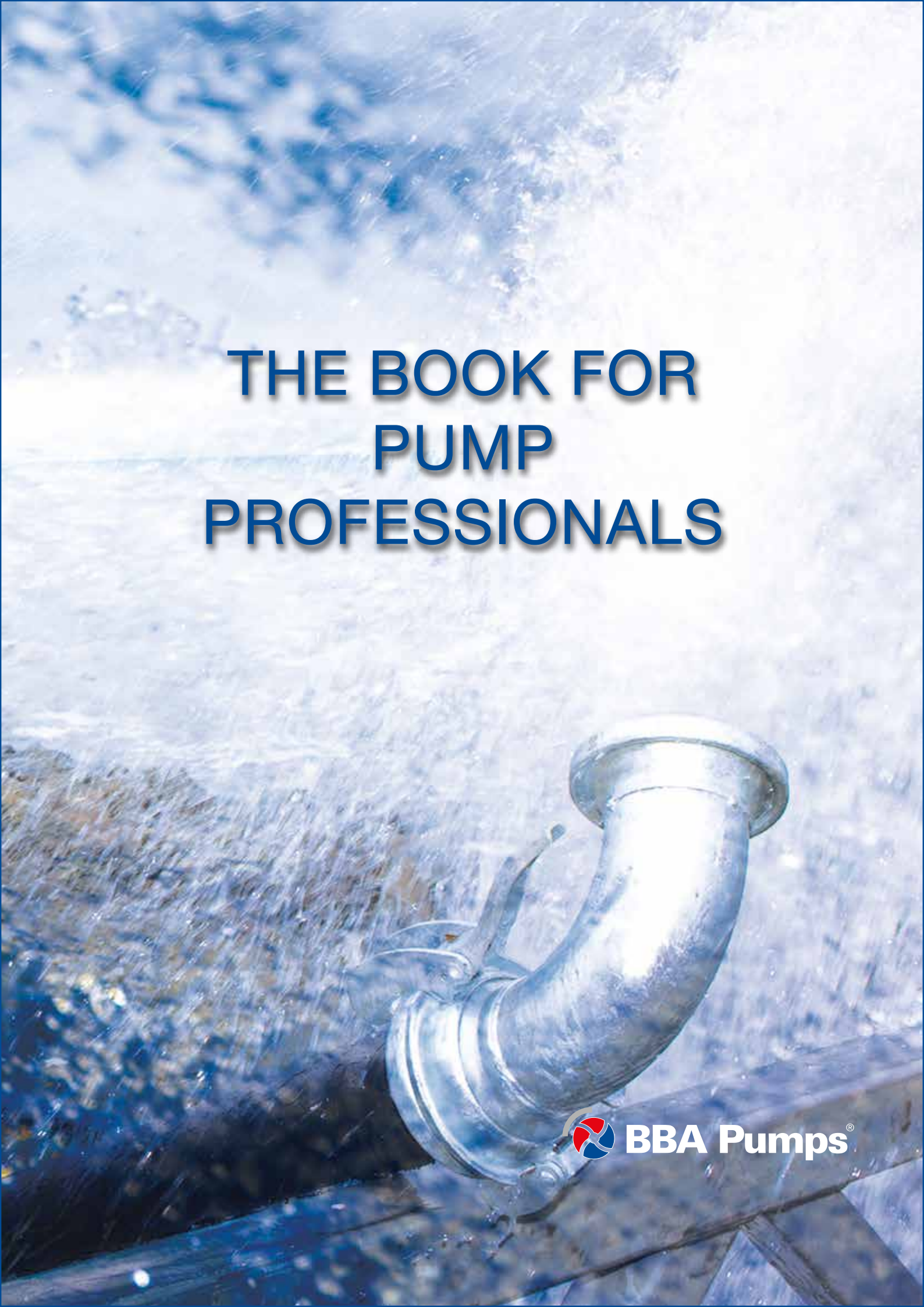
THE BOOK FOR
PUMP
PROFESSIONALS
BBA Pumps®

Our dedication:

Building the World's Best Portable Pump Solutions.

Dear Pump Professional,

Thank you for taking the time to read THE BOOK FOR PUMP PROFESSIONALS.

BBA Pumps has embraced the highest values and standards in **innovation**, **durability** and **sustainability.** With our dedicated innovation team we focus our efforts on the development of the greenest, most sustainable portable pump solutions in the world. Sustainability goes way beyond just an eco-friendly pump – it concerns our entire organization, from the design process all the way through to production, logistics and service.

The BBA Pumps Team.

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Born out of Experience

- **1953** Founding Bruin Buizen Apeldoorn, The Netherlands
- **1975** First major order BBA Pumps
- **1989** First PT Piston Pump
- **1995** Opening factory Czech Republic
- **2007** BBA Pumps Poland
- **2010** BBA Pumps USA
- **2014** Introduction PT150
- **2017** Opening new robot welding facility

Over 60 years of experience. Since its initial founding as a manufacturer of tubes and pipes the management of the company has been passed down through the family generations. The original business name '**B**ruin **B**uizen **A**peldoorn' has evolved into the prominent international producer known today as BBA Pumps.

Bruin = The name of the family, currently the third generation.
Buizen = The Dutch word for pipes & couplings.
Apeldoorn = The town in which the manufacturing facility is based.

Innovation

BBA Pumps' research and development department designs innovative and environmentally friendly solutions which are simply generations ahead, providing our users with products which meet and surpass their requirements.

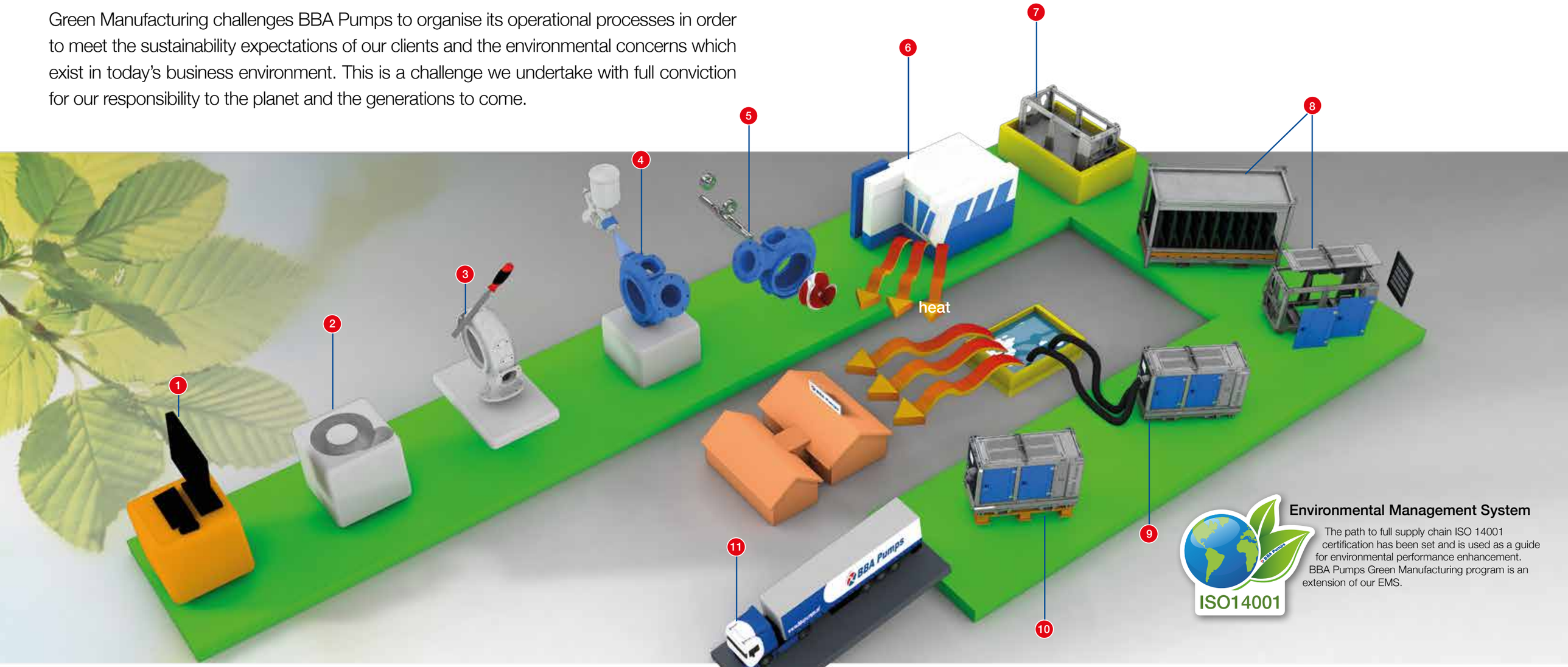
Our state-of-the-art production facilities and intensive supply partnerships result in production standards equal to leading manufacturers in the automotive industry. CNC and laser controlled equipment guarantee speed and consistent component quality. Testing is undertaken throughout the production process in order to guarantee performance and quality.

Durability

By the term durability, we think according to our philosophy of the “lowest cost of ownership” and in the form of the products economic life span. This includes products that can last a lifetime, such as the unprecedented life of the PT dewatering pumps, which can still be used after 30 years of reliable service. Or the nearly indestructible galvanized canopies with composite doors which can withstand the toughest conditions for decades. In 2014 BBA Pumps also took the step to extend its standard factory **warranty** conditions for up to **4 years** after commissioning.

Sustainability

Green Manufacturing challenges BBA Pumps to organise its operational processes in order to meet the sustainability expectations of our clients and the environmental concerns which exist in today's business environment. This is a challenge we undertake with full conviction for our responsibility to the planet and the generations to come.



1 Design

Not just designing the product to simply perform its task but thoroughly analysing how to manufacture, how to transport, with reduced weight and increased product durability; all with the goal of creating the least impact on the environment.

2 Casting

The selection of modern foundries located in our near vicinity reduces logistical considerations and manufacturing takes place in accordance with the latest technologies and environmental standards.

3 Machining

We use modern CNC centers and VFD controlled drives either with the latest optimal energy standards, or plans to upgrade them to the latest efficiency standards.

4 Powder coating

Components requiring coating are as far as possible, if not all, powder coated rather than liquid finished. Powder coatings contain no solvents and release negligible amounts of, if any, volatile organic compounds (VOCs) into the atmosphere.

5 Assembly

Internal logistics and storage systems are designed towards the elimination of packing materials and achieving the maximum ergonomic work environment.

6 Sheet metal works

We use the energy generated by machines during sheet metal working operations to heat our buildings.

7 Hot-dip galvanizing

Thermal galvanisation is the most sustainable method of protecting steel and results in a maximum score on the sustainability balance. It is a natural resource and fully recyclable.

8 Logistic and assembly systems

BBA Pumps has custom designed the component transportation systems used internally and externally. This reduces the amount of waste from packing materials to zero. Suppliers are selected based on criteria such as their close proximity to BBA Pumps.

9 Pump test stand

The energy released while testing the pump units is re-used through a heat exchanger to power the floor heating systems of our buildings.

10 Ready for shipping

Units are designed to be loaded square on a truck or inside a container for shipping, which reduces logistical handling to a minimum.

11 To customer

Carefully chosen transportation routes reduce shipment distances to the minimum, combining both delivery and pick-up. Custom designed delivery trucks are equipped to the latest environmental and fuel standards.

Environmental Management System

The path to full supply chain ISO 14001 certification has been set and is used as a guide for environmental performance enhancement. BBA Pumps Green Manufacturing program is an extension of our EMS.

ISO14001

Ready for the Next Generation

BBA Pumps offers technical solutions that go far beyond compliance with current regulations.

In addition to the groundbreaking galvanized canopy, the use of the most modern and cleanest engines, BBA Pumps established itself long ago as the industries pioneer with lightweight composite panels and fully bunded fuel tanks.

Additional Innovations

- Designed for global use when it comes to all different climates and languages.
- E-Lift®, thanks to the E-Lift system the pump and diesel engine as a whole can be removed from the canopy effortlessly allowing easy maintenance.
- Bumper bars and recessed doors preventing damage.

Particulate Filter
For single-cylinder driven pumps it is possible to supply an exhaust module fitted with a spark arrestor and prepared for the installation of a DPF.

Composite Fuel Tank
Fully bunded, corrosion free and minimal condensation.

DriveOn®
- 1500 hour service interval
- 65% less scheduled maintenance
- 25% savings on engine oil
- Ideal physical working conditions during maintenance

Super Silent Canopy
BBA Pumps built the first sound reduced pump units back in the early eighties. Nowadays our silenced canopies are the quietest in the world.

Unique Engine Concept

Key Features for DriveOn® Technology

- **1500 hour** service interval.
- **65%** less scheduled maintenance.
- **25%** savings on engine oil.
- Ideal physical working conditions during maintenance.

DriveOn® Technology

Sustainability was a key consideration with the development of the DriveOn® concept. Diesel driven BBA Pumps with DriveOn® technology offers an extended service interval up to **1500 running hours**. This results in huge savings on oil, filters and labour. On top of that, we have improved the working conditions significantly for the mechanics.

Pump Telematics

Fleet Management

Engine Data

- Run status, run hours, J1939 engine faults, battery voltage, fuel level, coolant temp
- Receive customized fault and alert messages

Pump Data

- Pressure pack: suction & discharge pressure
- Level pack: water level & alarm
- Flow pack: flow

Geo Data

- GPS location
- Connected to Google Maps
- GeoFencing

Analytics

- Interactive business insights
- Scheduled fault or utilization reports
- Export raw data for advanced analytics

Admin

- Invite other users
- Set permission levels
- Create secured pump groups

LinQ Remote Monitoring System

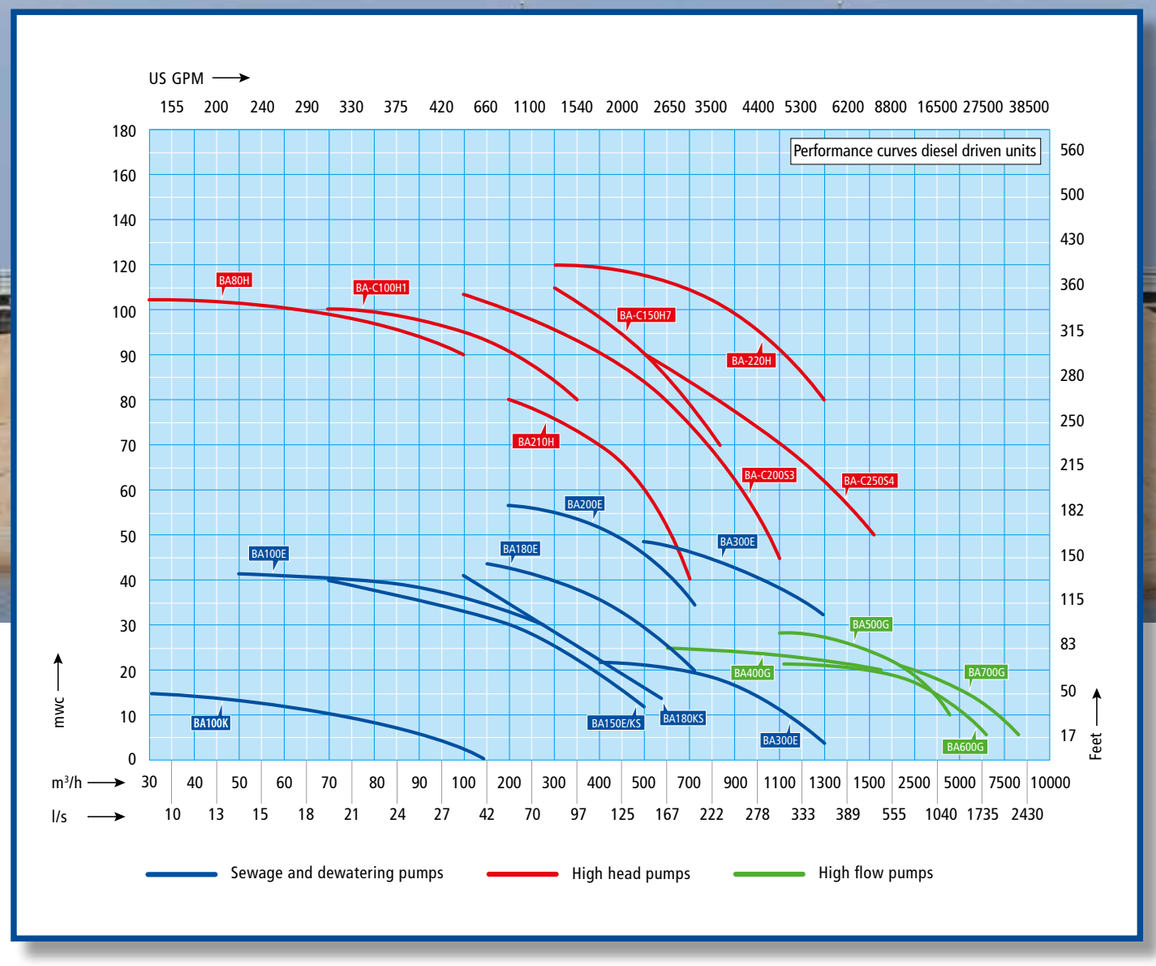
The linQ digital platform enables you to monitor your pump fleet. A simple interface allows you to remotely monitor detailed engine, pump and geo data. In addition you receive customized fault and maintenance messages.

Auto Prime Pumps

BA Series

World-class Performance

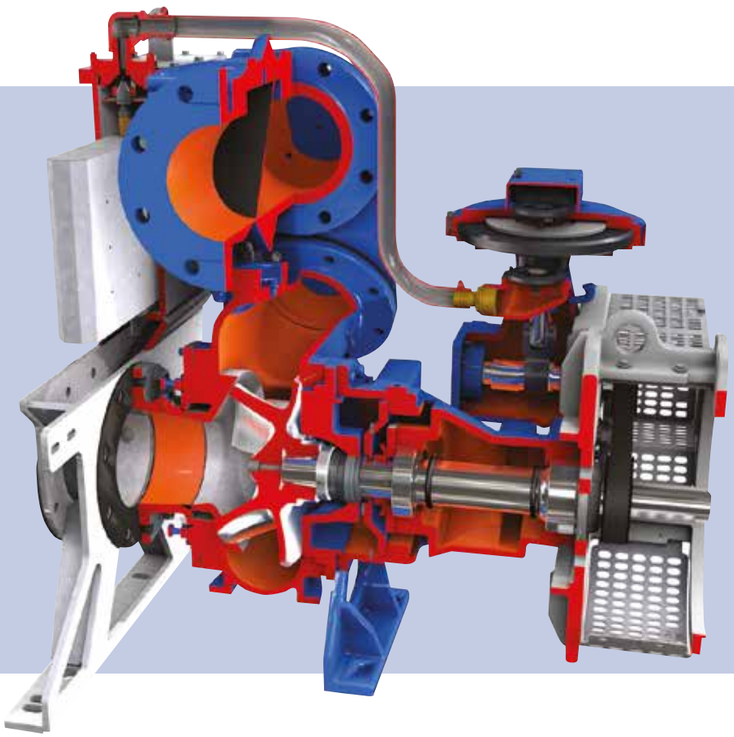
The BA auto prime pumps have been designed with a clear focus on reliability, efficiency and durability. Featuring a 100% mechanical priming system, the BA series pumps quickly prime and re-prime, even from dry conditions. The heavy build style of both pump and canopy make the BA range perfect for use in the strenuous contractor market.



The Heart of the Matter

E-style Open Impeller
The E-impeller is an open impeller with a large free passage, it is well suited for pumping dirty water and sewage without long fibrous materials.

KS Screw Channel Impeller
This special designed closed screw impeller is a real waste warrior. Even at higher speed, or with pumping air bubbles, the pump runs vibration-free. The best choice for your sewer bypass jobs.



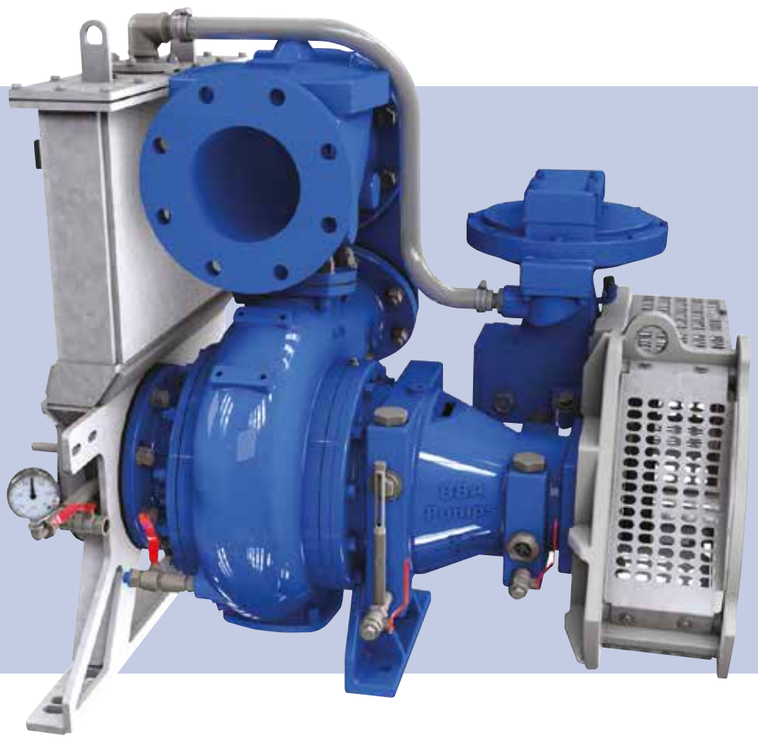
After starting the unit, the vacuum pump starts priming air out of the suction line. A non-return valve shuts off the discharge side. As soon as the pump is primed, the float closes the vacuum pump connection and the centrifugal pump starts pumping liquid.

Oil Chamber and Pressure Relief Chamber
The large oil chamber offers optimal seal cooling allowing dry running or snoring.
The pressure relief chamber prevents fluids from entering the bearing block at all times.

Easy Inspection
All inspection points, draining points and filler plugs are easily accessible and situated on one side of the pump as much as possible.

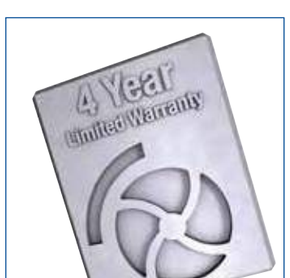
Reliable Vacuum Pump
MP series diaphragm pump. Air-cooled, water resistant and 100% oil-spill free offering air handling capacities of 29 CFM or 59 CFM.

Discharge Check Valve
The worry-free BBA Pumps check valve creates perfect sealing during the priming process. The integrated large inspection cover ensures easy access to all main areas.



Interchangeable Parts
The modular design of the BA series minimises parts requirement thereby lowering stock keeping costs and facilitating easy maintenance.

4 Year limited Warranty
The BBA Pumps limited warranty covers years or operating hours whichever occurs first. For more details please consult the BBA Pumps warranty book.



BA Series

BA75 D220	Solids Handling Pump
Max. Flow	440 US GPM / 100 m³/h
Max. Head	56 ft. / 24 PSI
Solids handling	1.65 inch / 42 mm
Operating point (BEP)	300 US GPM @ 42 ft.
Priming system	MP50
Engine	Hatz 1D90Z
Canopy	L9-15
Dimensions L x W x H	59 x 37 x 48.3 inch 1500 x 940 x 1228 mm
Fuel tank	32 US gallon / 120 l
Dry weight	1925 lbs. / 875 kg

BA80H D290	Clear Liquid Pump
Max. Flow	440 US GPM / 100 m³/h
Max. Head	350 ft. / 151 PSI
Solids handling	1 inch / 25 mm
Operating point (BEP)	420 US GPM @ 330 ft.
Priming system	MP50
Engine	Hatz 4H50TIC
Canopy	M10-23X
Dimensions L x W x H	90 x 41.3 x 63 inch 2300 x 1050 x 1600 mm
Fuel tank	80 US gallon / 300 l
Dry weight	3410 lbs. / 1550 kg

3 inch Diesel Driven Portable Pumps

Our Dedication:

Building the World's Best Portable Pump Solutions.

The BA75 is our most compact 3" dewatering and construction pump for general use. Its low weight and small dimensions make it an ideal portable pump for contractors, rental companies and municipal authorities responsible for water management.

BA Series

4 inch Dewatering and Sewage Pumps

BA100K D193	Solids Handling Pump
Max. Flow	750 US GPM / 170 m³/h
Max. Head	56 ft. / 24 PSI
Solids handling	3.23 inch / 82 mm
Operating point (BEP)	450 US GPM @ 32 ft.
Priming system	MP50
Engine	Hatz 1D90Z DriveOn®
Canopy	M10-18
Dimensions L x W x H	71 x 41.3 x 63 inch 1800 x 1050 x 1600 mm
Fuel tank	59 US gallon / 220 l
Dry weight	3223 lbs. / 1465 kg

BA100E D265	Solids Handling Pump
Max. Flow	1250 US GPM / 285 m³/h
Max. Head	137 ft. / 59 PSI
Solids handling	3.15 inch / 80 mm
Operating point (BEP)	900 US GPM @ 102 ft.
Priming system	MP50
Engine	Hatz 3H50TIC
Canopy	M10-23X
Dimensions L x W x H	90 x 41.3 x 63 inch 2300 x 1050 x 1600 mm
Fuel tank	80 US gallon / 300 l
Dry weight	3520 lbs. / 1600 kg

DriveOn® Technology

BA100K driven by an economical single cylinder diesel engine with DriveOn® technology ensures maintenance intervals of up to 1500 running hours.

BA Series

6 inch Dewatering and Sewage Pumps

BA150E D285	Solids Handling Pump
Max. Flow	2200 US GPM / 500 m³/h
Max. Head	125 ft. / 54 PSI
Solids handling	3.15 inch / 80 mm
Operating point (BEP)	1600 US GPM @ 90 ft.
Priming system	MP50
Engine	Hatz 4H50TIC DriveOn®
Canopy	M10-23X
Dimensions L x W x H	90 x 41.3 x 63 inch 2300 x 1050 x 1600 mm
Fuel tank	80 US gallon / 300 l
Dry weight	3630 lbs. / 1650 kg

BA150KS D285	Sewage and Trash Pump
Max. Flow	2150 US GPM / 490 m³/h
Max. Head	135 ft. / 58 PSI
Solids handling	3.94 inch / 100 mm
Operating point (BEP)	1500 US GPM @ 75 ft.
Priming system	MP50
Engine	Hatz 3H50TIC
Canopy	M10-23X
Dimensions L x W x H	90 x 41.3 x 63 inch 2300 x 1050 x 1600 mm
Fuel tank	80 US gallon / 300 l
Dry weight	3375 lbs. / 1625 kg

Most Popular

Our 6" diesel driven dry prime pump has been the most popular in the BA series for many years. Available with sound attenuated canopy or simply as an open trailer pump package traffic.

Trailer Pump Package.

BA Series

8 inch Dewatering and Sewage Pumps

BA180E D328	Solids Handling Pump
Max. Flow	3230 US GPM / 735 m³/h
Max. Head	145 ft. / 62 PSI
Solids handling	3.15 inch / 80 mm
Operating point (BEP)	2200 US GPM @ 110 ft.
Priming system	MP50
Engine	Perkins 904J-E36TA
Canopy	M12-29
Dimensions L x W x H	114 x 47 x 75 inch 2900 x 1200 x 1903 mm
Fuel tank	80 US gallon / 300 l
Dry weight	6050 lbs. / 2750 kg

DriveOn®

BA180KS D315	Sewage and Trash Pump
Max. Flow	2550 US GPM / 580 m³/h
Max. Head	135 ft. / 58 PSI
Solids handling	4.9 inch / 125 mm
Operating point (BEP)	1800 US GPM @ 75 ft.
Priming system	MP50
Engine	Hatz 4H50TIC DriveOn®
Canopy	M10-23X
Dimensions L x W x H	90 x 41.3 x 63 inch 2300 x 1050 x 1600 mm
Fuel tank	80 US gallon / 300 l
Dry weight	3795 lbs. / 1725 kg

Super Silent

A silent diesel pump package with the lowest decibel rating on the market and constructed to meet the toughest sewage bypass challenges.

8 inch High Head Solids Handling Pumps

BA210H D375	Solids Handling Pump
Max. Flow	3380 US GPM / 770 m³/h
Max. Head	363 ft. / 157 PSI
Solids handling	3.15 x 2.5 inch / 80 x 65 mm
Operating point (BEP)	2200 US GPM @ 250 ft.
Priming system	MP50
Engine	Volvo Penta TAD572VE
Canopy	M14-30
Dimensions L x W x H	158 x 57 x 98,4 inch 4000 x 1450 x 2500 mm
Fuel tank	125 US gallon / 475 l
Dry weight	8760 lbs. / 3980 kg

BA220H D510	Solids Handling Pump
Max. Flow	5700 US GPM / 1300 m³/h
Max. Head	410 ft. / 177 PSI
Solids handling	3,15 inch / 80 mm
Operating point (BEP)	4400 US GPM @ 300 ft.
Priming system	MP100
Engine	Volvo Penta TAD1375VE
Canopy	EL23-58
Dimensions L x W x H	229 x 91 x 91 inch 5830 x 2306 x 2300 mm
Fuel tank	80 US gallon / 300 l
Dry weight	22000 lbs. / 10000 kg

Pressure and solids

These 8" high head solids handling pumps are specially designed for projects which require long discharge pipes or for solving challenges of discharge pressure when working with height differentials. The BA200E pumps can be used for sewage bypassing, stormwater pumping, frac water transfer jobs and quarry dewatering.

BA Series

12 inch Dewatering and Sewage Pumps

BA300E D328	Solids Handling Pump
Max. Flow	5630 US GPM / 1280 m³/h
Max. Head	70 ft. / 30 PSI
Solids handling	4.7 x 4.1 inch / 120 x 105 mm
Operating point (BEP)	3500 US GPM @ 55 ft.
Priming system	MP100
Engine	Perkins 904J-E36TA
Canopy	M12-29
Dimensions L x W x H	136 x 47 x 83.5 inch 3455 x 1200 x 2125 mm
Fuel tank	80 US gallon / 300 l
Dry weight	7920 lbs. / 3600 kg

BA300E D388	Solids Handling Pump
Max. Flow	6380 US GPM / 1450 m³/h
Max. Head	159 ft. / 69 PSI
Solids handling	4.7 x 4.1 inch / 120 x 105 mm
Operating point (BEP)	5500 US GPM @ 130 ft.
Priming system	MP100
Engine	Volvo Penta TAD873VE
Canopy	M14-40
Dimensions L x W x H	189 x 57 x 97 inch 4816 x 1450 x 2467 mm
Fuel tank	185 US gallon / 700 l
Dry weight	11660 lbs. / 5300 kg

Two totally different 12" units

A low head package and the heavy duty BA300E D388 high pressure pump specially designed for projects which require long discharge pipes or for solving challenges of discharge pressure when working with height differentials.

BA Series

16 - 20 inch High Flow Pumps

BA400G D540	High Flow Pump
Max. Flow	14000 US GPM / 3200 m³/h
Max. Head	82 ft. / 35 PSI
Solids handling	3.93 inch / 100 mm
Operating point (BEP)	11000 US GPM @ 56 ft.
Priming system	MP100
Engine	Volvo Penta TAD572VE
Canopy	M14-40
Dimensions L x W x H	208 x 57 x 99 inch 5285 x 1450 x 2514 mm
Fuel tank	125 US gallon / 450 l
Dry weight	13860 lbs. / 6300 kg

BA500G D675	High Flow Pump
Max. Flow	19800 US GPM / 4500 m³/h
Max. Head	86 ft. / 37 PSI
Solids handling	4.5 inch / 115 mm
Operating point (BEP)	15000 US GPM @ 70 ft.
Priming system	MP100
Engine	Volvo Penta TAD1372VE
Canopy	EL23-58
Dimensions L x W x H	229 x 90.8 x 90,5 inch 5830 x 2306 x 2300 mm
Fuel tank	80 US gallon / 300 l
Dry weight	23980 lbs. / 10900 kg

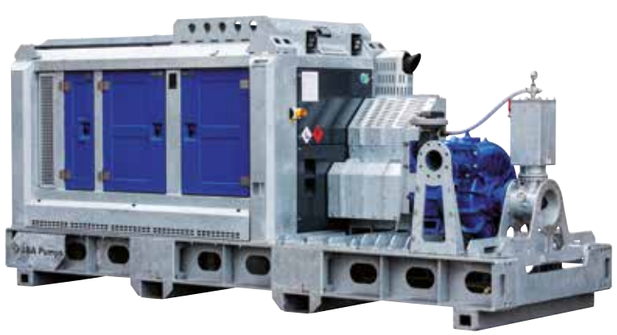
24 - 28 inch Ultra High Flow Pumps

BA600G D743	Ultra High Flow Pump
Max. Flow	28600 US GPM / 6500 m³/h
Max. Head	72 ft. / 31 PSI
Solids handling	5.3 inch / 135 mm
Operating point (BEP)	20000 US GPM @ 60 ft.
Priming system	MP100
Engine	Volvo Penta TAD1172VE
Canopy	EL23-58
Dimensions L x W x H	229 x 90.8 x 90.5 inch 5830 x 2306 x 2300 mm
Fuel tank	80 US gallon / 300 l
Dry weight	24200 lbs. / 11000 kg

BA700G D810	Ultra High Flow Pump
Max. Flow	34300 US GPM / 7800 m³/h
Max. Head	76 ft. / 33 PSI
Solids handling	5.7 inch / 145 mm
Operating point (BEP)	27000 US GPM @ 54 ft.
Priming system	MP100
Engine	Volvo Penta TAD1374VE
Canopy	EL23-58
Dimensions L x W x H	229 x 90.8 x 90.5 inch 5830 x 2306 x 2300 mm
Fuel tank	80 US gallon / 300 l
Dry weight	26400 lbs. / 12000 kg

BA Series

High Head and Mine Dewatering Pumps



Discharge pressures of up to 600 ft.
These multifunctional high head pumping systems find their use in general construction mining markets. Typical applications are underwater excavation, fire-fighting, tank cleaning and other clear water jetting jobs.

BA Series

Electrically Driven Portable Pumps

Many different models

The electrically driven vacuum assisted pumps available in many different versions. BBA Pumps has a line-up of standard models with stackable frames or sound attenuated canopies for mobile applications. In addition, we can also deliver customer-specific electric pumps for example with 316 stainless steel wet-ends or with ATEX certification.

BA Series

Dewatering and Sewage Pumps

The table shows a selection of the most common dewatering and sewage pumps.

	BA75 D220 3"	**BA100K D193 4"**	**BA100E D265 4"**	**BA150E/KS D285 6"**	**BA180E D328 8"**	**BA300E D328 12"**	**BA300E D388 12"**	**BA400G D540 16"**	**BA500G D675 20"**	**BA600G D743 24"**	**BA700G D810 28"**
Max. flow	440 gpm/ 100 m³/h	750 gpm/ 170 m³/h	1250 gpm/ 285 m³/h	2200 gpm/ 500 m³/h	3230 gpm/ 735 m³/h	5630 gpm/ 1280 m³/h	6380 gpm/ 1450 m³/h	14000 gpm/ 3200 m³/h	19800 gpm/ 4500 m³/h	28600 gpm/ 6500 m³/h	34300 gpm/ 7800 m³/h
Max. head	56 ft./ 24 PSI	56 ft./ 24 PSI	137 ft./ 59 PSI	125 ft./ 54 PSI	145 ft./ 62 PSI	70 ft./ 30 PSI	159 ft./ 69 PSI	83 ft./ 36 PSI	86 ft./ 37 PSI	72 ft./ 31 PSI	76 ft/ 33 PSI
Free passage	1.65 inch/ 42 mm	3.23 inch/ 82 mm	3.15 inch/ 80 mm	3.15 inch/ 80 mm	3.15 inch/ 80 mm	4.7 x 4.1 inch/ 105 mm	4.7 x 4.1 inch/ 105 mm	4 inch/ 100 mm	4.5 inch/ 115 mm	5.3 inch/ 135 mm	5.7 inch/ 145 mm
Max. pump speed	1500 rpm	1500 rpm	2100 rpm	1900 rpm	1800 rpm	1600 rpm	1800 rpm	885 rpm	740 rpm	620 rpm	590 rpm
Operating point (BEP)	300 gpm @ 42 ft.	450 gpm @ 32 ft.	900 gpm @ 102 ft.	1600 gpm @ 90 ft.	2200 gpm @ 110 ft.	3500 gpm @ 55 ft.	5500 gpm @ 130 ft.	11000 gpm @ 56 ft.	15000 gpm @ 70 ft.	20000 gpm @ 60 ft.	27000 gpm @ 54 ft.
Priming system	29 cfm/ 50 m³/h	29 cfm/ 50 m³/h	29 cfm/ 50 m³/h	29 cfm/ 50 m³/h	29 cfm/ 50 m³/h	59 cfm/ 100 m³/h	59 cfm/ 100 m³/h	59 cfm/ 100 m³/h	59 cfm/ 100 m³/h	59 cfm/ 100 m³/h	59 cfm/ 100 m³/h
Engine	Hatz	Hatz DriveOn®	Hatz	Hatz	Perkins	Perkins	Volvo Penta	Volvo Penta	Volvo Penta	Volvo Penta	Volvo Penta
Cylinders	1 cylinder	1 cylinder	3 cylinders	4 cylinders	4 cylinders	4 cylinders	6 cylinders	4 cylinders	6 cylinders	6 cylinders	6 cylinders
Max. absorbed power	7.5 Hp/ 5.5 kW	7.5 Hp/ 5.5 kW	59 Hp/ 43.7 kW	48 Hp/ 35 kW	95 Hp/ 70 kW	100 Hp/ 73 kW	245 Hp/ 180 kW	217 Hp/ 160 kW	340 Hp/ 250 kW	354 Hp/ 260 kW	475 Hp/ 350 kW
Max. fuel consumption	0.4 gph/ 1,5 l/h	0.45 gph/ 1,8 l/h	2.35 gph/ 9 l/h	2.4 gph/ 9.5 l/h	5 gph/ 19 l/h	5 gph/ 19 l/h	13 gph/ 50 l/h	10 gph/ 38 l/h	17 gph/ 65 l/h	18.5 gph/ 70 l/h	24 gph/ 90 l/h
Canopy	L9-15	M10-18	M10-23X	M10-23X	M12-29	M12-29	M14-40	M14-40	EL23-58	EL23-58	EL23-58
Sound level LwA at 33 ft	50 dB(A)	53 dB(A)	64 dB(A)	64 dB(A)	74 dB(A)	72 dB(A)	73 dB(A)	65 dB(A)	75 dB(A)	75 dB(A)	75 dB(A)
Dimensions L x W x H	59 x 37 x 48.3 inch	71 x 41.3 x 63 inch	90 x 41.3 x 63 inch	90 x 41.3 x 63 inch	114 x 47 x 75 inch	136 x 47 x 83,5 inch	156 x 57 x 95 inch	208 x 57 x 99 inch	229 x 90.8 x 90.5 inch	229 x 90.8 x 90.5 inch	229 x 90.8 x 90.5 inch
Fuel tank	32 gallon/ 120 l	59 gallon/ 220 l	80 gallon/ 300 l	80 gallon/ 300 l	80 gallon/ 300 l	80 gallon/ 300 l	185 gallon/ 700 l	125 gallon/ 450 l	80 gallon/ 300 l	80 gallon/ 300 l	80 gallon/ 300 l
Dry weight without fuel	1925 lbs/ 875 kg	3190 lbs/ 1450 kg	3520 lbs/ 1600 kg	3630 lbs/ 1650 kg	6050 lbs/ 2750 kg	7920 lbs/ 3600 kg	11660 lbs/ 5300 kg	13860 lbs/ 6300 kg	23980 lbs/ 10900 kg	24200 lbs/ 11000 kg	26400 lbs/ 12000 kg

BA Series

High Head Pumps

The table shows a selection of the most common high head pumps.

	BA80H D290 3"	BA80H D315 3"	BA-C100H1 D418 4"	BA-C150H7 D418 6"	BA210H D375 6"	BA-C200H42 D483 6"	BA-C200S3 D444 8"	BA200E D500 8”	BA-C250S4 D444 10"	BA-C250H45 D610 10"	
Max. flow	440 gpm/ 100 m³/h	990 gpm/ 225 m³/h	1518 gpm/ 345 m³/h	3742 gpm/ 850 m³/h	3380 gpm/ 770 m³/h	3522 gpm/ 800 m³/h	4840 gpm/ 1100 m³/h	5200 gpm/ 1180 m³/h	7040 gpm/ 1600 m³/h	6600 gpm/ 1500 m³/h	**Max. flow**
Max. head	350 ft./ 151 PSI	320 ft./ 138 PSI	330 ft./ 143 PSI	368 ft./ 159 PSI	363 ft./ 157 PSI	428 ft./ 185 PSI	350 ft./ 151 PSI	356 ft./ 154 PSI	330 ft./ 143 PSI	594 ft./ 257 PSI	**Max. head**
Free passage	1 inch/ 25 mm	1 inch/ 25 mm	0.62 inch/ 16 mm	1.22 inch/ 31 mm	3.15 x 2,5 inch/ 80 x 65 mm	2 inch/ 51 mm	3.38 inch/ 86 mm	3.14 inch/ 80 mm	3.38 inch/ 86 mm	2.38 inch/ 60 mm	**Free passage**
Max. pump speed	2800 rpm	2400 rpm	1850 rpm	2000 rpm	2100 rpm	1800 rpm	1800 rpm	1800 rpm	1800 rpm	1770 rpm	**Max. pump speed**
Operating point (BEP)	420 gpm @ 330 ft.	700 gpm @ 250 ft.	1300 gpm @ 280 ft.	3000 gpm @ 320 ft.	2200 gpm @ 250 ft.	2500 gpm @ 375 ft.	3500 gpm @ 230 ft.	3960 gpm @ 300 ft.	6160 gpm @ 198 ft.	5500 gpm @ 460 ft.	**Operating point (BEP)**
Priming system	29 cfm/ 50 m³/h	29 cfm/ 50 m³/h	29 cfm/ 50 m³/h	29 cfm/ 50 m³/h	29 cfm/ 50 m³/h	59 cfm/ 100 m³/h	59 cfm/ 100 m³/h	59 cfm/ 100 m³/h	59 cfm/ 100 m³/h	59 cfm/ 100 m³/h	**Priming system**
Engine	Hatz	Perkins	Perkins	Volvo Penta	Volvo Penta	Volvo Penta	Volvo Penta	Volvo Penta	Volvo Penta	Caterpillar	**Engine**
Cylinders	4 cylinders	4 cylinders	4 cylinders	6 cylinders	4 cylinders	6 cylinders	6 cylinders	6 cylinders	6 cylinders	12 cylinders	**Cylinders**
Max. absorbed power	61 Hp/ 45 kW	89 Hp/ 65 kW	136 Hp/ 100 kW	326 Hp/ 240 kW	200 Hp/ 145 kW	395 Hp/ 290 kW	272 Hp/ 200 kW	545 Hp/ 400 kW	410 Hp/ 300 kW	952 Hp/ 700 kW	**Max. absorbed power**
Max. fuel consumption	3.4 gph/ 13 l/h	5 gph/ 19 l/h	6.6 gph/ 25 l/h	16.7 gph/ 63 l/h	9.3 gph/ 35 l/h	19 gph/ 72 l/h	13.2 gph/ 50 l/h	26 gph/ 100 l/h	19.8 gph/ 75 l/h	42 gph/ 160 l/h	**Max. fuel consumption**
Canopy	M10-23	M12-29	EL17-40	EL17-50	M14-30	EL23-58	EL17-45	EL23-58	EL23-58	BF20-45	**Canopy**
Sound level LwA at 33 ft.	69 dB(A)	78 dB(A)	70 dB(A)	74 dB(A)	69 dB(A)	80 dB(A)	78 dB(A)	80 dB(A)	80 dB(A)	-	**Sound level LwA at 33 ft.**
Dimensions L x W x H	89.4 x 41.3 x 63 inch	114 x 47 x 75 inch	157.5 x 67 x 82 inch	197 x 67 x 89 inch	157 x 57 x 98 inch	229 x 91 x 91 inch	175 x 67 x 89 inch	229 x 91 x 91 inch	229 x 91 x 91 inch	177 x 78 x 87 inch	**Dimensions L x W x H**
Fuel tank	80 gallon/ 300 l	80 gallon/ 300 l	80 gallon/ 300 l	21 gallon/ 80 l	125 gallon/ 475 l	80 gallon/ 300 l	21 gallon/ 80 l	80 gallon/ 300 l	80 gallon/ 300 l	-	**Fuel tank**
Dry weight without fuel	3410 lbs/ 1550 kg	5720 lbs/ 2600 kg	11000 lbs/ 5000 kg	16000 lbs/ 7250 kg	8760 lbs/ 3980 kg	20900 lbs/ 9500 kg	14300 lbs/ 6500 kg	20900 lbs/ 9500 kg	20900 lbs/ 9500 kg	14300 lbs/ 6500 kg	**Dry weight without fuel**

Wellpoint Dewatering Pumps

PT Series

Vacuum of up to 30 ft.

An investment that pays for itself

The PT wellpoint pump has been designed for vertical and horizontal dewatering applications. These positive displacement pumps are fully self-priming and are capable of handling air, water or any mixture of both without requiring a separate priming system. Furthermore, these pumps are capable of running dry indefinitely without causing damage or excessive wear to any part of the unit.

An Investment for the Future

Features:

- Excellent suction capabilities
- Can run dry indefinitely
- High pump efficiency
- Low fuel consumption
- **1500 hour** service interval

DriveOn®

- 1500 hour service interval
- 65% less scheduled maintenance
- 25% savings on engine oil
- Ideal physical working conditions during maintenance

Ergonomic Design

PT150 with DriveOn® technology offers ideal working conditions during maintenance.

Super Silent Canopy

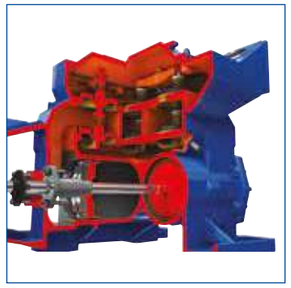
The PT150 diesel driven units are designed for operating in residential areas even throughout the night.

Particulate Filter

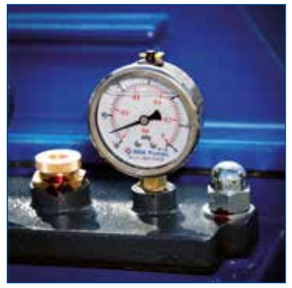
It is possible to supply the PT150 with an exhaust module fitted with a spark arrestor and prepared for the installation of a DPF.

The Heart of the Matter

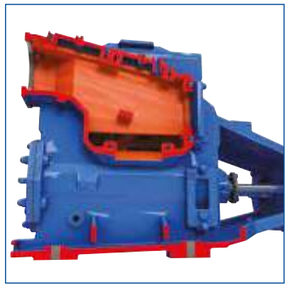
Excellent Pump Hydraulics
A patented suction valve seat and improved hydraulics guarantee the best pump efficiency and unbeatable vacuum build up.



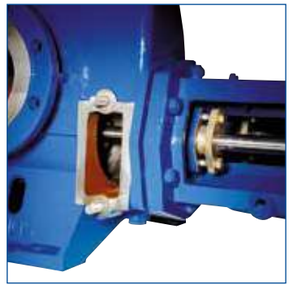
Close to Maximum Vacuum
The PT wellpoint pump is designed for vertical and horizontal dewatering applications and performs best under high vacuum.

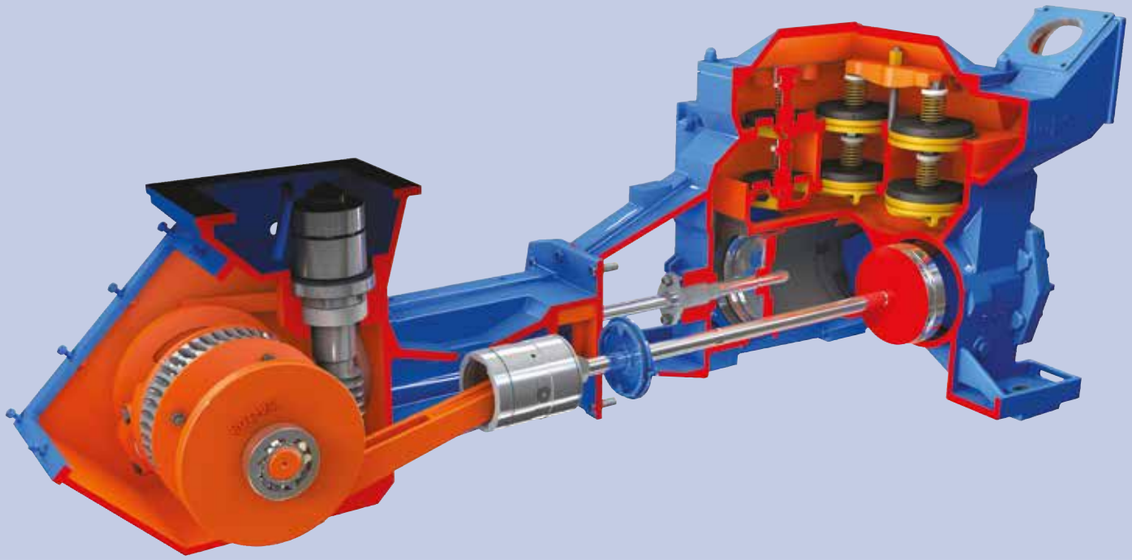


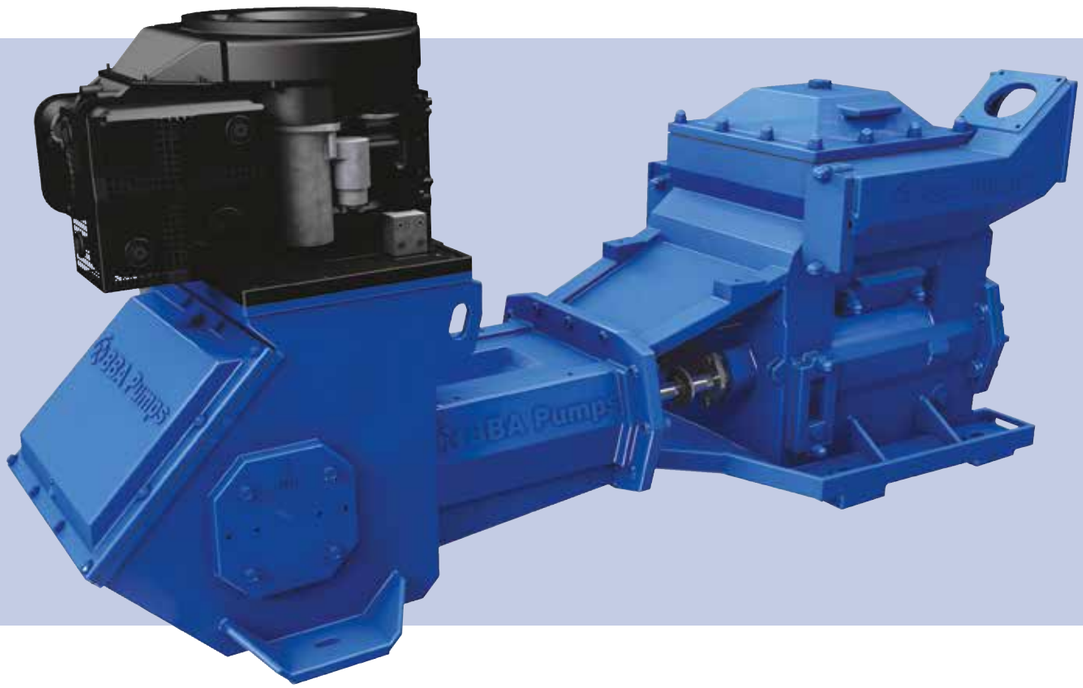
Integrated Stone Catcher
To protect the pump internals from any suspended solids.
The stone catcher has 4 inspection covers and comes with dual vacuum gauges to monitor pump performance.



Robust Piston Rods
The stainless steel piston rods have been carefully grinded to guarantee maximum service life.





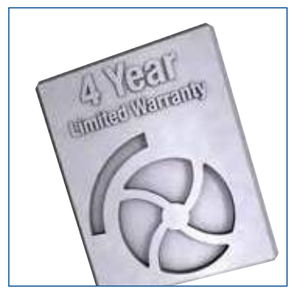


Direct Drive Design®
Precisely machined drive gears and an automatic lubrication system provide excellent efficiency and minimal sound emissions.

Easy Access Points
Allows access to the cylinders, valves, stuffing boxes and other critical areas for easy cleaning, draining and maintenance.

Handy Covers
The lightweight aluminum and composite covers are easy to grip, lift and move.

4 Year Limited Warranty
The BBA Pumps limited warranty covers years or operating hours whichever occurs first. For more details please consult the BBA Pumps warranty book.



PT Series

Diesel Driven Wellpoint Dewatering Pumps

PT150 D185	Wellpoint Pump
Max. Flow	396 US GPM / 90 m³/h
Max. Head	66 ft. / 28 PSI
Max. Suction lift	32 ft. / 9,6 mwc
Engine	Hatz 1D90V DriveOn®
Fuel consumption	0.4 US gallon/hour at BEP
Canopy	L10-23
Dimensions L x W x H	89,4 x 41 x 56,1 inch 2270 x 1050 x 1425 mm
Fuel tank	54 US gallon / 200 l
Sound level	48 dB(A) at 33 ft.
Dry weight	3597 lbs. / 1635 kg

PT200 D265	Wellpoint Pump
Max. Flow	880 US GPM / 200 m³/h
Max. Head	100 ft. / 43 PSI
Max. Suction lift	30 ft. / 9 mwc
Engine	Hatz 3H50TIC
Fuel consumption	0.9 US gallon/ hour at BEP
Canopy	M14-23
Dimensions L x W x H	92 x 57 x 66,1 inch 2350 x 1450 x 1680 mm
Fuel tank	80 US gallon / 300 l
Sound level	50 dB(A) at 33 ft.
Dry weight	6080 lbs. / 2760 kg

The Perfect Choice

When working on a construction site it is of vital importance to have an effective solution for controlling the groundwater level. The PT pump is the best choice around for ensuring a dry construction pit.

- **Impressive suction lift** with a vacuum up to 30 feet.
- **Service interval of 1500 hours** on the PT150.
- **Extremely low fuel consumption.**

PT Series

Electrically Driven Wellpoint Dewatering Pumps

Electric Motor Driven

The supply of power is often well organized on major construction projects. In such cases a PT wellpoint and sock pump with electric motor is a good choice. Environmentally friendly, with virtually no maintenance it’s an investment with a quick return.

Connecting Your Pump

Pipes, Couplings & Accessoires

During the past 60 years BBA Pumps extended the range of coupling and piping systems to a full range of quick couplings, pipes, filters for the portable pump and dewatering and wellpoint markets. With modern production technologies we can ensure the highest quality products for the most demanding applications.

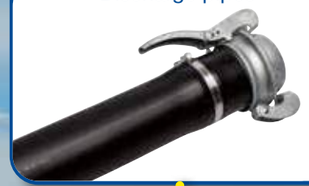
Delivery from stock

BBA Pumps Wellpoint System

BBA Swingarm

Flow meter

Discharge pipes



Weir tank

Hoses

Wellpoint piston pump

Header pipes

Wellpoint filters

Quick coupling

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BBA coupling TYPE B

Available in the sizes 4-8 inch.

Compatible with the bauer system.

BBA coupling TYPE A

Available in the size 12 inch.

Compatible with the Italian system.

1.1 Discharge pipes

BBA Pumps

1111 - HDPE poly pipes with fittings and clamps

art.nr.	⌀ coupling	SDR	length	max. pressure	platform	BBA coupling
	inch		ft	PSI	# pipes	type
1050916	4	26	20	87	178	B
1223384	6	26	10	72	110	B
1223387	6	26	20	72	110	B
1051080	6	17	10	72	110	B
1051085	6	17	20	72	110	B
1051069	8	26	10	72	72	B
1051065	8	26	20	72	72	B
1051068	8	17	10	72	72	B
1051067	8	17	20	72	72	B
1301956	12	33	20	58	30	A

BBA Pumps was originally established as a manufacturer of pipes and couplings. Today - over sixty years and thousands of miles of piping later - we are the worldwide market leader in this product group.

Pipe Rack 28305

Advantages

- Lightweight pipes simplify logistics at the construction site and in the field.
- Quick couplings are designed in-house and provide maximum user-friendliness.
- Only the highest quality HDPE is used, guaranteeing a long product life and excellent protection against the elements.
- HDPE has a minimal friction resistance which results in reduced energy requirements for the pump.

1.2 Strainers

453 - Strainer, galvanized

art.nr.	⌀ coupling		free passage	BBA coupling
	inch	mm	inch	type
3141744	4	108	0,6	B / male
3141746	6	159	0,8	B / male
3141748	8	216	0,8	B / male

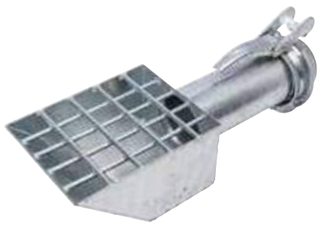
456 - Sewage strainer, galvanized

art.nr.	⌀ coupling		free passage	BBA coupling
	inch	mm	inch	type
3841864	4	108	1,2 x 6,3	B / male
3841866	6	159	1,6 x 7,5	B / male
3841868	8	216	2,4 x 7	B / male
3841857	12	300	2,8 x 9	A / female

155 - Sewage strainer hose fitting, galvanized

art.nr.	⌀ coupling		free passage
	inch	mm	inch
3842004	4	100	1,2 x 6,3
3842006	6	150	1,6 x 7,5
3141175	8	200	2,4 x 7
3141177	12	300	2,8 x 9

460 - Strainer bin, galvanized



art.nr.	⌀ coupling		free passage	BBA coupling
	inch	mm	inch	type
3842104	4	108	2 x 2	B / male
3842106	6	159	2 x 2	B / male
3842108	8	216	2 x 2	B / male
3842512	12	300	2 x 2	A / female

1.3 Quick couplings

419 - Elbow 90°, galvanized

art.nr.	⌀ coupling		crate	BBA coupling
	inch	mm	# bends	type
3571413	4	108	32	B
3571415	6	159	12	B
3571416	8	216	12	B
3781863	12	300	-	A

421 - Elbow 45°, galvanized

art.nr.	⌀ coupling		crate	BBA coupling
	inch	mm	# bends	type
3571423	4	108	48	B
3571425	6	159	18	B
3571426	8	216	18	B
3781867	12	300	-	A

433 - TEE male (ball / ball / cup), galvanized

art.nr.	⌀ coupling		crate	BBA coupling
	inch	mm	# pieces	type
3591467	4	108	16	B
3591469	6	159	12	B
3591470	8	216	4	B
3792107	12	300	-	A

434 - TEE female (cup / cup / ball), galvanized

art.nr.	⌀ coupling		crate	BBA coupling
	inch	mm	# pieces	type
3591873	4	108	21	B
3591875	6	159	12	B
3591876	8	216	8	B
3792102	12	300	-	A

437 - WYE male (ball - ball - cup), galvanized

art.nr.	∅		crate	BBA coupling
	inch	mm	# pieces	type
3221383	4	108	8	B
3221386	6	159	6	B
3221388	8	216	6	B
3221379	12	300	-	A

438 - WYE female (cup - cup - ball), galvanized

art.nr.	∅		crate	BBA coupling
	inch	mm	# pieces	type
3221394	4	108	12	B
3221396	6	159	9	B
3221398	8	216	6	B
3221381	12	300	-	A

432 - End plug male (ball), galvanized

art.nr.	∅		crate	BBA coupling
	inch	mm	# plugs	type
3561425	4	108	36	B
3561427	6	159	45	B
3561429	8	216	36	B
3762007	12	300	-	A

431 - End plug female (cup), galvanized

art.nr.	∅		crate	BBA coupling
	inch	mm	# plugs	type
3561419	4	108	224	B
3561421	6	159	120	B
3561431	8	216	96	B
3762002	12	300	-	A

BBA Pumps

439 - Reversing piece male (ball - ball), galvanized

art.nr.	∅		crate	BBA coupling
	inch	mm	# pieces	type
3651484	4	108	12	B
3651486	6	159	7	B
3651488	8	216	6	B
3851602	12	300	-	A

440 - Reversing piece female (cup - cup), galvanized

art.nr.	∅		crate	BBA coupling
	inch	mm	# pieces	type
3651494	4	108	56	B
3651496	6	159	30	B
3651498	8	216	12	B
3851607	12	300	-	A

429 - Reducer - enlarger , galvanized

art.nr.	∅ (female x male)		crate	BBA coupling
	inch	mm	# pieces	type
3661514	6 x 4	159 x 108	12	B
3661515	8 x 6	216 x 159	6	B

430 - Reducer - enlarger, galvanized

art.nr.	∅ (male x female)		crate	BBA coupling
	inch	mm	# pieces	type
3661506	6 x 4	159 x 108	12	B
3661508	8 x 6	216 x 159	6	B

417 - Hose fitting (ball), galvanized

art.nr.	⌀ coupling		⌀ spigot	crate	BBA coupling
	inch	mm	mm	# connections	type
3581447	4	108	100	36	B
3581449	6	159	150	12	B
3581450	8	216	200	11	B
1771481	12	300	300		A

415 - Hose fitting (cup) galvanized

art.nr.	⌀ coupling		⌀ spigot	crate	BBA coupling
	inch	mm	mm	# connections	type
3581457	4	108	100	56	B
3581459	6	159	150	30	B
3581468	8	216	200	12	B
3771493	12	300	100		A

401 - Lever ring, black steel

art.nr.	⌀		BBA coupling
	inch	mm	type
3551389	4	108	B
3551391	6	159	B

408 - O-ring rubber (set, 10 pieces)

art.nr.	⌀ coupling		BBA coupling
	inch	mm	type
3691407SP	4	108	B
3691409SP	6	159	B
3691410SP	8	216	B
3891489SP	12	300	A

BBA Pumps

446 - Thread piece male (ball) - outer thread, galvanized

art.nr.	⌀ couplings		⌀ outher thread	crate	BBA coupling
	inch	mm	inch	# pieces	type
3612489	4	108	4	32	B
3612490	6	159	6	22	B
3612491	8	216	8	12	B

447 - Thread piece female (cup) - outer thread, galvanized

art.nr.	⌀ couplings		⌀ outher thread	crate	BBA coupling
	inch	mm	inch	# pieces	type
3612492	4	108	4	84	B
3612493	6	159	6	45	B
3612494	8	216	8	24	B

448 - Thread piece male (ball) - inner thread, galvanized

Art.nr.	⌀ couplings		⌀ Inner thread	crate	BBA coupling
	inch	mm	inch	# pieces	type
3612495	4	108	4	16	B
3612496	6	159	6	8	B
3612497	8	216	8	6	B

449 - Thread piece female (cup) - inner thread, galvanized

art.nr.	⌀ couplings		⌀ inner thread	crate	BBA coupling
	inch	mm	inch	# pieces	type
3612498	4	108	4	84	B
3612499	6	159	6	45	B
3612500	8	216	8	24	B

442 - Flange piece male (ball) - BBA, galvanized

art.nr.	⌀ coupling		Flange (holes)	crate	BBA coupling
	inch	mm		# pieces	type
3611455	4	108	K180 (8)	15	B
3611457	6	159	K240 (8)	8	B
3611458	8	216	K295 (8)	6	B
3811503	12	300	K400 (12)		A

444 - Flange piece female (cup) - BBA, galvanized

art.nr.	⌀ coupling		flange (holes)	crate	BBA coupling
	inch	mm		# pieces	type
3611461	4	108	K180 (8)	45	B
3611463	6	159	K240 (8)	24	B
3611466	8	216	K295 (8)	12	B
3811513	12	300	K400 (120		A

458 - Flange piece male (ball) - ANSI, galvanized

art.nr.	⌀ coupling		flange (holes)	crate	BBA coupling
	inch	mm		# pieces	type
3612474	4	108	K190.5 (8)	15	B
3612476	6	159	K241.5 (8)	11	B
3612478	8	216	K298.5 (8)	6	B
3811527	12	300	K431.8 (12)		A

459 - Flange piece - ANSI, galvanized

art.nr.	⌀ coupling		flange (holes)	crate	BBA coupling
	inch	mm		# pieces	type
3612484	4	108	K190.5 (8)	69	B
3612486	6	159	K241.5 (8)	33	B
3612488	8	216	K298.5 (8)	12	B
3811522	12	300	K431.8 (12)		A

801 - Ring gasket

art.nr.	⌀ coupling	
	inch	mm
3401915	4	108
3401917	6	159
3401918	8	216

803 - Flange gasket - ANSI

art.nr.	⌀ coupling		flange (holes)
	inch	mm	
3401940	4	108	K191 (8)
3401941	6	159	K241 (8)
3401942	8	216	K298.5 (8)

BBA Pumps

Square flange - 30° male (ball / lever), galvanized

art.nr.	⌀ coupling		pump series	BBA coupling
	inch	mm		type
3111412	4	100	PT	B
5080878	4	100	BA	B
5080881	6	150	PT / BA	B
5080909	8	200	BA	B

Square flange - 30° female (cup), galvanized

art.nr.	⌀ coupling		pump series	BBA coupling
	inch	mm		type
3111411	4	100	PT	B
5080879	4	100	BA	B
5080876	6	150	PT / BA	B
5080913	8	200	BA	B

Square flange - 30° ANSI flange, galvanized

art.nr.	⌀ coupling		pump series	BBA coupling
	inch	mm		type
5080871	4	100	BA	B
5080873	6	150	BA	B
5080899	8	200	BA	B

1.4 Wellpoint system “TUNE”

1210 - Header pipes HDPE system “TUNE”

art.nr.	∅ coupling		length	branch	bundle	platform
	inch	mm	ft	# ports	# pipes	# pipes
1221055	6	160	10	3	10	110
1221050	6	160	20	5	10	110
20483	8	216	20	10	8	64

1290 - Plug

art.nr.	type	∅ branch
		inch
11421341	conical rubber branch plug	2

0000 - BBA swingarm

art.nr.		length
		ft
7054160	Wellpoint swingarm tune incl. ball valve	3,5

Grommet

art.nr.	
11421322	Grommet for BBA Wellpoint Swingarm

1.4 Wellpoint filters BBA Pumps shock proof

BBA Pumps

1402 - Vacuum wellpoint filter PVC (shock proof) with flat bottom

art.nr.	∅ (outer)	length	perforation length	perforation	bundle	platform
	inch	ft	ft	thou	# pipes	# pipes
11116920	2	3,3	3,3	11,8	120	600
11117003	2	19,7	3,3	11,8	120	600
11117079	2	29,7	3,3	11,8	120	600

1403 -Vacuum wellpoint filter PVC (shock proof) with point botttom and drop tube

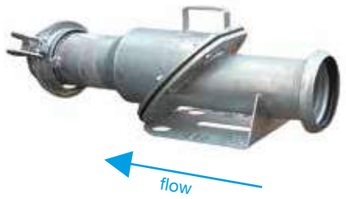
art.nr.	∅ (outer)	length	perforation length	perforation	bundle	platform
	inch	ft	ft	thou	# pipes	# pipes
11117129	2	3,3	3,3	11,8	120	600
11117136	2	29,7	3,3	11,8	120	600

0000 -Glue coupling

art.nr.	∅ (inner)	adapter	colour
	inch	ft	
11275008	2 - 2	BBA to BBA	grey
11106030	2 - 1,8 (US pvc)	BBA to PVC	blue

1.5 Portable non-return valve

463 - "Handy" non-return valve female (cup) x male (ball), galvanized



art.nr.	∅		max. pressure	max. flow	BBA coupling
	inch	mm	PSI	US GPM	type
9051334	4	108	58	600	B
9051336	6	159	58	1550	B
31428	8	216	44	2650	B
9051332	12	300	44	5000	A
9051356	4	108	Rubber valve for BBA non-return valve		B
9051358	6	159	Rubber valve for BBA non-return valve		B

Please check flow direction.

BBA "Handy" non-return valve

Our BBA "Handy" non-return valve is made of a robust steel casing and a low-maintenance rubber discs valve. The complete assembly is light weight, portable, stackable and has a sturdy base plate. The non-return valve can be used when several pumps are connected to one discharge line like pipe-line dewatering.

1.6 Weir tank

466 - Weir tank 10-23, galvanized

art. nr.	max. flow	L x W x H	BBA coupling
	US GPM	inch	type
US-SC-001	500	89 x 41.3 x 60.4	B

BBA Weir Tank

Portable sand collectors - small weir tanks - optimize your pump system during wellpoint dewatering projects. In addition to the setting and separation of sand present in the groundwater, the BBA weir tank also act as a deaerator.

Suitable for:

- Wellpoint dewatering.
- Horizontal sock dewatering.
- Soil remediation.
- Soil drilling.

Drainage

Four drainage points, with one on each side ensures good drainage.

Mobility

Detachable lifting beam and extendable partition. Equipped as standard with two forklift pockets.

Separator

Prevents sand entering the discharge.

Flanges

Standard square flanges for mounting quick couplings designed for the system. (the connecting parts are optional)

Most common pump terminology and abbreviations

Q	Capacity, actual pump delivery in m^3/hour or in gallons per minute
H	Head, vertical height of a static column of liquid in mwc or feet.
n	Pump speed in revolutions per minute (rpm)
η	Efficiency in percentage
P	Power required in kW of Hp
Hp	Horsepower (1 Hp = 0,745 kW kilowatts)
TDH	Total Dynamic Head = Sum of Static Height, Static Suction Lift and Friction Loss
Static Height	The maximum height reached by the pipe after the pump - measured from the centerline.
Static Suction Lift	The vertical distance from the surface of the liquid to the pump centerline.
Friction Loss	The loss of pressure due to the flow of the liquid through pipes and fittings (resistance).
NPSHr	Net Positive Suction Head Required in mwc or ft
NPSHa	Net Positive Suction Head Available in mwc or ft
Cavitation	Process in which small bubbles are formed and implode violently; occurs when NPSHa < NPSHr.
BEP	Best Efficiency Point
BSFC	Brake Specific Fuel Consumption in g/kWh or lb/Hph
dB(A)	Sound level in decibels (A) stands for the A-scale
V	Velocity in m/s or ft/s
ρ	Density in kg/m^3 is the mass per unit volume of a substance

Affinity laws

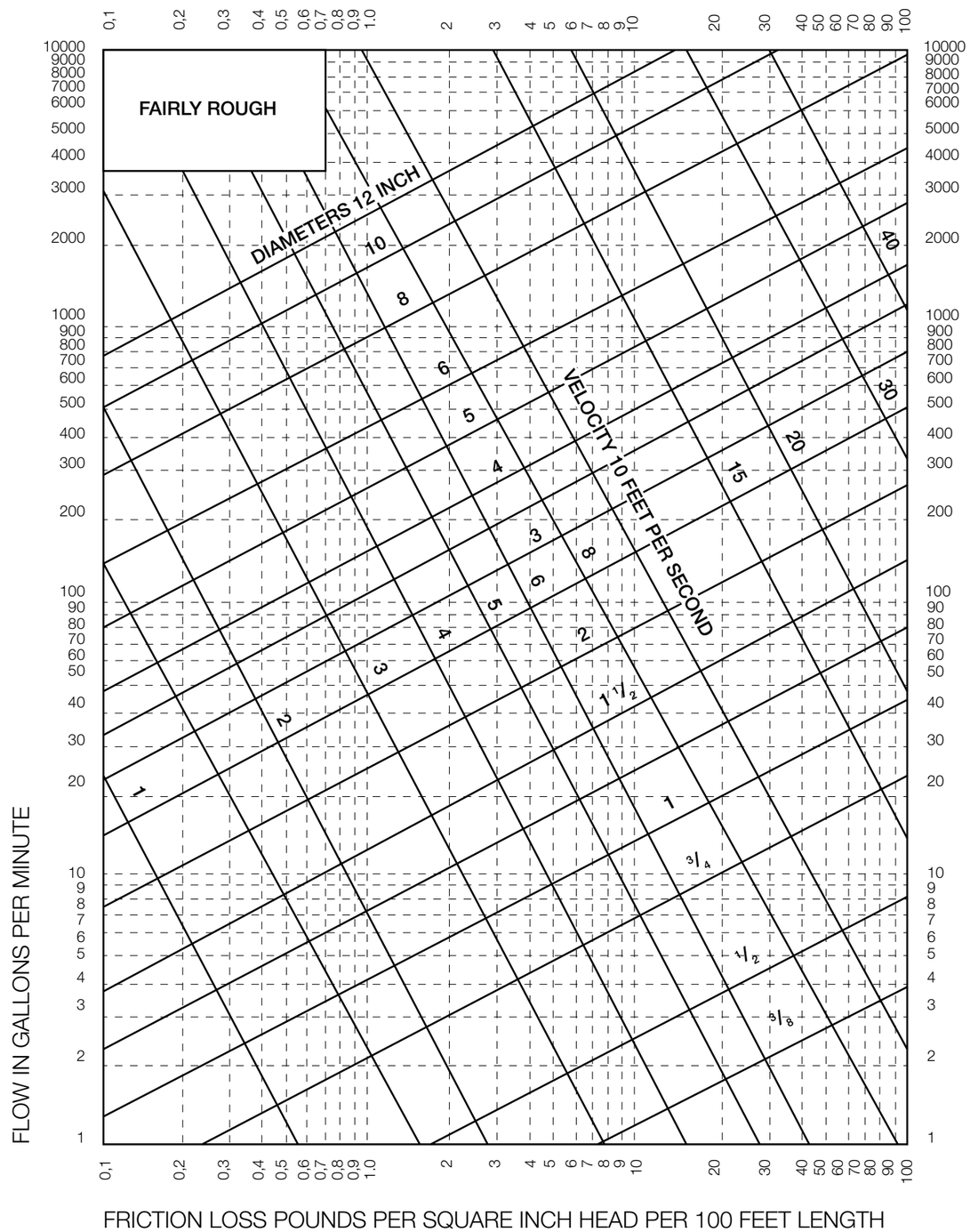
The affinity laws for pumps express the relationship between the several variables involved in pump performance. They apply to all types of centrifugal and axial flow pumps.

With impeller diameter held constant:

- Capacity is proportional to the pump speed $\frac{Q1}{Q2} = \frac{n1}{n2}$
- Head is proportional to the square of the pump speed $\frac{H1}{H2} = (\frac{n1}{n2})^2$
- Power is proportional to the cube of the pump speed $\frac{P1}{P2} = (\frac{n1}{n2})^3$

Friction Loss Nomogram

Nomogram for the calculation of the friction loss, valid for liquids with a viscosity of 1 cSt (e.g.water)



Recommended suction Pipe ID vs Flow Rates by Pipe dimension

Recommendation based on maximum velocity = 4 m/s.

US gallons	m³/h	(L/sec)	2” 50	3” 75	4” 100	5” 125	6” 150	8” 200	10” 250	12” 300	14” 350	16” 400	18” 450	20” 500
31.7	7.2	2	1.02	0.45	0.25	0.16	0.11	0.06	0.04	0.03	0.02	0.02	0.01	0.01
63.4	14.4	4	2.04	0.91	0.51	0.33	0.23	0.13	0.08	0.06	0.04	0.03	0.03	0.02
95.1	21.6	6	3.06	1.36	0.76	0.49	0.34	0.19	0.12	0.08	0.06	0.05	0.04	0.03
126.8	28.8	8	4.07	1.81	1.02	0.65	0.45	0.25	0.16	0.11	0.08	0.06	0.05	0.04
158.5	36	10	5.09	2.26	1.27	0.81	0.57	0.32	0.20	0.14	0.10	0.08	0.06	0.05
190.2	43.2	12	6.11	2.72	1.53	0.98	0.68	0.38	0.24	0.17	0.12	0.10	0.08	0.06
221.9	50.4	14	7.13	3.17	1.78	1.14	0.79	0.45	0.29	0.20	0.15	0.11	0.09	0.07
253.6	57.6	16	8.15	3.62	2.04	1.30	0.91	0.51	0.33	0.23	0.17	0.13	0.10	0.08
285.3	64.8	18	9.17	4.07	2.29	1.47	1.02	0.57	0.37	0.25	0.19	0.14	0.11	0.09
317	72	20	10.19	4.53	2.55	1.63	1.13	0.64	0.41	0.28	0.21	0.16	0.13	0.10
396.3	90	25	12.73	5.66	3.18	2.04	1.41	0.80	0.51	0.35	0.26	0.20	0.16	0.13
475.5	108	30	15.28	6.79	3.82	2.44	1.70	0.95	0.61	0.42	0.31	0.24	0.19	0.15
634	144	40	20.37	9.05	5.09	3.26	2.26	1.27	0.81	0.57	0.42	0.32	0.25	0.20
792.5	180	50	25.46	11.32	6.37	4.07	2.83	1.59	1.02	0.71	0.52	0.40	0.31	0.25
951	216	60	30.56	13.58	7.64	4.89	3.40	1.91	1.22	0.85	0.62	0.48	0.38	0.31
1109.5	252	70	35.65	15.84	8.91	5.70	3.96	2.23	1.43	0.99	0.73	0.56	0.44	0.36
1268	288	80	40.74	18.11	10.19	6.52	4.53	2.55	1.63	1.13	0.83	0.64	0.50	0.41
1426.5	324	90	45.84	20.37	11.46	7.33	5.09	2.86	1.83	1.27	0.94	0.72	0.57	0.46
1585	360	100	50.93	22.64	12.73	8.15	5.66	3.18	2.04	1.41	1.04	0.80	0.63	0.51
1775.2	403.2	112	57.04	25.35	14.26	9.13	6.34	3.57	2.28	1.58	1.16	0.89	0.70	0.57
1902	432	120	61.12	27.16	15.28	9.78	6.79	3.82	2.44	1.70	1.25	0.95	0.75	0.61
2060.5	468	130	66.21	29.34	16.55	10.59	7.36	4.14	2.65	1.84	1.35	1.03	0.82	0.66
2219	504	140	71.30	31.69	17.83	11.41	7.92	4.46	2.85	1.98	1.46	1.11	0.88	0.71
2337.6	540	150	76.39	33.95	19.10	12.22	8.49	4.77	3.06	2.12	1.56	1.19	0.94	0.76
2536	576	160	81.49	36.22	20.37	13.04	9.05	5.09	3.26	2.26	1.66	1.27	1.01	0.81
2694.6	612	170	86.58	38.48	21.65	13.85	9.62	5.41	3.46	2.41	1.77	1.35	1.07	0.87
2853.1	648	180	91.67	40.74	22.92	14.67	10.19	5.73	3.67	2.55	1.87	1.43	1.13	0.92
3011.6	684	190	96.77	43.01	24.19	15.48	10.75	6.05	3.87	2.69	1.97	1.51	1.19	0.97
3170.1	720	200	101.86	45.27	25.46	16.30	11.32	6.37	4.07	2.83	2.08	1.59	1.26	1.02
3328.6	756	210	106.95	47.53	26.74	17.11	11.88	6.68	4.28	2.97	2.18	1.67	1.32	1.07
3487.1	792	220	112.05	49.80	28.01	17.93	12.45	7.00	4.48	3.11	2.29	1.75	.138	1.12
3645.6	828	230	117.14	52.06	29.28	18.47	13.02	7.32	4.69	3.25	2.39	1.83	1.45	1.17
3804.1	864	240	122.23	54.32	30.56	19.56	13.58	7.64	4.89	3.40	2.49	1.91	1.51	1.22
3962.6	900	250	127.32	56.59	31.83	20.37	14.15	7.96	5.09	3.54	2.60	1.99	1.57	1.27
4121.1	936	260	132.42	58.85	33.10	21.19	14.71	8.28	5.30	3.68	2.70	2.07	1.63	1.32
4279.6	972	270	137.51	61.12	34.38	22.00	15.28	8.59	5.50	3.82	2.81	2.15	1.70	1.38
4438.1	1008	280	142.60	63.38	35.65	22.82	15.84	8.91	5.70	3.96	2.91	2.23	1.76	1.43
4596.6	1044	290	147.70	65.64	36.92	23.63	16.41	9.23	5.91	4.10	3.01	2.31	1.82	1.48
4755.1	1080	300	152.79	67.91	38.20	24.45	16.98	9.55	6.11	4.24	3.12	2.39	1.89	1.53
4913.6	1116	310	157.88	70.17	39.47	25.26	17.54	9.87	6.32	4.39	3.22	2.47	1.95	1.58
5072.1	1152	320	162.97	72.43	40.74	26.08	18.11	10.19	6.52	4.53	3.33	2.55	2.01	1.63
5230.6	1188	330	168.07	74.70	42.02	26.89	18.67	10.50	6.72	4.67	3.43	2.63	2.07	1.68
5389.1	1224	340	173.16	76.96	43.29	27.71	19.24	10.82	6.93	4.81	3.53	2.71	2.14	1.73
5547.6	1260	350	178.25	79.22	44.56	28.52	19.81	11.14	7.13	4.95	3.64	2.79	2.20	1.78
5706.1	1296	360	183.35	81.49	45.84	29.34	20.37	11.46	7.33	5.09	3.74	2.86	2.26	1.83
5864.6	1332	370	188.44	83.75	47.11	30.15	20.94	11.78	7.54	5.23	3.85	2.94	2.33	1.88
6023.1	1368	380	193.53	86.01	48.38	30.97	21.50	12.10	7.74	5.38	3.95	3.02	2.39	1.94
6181.6	1404	390	198.63	88.28	49.66	31.78	22.07	12.41	7.95	5.52	4.05	3.10	2.45	1.99
6340.1	1440	400	203.72	90.54	50.93	32.59	22.64	12.73	8.15	5.66	4.16	3.18	2.52	2.04
6498.6	1476	410	208.81	92.81	52.20	33.41	23.20	13.05	8.35	5.80	4.26	3.26	2.58	2.09
6657.1	1512	420	213.90	95.07	53.48	34.22	23.77	13.37	8.56	5.94	4.37	3.34	2.64	2.14

Correction in dB(A) in relation to distance from the sound source

Distance to heart sound source	Correction (c)
ft	dB(A)
3,3	8,0
6,6	14,0
9,9	17,5
13,2	20,0
16,5	22,0
19,8	23,5
23,1	24,9
26,4	26,0
29,7	27,1
33	28,0
49,5	31,5
66	34,0
82,5	35,9
99	37,5
115,5	38,9
132	40,0
148,5	41,0
165	42,0
181,5	42,8
198	43,5
231	44,9
264	46,0
297	47,1
330	48,0
363	48,8
396	49,6
429	50,3
462	50,9
495	51,5
528	52,1
561	52,6

Table shows the correction in dB(A) to determine the sound level for different distances.

LWA Value -/- Correction = dB(A)

Example:

LWA Value Dieselunit..... 90
Distance ..... 23,1 ft
Correction..... - 24,9 dB(A)
Sound level at 23,1 ft ..... 65,1 dB(A)

USA emission standards for diesel driven pump units

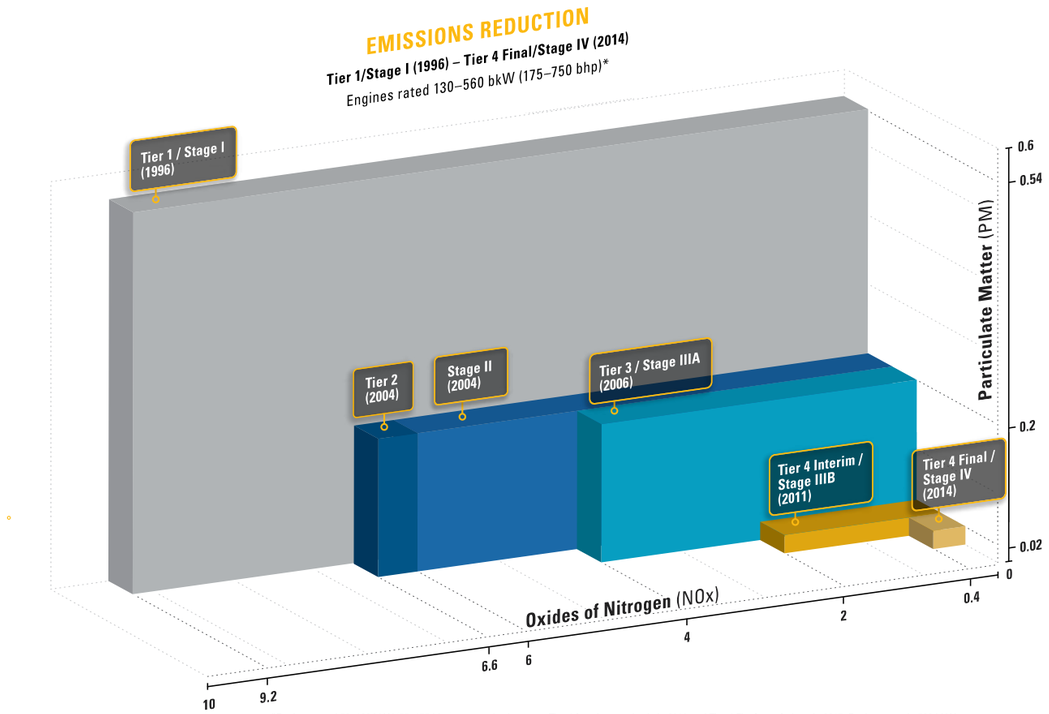
Emissions standards are managed on a national level by the Environmental Protection Agency (EPA). State and local governments may apply for waivers to enact stricter regulations.

Non-road engines

Non-road engines, including equipment and vehicles that are not operated on the public roadways, are used in an extremely wide range of applications, each involving great differences in operating characteristics and engine technology. Emissions from all non-road engines are regulated by categories.

In the United States, the emission standards for non-road diesel engines are published in the US Code of Federal Regulations, Title 40, Part 89 (40 CFR Part 89). Tier 1-3 Standards were adopted in 1994 and was phased in between 1996 and 2000 for engines over 50 hp. In 1998 the regulation included engines under 37 kW and introduced more stringent Tier 2 and Tier 3 standards which was scheduled to be phased in between 2000 and 2008. In 2004, US EPA introduced the more stringent Tier 4 standards which was scheduled to be phased in between 2008 and 2015. The testing cycles used for certification follow the ISO 8178 standards.

Several engine manufacturers use different techniques to comply with the Tier 4 emission standards. Consult the technical specifications for information on the emission standard of the pump unit.



*Engines rated 56–130 bkW (75–175 bhp) are required to meet Tier 4 Interim standards in 2012 and Tier 4 Final regulations in 2015. Engines rated >560 bkW (750 bhp) will meet Tier 4 Interim standards in 2011 and Tier 4 Final regulations in 2015 (EPA only). Standards differ by power category.

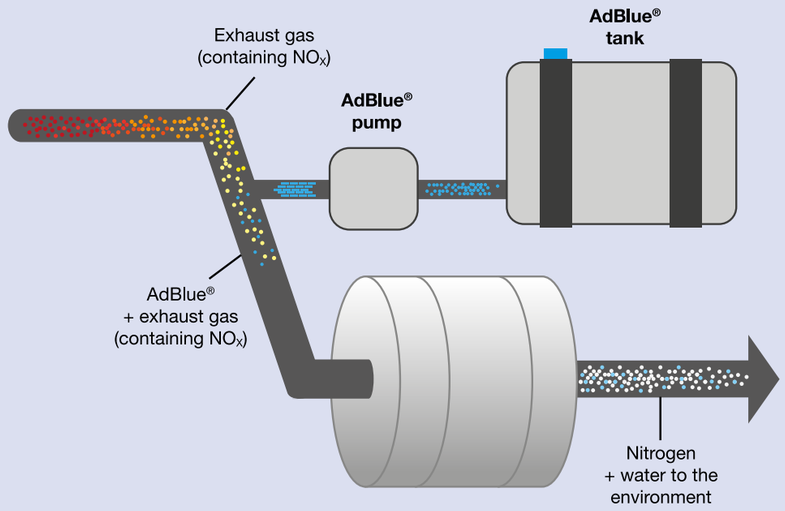
Aftertreatment methods

- **EGR – Exhaust Gas Recirculation** cools and mixes measured amounts of cooled exhaust gas with incoming fresh air to lower peak combustion temperatures and reduce nitrogen oxides (NOx).

- **DOC – Diesel Oxidation Catalyst** is a flow-through device and reacts with exhaust gases to reduce carbon monoxide, hydrocarbons and some particulate matter.

- **DPF – Diesel Particulate Filter** forces exhaust gases to flow through channel walls, trapping and holding the remaining particulate matter. Trapped matter is later oxidized within the DPF through a self-activating cleaning process, called passive regeneration, that uses exhaust heat produced during normal operating conditions.
- **SCR – Selective Catalytic Reduction** is an advanced active emissions control technology system that injects a liquid-reductant agent through a special catalyst into the exhaust stream of a diesel engine. SCR one of the most cost-effective and fuel-efficient technologies available to help reduce diesel engine emissions.

How SCR works



Before the exhaust gases pass through the catalytic converter, up to 5% AdBlue® is added. The NO_x is then converted into harmless nitrogen gas and water vapour, and released into the environment.

The SCR system uses high-efficiency combustion, which results in lower fuel consumption and extremely low levels of partivulate matter (PM), but high levels of nitrogen (NO_x).

Source: Volvo Penta.

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