



PUMPSET SELECTION HANDBOOK



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About Pioneer Pumps

Founded in 1998, Pioneer Pump has grown to become one of the world's leading suppliers of portable pumps.

Operating from four facilities in Australia, America, South Africa and the UK, the company designs, manufactures, sells and rents its pumps and accessory equipment in the mining, energy, industrial and municipal markets.

Working with customers in locations as diverse as Central Africa, South East Asia, the Arctic Circle and of course more mature markets such as Western Europe and North America.

Focused on designing and building the most efficient pumps and with 30,000 now in service, Pioneer has forged its reputation as the pump with the lowest cost of ownership, best reliability and high performance, making it the pump of choice for their customers.

Operating around the clock and around the world, no location is too remote for a Pioneer pump.





Severn Trent Water

When Severn Trent Water in the UK needed to bypass 7000m³/hr in an emergency, there was only one company that could supply, install and start the pumps in less than 14 hours including installing over 1km of hoses. Pioneer Pump Solutions, was that company.

High Performance

Designed and manufactured to offer the most reliable, high performing fleet of rental pumps in Europe, Pioneer Pump Solutions is the only pump rental company in the UK offering pumps capable of flows up to 4000m³/hr or heads of 200m all in sound attenuated, fully banded canopies.

Whether you operate in the mineral, oil and gas or even the municipal markets, Pioneer Pump Solutions is a company capable of taking on the largest projects and ensuring smooth and reliable delivery in conjunction with the lowest overall operating costs.

Features that make our pumps operate more cost effectively than our competition include:

- Ductile Iron body and self-hardening stainless steel impellers offering great suction lifts
- High efficiency impellers offering the best flows at the lowest fuel burn
- Optimum engine operating speeds combined with best efficiency point pumping giving lowest operating costs and smallest environmental footprint
- Robust and sophisticated control systems allowing for remote operation, monitoring and management

Operating around the clock and around the world, no location is too remote for a Pioneer pump.

Solids Handling Pumps

The largest range of engine driven solids handling pumps in the world capable of flows in excess of 9000m³/hr and pressures over 20 bar means Pioneer Pump Solutions is the UK's leading pump rental company focusing on high performance and low cost of ownership.

Solids Handling Pump Features

- Indefinite Run-Dry Capability
- Efficient Design for Reduced Operating Costs
- Auto Stop/Start with Floats
- Sound Attenuated, Fully Bunded Packages
- Spark Arresting Mufflers
- Chalwyn Valve
- Environmentally Safe Priming System with Patented PosiValve™ – No Blow By

Bridgwater, Somerset

Pioneer recently mobilised four of its largest 450SH pumpsets to Bridgwater, UK to relieve the floods in the Somerset Plains region by pumping 12000m³/hr through multiple lines. These pumps in conjunction with external fuel tanks were able to bring the potentially disastrous situation under control.

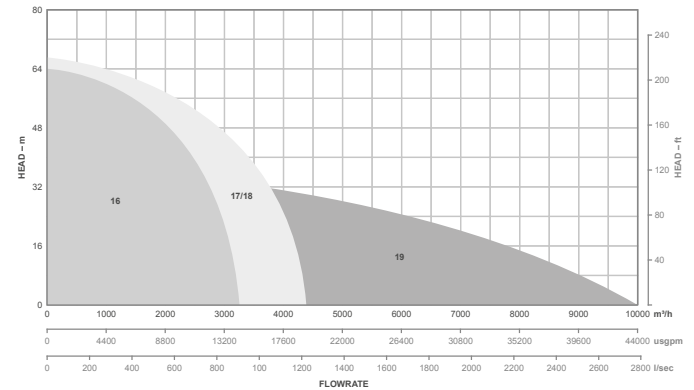
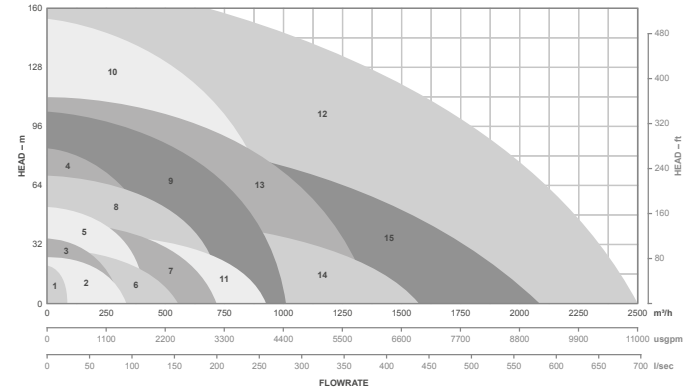
Solids Handling Pump Range

Our standard pumps operate in a range up to 1200m³/hr and pressures up to 120m whilst still being able to pass a solid of 76mm (3") in all but the smallest 80mm pumpset. The larger 300mm and 450mm pumpsets pass solids between 90mm and 150mm in size whilst the very largest 760mm pumpset passes solids over 150mm in size.

All of the solids handling pumps utilise Pioneer enclosed solids handling impellers offering outstanding NPSHr and suction lift characteristics whilst having high efficiency therefore low fuel burn performance.

See our full range of engine driven pumps opposite operating at 1800–2000rpm (unless otherwise stated below).

- | | |
|-------------------|----------------------------------|
| 1. 80SL PP43075 | 11. 200SL PP88S12 |
| 2. 100SL PP44S8 | 12. 200SX PP128S22 |
| 3. 100SM PP44S10 | 13. 250SH PP108S17 |
| 4. 100SH PP64S17 | 14. 300SL PP1212S17T (@ 1250rpm) |
| 5. 125SM PP64S12 | 15. 300SM PP1212S17 |
| 6. 150SL PP66S10 | 16. 400SM PP1414S17 (@ 1450rpm) |
| 7. 150SM PP66S12 | 17. 450SM PP1818S22 (@ 1200rpm) |
| 8. 150SMs PP66S14 | 18. 450SH PP1818S22 (@ 1200rpm) |
| 9. 150SH PP86S17 | 19. 750SL PP3030S34 (@ 600rpm) |
| 10. 150SX PP86S20 | |



80SL

Pump Model PP43075



Specifications

Pump Size:	80 mm
Max Flow:	100 m ³ /h
Max Head:	22 metres
Solids Size:	25 mm
Max Speed:	1800 rpm
Rated Power @ BEP:	5.5 kW
Fuel Tank Size:	150 litres*
Fuel Consumption @ BEP:	3 l/h
Max Running Hours @ Full Load:	48 h
Sound Rating @ 7 m :	66 dBA
L × W × H (mm):	1760 × 880 × 1200
Dry Weight:	1000 kg
Wet Weight:	1150 kg

Engine Specifications

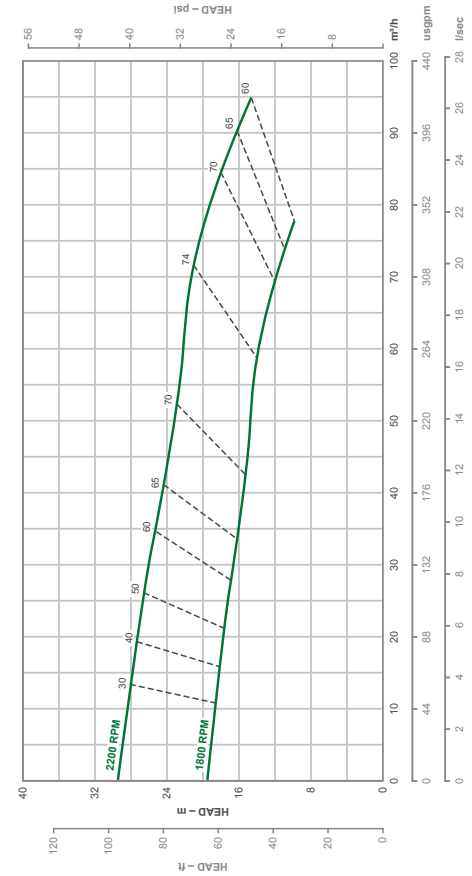
Engine Type:	Hatz-ID91
Displacement:	0.75 litres
Max Continuous Horsepower:	7.5 kW
Safety Shutdown Switches:	Low Oil Pressure, High Temperature and V-Belt Failure

Additional Information

Auto start/stop with floats.

* estimated figures

Performance Curve (to be used for guidance only)



80SL

100SL

Pump Model PP44S8



Specifications

Pump Size:	100 × 100 mm
Max Flow:	350 m ³ /h
Max Head:	40 metres
Solids Size:	76 mm
Max Speed:	1800 rpm
Rated Power @ BEP:	11 kW
Fuel Tank Size:	200 litres
Fuel Consumption @ BEP:	4 l/h
Max Running Hours @ Full Load:	50 h
Sound Rating @ 7 m :	66 dBA
L × W × H (mm):	2200 × 1100 × 1500
Dry Weight:	1390 kg
Wet Weight:	1500 kg

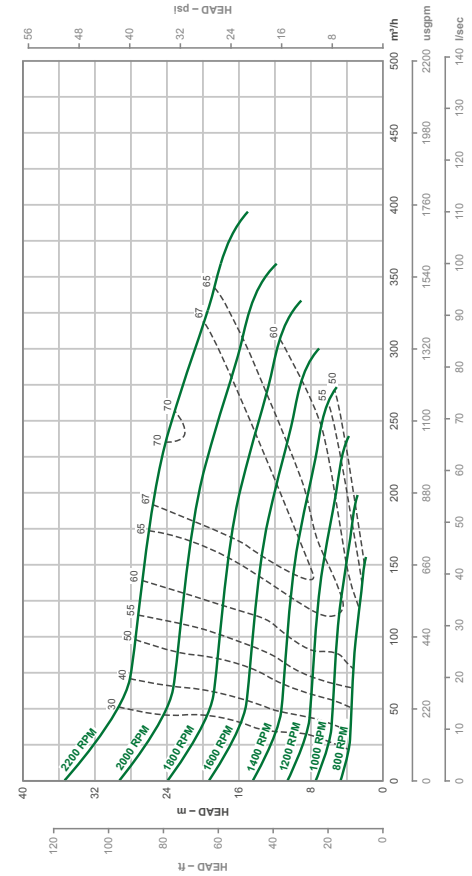
Engine Specifications

Engine Type:	Perkins 403D / CAT 1.5
Displacement:	1.5 litres
Max Continuous Horsepower:	12 kW
Safety Shutdown Switches:	Low Oil Pressure, High Temperature and V-Belt Failure

Additional Information

Auto start/stop with floats.

Performance Curve (to be used for guidance only)



100SL

100SM

Pump Model PP44S10



Specifications

Pump Size:	100 × 100 mm
Max Flow:	320 m ³ /h
Max Head:	32 metres
Solids Size:	76 mm
Max Speed:	1800 rpm
Rated Power @ BEP:	18 kW
Fuel Tank Size:	200 litres
Fuel Consumption @ BEP:	5 l/h
Max Running Hours @ Full Load:	35 h
Sound Rating @ 7 m :	64 dBA
L × W × H (mm):	2200 × 1100 × 1500
Dry Weight:	1480 kg
Wet Weight:	1660 kg

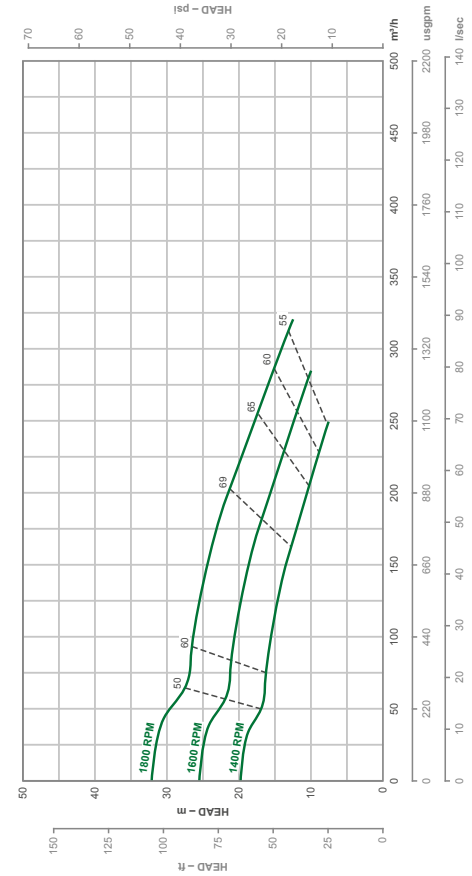
Engine Specifications

Engine Type:	Perkins 404D-22
Displacement:	2.2 litres
Max Continuous Horsepower:	23 kW
Safety Shutdown Switches:	Low Oil Pressure, High Temperature and V-Belt Failure

Additional Information

Auto start/stop with floats.

Performance Curve (to be used for guidance only)



100SM

100SH

Pump Model PP64S17



Specifications

Pump Size:	150 × 150 mm
Max Flow:	520 m ³ /h
Max Head:	82 metres
Solids Size:	76 mm
Max Speed:	1700 rpm
Rated Power @ BEP:	68 kW
Fuel Tank Size:	700 litres
Fuel Consumption @ BEP:	20 l/h
Max Running Hours @ Full Load:	28 h
Sound Rating @ 7 m :	64 dBA
L × W × H (mm):	2950 × 1450 × 2110
Dry Weight:	3200 kg
Wet Weight:	3800 kg

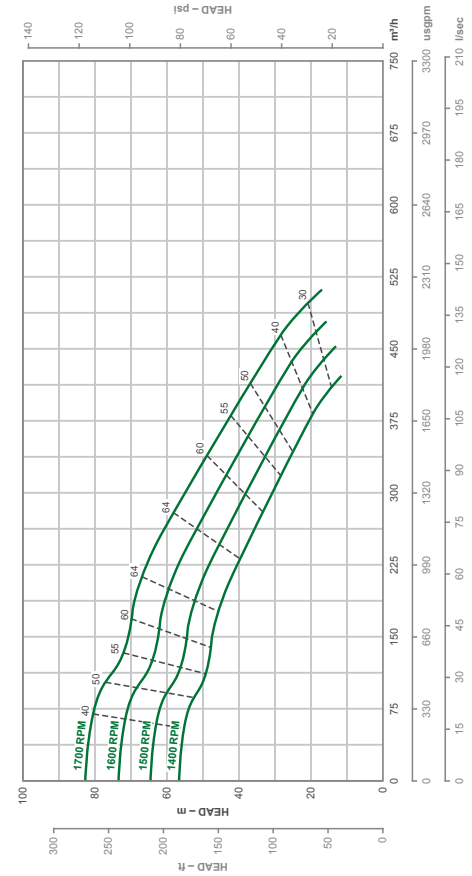
Engine Specifications

Engine Type:	JCB 444 TCEA
Displacement:	4.4 litres
Max Continuous Horsepower:	100 kW
Safety Shutdown Switches:	Low Oil Pressure, High Temperature and V-Belt Failure

Additional Information

Auto start/stop with floats.

Performance Curve (to be used for guidance only)



100SH

125SM

Pump Model PP64S12



Specifications

Pump Size:	150 × 100 mm
Max Flow:	400 m ³ /h
Max Head:	66 metres
Solids Size:	76 mm
Max Speed:	2000 rpm
Rated Power @ BEP:	43 kW
Fuel Tank Size:	430 litres
Fuel Consumption @ BEP:	13 l/h
Max Running Hours @ Full Load:	34 h
Sound Rating @ 7 m :	64 dBA
L × W × H (mm):	2600 × 1180 × 1800
Dry Weight:	2150 kg
Wet Weight:	2550 kg

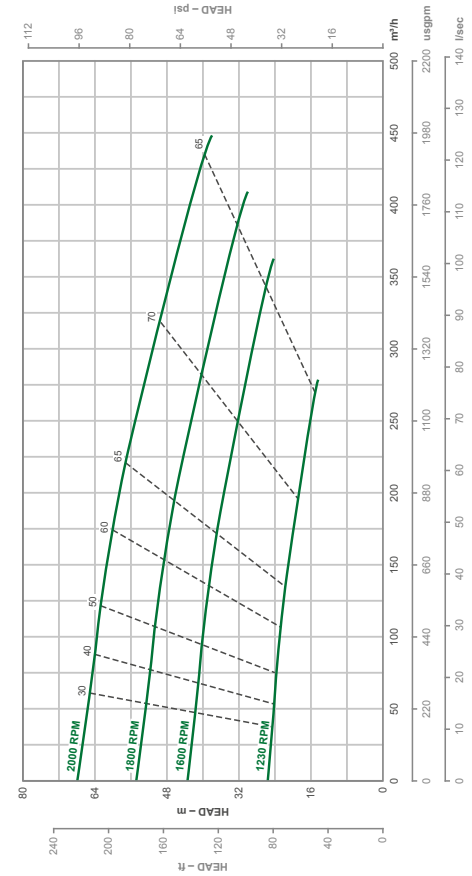
Engine Specifications

Engine Type:	JCB 444 / TC-63 kW
Displacement:	4.4 litres
Max Continuous Horsepower:	60 kW
Safety Shutdown Switches:	Low Oil Pressure, High Temperature and V-Belt Failure

Additional Information

Auto start/stop with floats.

Performance Curve (to be used for guidance only)



125SM

150SL

Pump Model PP66S10



Specifications

Pump Size:	150 × 150 mm
Max Flow:	525 m ³ /h
Max Head:	30 metres
Solids Size:	76 mm
Max Speed:	1800 rpm
Rated Power @ BEP:	23 kW
Fuel Tank Size:	200 litres
Fuel Consumption @ BEP:	6 l/h
Max Running Hours @ Full Load:	28 h
Sound Rating @ 7 m :	64 dBA
L × W × H (mm):	2200 × 1100 × 1500
Dry Weight:	1480 kg
Wet Weight:	1660 kg

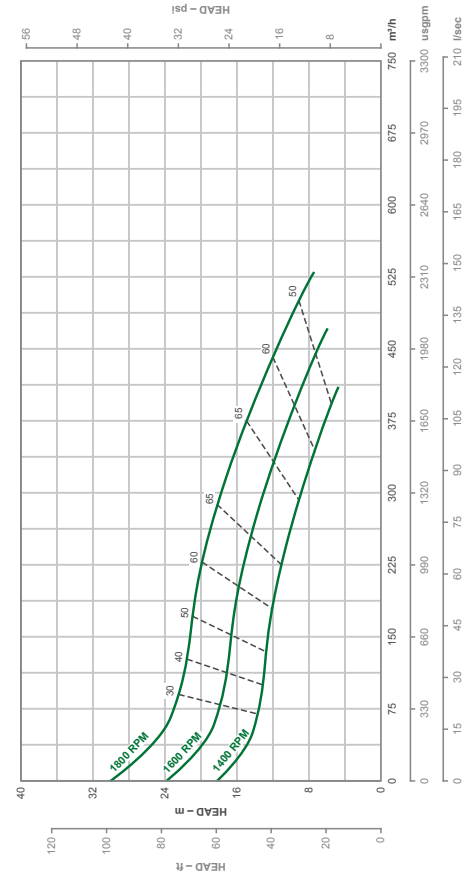
Engine Specifications

Engine Type:	Perkins 404D-22
Displacement:	2.2 litres
Max Continuous Horsepower:	23 kW
Safety Shutdown Switches:	Low Oil Pressure, High Temperature and V-Belt Failure

Additional Information

Auto start/stop with floats.

Performance Curve (to be used for guidance only)



150SL

150SM

Pump Model PP66S12



Specifications

Pump Size:	150 × 150 mm
Max Flow:	800 m ³ /h
Max Head:	55 metres
Solids Size:	76 mm
Max Speed:	2000 rpm
Rated Power @ BEP:	55 kW
Fuel Tank Size:	430 litres
Fuel Consumption @ BEP:	17 l/h
Max Running Hours @ Full Load:	29 h
Sound Rating @ 7 m :	64 dBA
L × W × H (mm):	2600 × 1180 × 1800
Dry Weight:	2150 kg
Wet Weight:	2550 kg

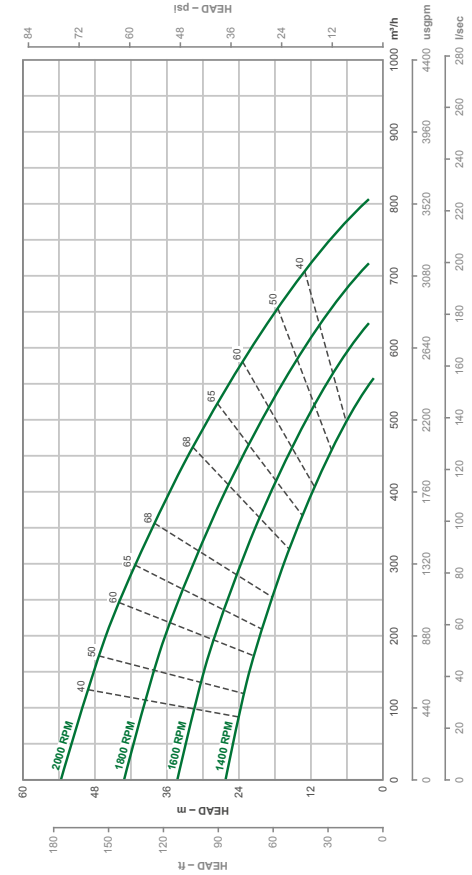
Engine Specifications

Engine Type:	JCB 444 TC-63 kW
Displacement:	4.4 litres
Max Continuous Horsepower:	60 kW
Safety Shutdown Switches:	Low Oil Pressure, High Temperature and V-Belt Failure

Additional Information

Auto start/stop with floats.

Performance Curve (to be used for guidance only)



150SM

150SMs

Pump Model PP66S14



Specifications

Pump Size:	150 × 150 mm
Max Flow:	720 m ³ /h
Max Head:	68 metres
Solids Size:	76 mm
Max Speed:	1800 rpm
Rated Power @ BEP:	80 kW
Fuel Tank Size:	700 litres
Fuel Consumption @ BEP:	25 l/h
Max Running Hours @ Full Load:	30 h
Sound Rating @ 7 m :	65 dBA
L × W × H (mm):	2950 × 1450 × 2110
Dry Weight:	3200 kg
Wet Weight:	3800 kg

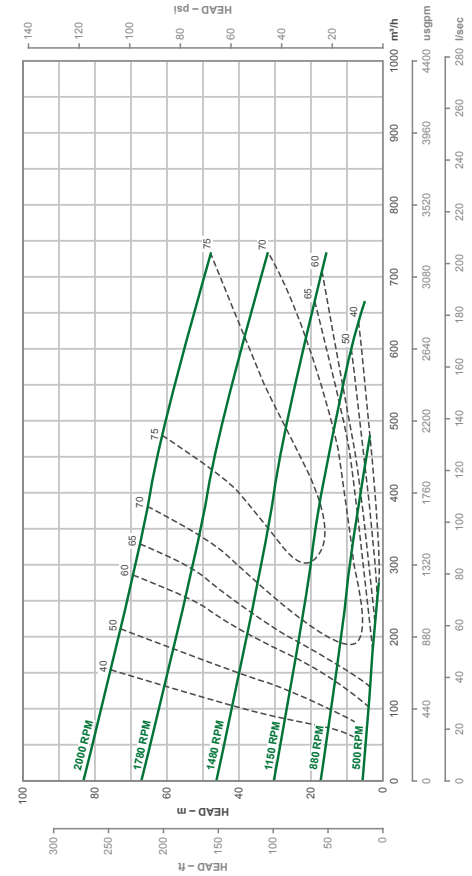
Engine Specifications

Engine Type:	JCB 444 TCEA
Displacement:	4.4 litres
Max Continuous Horsepower:	93 kW
Safety Shutdown Switches:	Low Oil Pressure, High Temperature and V-Belt Failure

Additional Information

Auto start/stop with floats.

Performance Curve (to be used for guidance only)



150SMs

150SH

Pump Model PP86S17



Specifications

Pump Size:	200 × 150 mm
Max Flow:	1290 m ³ /h
Max Head:	130 metres
Solids Size:	76 mm
Max Speed:	1980 rpm
Rated Power @ BEP:	225 kW
Fuel Tank Size:	800 litres
Fuel Consumption @ BEP:	120 l/h
Max Running Hours @ Full Load:	6.5 h (requires external tank)
Sound Rating @ 7 m :	65 dBA
L × W × H (mm):	4400 × 2000 × 2565
Dry Weight:	6000 kg
Wet Weight:	6900 kg

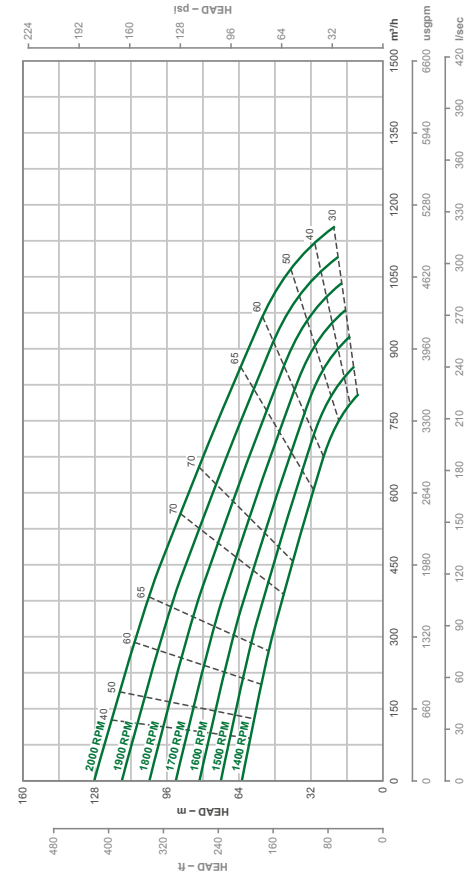
Engine Specifications

Engine Type:	Volvo 952VE / CAT C9
Displacement:	9 litres
Max Continuous Horsepower:	205 kW
Safety Shutdown Switches:	Low Oil Pressure, High Temperature and V-Belt Failure

Additional Information

Auto start/stop with floats.

Performance Curve (to be used for guidance only)



150SH

150SX

Pump Model PP86S20



Specifications

Pump Size:	200 × 150 mm
Max Flow:	1125 m ³ /h
Max Head:	190 metres
Solids Size:	76 mm
Max Speed:	2000 rpm
Rated Power @ BEP:	388 kW
Fuel Tank Size:	800 litres
Fuel Consumption @ BEP:	79 l/h
Max Running Hours @ Full Load:	6 h
Sound Rating @ 7 m :	70 dBA
L × W × H (mm):	4400 × 2000 × 2565
Dry Weight:	6550 kg
Wet Weight:	7220 kg

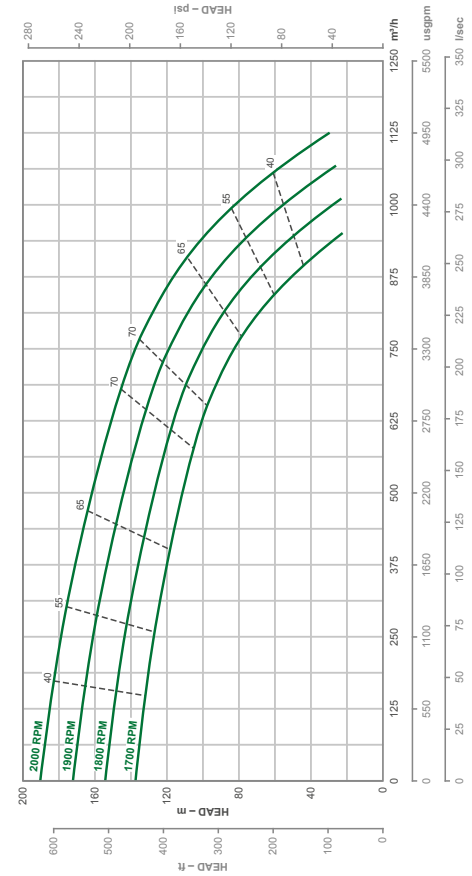
Engine Specifications

Engine Type:	Volvo 1643VE
Displacement:	16 litres
Max Continuous Horsepower:	480 kW
Safety Shutdown Switches:	Low Oil Pressure, High Temperature and V-Belt Failure

Additional Information

Auto start/stop with floats & telemetry controls.
Remote auxiliary fuel connections.

Performance Curve (to be used for guidance only)



150SX

200SL

Pump Model PP88S12



Specifications

Pump Size:	200 × 200 mm
Max Flow:	1025 m ³ /h
Max Head:	45 metres
Solids Size:	76 mm
Max Speed:	2000 rpm
Rated Power @ BEP:	58 kW
Fuel Tank Size:	700 litres
Fuel Consumption @ BEP:	21–25 l/h
Max Running Hours @ Full Load:	30 h
Sound Rating @ 7 m:	65 dBA
L × W × H (mm):	2950 × 1450 × 2110
Dry Weight:	3200 kg
Wet Weight:	3800 kg

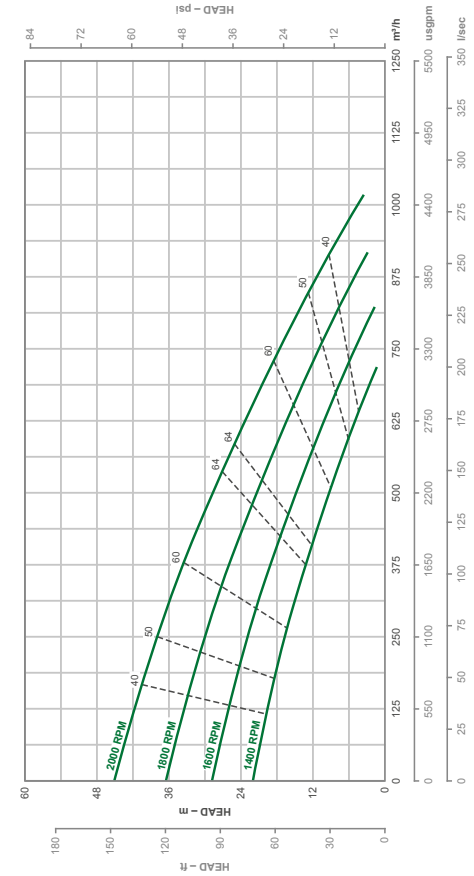
Engine Specifications

Engine Type:	JCB 444 TCEA
Displacement:	4.4 litres
Max Continuous Horsepower:	79 kW
Safety Shutdown Switches:	Low Oil Pressure, High Temperature and V-Belt Failure

Additional Information

Auto start/stop with floats.

Performance Curve (to be used for guidance only)



200SL

200SX

Pump Model PP128S22



Specifications

Pump Size:	300 × 200 mm
Max Flow:	2760 m ³ /h
Max Head:	220 metres
Solids Size:	76 mm
Max Speed:	2000 rpm
Rated Power @ BEP:	670 kW
Fuel Tank Size:	1000 litres
Fuel Consumption @ BEP:	190 l/h
Max Running Hours @ Full Load:	5 h (requires external tank)
Sound Rating @ 7 m :	70 dBA
L × W × H (mm):	4400 × 2250 × 2565
Dry Weight:	3500 kg
Wet Weight:	9500 kg

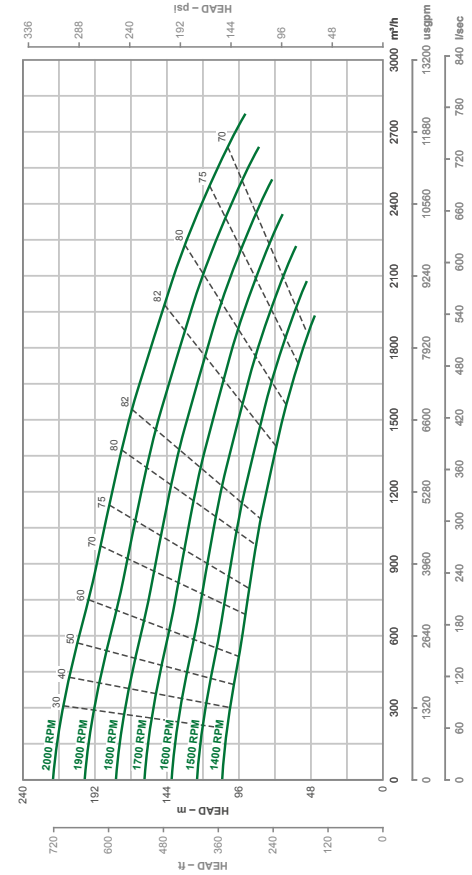
Engine Specifications

Engine Type:	CAT C32 ACERT
Displacement:	32 litres
Max Continuous Horsepower:	700 kW
Safety Shutdown Switches:	Low Oil Pressure, High Temperature and V-Belt Failure

Additional Information

This pumpset requires an external fuel tank of a minimum 4000 litres in order to operate over a 24 hour period.
Auto start/stop with floats available on request.

Performance Curve (to be used for guidance only)



200SX

250SH

Pump Model PP108S17



Specifications

Pump Size:	250 × 200 mm
Max Flow:	1550 m ³ /h
Max Head:	112 metres
Solids Size:	88 mm
Max Speed:	1800 rpm
Rated Power @ BEP:	186 kW
Fuel Tank Size:	800 litres
Fuel Consumption @ BEP:	57 l/h
Max Running Hours @ Full Load:	13 h
Sound Rating @ 7 m:	65 dBA
L × W × H (mm):	4400 × 2000 × 2565
Dry Weight:	6050 kg
Wet Weight:	6720 kg

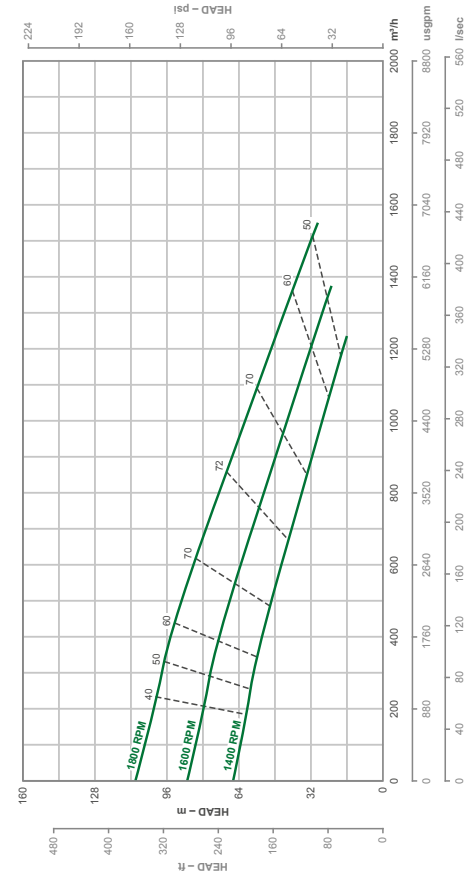
Engine Specifications

Engine Type:	Volvo 952VE
Displacement:	9 litres
Max Continuous Horsepower:	225 kW
Safety Shutdown Switches:	Low Oil Pressure, High Temperature and V-Belt Failure

Additional Information

Auto start/stop with floats & telemetry controls.
Remote auxiliary fuel connections.

Performance Curve (to be used for guidance only)



250SH

300SL

Pump Model PP1212S17T



Specifications

Pump Size:	300 × 300 mm
Max Flow:	1550 m ³ /h
Max Head:	45 metres
Solids Size:	95 mm
Max Speed:	1250 rpm
Rated Power @ BEP:	89 kW
Fuel Tank Size:	900 litres
Fuel Consumption @ BEP:	19 l/h
Max Running Hours @ Full Load:	45 h
Sound Rating @ 7 m:	72 dBA
L × W × H (mm):	5400 × 2300 × 2565
Dry Weight:	7600 kg
Wet Weight:	8200 kg

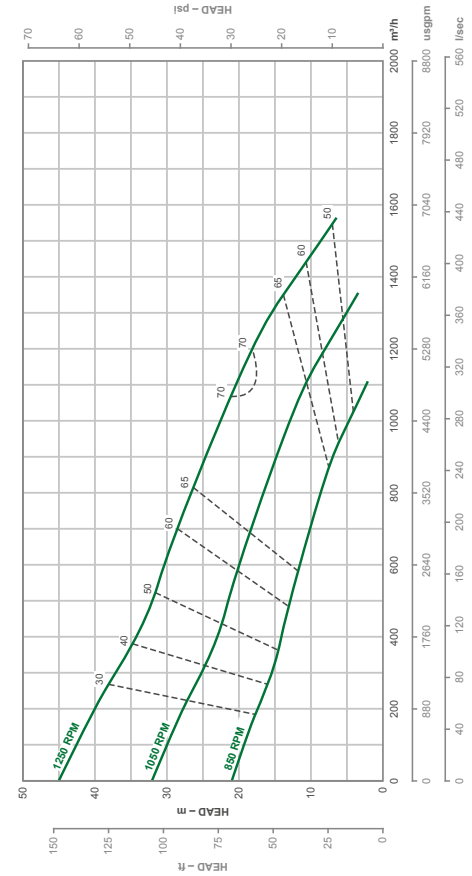
Engine Specifications

Engine Type:	JCB 444 TCEA
Displacement:	4.4 litres
Max Continuous Horsepower:	100 kW
Safety Shutdown Switches:	Low Oil Pressure, High Temperature and V-Belt Failure

Additional Information

Auto start/stop with floats.

Performance Curve (to be used for guidance only)



300SL



Stourmouth, Kent

Pioneer mobilised four of its 300SM pumpsets to relieve possible flooding in the Canterbury region of Kent. The four pumps created a combined flow of 8000m³/hr and saved the installed pump station from being damaged and the area being flooded.

300SM High Flow Pumps

When the UK's largest water management organisation, the Environment Agency required high flow pumps to manage the severe flooding in Southern England, they called on Pioneer Pump Solutions to deliver. With over fifty high flow pumpsets on hire for almost three months, Pioneer moved in excess of 150,000 gallons every minute for almost 3 months, some 74 million tonnes of water.

Using our high flow, 18" and 12" pumpsets, Pioneer is capable of moving far larger volumes of water with smaller numbers of pumps than any other UK pump hire company, in fact, we are so efficient our pumps are used all over Europe in emergency situations making us the most internationally demanded pump hire company in the UK.

With features such as internet based telemetry, and safety equipment such as overspeed protection systems as standard, Pioneer has set the standard in high performance pumpsets for hire in the industrial, municipal and mineral markets.

Pioneer 300SM pumpsets with flows in excess of 2000m³/hr represent the highest performing 12" pumpsets in the world and are available next day from Pioneer Pump Solutions regardless of your location, we can organise shipment, delivery, installation and operation, just let us know your specific requirements.

300SM

Pump Model PP1212S17



Specifications

Pump Size:	300 × 300 mm
Max Flow:	2100 m ³ /h
Max Head:	75 metres
Solids Size:	95 mm
Max Speed:	1800 rpm
Rated Power @ BEP:	224 kW
Fuel Tank Size:	880 litres
Fuel Consumption @ BEP:	63 l/h
Max Running Hours @ Full Load:	16 h
Sound Rating @ 7 m:	72 dBA
L × W × H (mm):	4400 × 2250 × 2565
Dry Weight:	7000 kg
Wet Weight:	7600 kg

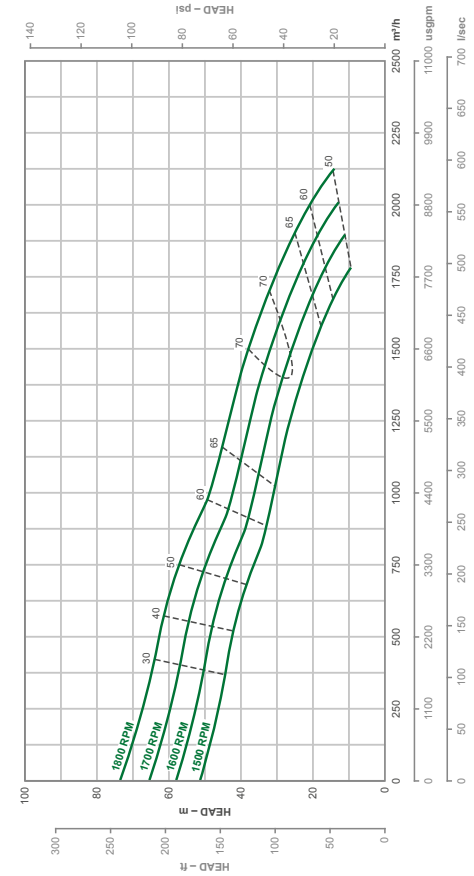
Engine Specifications

Engine Type:	Volvo 952VE
Displacement:	9 litres
Max Continuous Horsepower:	250 kW
Safety Shutdown Switches:	Low Oil Pressure, High Temperature and V-Belt Failure

Additional Information

Auto start/stop with floats & telemetry controls.
Remote auxiliary fuel connections.

Performance Curve (to be used for guidance only)



300SM

400SM

Pump Model PP1414S17



Specifications

Pump Size:	350 × 350 mm
Max Flow:	3270 m ³ /h
Max Head:	60 metres
Solids Size:	102 mm
Max Speed:	1450 rpm
Rated Power @ BEP:	250 kW
Fuel Tank Size:	1135 litres
Fuel Consumption @ BEP:	71 l/h
Max Running Hours @ Full Load:	15 h
Sound Rating @ 7 m :	70 dBA
L × W × H (mm):	5600 × 2300 × 2565
Dry Weight:	14000 kg*
Wet Weight:	15000 kg*

Engine Specifications

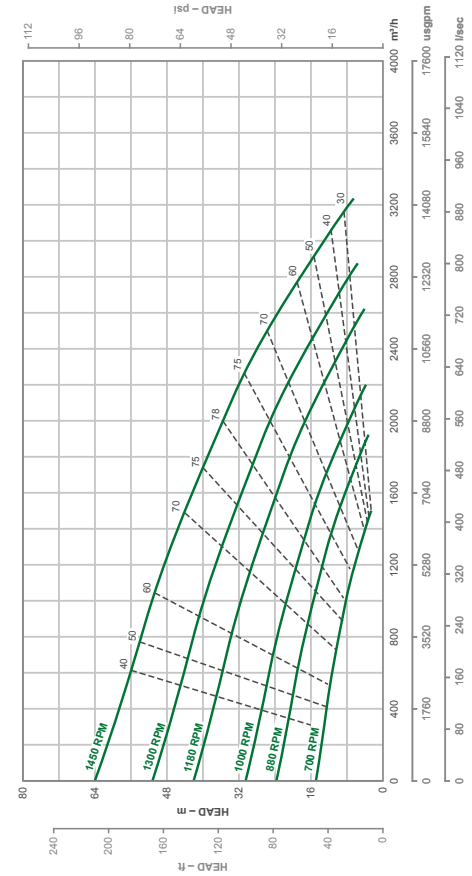
Engine Type:	Volvo 952VE
Displacement:	9 litres
Max Continuous Horsepower:	225 kW
Safety Shutdown Switches:	Low Oil Pressure, High Temperature and V-Belt Failure

Additional Information

Auto start/stop with floats & telemetry controls.
Remote auxiliary fuel connections.

* estimated figures

Performance Curve (to be used for guidance only)



400SM

450SM

Pump Model PP1818S22



Specifications

Pump Size:	450 × 450 mm
Max Flow:	3500 m ³ /h
Max Head:	47 metres
Solids Size:	115 mm
Max Speed:	1000 rpm
Rated Power @ BEP:	225 kW
Fuel Tank Size:	1135 litres
Fuel Consumption @ BEP:	65 l/h
Max Running Hours @ Full Load:	17 h
Sound Rating @ 7 m :	68 dBA
L × W × H (mm):	5600 × 2300 × 2565
Dry Weight:	14000 kg*
Wet Weight:	15000 kg*

Engine Specifications

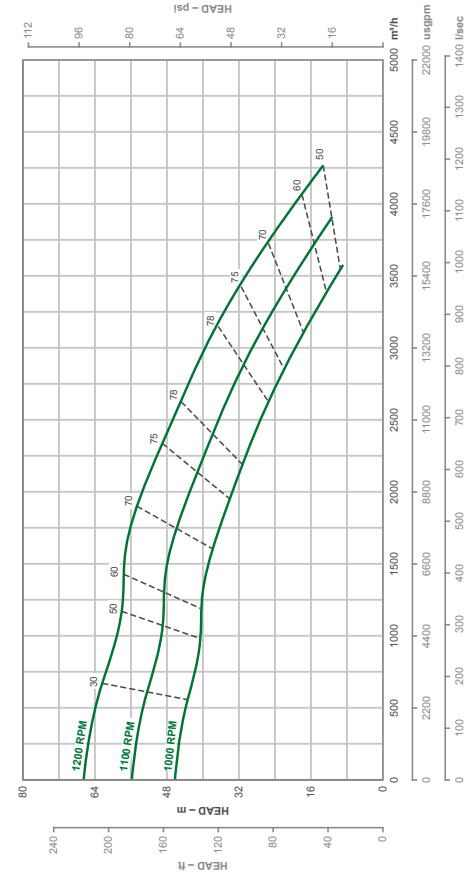
Engine Type:	Volvo 952VE
Displacement:	9 litres
Max Continuous Horsepower:	225 kW
Safety Shutdown Switches:	Low Oil Pressure, High Temperature and V-Belt Failure

Additional Information

Auto start/stop with floats & telemetry controls.
Remote auxiliary fuel connections.

* estimated figures

Performance Curve (to be used for guidance only)



450SM

450SH

Pump Model PP1818S22



Specifications

Pump Size:	450 × 450 mm
Max Flow:	4500 m ³ /h
Max Head:	65 metres
Solids Size:	115 mm
Max Speed:	1200 rpm
Rated Power @ BEP:	387 kW
Fuel Tank Size:	1135 litres
Fuel Consumption @ BEP:	94 l/h
Max Running Hours @ Full Load:	11 h
Sound Rating @ 7 m:	71 dBA
L × W × H (mm):	5600 × 2300 × 2565
Dry Weight:	15500 kg
Wet Weight:	16500 kg

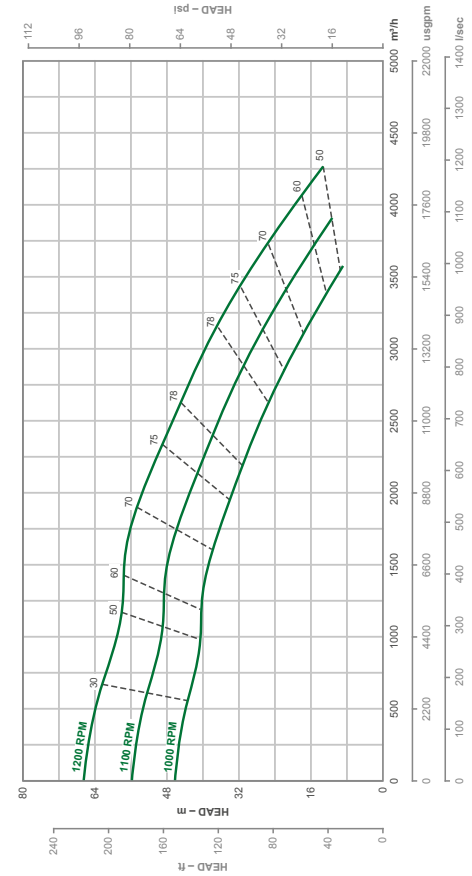
Engine Specifications

Engine Type:	Volvo 1643VE
Displacement:	16 litres
Max Continuous Horsepower:	480 kW
Safety Shutdown Switches:	Low Oil Pressure, High Temperature and V-Belt Failure

Additional Information

Auto start/stop with floats & telemetry controls.
Remote auxiliary fuel connections.

Performance Curve (to be used for guidance only)



450SH

750SL

Pump Model PP3030S34



Specifications

Pump Size:	750 × 750 mm
Max Flow:	9500 m ³ /h
Max Head:	36 metres
Solids Size:	150 mm
Max Speed:	600 rpm
Rated Power @ BEP:	485 kW
Fuel Tank Size:	450 litres
Fuel Consumption @ BEP:	145 l/h
Max Running Hours @ Full Load:	6 h
Sound Rating @ 7 m:	64 dBA
L × W × H (mm):	6000 × 2600 × 2400
Dry Weight:	18000 kg
Wet Weight:	19000 kg

Engine Specifications

Engine Type:	CAT C27 ACERT
Displacement:	27 litres
Max Continuous Horsepower:	575 kW
Safety Shutdown Switches:	Low Oil Pressure, High Temperature and V-Belt Failure

Additional Information

- Auto start/stop with floats & telemetry controls.
- Remote auxiliary fuel connections.
- Suction discharge dispersion up to 10m included.

Performance Curve (to be used for guidance only)



750SL



Boliden, Sweden

Pioneer received the call for a temporary fire pumpset requirement in central Sweden on Friday at four in the afternoon. By the following Monday lunchtime, a Pioneer 80CH was installed on site and providing protection for the client site and remained there for three months.

Clear Liquid Pumps

Pioneer design and manufacture the highest performing and broadest range of engine driven clear liquid pumps, capable of over 2000m³/hr and pressures in excess of 22 bar. Designed to operate at up to 2200rpm, the Pioneer range of pumps offer unrivalled lowest energy consumption, giving you—the user—the lowest cost of ownership.

Clear Liquid Pump Features

- Indefinite Run-Dry Capability
- Efficient Design for Reduced Operating Costs
- Auto Stop/Start with Floats
- Sound Attenuated, Fully Bunded Packages
- Spark Arresting Mufflers
- Chalwyn Valve
- Environmentally Safe Priming System with Patented PosiValve™ –No Blow By

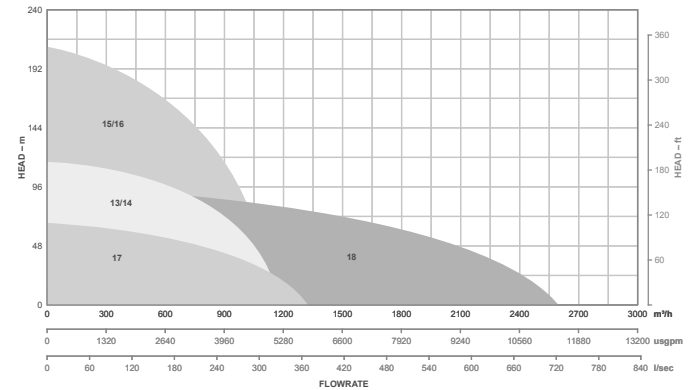
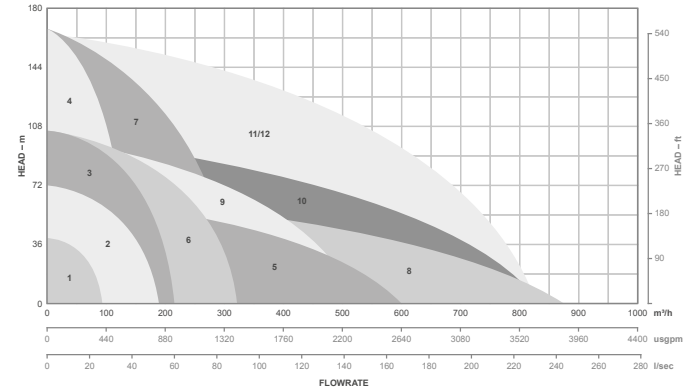
Clear Liquid Pump Range

All of the clear liquid pumps utilise Pioneer designed enclosed, multi-vane impellers offering outstanding NPSHr and suction lift characteristics. These designs are able to operate at up to 85% or more efficiency therefore offering the lowest fuel burn performance of any manufacturer, reducing cost of ownership and downtime.

Our standard pumps operate up to 1200m³/hr and pressures up to 210m whilst still being able to pass a solid of 25mm (1") in all but the smallest 80mm pumpset making them ideal for applications in the mining, oil & gas and industrial markets as well as more traditional markets such as irrigation and water supply.

See our full range of engine driven pumps opposite operating at 1500–2000rpm all which are direct coupled via SAE housing and flexible drive making for compact designs and outstanding reliability and serviceability.

- | | | | |
|-----------|----------|------------|-----------|
| 1. 80CL | PP43C10 | 10. 150CH | PP86C17 |
| 2. 80CM | PP53C14 | 11. 150CXO | PP86C21 |
| 3. 80CH | PP63C17 | 12. 150CX | PP86C21 |
| 4. 80CX | PP43C21 | 13. 200CH | PP108C18 |
| 5. 100CM | PP66C14 | 14. 200CHO | PP108C18 |
| 6. 100CH | PP64C17 | 15. 200CX | PP108C24 |
| 7. 100CX | PP64C21 | 16. 200CXO | PP108C24 |
| 8. 150CL | PP86C14 | 17. 250CM | PP1010C14 |
| 9. 150CMO | PP86C17B | 18. 300CM | PP1212C17 |



80CL

Pump Model PP43C10



Specifications

Pump Size:	100 × 76 mm
Max Flow:	130 m ³ /h
Max Head:	70 metres
Solids Size:	19 mm
Max Speed:	2200 rpm
Rated Power @ BEP:	14 kW
Fuel Tank Size:	200 litres
Fuel Consumption @ BEP:	5 l/h
Max Running Hours @ Full Load:	32 h
Sound Rating @ 7 m :	65 dBA (@ 1800 rpm)
L × W × H (mm):	2200 × 1100 × 1500
Dry Weight:	1480 kg
Wet Weight:	1660 kg

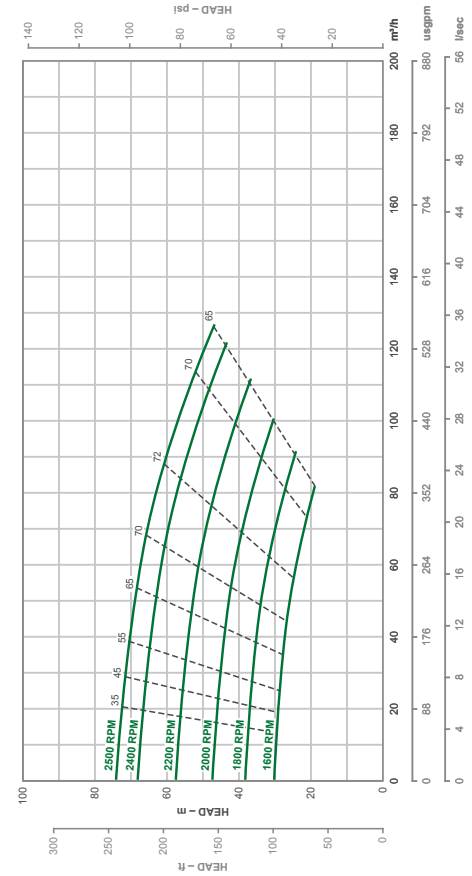
Engine Specifications

Engine Type:	Perkins 404D-22
Displacement:	2.2 litres
Max Continuous Horsepower:	23 kW
Safety Shutdown Switches:	Low Oil Pressure, High Temperature and V-Belt Failure

Additional Information

Auto start/stop with floats.

Performance Curve (to be used for guidance only)



80CL

80CM

Pump Model PP53C14



Specifications

Pump Size:	150 × 80 mm
Max Flow:	210 m ³ /h
Max Head:	90 metres
Solids Size:	12 mm
Max Speed:	2000 rpm
Rated Power @ BEP:	46 kW
Fuel Tank Size:	430 litres
Fuel Consumption @ BEP:	8 l/h
Max Running Hours @ Full Load:	53 h
Sound Rating @ 7 m:	64 dBA
L × W × H (mm):	2600 × 1180 × 1800
Dry Weight:	2150 kg
Wet Weight:	2550 kg

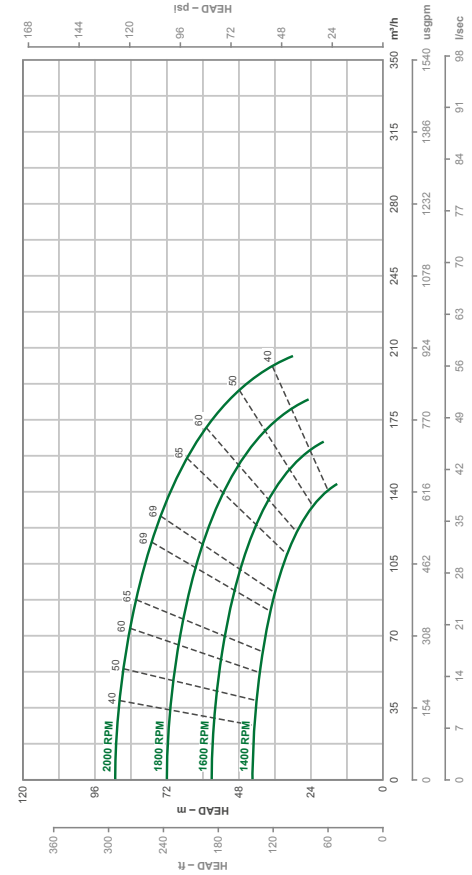
Engine Specifications

Engine Type:	JCB 444 TC-63 kW
Displacement:	4.4 litres
Max Continuous Horsepower:	60 kW
Safety Shutdown Switches:	Low Oil Pressure, High Temperature and V-Belt Failure

Additional Information

Auto start/stop with floats.

Performance Curve (to be used for guidance only)



80CM

80CH

Pump Model PP63C17



Specifications

Pump Size:	150 × 80 mm
Max Flow:	250 m ³ /h
Max Head:	130 metres
Solids Size:	20 mm
Max Speed:	2000 rpm
Rated Power @ BEP:	89 kW
Fuel Tank Size:	700 litres
Fuel Consumption @ BEP:	13 l/h
Max Running Hours @ Full Load:	25 h
Sound Rating @ 7 m:	64 dBA
L × W × H (mm):	2950 × 1450 × 2110
Dry Weight:	3200 kg
Wet Weight:	3800 kg

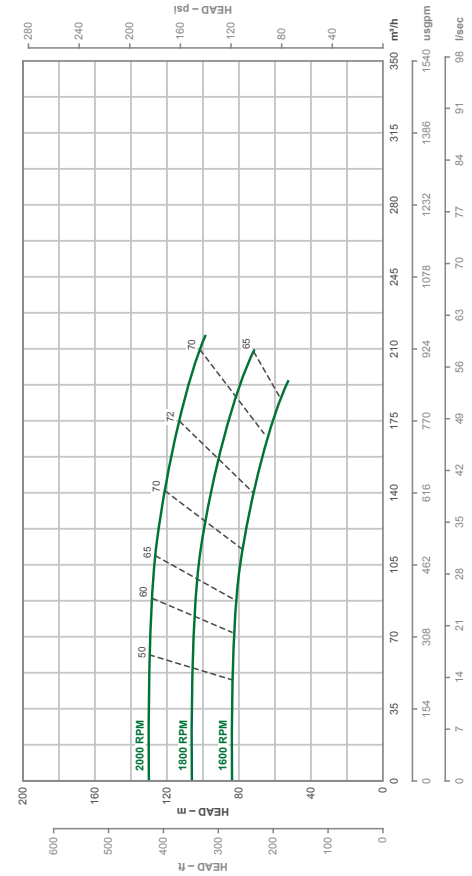
Engine Specifications

Engine Type:	JCB 444 TCEA
Displacement:	4.4 litres
Max Continuous Horsepower:	100 kW
Safety Shutdown Switches:	Low Oil Pressure, High Temperature and V-Belt Failure

Additional Information

Auto start/stop with floats.

Performance Curve (to be used for guidance only)



80CH

80CX

Pump Model PP43C21



Specifications

Pump Size:	100 × 76 mm
Max Flow:	130 m ³ /h
Max Head:	170 metres
Solids Size:	20 mm
Max Speed:	1800 rpm
Rated Power @ BEP:	89 kW
Fuel Tank Size:	700 litres
Fuel Consumption @ BEP:	13 l/h
Max Running Hours @ Full Load:	25 h
Sound Rating @ 7 m:	64 dBA
L × W × H (mm):	2950 × 1450 × 2110
Dry Weight:	3200 kg
Wet Weight:	3800 kg

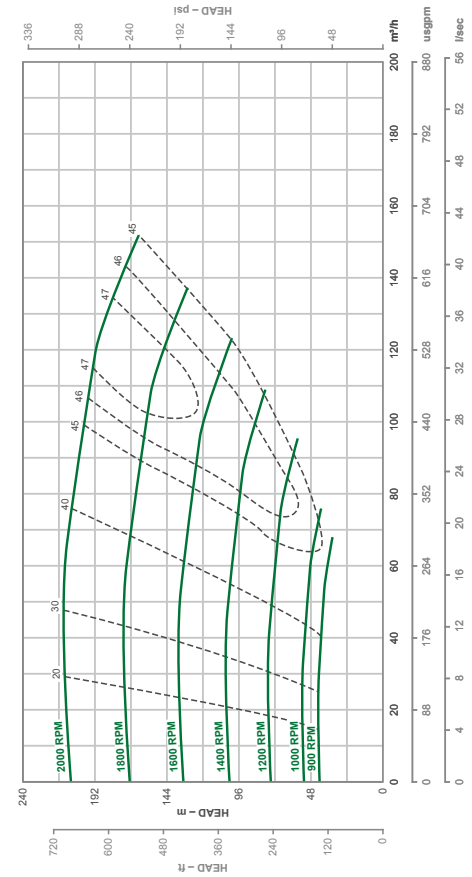
Engine Specifications

Engine Type:	JCB 444 TCEA
Displacement:	4.4 litres
Max Continuous Horsepower:	100 kW
Safety Shutdown Switches:	Low Oil Pressure, High Temperature and V-Belt Failure

Additional Information

Can be used with CAT C7/Perkins 1106TA engine.
Auto start/stop with floats.

Performance Curve (to be used for guidance only)



80CX

100CM

Pump Model PP66C14



Specifications

Pump Size:	150 × 150 mm
Max Flow:	550 m ³ /h
Max Head:	65 metres
Solids Size:	35 mm
Max Speed:	1800 rpm
Rated Power @ BEP:	89 kW
Fuel Tank Size:	700 litres
Fuel Consumption @ BEP:	13 l/h
Max Running Hours @ Full Load:	25 h
Sound Rating @ 7 m:	64 dBA
L × W × H (mm):	2950 × 1450 × 2110
Dry Weight:	3200 kg
Wet Weight:	3800 kg

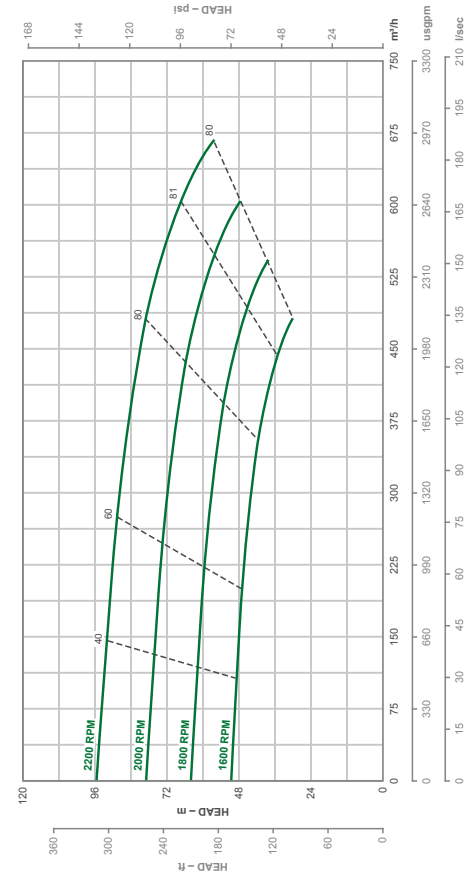
Engine Specifications

Engine Type:	JCB 444 TCEA
Displacement:	4.4 litres
Max Continuous Horsepower:	100 kW
Safety Shutdown Switches:	Low Oil Pressure, High Temperature and V-Belt Failure

Additional Information

Auto start/stop with floats.

Performance Curve (to be used for guidance only)



100CM

100CH

Pump Model PP64C17



Specifications

Pump Size:	150 × 100 mm
Max Flow:	390 m ³ /h
Max Head:	160 metres
Solids Size:	19 mm
Max Speed:	2000 rpm
Rated Power @ BEP:	105 kW
Fuel Tank Size:	700 litres
Fuel Consumption @ BEP:	30 l/h
Max Running Hours @ Full Load:	23 h
Sound Rating @ 7 m :	68 dBA
L × W × H (mm):	3500 × 1500 × 2000*
Dry Weight:	4000 kg*
Wet Weight:	5000 kg*

Engine Specifications

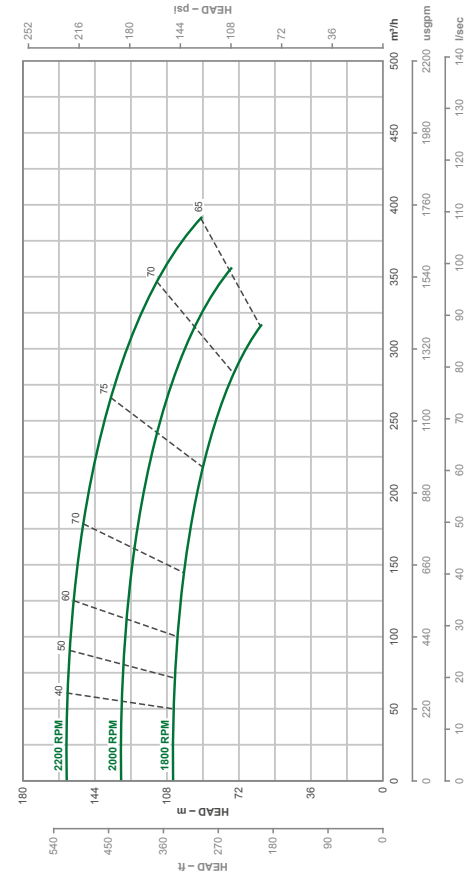
Engine Type:	Perkins 1106D / CAT C7
Displacement:	6.6 litres
Max Continuous Horsepower:	150 kW
Safety Shutdown Switches:	Low Oil Pressure, High Temperature and V-Belt Failure

Additional Information

Auto start/stop with floats.

* estimated figures

Performance Curve (to be used for guidance only)



100CH

100CX

Pump Model PP64C21



Specifications

Pump Size:	150 × 100 mm
Max Flow:	300 m ³ /h
Max Head:	210 metres
Solids Size:	20 mm
Max Speed:	2000 rpm
Rated Power @ BEP:	186 kW
Fuel Tank Size:	800 litres
Fuel Consumption @ BEP:	57 l/h
Max Running Hours @ Full Load:	13 h
Sound Rating @ 7 m:	65 dBA
L × W × H (mm):	4400 × 2000 × 2565
Dry Weight:	6050 kg
Wet Weight:	6720 kg

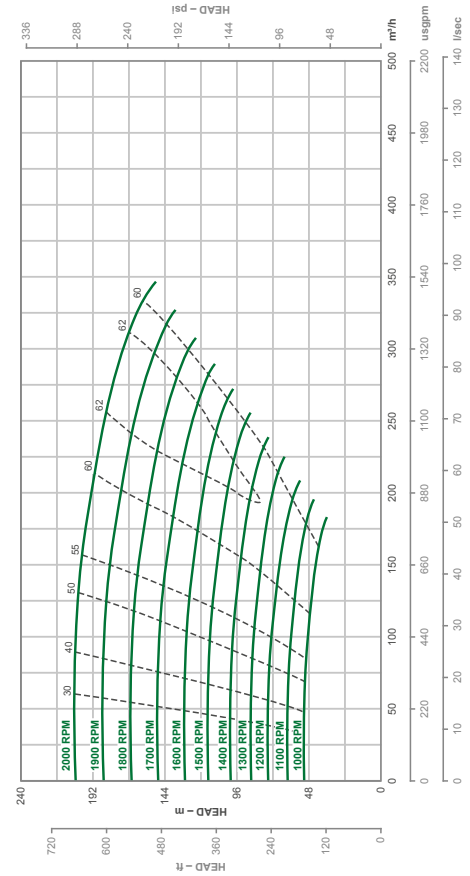
Engine Specifications

Engine Type:	Volvo 952VE
Displacement:	9 litres
Max Continuous Horsepower:	225 kW
Safety Shutdown Switches:	Low Oil Pressure, High Temperature and V-Belt Failure

Additional Information

Auto start/stop with floats & telemetry controls.
Remote auxiliary fuel connections.

Performance Curve (to be used for guidance only)



100CX

150CL

Pump Model PP86C14



Specifications

Pump Size:	250 × 150 mm
Max Flow:	1040 m ³ /h
Max Head:	90 metres
Solids Size:	25 mm
Max Speed:	2100 rpm
Rated Power @ BEP:	105 kW
Fuel Tank Size:	700 litres
Fuel Consumption @ BEP:	30 l/h
Max Running Hours @ Full Load:	23 h
Sound Rating @ 7 m :	68 dBA
L × W × H (mm):	3500 × 1500 × 2000*
Dry Weight:	4000 kg*
Wet Weight:	5000 kg*

Engine Specifications

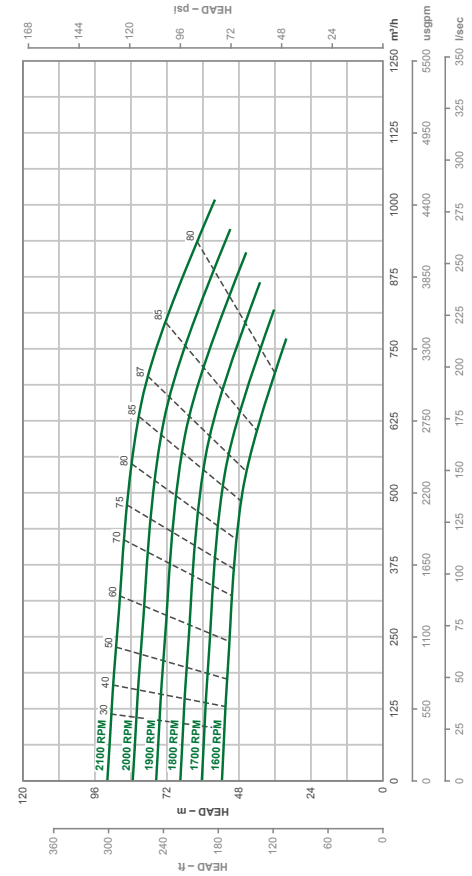
Engine Type:	Perkins 1106D / CAT C7
Displacement:	6.6 litres
Max Continuous Horsepower:	150 kW
Safety Shutdown Switches:	Low Oil Pressure, High Temperature and V-Belt Failure

Additional Information

Auto start/stop with floats.

* estimated figures

Performance Curve (to be used for guidance only)



150CL

150CMO

Pump Model PP86C17B



Specifications

Pump Size:	200 × 150 mm
Max Flow:	575 m ³ /h
Max Head:	125 metres
Solids Size:	25 mm
Max Speed:	2000 rpm
Rated Power @ BEP:	142 kW
Fuel Tank Size:	900 litres
Fuel Consumption @ BEP:	47 l/h
Max Running Hours @ Full Load:	17 h
Sound Rating @ 7 m:	n/a
L × W × H (mm):	3800 × 1820 × 2500
Dry Weight:	5000 kg
Wet Weight:	6000 kg

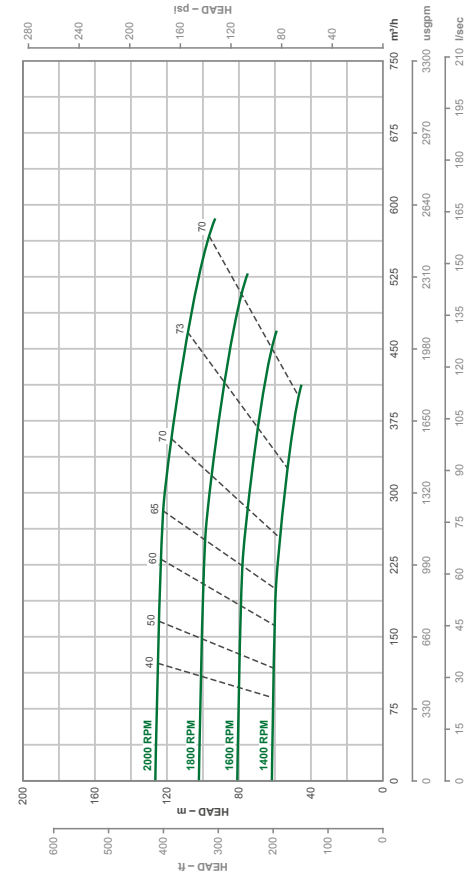
Engine Specifications

Engine Type:	CAT C9 / Volvo 952VE
Displacement:	9 litres
Max Continuous Horsepower:	224 kW
Safety Shutdown Switches:	Low Oil Pressure, High Temperature and V-Belt Failure

Additional Information

Auto start/stop with floats & telemetry controls.
Remote auxiliary fuel connections.

Performance Curve (to be used for guidance only)



150CMO

150CH

Pump Model PP86C17



Specifications

Pump Size:	250 × 150 mm
Max Flow:	970 m ³ /h
Max Head:	140 metres
Solids Size:	38 mm
Max Speed:	2100 rpm
Rated Power @ BEP:	410 kW
Fuel Tank Size:	800 litres
Fuel Consumption @ BEP:	101 l/h
Max Running Hours @ Full Load:	6 h
Sound Rating @ 7 m:	n/a
L × W × H (mm):	4400 × 2000 × 2565
Dry Weight:	6600 kg
Wet Weight:	7280 kg

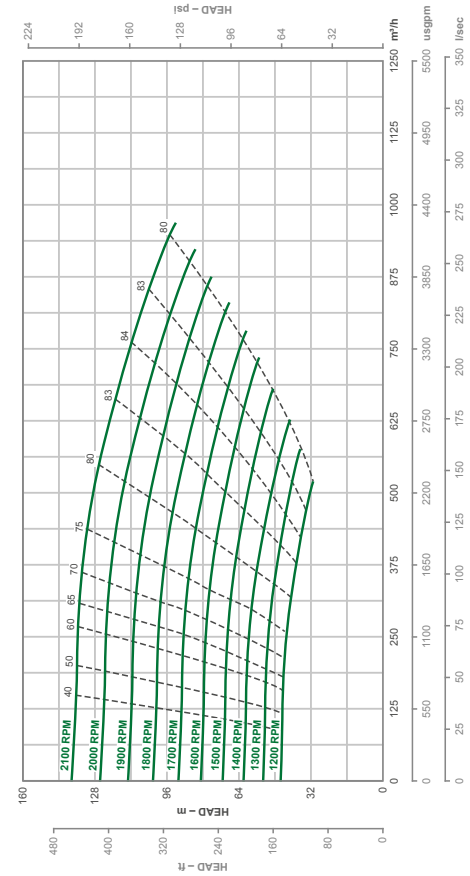
Engine Specifications

Engine Type:	Volvo 1643VE
Displacement:	16 litres
Max Continuous Horsepower:	480 kW
Safety Shutdown Switches:	Low Oil Pressure, High Temperature and V-Belt Failure

Additional Information

Auto start/stop with floats & telemetry controls.
Remote auxiliary fuel connections.

Performance Curve (to be used for guidance only)



150CH

150CXO

Pump Model PP86C21



Specifications

Pump Size:	200 × 150 mm
Max Flow:	900 m ³ /h
Max Head:	202 metres
Solids Size:	38 mm
Max Speed:	2000 rpm
Rated Power @ BEP:	448 kW
Fuel Tank Size:	800 litres
Fuel Consumption @ BEP:	102 l/h
Max Running Hours @ Full Load:	7 h
Sound Rating @ 7 m:	n/a
L × W × H (mm):	4400 × 2000 × 2565
Dry Weight:	6550 kg
Wet Weight:	7220 kg

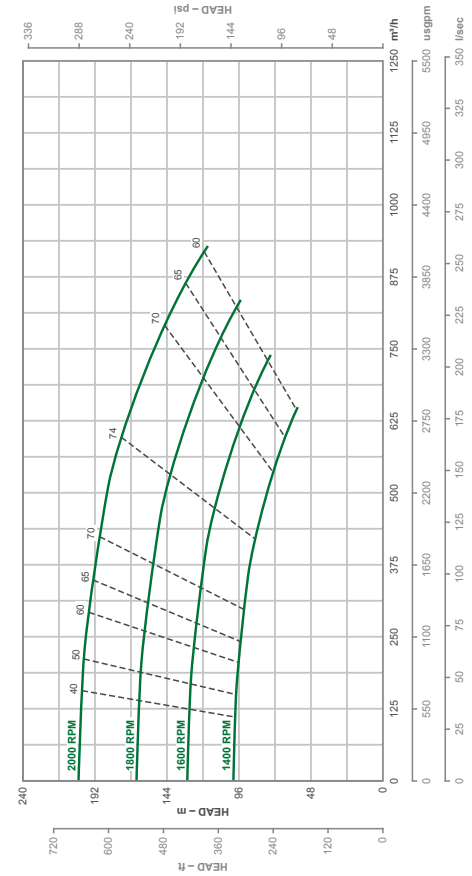
Engine Specifications

Engine Type:	CAT C18 ACERT
Displacement:	18 litres
Max Continuous Horsepower:	450 kW
Safety Shutdown Switches:	Low Oil Pressure, High Temperature and V-Belt Failure

Additional Information

Auto start/stop with floats & telemetry controls.
Remote auxiliary fuel connections.

Performance Curve (to be used for guidance only)



150CXO

150CX

Pump Model PP86C21



Specifications

Pump Size:	200 × 150 mm
Max Flow:	900 m ³ /h
Max Head:	202 metres
Solids Size:	38 mm
Max Speed:	2000 rpm
Rated Power @ BEP:	448 kW
Fuel Tank Size:	800 litres
Fuel Consumption @ BEP:	102 l/h
Max Running Hours @ Full Load:	7 h
Sound Rating @ 7 m:	70 dBA
L × W × H (mm):	4400 × 2000 × 2565
Dry Weight:	6550 kg
Wet Weight:	7220 kg

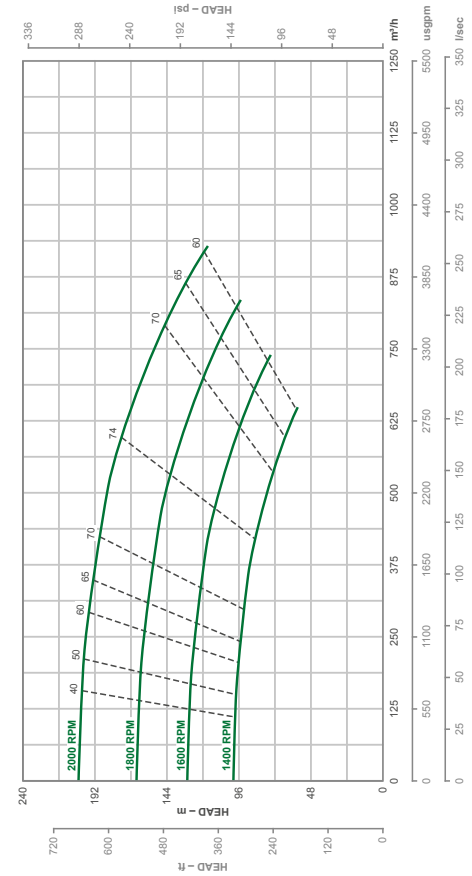
Engine Specifications

Engine Type:	Volvo TAD1643VE
Displacement:	16 litres
Max Continuous Horsepower:	480 kW
Safety Shutdown Switches:	Low Oil Pressure, High Temperature and V-Belt Failure

Additional Information

Auto start/stop with floats & telemetry controls.
Remote auxiliary fuel connections.

Performance Curve (to be used for guidance only)



150CX

200CH & CHO

Pump Model PP108C18



Specifications

Pump Size:	250 × 200 mm
Max Flow:	1150 m ³ /h
Max Head:	120 metres
Solids Size:	30 mm
Max Speed:	1800 rpm
Rated Power @ BEP:	298 kW
Fuel Tank Size:	900 litres
Fuel Consumption @ BEP:	74 l/h
Max Running Hours @ Full Load:	11 h
Sound Rating @ 7 m:	n/a
L × W × H (mm):	4400 × 2000 × 2565
Dry Weight:	6600 kg
Wet Weight:	7280 kg

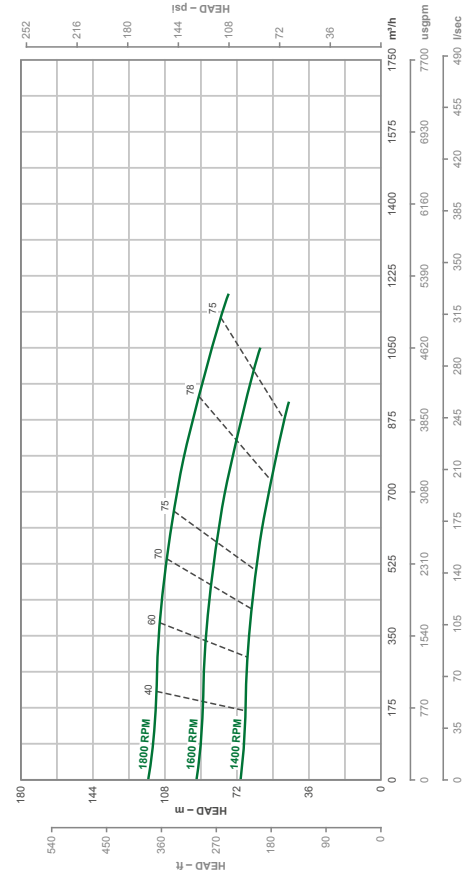
Engine Specifications

Engine Type:	CAT C15
Displacement:	15 litres
Max Continuous Horsepower:	350 kW
Safety Shutdown Switches:	Low Oil Pressure, High Temperature and V-Belt Failure

Additional Information

Auto start/stop with floats & telemetry controls.
Remote auxiliary fuel connections.

Performance Curve (to be used for guidance only)



200CH & 200CHO



Welsh Slate

Using our high efficiency clear liquids pumps, Welsh Slate in the UK reduced their operating costs by over £100,000 per annum, whilst improving the output of their dewatering system.

200CX High Head Pumps

Welsh Slate, the UK's largest producer of slate for the UK construction market were looking to reduce their fuel costs and most importantly the environmental footprint of their mine in North Wales, UK.

Utilising a Pioneer 200CX high flow, high head pumpset, which replaced a high pressure submersible powered by a portable generator, Welsh Slate were able to achieve savings in excess of £100,000 per year by using a Pioneer Pump solution.

More importantly to them, they were able to show a carbon reduction of almost 2000 tonnes per year as well making them one of the most environmental producers of slate in the world.

If your company is looking to seriously improve the operational efficiency of your mine or quarry, then call us and we will develop the most efficient solution you can invest in or hire.

200CX & CXO

Pump Model PP108C24



Specifications

Pump Size:	250 × 200 mm
Max Flow:	1000 m ³ /h
Max Head:	210 metres
Solids Size:	28 mm
Max Speed:	1800 rpm
Rated Power @ BEP:	525 kW
Fuel Tank Size:	800 litres
Fuel Consumption @ BEP:	101 l/h
Max Running Hours @ Full Load:	6 h
Sound Rating @ 7 m:	n/a
L × W × H (mm):	4400 × 2000 × 2565
Dry Weight:	8000 kg
Wet Weight:	9000 kg

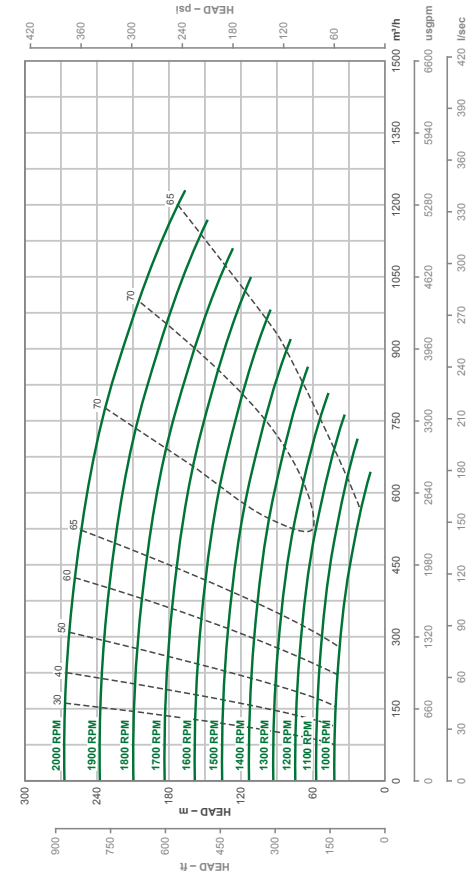
Engine Specifications

Engine Type:	CAT C32 ACERT
Displacement:	16 litres
Max Continuous Horsepower:	1000 kW
Safety Shutdown Switches:	Low Oil Pressure, High Temperature and V-Belt Failure

Additional Information

Auto start/stop with floats & telemetry controls.
Remote auxiliary fuel connections.

Performance Curve (to be used for guidance only)



200CX & 200CXO

250CM

Pump Model PP1010C14



Specifications

Pump Size:	250 × 250 mm
Max Flow:	1500 m ³ /h
Max Head:	80 metres
Solids Size:	33 mm
Max Speed:	2000 rpm
Rated Power @ BEP:	186 kW
Fuel Tank Size:	800 litres
Fuel Consumption @ BEP:	57 l/h
Max Running Hours @ Full Load:	13 h
Sound Rating @ 7 m:	65 dBA
L × W × H (mm):	4400 × 2000 × 2565
Dry Weight:	6050 kg
Wet Weight:	6720 kg

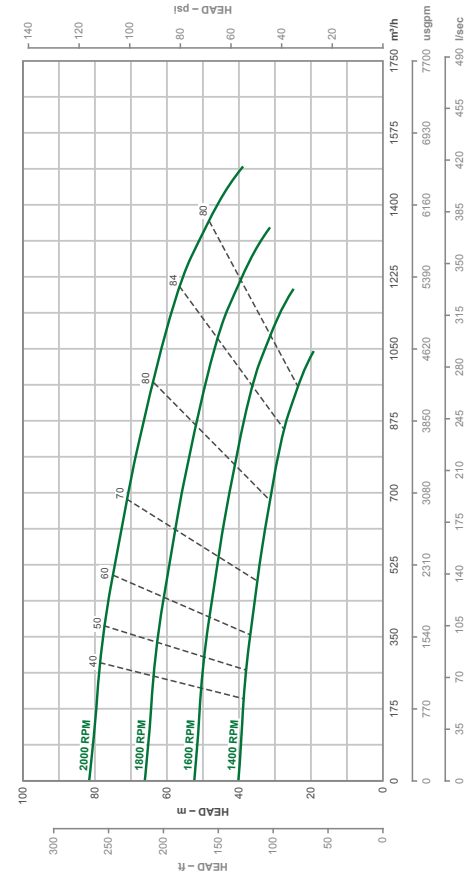
Engine Specifications

Engine Type:	Volvo 952VE
Displacement:	9 litres
Max Continuous Horsepower:	225 kW
Safety Shutdown Switches:	Low Oil Pressure, High Temperature and V-Belt Failure

Additional Information

Auto start/stop with floats & telemetry controls.
Remote auxiliary fuel connections.

Performance Curve (to be used for guidance only)



250CM

300CM

Pump Model PP1212C17



Specifications

Pump Size:	300 × 300 mm
Max Flow:	2650 m ³ /h
Max Head:	100 metres
Solids Size:	58 mm
Max Speed:	1800 rpm
Rated Power @ BEP:	250 kW
Fuel Tank Size:	1135 litres
Fuel Consumption @ BEP:	71 l/h
Max Running Hours @ Full Load:	15 h
Sound Rating @ 7 m :	70 dBA
L × W × H (mm):	5600 × 2300 × 2565
Dry Weight:	14000 kg*
Wet Weight:	15000 kg*

Engine Specifications

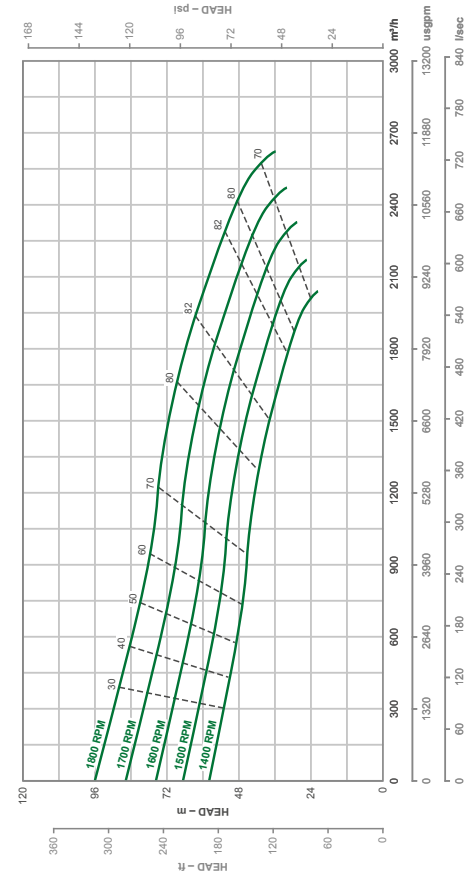
Engine Type:	Volvo 952VE
Displacement:	9 litres
Max Continuous Horsepower:	225 kW
Safety Shutdown Switches:	Low Oil Pressure, High Temperature and V-Belt Failure

Additional Information

Auto start/stop with floats & telemetry controls.
Remote auxiliary fuel connections.

* estimated figures

Performance Curve (to be used for guidance only)



300CM

Accessories

Hoses

Pioneer holds high quality hoses in sizes up to 450mm diameter in both layflat and wire armoured configuration. Most hoses are 16 or 10 bar rated allowing them to be used across the range of pumpsets including our high pressure units. Available with quick release couplings, ANSI or DIN PN flanges.



Wired Armour

HDPE pipework up to 450mm in diameter and 16 bar in pressure allowing them to be used with all our pumps even the high pressure units. Available in either flanged or quick release couplings, in lengths up to 12m for ease of installation and reduction in installation time and cost.



Fittings

Our fittings and accessories allow us to install our pumps into a variety of applications. We hold bends, strainers, reducers, increasers and almost all the fittings we need for installation.



Settlement Tanks

The company holds a number of settlement tanks capable of a variety of flow rates. Utilised mainly in our construction markets, our settlement tanks are designed to minimise the pollution of any liquids discharged from a site. Available to hire or buy and located in all of our hubs.



Road Ramps

Critical in minimising the impact in local environments, Pioneer has invested heavily in road ramps to be able to bypass without closing roads. Using the largest available, we have ensured the maximum flow through the ramps with the minimum losses to ensure reduced fuel burn when they are used.

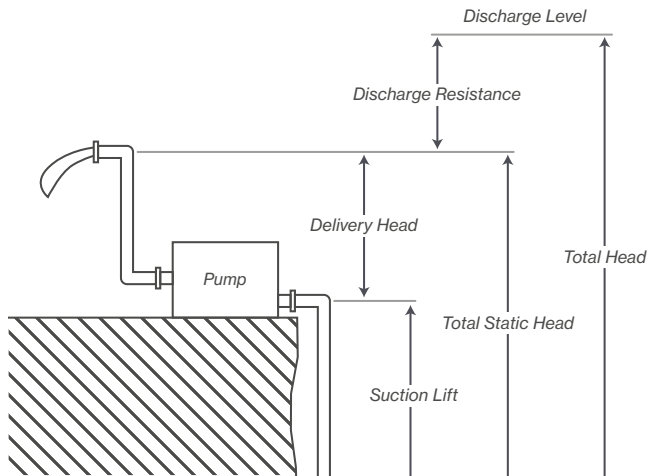


Fuel Tanks

Pioneer have a number of bulk storage fuel tanks for use with their pumpsets up to 4000 litres offering the opportunity to have extended run time on the entire range of pumpsets.



Pump Terms



Friction Loss In Smooth Bore Pipe

igpm	2"	3"	4"	6"	8"	10"	12"	m ³ /h
50	10	1.4	0.3					10
75	20	3	0.7					15
100	35	5	1	0.1				20
150		12	2.5	0.35				30
200		18	4.5	0.6				50
300		40	10	1.2	0.4			75
400			18	2.2	0.7			100
500			28	3.5	1.1			125
600			38	4.5	1.5			150
700				6.5	2			175
800				8	2.7			200
900				10	3.4	1	0.4	225
1000				13	4	1.4	0.5	250
1200				18	6	2	0.8	300
1400				26	8	3	1	350
1600				32	11	4	1.5	400
1800				36	14	4.5	2	450
2000				38	17	5	2.5	500
2500					25	9	4	650
3000					38	12	5	750
4000						21	8	1000

Losses in m/100 m or ft/100 ft

The above table refers to new pipes. Moderate corrosion may increase the resistance by 25% and severe corrosion by 50% or 100%. To calculate the resistance of bends and other fittings, an equivalent length for each fitting should be added to the actual length of straight pipe. The equivalent length in feet can be estimated with sufficient accuracy by multiplying the factors in the following table by the pipe diameter in inches.

Mitre elbow or toe	5
Round elbow	3
Slow bend	2
Square edged entrance	3
Gate valve fully open	2
Globe valve fully open	10
Non-return valve (flap type)	3
Foot-valve and strainer (clean)	5

Conversion Chart

Distance		
1 inch	2.54 centimetres	25.4 millimetres
1 foot	0.305 metre	30.48 centimetres
1 yard	0.9144 metre	
1 mile	1.61 kilometres	5280 feet
1 kilometre	1000 metre	0.6214 mile
1 metre	3.28 feet	
1 centimetre	0.3937 inch	10 millimetres
1 millimetre	0.039 inch	0.1 centimetre
1 micron	10 ⁴ centimetre	10 ⁶ metre
10 ⁶ metre	1 micrometre	
Volume		
1 kilolitre	1000 litres	1 cubic metre
1 litre	1000 millilitres	1000 cc
1 millilitre	1 cc (exact = 1.000027)	
1 fluid ounce	29.57 millilitres	
1 US gallon	3.785 litres	
1 imperial gallon	4.546 litres	
Weight		
1 kilogram	1000 grams	2.2 pounds
1 gram	1000 milligrams	0.035 ounce
1 milligram	1000 micrograms	1/1000 gram
1 microgram	10 ⁶ grams	1/1000 milligram
1 nanogram	10 ⁹ grams	1/1000 microgram
1 pound	0.45 kilogram	16 ounces
1 ounce	28.35 grams	

Suction Head

As Affected by Temperature

Temperature Pressure		Vapour Pressure	Max. Elevation	
°C	°F	kN/m ²	m	ft
0	32	0.6	10.3	33.8
5	41	0.9	10.2	33.5
10	50	1.2	10.2	33.5
15	59	1.7	10.2	33.5
20	68	2.3	10.1	33.1
25	77	3.2	10.0	32.8
30	86	4.3	9.9	32.5
35	95	5.6	9.8	32.2
40	104	7.7	9.5	31.2
45	113	9.6	9.4	30.8
50	122	12.5	9.1	29.9
55	131	15.7	8.7	28.5
60	140	20	8.3	27.2
65	149	25	7.8	25.6
70	158	32.1	7.1	23.3
75	167	38.6	6.4	21
80	176	47.5	5.5	18
85	185	57.8	4.4	14.4
90	194	70	3.2	10.5
95	203	84.5	1.7	5.6
100	212	101.33	0	0

Useful Technical Information

Head

Centrifugal pump curves show 'pressure' as head, which is the equivalent height of water with S.G. = 1. This makes allowance for specific gravity variations in the pressure to head conversion to cater for higher power requirements. Head can be expressed in a number of units however most common is feet (ft) or metres (m). The head of a pump performance shows what 'pressure' can be achieved by a given pump at a specific flow rate resulting from rotating the pump at a predetermined speed, generally 1500rpm to 1800rpm or higher.

Static Head and Friction Loss

When a pump company asks its customer "How much head or pressure?" It is asking what is the total of the static head and the friction losses created in pumping a given flow rate of water from point to point. If you are pumping 100m up then you have 100m of static from the level of the source of liquid to the end of your pipe which might include up to 7m of static lift from the lagoon to the entrance of the pump. If your pipe is 100m long and you calculate 8% losses through the pipe, bends, strainers etc., then your friction losses are 8m. The total dynamic head or TDH is therefore 108m and it is this head or pressure that the pump company is asking for.

NPSH

This is a common issue that is either forgotten or not understood by many pump users, pumps do not suck, they rely upon atmospheric pressure to 'push' water up the suction hose to the pump into a lower pressure area created by the pump by removing water from its body. In simple terms, nothing can operate in a vacuum, therefore if you switch the pump on it will spin and push the water out, therefore it needs some more and as long as atmospheric pressure (NPSHa) is greater than the pump requires (NPSHr) then the water will be pushed up the suction hose.

Remember

Don't be fooled by a company telling you that they can lift 9m on the suction side. Most self-priming pumps can do this, however the trick is keeping the pump primed and maximizing performance and this is achieved through designing a good pump with a low net positive suction head required (NPSHr).

The vertical height difference from surface of water source to centreline of impeller is termed as static suction head or suction lift ('suction lift' can also mean total suction head).

The vertical height difference from centreline of impeller to discharge point is termed as discharge static head. The vertical height difference from surface of water source to discharge point is termed as total static head.

Notes





PIONEER PUMP

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