

# SUPER BETSY

PUMPING SYSTEMS



*Hidrostaal*



# 2

## Super Betsy, designed and built by professionals, for professionals

Quality with innovation and a passion to provide solutions that benefit our customers is the driving force behind continuous product improvement and new product development to fit the needs of our customers. Our in-house ability to analyse, design, manufacture, and test our products ensures that our pump units meet the highest standards.

### BetsyPrime electronic priming system

BetsyPrime has no moving parts in the priming chamber, making the system ideal for handling contaminated liquids without the usual risk of mechanical interference. The priming system vacuum pump only operates when the liquid in the priming chamber falls below a predetermined level.

### Super Betsy Hidrostral screw solids handling pump

The Hidrostral pump has been designed to cope with the most difficult liquids, including those with large size solids content as well as viscose and high specific gravity liquids. As an example, contaminated bentonite and raw sewage can be pumped with ease. The screw impeller is extremely efficient and therefore the power required to drive the unit is far less than that of traditional solids handling pumps. Its clog free properties combined with its very large free passage ensures that the user has problem free pumping and low fuel consumption. The Hidrostral pump can be supplied in different materials of construction to suit your application.



### Shaft seals

All the Super Betsy pumps are fitted with high grade double mechanical shaft seals submerged in an oil bath. This allows the pumps to run dry without overheating the Sic-Tungsten Carbide (medium side) or Sic-Antimony Carbon (atmospheric side) seal surfaces of the mechanical shaft seals.



- 1 Hidrostral Screw Centrifugal Pump
- 2 BetsyPrime Electronic Priming System

Designed, built and tested at our own European facilities

### Super Betsy Whisper Sound Reduction Canopies

All the canopies are constructed of high quality sheet steel which is galvanized after cutting and welding. This ensures that the canopy will stay in top condition for many years. The canopies have been designed to reduce noise emissions to a very low level while the fully enclosed fuel tank eliminates the possibility of environmental contamination caused by fuel leakage.

### Lower container

The robust container is hot-dip galvanized and acts as a secondary enclosure for the fuel tank. Added fork lift channels assist in the safe transport of the pump set by means of fork lift trucks.

# Overview Super Betsy range [1/3]



Description	100H	100S	125M
Ø Suction - Discharge flanges	PN10, DN100	PN10, DN100	PN10, DN150
Max capacity [m³/h] - [usgpm]	1500 rpm: 136 m³/h - 602 usgpm 1650 rpm: 147 m³/h - 650 usgpm	1500 rpm: 173 m³/h - 760 usgpm. 2000 rpm: 238 m³/h - 1048 usgpm	1500 rpm: 288 m³/h - 1268 usgpm 1650 rpm: 320 m³/h - 1426 usgpm
Max discharge head [m/ft]	1500 rpm: 15m - 50ft 1650 rpm: 21m - 69ft	1500 rpm: 15m - 50ft 2000 rpm: 32m - 105ft	1500 rpm: 24m - 79ft 1650 rpm: 30m - 98ft
Maximum suction lift [m/ft]	8.5m - 28ft	8.5m - 28ft	8.5m - 28ft
Ø spherical free passage impeller [mm / in]	75mm - 3in	100mm - 4in	100mm - 4in
Capacity vacuum pump [m³/h-cfm]	m³/h - 40/63/100. cfm - 23/37/59	m³/h - 40/63/100 cfm - 23/37/59	m³/h - 40/63/100 cfm - 23/37/59
Type Hidrostral pump	D04R-HMN(1R/3R)+DDM1W-MQFFT	D04R-SMN(1R/3R)+ DDM1W-MQFFT	E125-M0(1/3R)+EFM1W-MQFFT
Material impeller	1R: GGG60 / 3R: Cr. Mo Steel	1R: GGG60 / 3R: Cr. Mo Steel	1R: GGG60 / 3R: Cr. Mo Steel
Material wear liner	1R:GG20 / 3R:Hidrohard	1R:GG20 / 3R:Hidrohard	1R:GG20 / 3R:Hidrohard
Shaft seals (double seals in oil bath)	Pump side: sic/tungsten carbide Engine side: sic/antimony carbon	Pump side: sic/tungsten carbide Engine side: sic/antimony carbon	Pump side: sic/tungsten carbide Engine side: sic/antimony carbon
Diesel engine make & type	Hatz 1D81Z	Perkins 403D-11	Perkins 404D-15
Euro Stage - US Tier	Not required / Tier 4 Final	3A / Tier 4 Interim	3A / Tier 4 Interim
Rated engine power [kW]-[hp]	5kW @ 1500 / 5.6 kW @ 1650 rpm. 6.7 hp @ 1500 / 7.5 hp @ 1650 rpm	8kW @ 1500 / 11.2kW @ 2000 rpm 11 hp @ 1500 / 15 hp @ 2000 rpm	14W @ 1500 / 17kW @ 1650rpm 19 hp @ 1500 / 23 hp @ 1650 rpm
Absorbed power pump full load [kW]-[hp]	3.2kW @1500 / 4.5kW @ 1650 rpm 4.3 hp @ 1500 / 6 hp @1650 rpm	4.1kW @1500 / 11kW @ 2000 rpm 5.5 hp @ 1500 / 15 hp @2000 rpm	10kW @1500 / 14kW @ 1650 rpm 13 hp @ 1500 / 19 hp @1650 rpm
Fuel consumption per hour @ BEP [litres] - [usg]	1500 rpm - 0.9 ltr - 0.24 usg 1650 rpm - 1.2 ltr - 0.32 usg	1500 rpm - 1.7 ltr - 0.45 usg 2000 rpm - 3 ltr - 0.8 usg	1500 rpm - 2.8 ltr - 0.74 usg 1650 rpm - 3.8ltr - 1 usg
Maximum engine [rpm]	standard 1500 rpm optional 1650 rpm	standard 1500 rpm optional 2000 rpm	standard 1500 rpm optional 1650 rpm
Capacity fuel tank [litres] - [usg]	180 litres - 47 usg	400 litres - 105 usg	340 litres - 90 usg
Running time @ BEP in hours	circa 180 hrs @ 1500 rpm circa 130 hrs @ 1650 rpm	circa 235 hrs @ 1500 rpm circa 130 hrs @ 1800 rpm	circa 120 hrs @ 1500 rpm circa 90 hrs @ 1650 rpm
Sound power level Lw [dB] Sound pressure level Lp [dB(A)] @ 7m/23ft	79 dB 54 dB(A)	80 dB 55 dB(A)	81 dB 56 dB(A)
Global measurements (l x b x h) [mm] - [in]	2015 x 948 x 1475 mm 79 x 37 x 58 in	2610 x 1060 x 1660 mm 103 x 42 x 65 in	2620 x 1046 x 1690 mm 103 x 41 x 66 in
Weight with fuel (filled) [kg] - [lbs]	1215 kg - 2679 lbs	2000 kg - 4409 lbs	1855 kg - 4090 lbs

Subject to changes without prior notice.

# Overview Super Betsy range [2/3]



Description	125H	125S	125SH	104S
<b>Ø Suction - Discharge flanges</b>	PN10, DN150	PN10, DN200 – PN10, DN150	PN10, DN150	PN10, DN200, PN10, DN150
<b>Max capacity [m³/h] - [usgpm]</b>	1500 rpm: 324 m³/h – 1506 usgpm 1800 rpm: 367 m³/h – 1670 usgpm	1500 rpm: 374 m³/h – 1647 usgpm 1900 rpm: 497 m³/h – 2188 usgpm	1500 rpm: 230 m³/h – 1013 usgpm 2200 rpm: 288 m³/h – 1268 usgpm	1500 rpm: 378 m³/h – 1664 usgpm 1800 rpm: 468 m³/h – 2060 usgpm
<b>Max discharge head [m/ft]</b>	1500 rpm: 28m – 79ft 1800 rpm: 40m – 131ft	1500 rpm: 31m – 102ft 1900 rpm: 51m – 167ft	1500 rpm: 27m – 89ft 2200 rpm: 59m – 194ft	1500 rpm: 40m – 89ft 1800 rpm: 69m – 194ft
<b>Maximum suction lift [m/ft]</b>	8.5m – 28ft	8.5m – 28ft	8.5m – 28ft	8.5m – 28ft
<b>Ø spherical free passage impeller [mm / in]</b>	100mm – 4in	90mm – 3 1/2in	75mm – 3in	75mm – 3in
<b>Capacity vacuum pump [m³/h-cfm]</b>	m³/h – 40/63/100 cfm – 23/37/59	m³/h – 40/63/100 cfm – 23/37/59	m³/h – 40/63/100 cfm – 23/37/59	m³/h – 40/63/100 cfm – 23/37/59
<b>Type Hidrostal pump</b>	E125-H0(1/3R)+EFM1W-MQFFT	E125-S0(1/3R)+EFM1W-MQFFT	E125-SH(1/3R)+EFM1W-MQFFT	F04K-S0(1R/3R)+FGM1W-XK
<b>Material impeller</b>	1R: GGG60 / 3R: Cr. Mo Steel	1R: GGG60 / 3R: Cr. Mo Steel	1R: GGG60 / 3R: Cr. Mo Steel	1R: GGG60 / 3R: Cr. Mo Steel
<b>Material wear liner</b>	1R:GG20 / 3R:Hidrohard	1R:GG20 / 3R:Hidrohard	1R:GG20 / 3R:Hidrohard	1R:GG20 / 3R:Hidrohard
<b>Shaft seals (double seals in oil bath)</b>	Pump side: sic/tungsten carbide Engine side: sic/antimony carbon	Pump side: sic/tungsten carbide Engine side: sic/antimony carbon	Pump side: sic/tungsten carbide Engine side: sic/antimony carbon	Pump side: sic/tungsten carbide Engine side: sic/antimony carbon
<b>Diesel engine make &amp; type</b>	Perkins 404D-22	Perkins 404D-22T Hatz 4H50TIC*	Perkins 404D-22	JCB IPU TC-55 JCB TCAE-55*
<b>Euro Stage - US Tier</b>	3A / Tier 4 Interim	3A / Tier 4 Interim 3B / Tier 4 Final*	3A / Tier 4 Interim	3A / Tier 4 Interim 3B / Tier 4 Final*
<b>Rated engine power [kW]-[hp]</b>	18.4kW@1500/22kW@1800 rpm 25hp@1500/26hp@1800 rpm	24kW@1500 / 32kW@1900 rpm 32hp@1500 / 43hp@1900 rpm	18.4kW @ 1500 / 30kW @ 2200 rpm 25hp @ 1500 / 40hp @ 2200rpm	43kW @ 1500 / 47kW @ 1800 rpm 58hp @ 1500 / 66hp @ 1800rpm
<b>Absorbed power pump full load [kW]-[hp]</b>	11kW @1500 / 21kW @ 1800 rpm 15hp @ 1500 / 28hp @1800 rpm	15kW @1500 / 30kW @ 1900 rpm 20hp @ 1500 / 40hp @1900 rpm	11kW @1500 / 23kW @ 2200 rpm 15hp @ 1500 / 31hp @ 2200 rpm	24kW @1500 / 45kW @ 1800 rpm 32hp @ 1500 / 60hp @ 1800 rpm
<b>Fuel consumption per hour @ BEP [litres] – [usg]</b>	1500 rpm – 3 ltr - 0.8 usg 1800 rpm – 5.6ltr – 1.5 usg	1500 rpm – 4 ltr - 1 usg 1900 rpm – 8ltr – 2 usg	1500 rpm – 3 ltr - 0.8 usg 2200 rpm – 6.2 ltr – 1.6 usg	1500 rpm – 6.4 ltr - 1.7 usg 1850 rpm – 12 ltr – 3.2 usg
<b>Maximum engine [rpm]</b>	standard 1500 rpm optional 1800 rpm	standard 1500 rpm optional 1900 rpm	standard 1500 rpm optional 2200 rpm	standard 1500 rpm optional 1850 rpm
<b>Capacity fuel tank [litres] – [usg]</b>	340 litres – 90 usg	340 litres – 90 usg	340 litres – 90 usg	575 litres – 151 usg
<b>Running time @ BEP in hours</b>	circa 113 hrs @ 1500 rpm circa 61 hrs @ 1800 rpm	circa 85 hrs @ 1500 rpm circa 42 hrs @ 1900 rpm	circa 113 hrs @ 1500 rpm circa 54 hrs @ 2200 rpm	circa 90 hrs @ 1500 rpm circa 48 hrs @ 1800 rpm
<b>Sound power level Lw [dB] Sound pressure level Lp [dB(A)] @ 7m/23ft</b>	83 dB 58 dB(A)	83 dB 58 dB(A)	83 dB 58 dB(A)	90 dB 65 dB(A)
<b>Global measurements (l x b x h) [mm] – [in]</b>	2620 x 1046 x 1690 mm 103 x 41 x 66 in	2620 x 1046 x 1690 mm 103 x 41 x 66 in	2620 x 1046 x 1690 mm 103 x 41 x 66 in	3553 x 1190 x 2137 mm 140 x 47 x 84 in
<b>Weight with fuel (filled) [kg] – [lbs]</b>	1900 kg – 4189 lbs	1920 kg – 4232 lbs	1900 kg – 4189 lbs	2500 kg – 5512 lbs



# Overview Super Betsy range [3/3]



Description	150H	200SL	300HD	300XXL
<b>Ø Suction - Discharge flanges</b>	PN10, DN200	PN10, DN200	PN10, DN300	PN10, DN 400 – PN10, DN 300
<b>Max capacity [m³/h] - [usgpm]</b>	1500 rpm: 583 m³/h – 2567 usgpm 1750 rpm: 684 m³/h – 3012 usgpm	1500 rpm: 630 m³/h – 2774 usgpm 1800 rpm: 738 m³/h – 3250 usgpm	1600 rpm: 1116 m³/h – 4914 usgpm	1000 rpm: 1476 m³/h – 6499 usgpm 1225 rpm: 1782 m³/h – 7846 usgpm Reduction gear box fitted. Ratio: 1:151
<b>Max discharge head [m/ft]</b>	1500 rpm: 39m – 128ft 1750 rpm: 53m – 174ft	1500 rpm: 22m – 72ft 1800 rpm: 32m – 105ft	1600 rpm: 32m – 105ft	1000 rpm: 24m – 79ft 1225 rpm: 36m – 102ft
<b>Maximum suction lift [m/ft]</b>	8.5m – 28ft	8.5m – 28ft	8.5m – 28ft	8.5m – 28ft
<b>Ø spherical free passage impeller [mm / in]</b>	115mm – 4.5in	100mm – 4in	120mm – 4.7in	150mm – 6in
<b>Capacity vacuum pump [m³/h-cfm]</b>	m³/h – 40/63/100. cfm – 23/37/59	m³/h – 40/63/100 cfm – 23/37/59	m³/h – 40/63/100 cfm – 23/37/59	m³/h – 40/63/100 cfm – 23/37/59
<b>Type Hidrostal pump</b>	F06K-H03R+FGM1W-XK	E08R-SLN(1R/3R)+EFM1W-MQFFT	F10K-HD3R+FGM1W-XK	H12K-SD3R+HGM1W-XK
<b>Material impeller</b>	3R: Cr. Mo Steel	1R: GGG60 / 3R: Cr. Mo Steel	3R: Cr. Mo Steel	3R: Cr. Mo Steel
<b>Material wear liner</b>	3R:Hidrohard	1R:GG20 / 3R:Hidrohard	3R:Hidrohard	3R:Hidrohard
<b>Shaft seals (double seals in oil bath)</b>	Pump side: sic/tungsten carbide Engine side: sic/antimony carbon	Pump side: sic/tungsten carbide Engine side: sic/antimony carbon	Pump side: sic/tungsten carbide Engine side: sic/antimony carbon	Pump side: sic/tungsten carbide Engine side: sic/antimony carbon
<b>Diesel engine make &amp; type</b>	JCB IPU TC-55 JCB TCAE-55*	Perkins 404D-22T Hatz 4H50TIC*	JCB IPU TC-55 JCB TCAE-55*	Perkins 1104D-E44TA
<b>Euro Stage - US Tier</b>	3A / Tier 4 Interim 3B / Tier 4 Final*	3A / Tier 4 Interim 3B / Tier 4 Final*	3A / Tier 4 Interim 3B / Tier 4 Final*	3A / Tier 4 Interim
<b>Rated engine power [kW]-[hp]</b>	43kW @ 1500 / 47kW @ 1750 rpm 58hp @ 1500 / 66hp @ 1750rpm	24kW @ 1500 / 31kW @ 1800 rpm 32hp @ 1500 / 42hp @ 1800 rpm	46kW @ 1600 62hp @ 1600	71kW @ 1500 / 80kW @ 1850rpm 95hp @ 1500 / 107hp @ 1850rpm
<b>Absorbed power pump full load [kW]-[hp]</b>	28kW @1500 / 44kW @ 1750 rpm 37hp @ 1500 / 59hp @ 1750 rpm	17kW @1500 / 28kW @ 1800 rpm 23hp @ 1500 / 38hp @1800 rpm	44kW @1600 rpm 59hp @ 1600 rpm	41kW @1500 / 75kW @ 1850 rpm 55hp @ 1500 / 100hp @ 1850 rpm
<b>Fuel consumption per hour @ BEP [litres] – [usg]</b>	1500 rpm – 7.4 ltr – 1.9 usg 1750 rpm – 11.8 ltr – 3.1 usg	1500 rpm – 4.6ltr – 1.2 usg 1800 rpm – 7.6 ltr – 2usg	1600 rpm – 11.8 ltr – 3.1 usg	1500 rpm – 11 ltr – 2.9usg 1850 rpm – 20 ltr – 5.3usg
<b>Maximum engine [rpm]</b>	standard 1500 rpm optional 1750 rpm	standard 1500 rpm optional 1800 rpm	standard 1600 rpm	standard 1500 rpm optional 1850 rpm
<b>Capacity fuel tank [litres] – [usg]</b>	575 ltr – 151 usg	575 ltr – 151 usg	575 ltr – 151 usg	700 ltr – 185 usg
<b>Running time @ BEP in hours</b>	circa 78 hrs @ 1500 rpm circa 48 hrs @ 1750 rpm	circa 125 hrs @ 1500 rpm circa 75 hrs @ 1800 rpm	circa 50 hrs @ 1600 rpm	circa 63 hrs @ 1500 rpm circa 35 hrs @ 1850 rpm
<b>Sound power level Lw [dB] Sound pressure level Lp [dB(A)] @ 7m/23ft</b>	89 dB 64 dB(A)	90 dB 65 dB(A)	90 dB 65 dB(A)	95 dB 70 dB(A)
<b>Global measurements (l x b x h) [mm] – [in]</b>	3692 x 1190 x 2306 mm 145 x 47 x 91 in	3588 x 1190 x 2306 mm 141 x 47 x 91 in	3695 x 1190 x 2382 mm 145 x 47 x 94 in	4943 x 1460 x 2814 mm 195 x 47 x 111 in
<b>Weight with fuel (filled) [kg] – [lbs]</b>	3140 kg – 6923 lbs	2930 kg – 6460 lbs	3435 kg – 7573 lbs	5990 kg – 13206 lbs

# Life cycle costs and the huge fuel savings to be made by using the **SuperBetsy Pumping System**

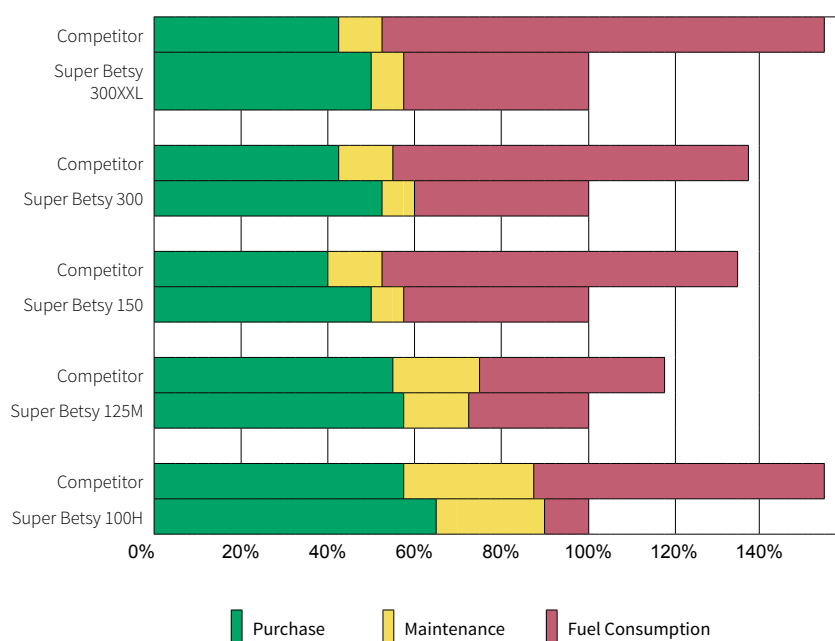
Energy costs are the largest single element in pump Life Cycle Costs (LCC). By reducing the energy consumption during the operational life of a pump unit, large financial savings can be made. The SuperBetsy Pumps are fitted with the Hidrostal Screw Centrifugal impellers, which have a large spherical free passage with inherent non-clogging properties. The elimination of solids “hang up” reduces energy consumption because a partially blocked pump is always inefficient.

Conventional pumps with large free passages, for example vortex impeller pumps or self-priming pumps have a large free passage but they do not possess the same high degree of non-clogging properties as a Hidrostal, and their efficiency is very much lower.

The fuel savings which can be achieved by using the Super Betsy Pumping Systems is best illustrated by the following comparison:

A Betsy 125M operating at 1500 rpm will consume 3 litres of diesel per hour. A diesel driven pump set fitted with a vortex impeller with the same and comparable pumping conditions will consume 7.8 litres of diesel fuel per hour. We assume now a fuel price of € 1.20 per litre. Over a period of 168 hours (one week of continuous running) fuel consumption of a Vortex impeller will be about 1310 litre with fuel costs of € 1,572.50. Fuel consumption of a Super Betsy 125M will be about 504 litre with fuel costs of € 604.80, a saving on fuel costs of 62%.

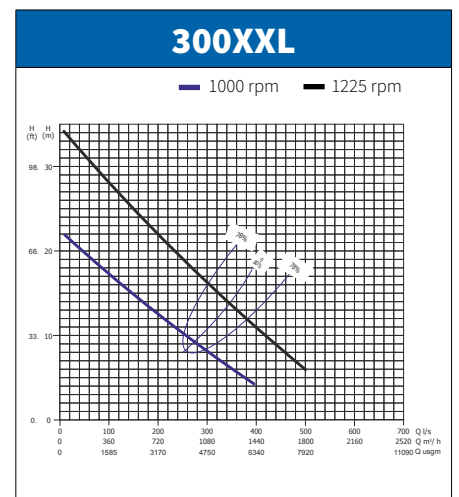
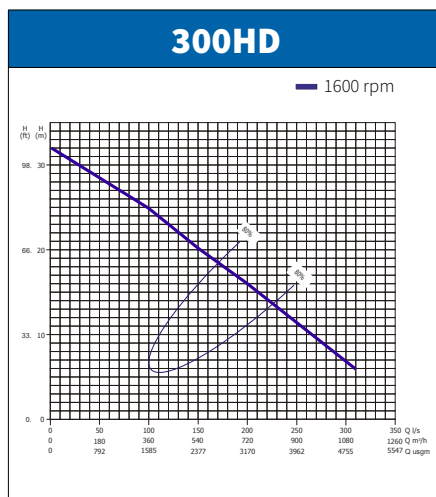
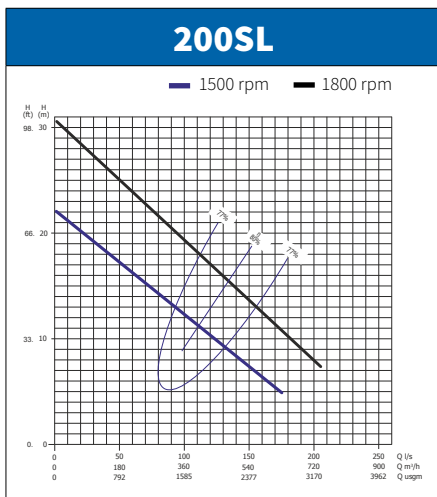
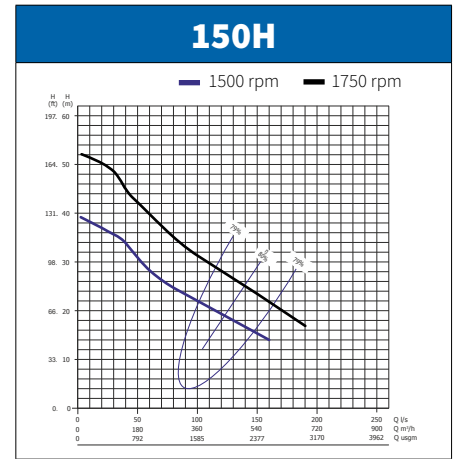
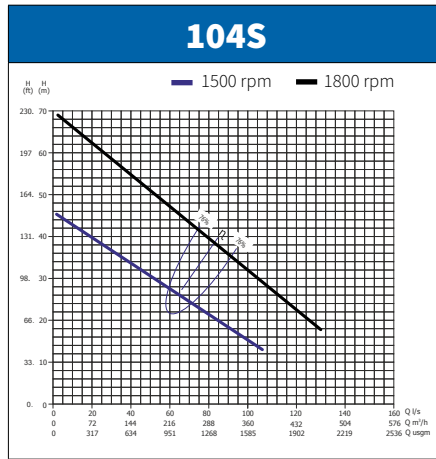
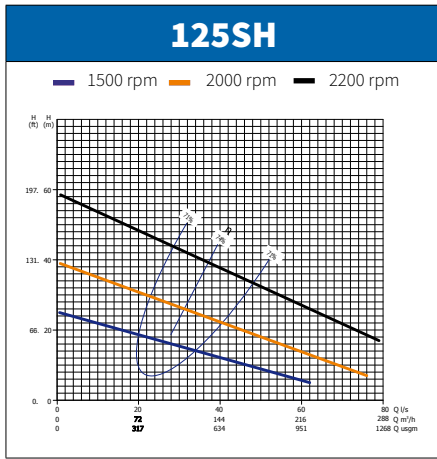
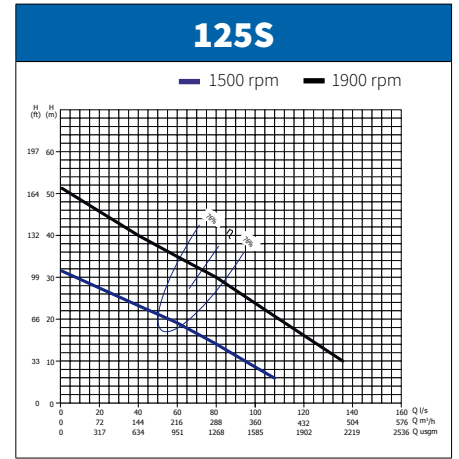
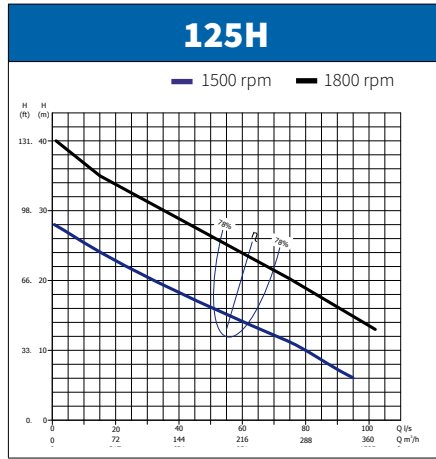
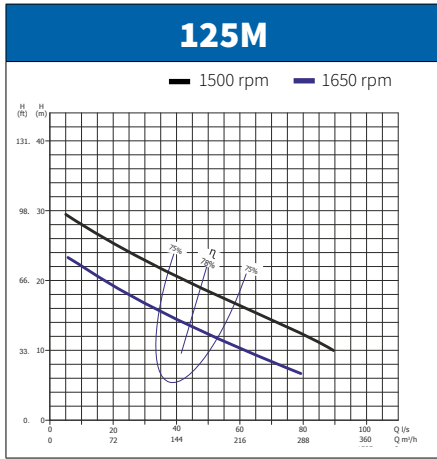
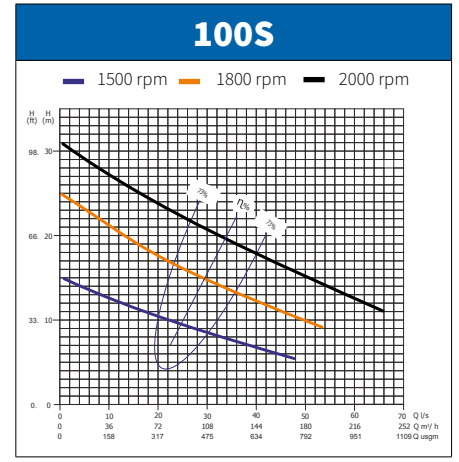
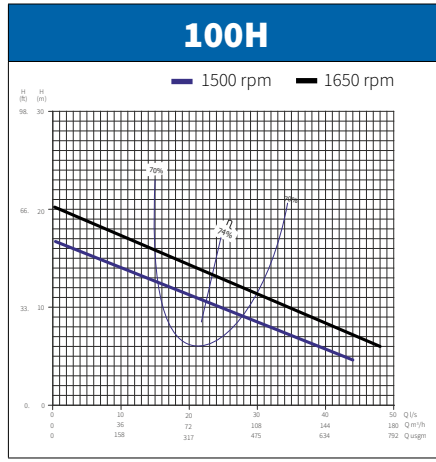
## Average Life Cycle Costs after 3000 hours



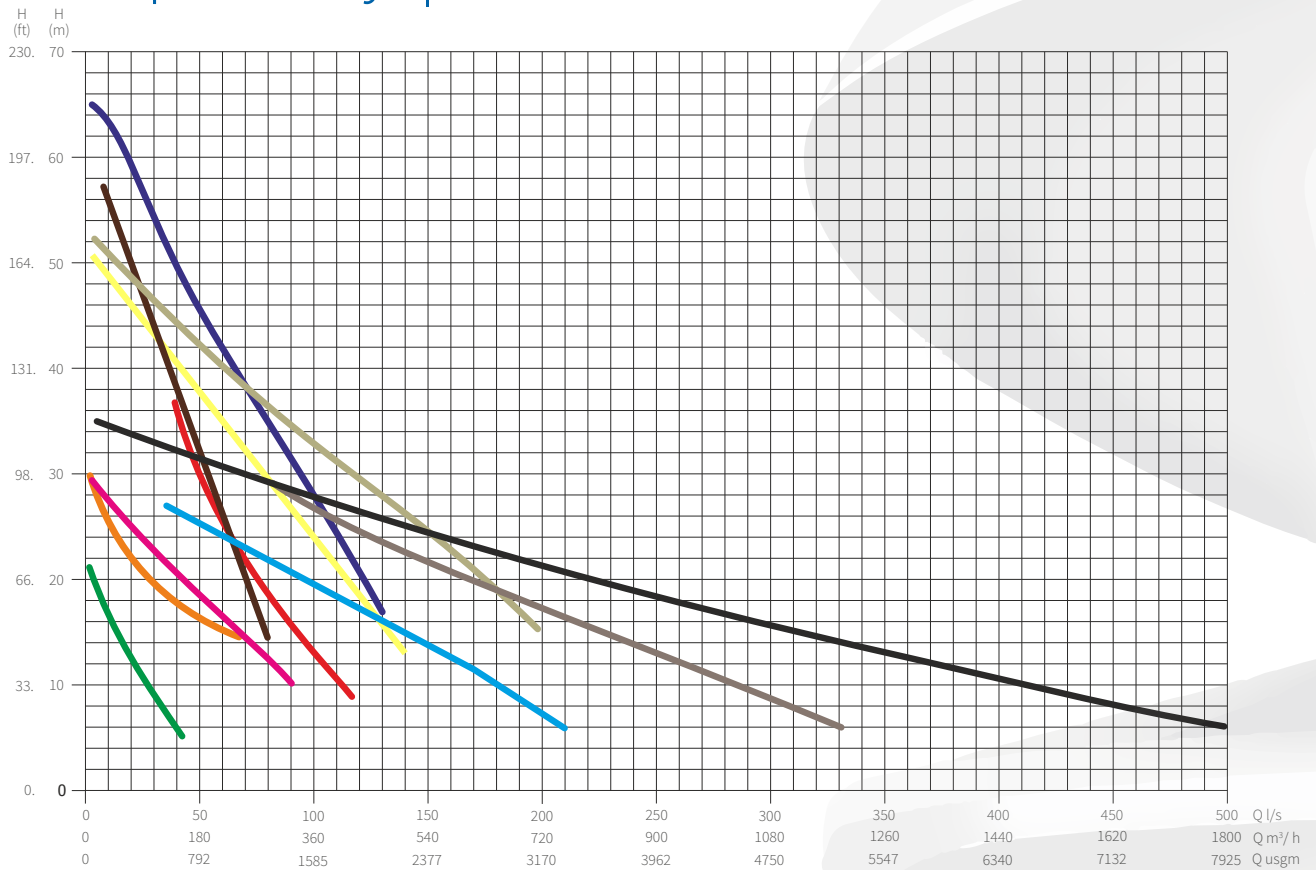
## Other areas where Super Betsy will save you costs

1. The large integral fuel tank reduces the need to constantly refuel, saving unnecessary labour and transport costs, especially on weekends when labour costs are high.
2. Standard level switching on all models. This automatic monitoring system will start and stop the pump unit automatically depending on the water level.
3. BetsyPrime. This automatic dry prime system only runs when required. For example during initial start-up priming and when operating under snore conditions.
4. The externally adjustable wear liner allows easy clearance adjustment between the wear liner and the impeller of the pump, thereby allowing the original efficiency to be maintained.
5. High quality mechanical shaft seals, either Sic-Tungsten Carbide (medium side) or Sic-Antimony Carbon (atmospheric side)
6. in an oil bath, gives extremely long-life and low maintenance intervals.certification and low maintenance requirements.
6. Low noise emissions allows the pump unit to be deployed in noise sensitive areas without the need for an electricity supply.
7. Modern diesel engines with current European Stage & EPA Tier certification combined with low maintenance requirements.
8. Fully galvanized noise reduction canopy with easy access and lockable doors.The galvanized canopy will withstand corrosion and is robustly built guaranteeing many years of service.
9. Built with standard products. All of Super Betsy’s components are of the highest quality and are obtainable throughout the world from local suppliers. Alternatively our Spares Department can quickly supply parts from our comprehensive stock.
10. Super Betsy pumps are built on the basis of practical knowledge and the technical understanding that we have gained over the last 60 plus years in designing and manufacturing high grade pump units that are suitable for the most diverse and demanding conditions.

# SuperBetsy Curves



# SuperBetsy | Curves



- Super Betsy 100H
- Super Betsy 100S
- Super Betsy 125M
- Super Betsy 125H
- Super Betsy 125S
- Super Betsy 125SH
- Super Betsy 104S
- Super Betsy 150H
- Super Betsy 200SL
- Super Betsy 300HD
- Super Betsy 300XXL

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