control Voltage/Type	(D) Starting Method	Notes
		Motor	Controller			
02-14909-1-1-2-1	1 (53 gpm/200 lpm)	60 Hz	1 (60 Hz)	2 (208 V/single source)	Standard	1,6
02-14909-1-1-2-2	1 (53 gpm/200 lpm)	60 Hz	1 (60 Hz)	2 (208 V/single source)	Soft	1,7
02-14909-1-1-3-1	1 (53 gpm/200 lpm)	60 Hz	1 (60 Hz)	3 (220 V/single source)	Standard	1,6
02-14909-1-1-3-2	1 (53 gpm/200 lpm)	60 Hz	1 (60 Hz)	3 (220 V/single source)	Soft	1,7
02-14909-1-1-4-1	1 (53 gpm/200 lpm)	60 Hz	1 (60 Hz)	4 (230 V/single source)	Standard	1,6
02-14909-1-1-4-2	1 (53 gpm/200 lpm)	60 Hz	1 (60 Hz)	4 (230 V/single source)	Soft	1,7
02-14909-1-1-9-1	1 (53 gpm/200 lpm)	60 Hz	1 (60 Hz)	9 (460 V/single source)	Standard	1,6
02-14909-1-1-9-2	1 (53 gpm/200 lpm)	60 Hz	1 (60 Hz)	9 (460 V/single source)	Soft	1,7
02-14909-1-1-12-1	1 (53 gpm/200 lpm)	60 Hz	1 (60 Hz)	12 (208 V/VFD)	Standard	3,6
02-14909-1-1-12-2	1 (53 gpm/200 lpm)	60 Hz	1 (60 Hz)	12 (208 V/VFD)	Soft	3,7
02-14909-1-1-13-1	1 (53 gpm/200 lpm)	60 Hz	1 (60 Hz)	13 (220 V/VFD)	Standard	3,6
02-14909-1-1-13-2	1 (53 gpm/200 lpm)	60 Hz	1 (60 Hz)	13 (220 V/VFD)	Soft	3,7
02-14909-1-1-14-1	1 (53 gpm/200 lpm)	60 Hz	1 (60 Hz)	14 (230 V/VFD)	Standard	3,6
02-14909-1-1-14-2	1 (53 gpm/200 lpm)	60 Hz	1 (60 Hz)	14 (230 V/VFD)	Soft	3,7
02-14909-1-1-19-1	1 (53 gpm/200 lpm)	60 Hz	1 (60 Hz)	19 (460 V/VFD)	Standard	3,6
02-14909-1-1-19-2	1 (53 gpm/200 lpm)	60 Hz	1 (60 Hz)	19 (460 V/VFD)	Soft	3,7
02-14909-1-1-22-1	1 (53 gpm/200 lpm)	60 Hz	1 (60 Hz)	22 (208 V/ dual source)	Standard	2,6
02-14909-1-1-22-2	1 (53 gpm/200 lpm)	60 Hz	1 (60 Hz)	22 (208 V/ dual source)	Soft	2,7
02-14909-1-1-23-2	1 (53 gpm/200 lpm)	60 Hz	1 (60 Hz)	23 (220 V/ dual source)	Standard	2,6
02-14909-1-1-23-2	1 (53 gpm/200 lpm)	60 Hz	1 (60 Hz)	23 (220 V/ dual source)	Soft	2,7
02-14909-1-1-24-1	1 (53 gpm/200 lpm)	60 Hz	1 (60 Hz)	24 (230 V/ dual source)	Standard	2,6
02-14909-1-1-24-2	1 (53 gpm/200 lpm)	60 Hz	1 (60 Hz)	24 (230 V/ dual source)	Soft	2,7
02-14909-1-1-29-1	1 (53 gpm/200 lpm)	60 Hz	1 (60 Hz)	29 (460 V/ dual source)	Standard	2,6
02-14909-1-1-29-2	1 (53 gpm/200 lpm)	60 Hz	1 (60 Hz)	29 (460 V/ dual source)	Soft	2,7
02-14909-2-1-2-1	2 (53 gpm/200 lpm)	60 Hz	1 (60 Hz)	2 (208 V/single source)	Standard	2,6
02-14909-2-1-2-2	2 (53 gpm/200 lpm)	60 Hz	1 (60 Hz)	2 (208 V/single source)	Soft	2,7
02-14909-2-1-3-1	2 (53 gpm/200 lpm)	60 Hz	1 (60 Hz)	3 (220 V/single source)	Standard	2,6
02-14909-2-1-3-2	2 (53 gpm/200 lpm)	60 Hz	1 (60 Hz)	3 (220 V/single source)	Soft	2,7

This document is only intended to be a guideline and is not applicable to all situations. Information is subject to Fike’s full disclaimer at <http://www.fike.com/disclaimer>.

02-14909-A-B-C-D						
Pump Skid P/N	(A) Pump Capacity	(B) Frequency		(C) Control Voltage/Type	(D) Starting Method	Notes
		Motor	Controller			
02-14909-2-1-4-1	2 (53 gpm/200 lpm)	60 Hz	1 (60 Hz)	4 (230 V/single source)	Standard	2,6
02-14909-2-1-4-2	2 (53 gpm/200 lpm)	60 Hz	1 (60 Hz)	4 (230 V/single source)	Soft	2,7
02-14909-2-1-9-1	2 (53 gpm/200 lpm)	60 Hz	1 (60 Hz)	9 (460 V/single source)	Standard	2,6
02-14909-2-1-9-2	2 (53 gpm/200 lpm)	60 Hz	1 (60 Hz)	9 (460 V/single source)	Soft	2,7
02-14909-2-1-12-1	2 (53 gpm/200 lpm)	60 Hz	1 (60 Hz)	12 (208 V/VFD)	Standard	3,6
02-14909-2-1-12-2	2 (53 gpm/200 lpm)	60 Hz	1 (60 Hz)	12 (208 V/VFD)	Soft	3,7
02-14909-2-1-13-1	2 (53 gpm/200 lpm)	60 Hz	1 (60 Hz)	13 (220 V/VFD)	Standard	3,6
02-14909-2-1-13-2	2 (53 gpm/200 lpm)	60 Hz	1 (60 Hz)	13 (220 V/VFD)	Soft	3,7
02-14909-2-1-14-1	2 (53 gpm/200 lpm)	60 Hz	1 (60 Hz)	14 (230 V/VFD)	Standard	3,6
02-14909-2-1-14-2	2 (53 gpm/200 lpm)	60 Hz	1 (60 Hz)	14 (230 V/VFD)	Soft	3,7
02-14909-2-1-19-1	2 (53 gpm/200 lpm)	60 Hz	1 (60 Hz)	19 (460 V/VFD)	Standard	3,6
02-14909-2-1-19-2	2 (53 gpm/200 lpm)	60 Hz	1 (60 Hz)	19 (460 V/VFD)	Soft	3,7
02-14909-2-1-22-1	2 (53 gpm/200 lpm)	60 Hz	1 (60 Hz)	22 (208 V/ dual source)	Standard	2,6
02-14909-2-1-22-2	2 (53 gpm/200 lpm)	60 Hz	1 (60 Hz)	22 (208 V/ dual source)	Soft	2,7
02-14909-2-1-23-1	2 (53 gpm/200 lpm)	60 Hz	1 (60 Hz)	23 (220 V/ dual source)	Standard	2,6
02-14909-2-1-23-2	2 (53 gpm/200 lpm)	60 Hz	1 (60 Hz)	23 (220 V/ dual source)	Soft	2,7
02-14909-2-1-24-1	2 (53 gpm/200 lpm)	60 Hz	1 (60 Hz)	24 (230 V/ dual source)	Standard	2,6
02-14909-2-1-24-2	2 (53 gpm/200 lpm)	60 Hz	1 (60 Hz)	24 (230 V/ dual source)	Soft	2,7
02-14909-2-1-29-1	2 (53 gpm/200 lpm)	60 Hz	1 (60 Hz)	29 (460 V/ dual source)	Standard	2,6
02-14909-2-1-29-2	2 (53 gpm/200 lpm)	60 Hz	1 (60 Hz)	29 (460 V/ dual source)	Soft	2,7
02-14909-3-1-2-1	3 (111 gpm/420 lpm)	60 Hz	1 (60 Hz)	2 (208 V/single source)	Standard	1,6
02-14909-3-1-2-2	3 (111 gpm/420 lpm)	60 Hz	1 (60 Hz)	2 (208 V/single source)	Soft	1,7
02-14909-3-1-4-1	3 (111 gpm/420 lpm)	60 Hz	1 (60 Hz)	4 (230 V/single source)	Standard	1,6
02-14909-3-1-4-2	3 (111 gpm/420 lpm)	60 Hz	1 (60 Hz)	4 (230 V/single source)	Soft	1,7
02-14909-3-1-9-1	3 (111 gpm/420 lpm)	60 Hz	1 (60 Hz)	9 (460 V/single source)	Standard	1,6
02-14909-3-1-9-2	3 (111 gpm/420 lpm)	60 Hz	1 (60 Hz)	9 (460 V/single source)	Soft	1,7
02-14909-3-1-12-1	3 (111 gpm/420 lpm)	60 Hz	1 (60 Hz)	12 (208 V/VFD)	Standard	3,4,6
02-14909-3-1-12-2	3 (111 gpm/420 lpm)	60 Hz	1 (60 Hz)	12 (208 V/VFD)	Soft	3,4,7
02-14909-3-1-14-1	3 (111 gpm/420 lpm)	60 Hz	1 (60 Hz)	14 (230 V/VFD)	Standard	3,6
02-14909-3-1-14-1	3 (111 gpm/420 lpm)	60 Hz	1 (60 Hz)	14 (230 V/VFD)	Soft	3,7
02-14909-3-1-19-1	3 (111 gpm/420 lpm)	60 Hz	1 (60 Hz)	19 (460 V/VFD)	Standard	3,6
02-14909-3-1-19-2	3 (111 gpm/420 lpm)	60 Hz	1 (60 Hz)	19 (460 V/VFD)	Soft	3,7
02-14909-3-1-22-1	3 (111 gpm/420 lpm)	60 Hz	1 (60 Hz)	22 (208 V/ dual source)	Standard	2,4,6
02-14909-3-1-22-2	3 (111 gpm/420 lpm)	60 Hz	1 (60 Hz)	22 (208 V/ dual source)	Soft	2,4,7
02-14909-3-1-24-1	3 (111 gpm/420 lpm)	60 Hz	1 (60 Hz)	24 (230 V/ dual source)	Standard	2,6
02-14909-3-1-24-2	3 (111 gpm/420 lpm)	60 Hz	1 (60 Hz)	24 (230 V/ dual source)	Soft	2,7
02-14909-3-1-29-1	3 (111 gpm/420 lpm)	60 Hz	1 (60 Hz)	29 (460 V/ dual source)	Standard	2,6
02-14909-3-1-29-2	3 (111 gpm/420 lpm)	60 Hz	1 (60 Hz)	29 (460 V/ dual source)	Soft	2,7
02-14909-4-2-2-1	4 (75 gpm/284 lpm)	50 Hz	2 (50 Hz)	2 (208 V/single source)	Standard	1,4,6
02-14909-4-2-2-2	4 (75 gpm/284 lpm)	50 Hz	2 (50 Hz)	2 (208 V/single source)	Soft	1,4,7
02-14909-4-2-6-1	4 (75 gpm/284 lpm)	50 Hz	2 (50 Hz)	6 (380 V/single source)	Standard	1,6
02-14909-4-2-6-2	4 (75 gpm/284 lpm)	50 Hz	2 (50 Hz)	6 (380 V/single source)	Soft	1,7

This document is only intended to be a guideline and is not applicable to all situations.
Information is subject to Fike's full disclaimer at <http://www.fike.com/disclaimer>.

02-14909-A-B-C-D						
Pump Skid P/N	(A) Pump Capacity	(B) Frequency		(C) Control Voltage/Type	(D) Starting Method	Notes
		Motor	Controller			
02-14909-4-2-7-1	4 (75 gpm/284 lpm)	50 Hz	2 (50 Hz)	7 (400 V/single source)	Standard	1,6
02-14909-4-2-7-2	4 (75 gpm/284 lpm)	50 Hz	2 (50 Hz)	7 (400 V/single source)	Soft	1,7
02-14909-4-2-8-1	4 (75 gpm/284 lpm)	50 Hz	2 (50 Hz)	8 (415 V/single source)	Standard	1,6
02-14909-4-2-8-2	4 (75 gpm/284 lpm)	50 Hz	2 (50 Hz)	8 (415 V/single source)	Soft	1,7
02-14909-4-2-12-1	4 (75 gpm/284 lpm)	50 Hz	2 (50 Hz)	12 (208 V/VFD)	Standard	3,4,6
02-14909-4-2-12-2	4 (75 gpm/284 lpm)	50 Hz	2 (50 Hz)	12 (208 V/VFD)	Soft	3,4,7
02-14909-4-2-16-1	4 (75 gpm/284 lpm)	50 Hz	2 (50 Hz)	16 (380 V/VFD)	Standard	3,6
02-14909-4-2-16-2	4 (75 gpm/284 lpm)	50 Hz	2 (50 Hz)	16 (380 V/VFD)	Soft	3,7
02-14909-4-2-17-1	4 (75 gpm/284 lpm)	50 Hz	2 (50 Hz)	17 (400 V/VFD)	Standard	3,6
02-14909-4-2-17-2	4 (75 gpm/284 lpm)	50 Hz	2 (50 Hz)	17 (400 V/VFD)	Soft	3,7
02-14909-4-2-18-1	4 (75 gpm/284 lpm)	50 Hz	2 (50 Hz)	18 (415 V/VFD)	Standard	3,6
02-14909-4-2-18-2	4 (75 gpm/284 lpm)	50 Hz	2 (50 Hz)	18 (415 V/VFD)	Soft	3,7
02-14909-4-2-22-1	4 (75 gpm/284 lpm)	50 Hz	2 (50 Hz)	22 (208 V/ dual source)	Standard	2,4,6
02-14909-4-2-22-2	4 (75 gpm/284 lpm)	50 Hz	2 (50 Hz)	22 (208 V/ dual source)	Soft	2,4,7
02-14909-4-2-26-1	4 (75 gpm/284 lpm)	50 Hz	2 (50 Hz)	26 (380 V/ dual source)	Standard	2,6
02-14909-4-2-26-2	4 (75 gpm/284 lpm)	50 Hz	2 (50 Hz)	26 (380 V/ dual source)	Soft	2,7
02-14909-4-2-27-1	4 (75 gpm/284 lpm)	50 Hz	2 (50 Hz)	27 (400 V/ dual source)	Standard	2,6
02-14909-4-2-27-2	4 (75 gpm/284 lpm)	50 Hz	2 (50 Hz)	27 (400 V/ dual source)	Soft	2,7
02-14909-4-2-28-1	4 (75 gpm/284 lpm)	50 Hz	2 (50 Hz)	28 (415 V/ dual source)	Standard	2,6
02-14909-4-2-28-2	4 (75 gpm/284 lpm)	50 Hz	2 (50 Hz)	28 (415 V/ dual source)	Soft	2,7
02-14909-5-2-1-1	5 (133 gpm/503 lpm)	50 Hz	2 (50 Hz)	1 (200 V/single source)	Standard	1,6
02-14909-5-2-1-2	5 (133 gpm/503 lpm)	50 Hz	2 (50 Hz)	1 (200 V/single source)	Soft	1,7
02-14909-5-2-2-1	5 (133 gpm/503 lpm)	50 Hz	2 (50 Hz)	2 (208 V/single source)	Standard	1,4,6
02-14909-5-2-2-2	5 (133 gpm/503 lpm)	50 Hz	2 (50 Hz)	2 (208 V/single source)	Soft	1,4,7
02-14909-5-2-7-1	5 (133 gpm/503 lpm)	50 Hz	2 (50 Hz)	7 (400 V/single source)	Standard	1,6
02-14909-5-2-7-2	5 (133 gpm/503 lpm)	50 Hz	2 (50 Hz)	7 (400 V/single source)	Soft	1,7
02-14909-5-2-11-1	5 (133 gpm/503 lpm)	50 Hz	2 (50 Hz)	11 (200 V/VFD)	Standard	3,6
02-14909-5-2-11-2	5 (133 gpm/503 lpm)	50 Hz	2 (50 Hz)	11 (200 V/VFD)	Soft	3,7
02-14909-5-2-12-1	5 (133 gpm/503 lpm)	50 Hz	2 (50 Hz)	12 (208 V/VFD)	Standard	3,4,6
02-14909-5-2-12-2	5 (133 gpm/503 lpm)	50 Hz	2 (50 Hz)	12 (208 V/VFD)	Soft	3,4,7
02-14909-5-2-17-1	5 (133 gpm/503 lpm)	50 Hz	2 (50 Hz)	17 (400 V/VFD)	Standard	3,6
02-14909-5-2-17-2	5 (133 gpm/503 lpm)	50 Hz	2 (50 Hz)	17 (400 V/VFD)	Soft	3,7
02-14909-5-2-21-1	5 (133 gpm/503 lpm)	50 Hz	2 (50 Hz)	21 (200 V/dual source)	Standard	2,6
02-14909-5-2-21-2	5 (133 gpm/503 lpm)	50 Hz	2 (50 Hz)	21 (200 V/dual source)	Soft	2,7
02-14909-5-2-22-1	5 (133 gpm/503 lpm)	50 Hz	2 (50 Hz)	22 (208 V/ dual source)	Standard	2,4,6
02-14909-5-2-22-2	5 (133 gpm/503 lpm)	50 Hz	2 (50 Hz)	22 (208 V/ dual source)	Soft	2,4,7
02-14909-5-2-27-1	5 (133 gpm/503 lpm)	50 Hz	2 (50 Hz)	27 (400 V/ dual source)	Standard	2,6
02-14909-5-2-27-2	5 (133 gpm/503 lpm)	50 Hz	2 (50 Hz)	27 (400 V/ dual source)	Soft	2,7

Notes:

1. Single power source controller.
2. Dual power source controller with integral automatic transfer switch.
3. Variable frequency drive controller. Transfer switch, if required, must be ordered separately.
4. Pump motor has been tested for operation at 208 V.
5. Jockey pump, if required, must be ordered separately on all skids using P/N 02-15270.
6. Controller provides Standard Across the Line motor starting.
7. Controller provides motor soft starter.

This document is only intended to be a guideline and is not applicable to all situations.
Information is subject to Fike's full disclaimer at <http://www.fike.com/disclaimer>.