

Pumping Systems

NEWTON TROJAN

Multi-Use Pumping System

Rev 2.0 - 14 January 2015

PRODUCT CODE - TR

PRODUCT OVERVIEW

The Newton Trojan is a specialist pumping system suitable for a variety of pumping tasks ranging from lifting sewage from basements to the higher level sewage system to the removal of ground water and surface drainage. The sump is available in depths of 1m and 1.5m. Please see page 5 for dimensions.

When used for sewage, the system does not provide 24 hour storage capabilities and so is not capable of receiving all of the house sewage and one of our larger 'whole house' pumping systems should be specified instead.

PUMP OPTIONS

CLEAN WATER

Newton CP400 - P32 - The Newton CP400 is a medium head and medium performance clean water pump.

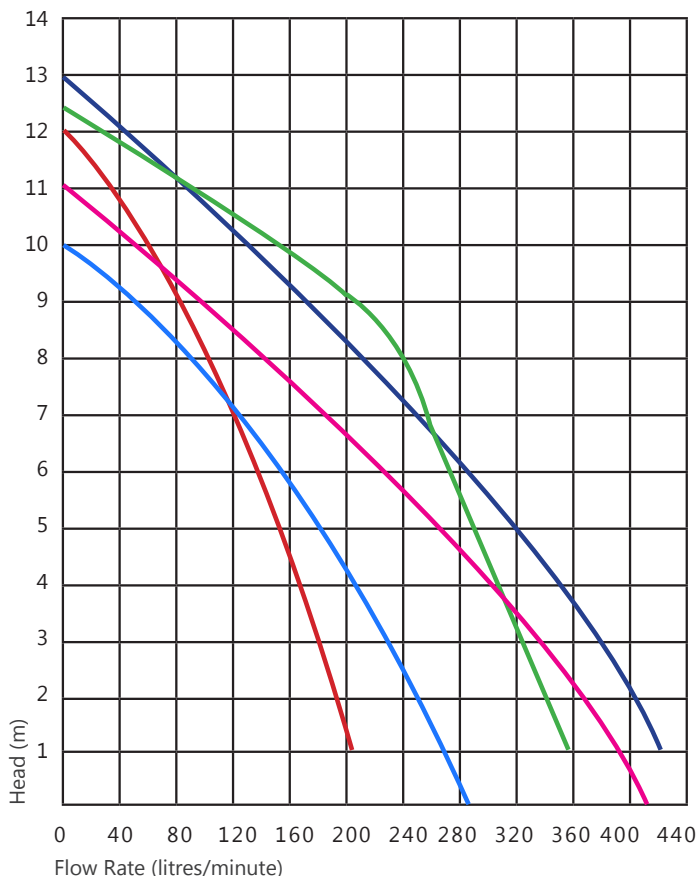
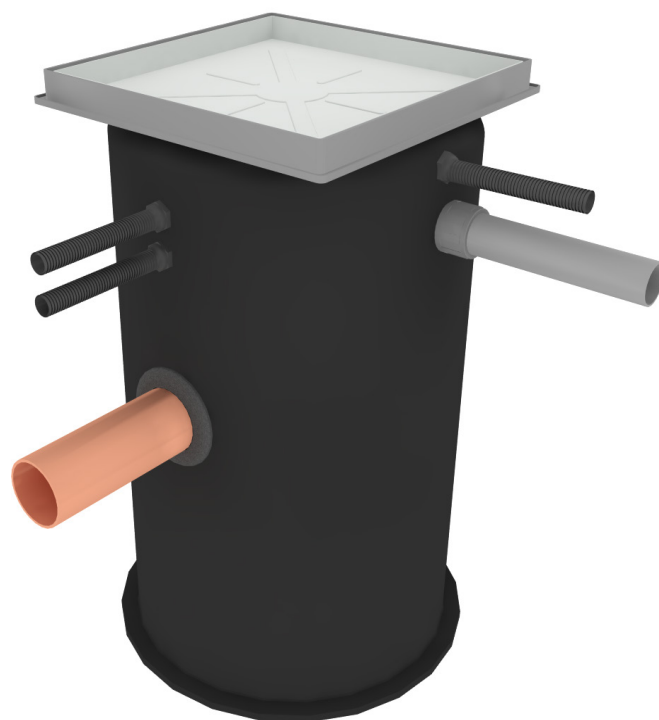
Newton NP400 - P2 & P3 - The Newton NP400 is a high head and medium performance clean water pump.

Newton CP750 - P33 - The Newton CP750 is a medium head and high performance clean water pump.

Newton NP750 - P5 & P6 - The Newton NP750 high head and high performance clean water pump.

SEWAGE

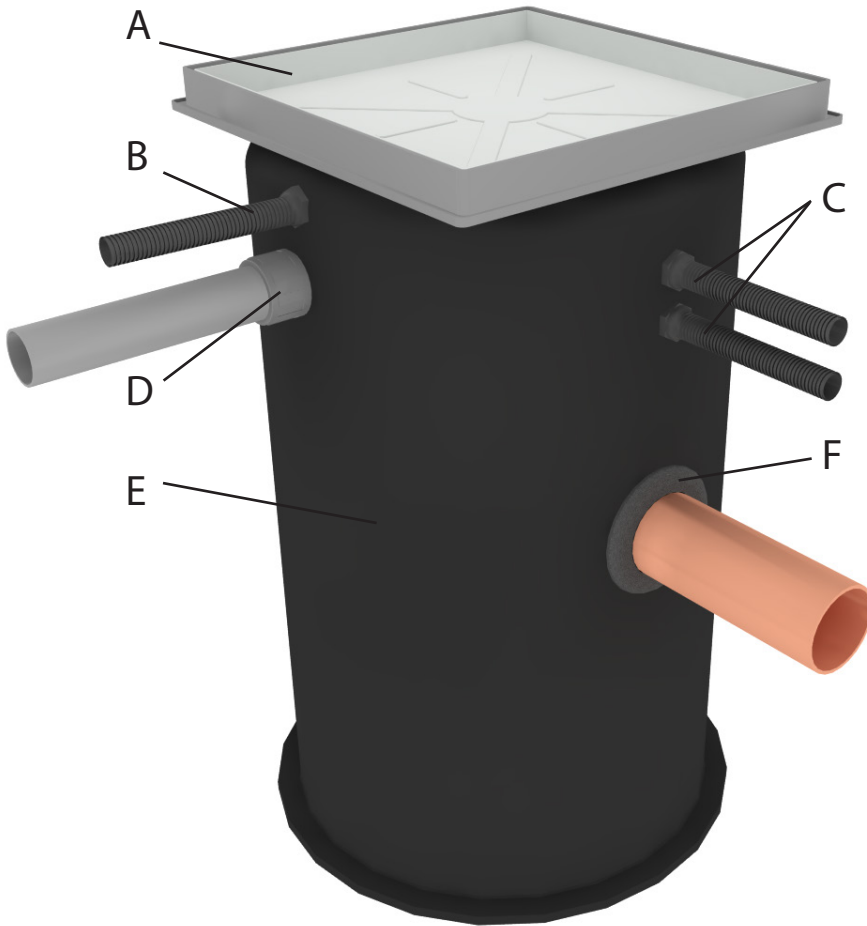
Newton SP750 Cutter - P35 & P36 - The Newton SP750 Cutter is a high quality sewage pump incorporating a tungsten carbide tipped cutting impellor which rotates against a serrated suction cover to cut solid waste before pumping, resulting in a much lower risk of blockage than similar sized vortex impellor sewage pumps.



Pump Model	Pump Type	Water Type	Number of pumps	Discharge Lines	Chamber depth	
					1.0m Code	1.5m Code
CP400 P32	Auto 50mm Vortex	Clean	One	One	TR17	TR19
			Two	One	TR18	TR20
NP400 P2	Auto 50mm Vortex	Clean	One	One	TR21	TR23
			Two	One	TR22	TR24
NP400 P3	Manual 50mm Vortex	Clean	One	One	TR30	TR32
			Two	One	TR31	TR33
CP750 P33	Auto 80mm Vortex	Clean	One	One	TR34	TR36
			Two	One	TR35	TR37
NP750 P5	Auto 50mm Vortex	Clean	One	One	TR38	TR40
			Two	One	TR39	TR41
NP750 P6	Manual 50mm Vortex	Clean	One	One	TR42	TR44
			Two	One	TR43	TR45
SP750 Cutter P35	Auto 50mm Cutter	Sewage	One	One	TR13	TR15
			Two	One	TR14	TR16
SP750 Cutter P36	Manual 50mm Cutter	Sewage	One	One	TR46	TR48
			Two	One	TR47	TR49

NEWTON TROJAN

Multi-Use Pumping System

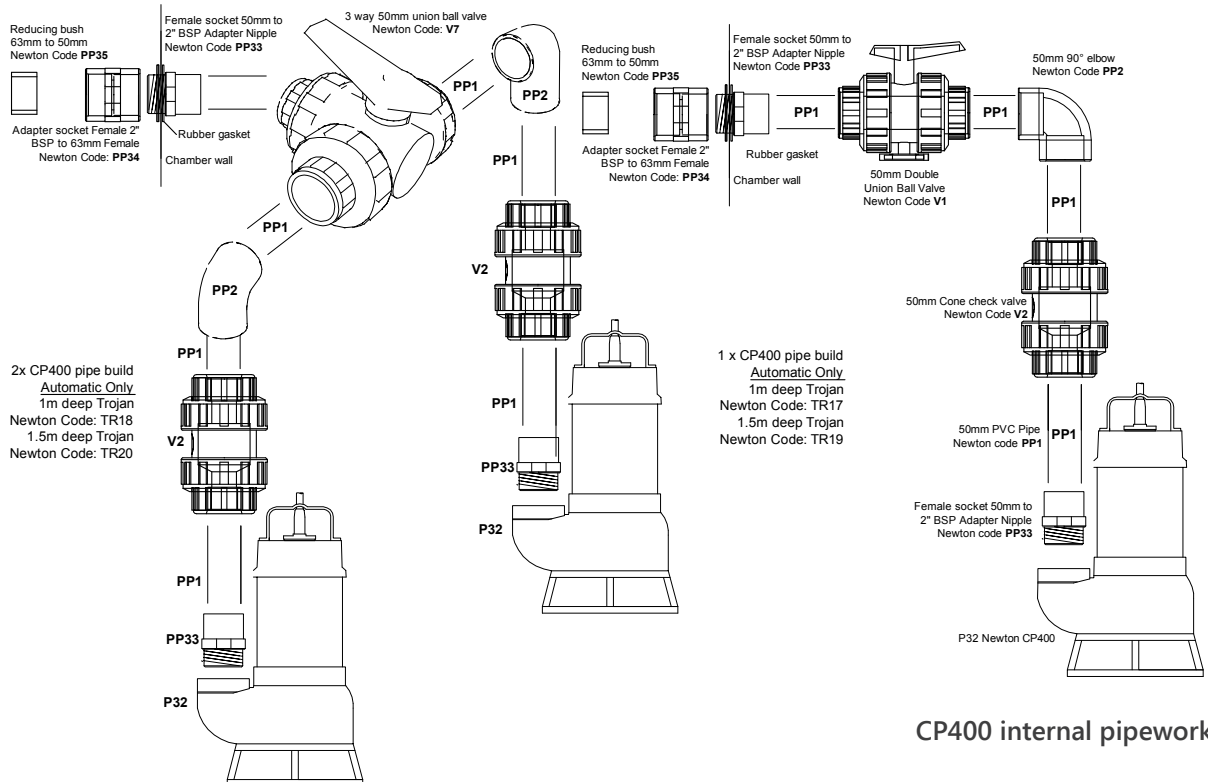


SUMP PARTS

Included within the sump packaging is:

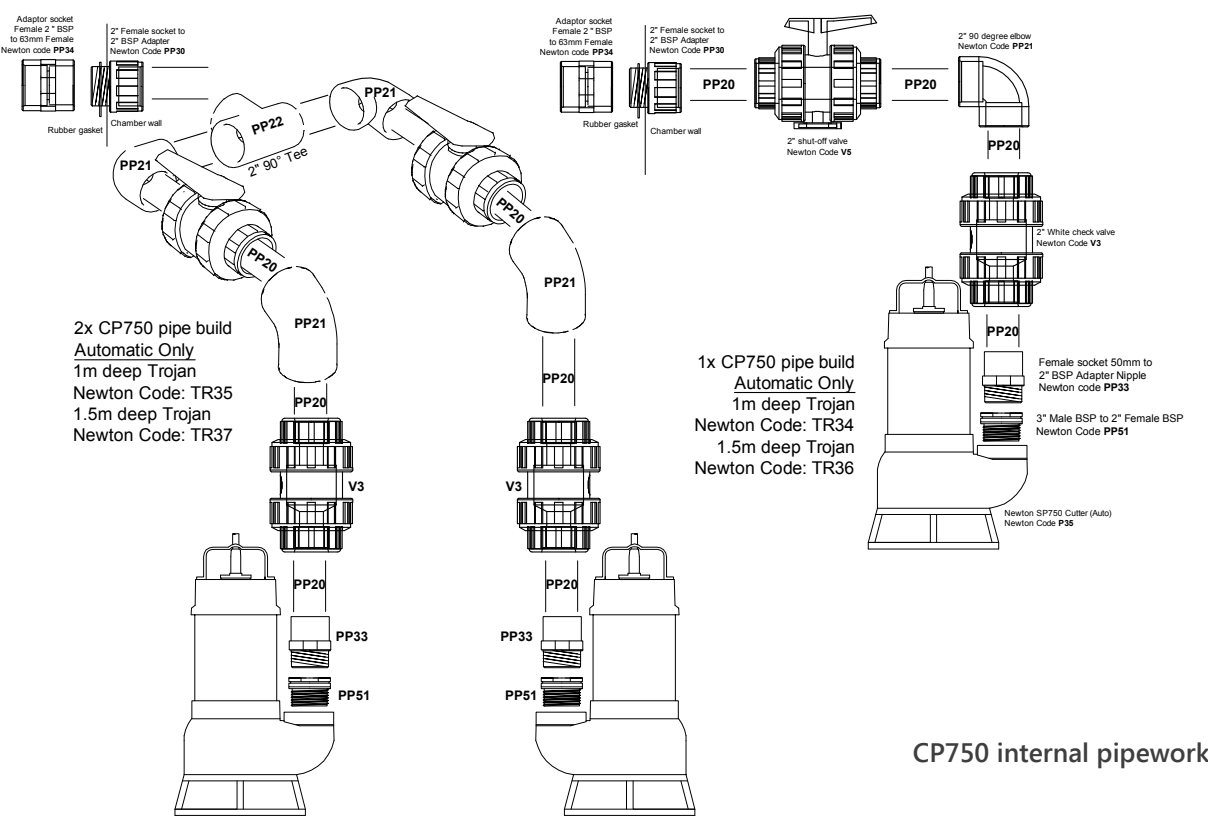
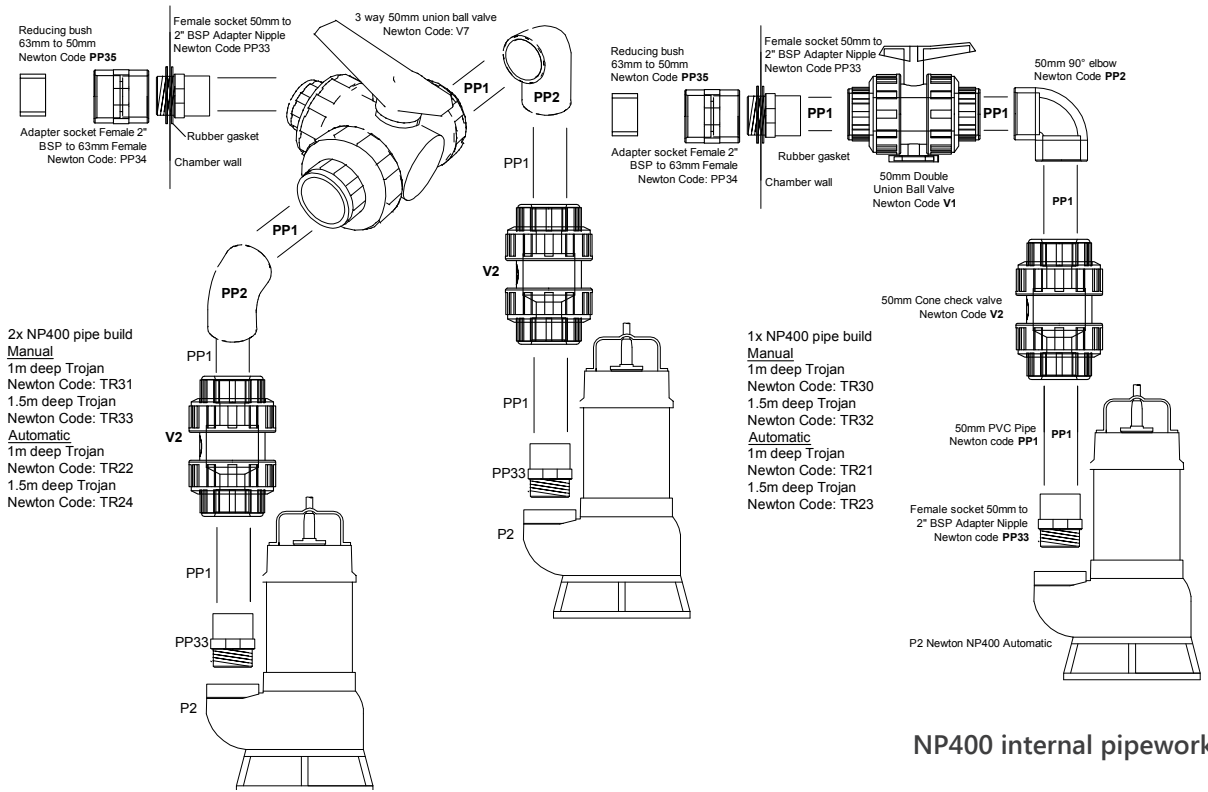
- A. 1 x Locked & Sealed Lid & Frame.
- B. 1 x 10m of 32mm flexible vent pipe with bulkhead fittings. Supplied loose. 34mm hole cutter required to form hole in preferred location. 110mm saddle is also supplied (not shown) to connect the vent to a stack pipe.
- C. 2 x 5m of 32mm flexible power conduit with bulkhead fittings. Supplied loose. 34mm hole cutter required to form holes in preferred location.
- D. 1 x 63mm uPVC female socket bulkhead connection ready for 63mm or 50mm uPVC solvent weld pipe. Reduction to 50mm is by a 63mm to 50mm reducer
- E. 1 x Trojan sump at either 1m or 1.5m depth.
- F. 1 x 110mm rubber wall flange to receive 110mm invert pipe. Supplied loose. A hole cutter is supplied to form hole in preferred location. Further 110mm wall flanges can be purchased at the time of order.
- G. Pipe glue 240ml) - not shown.
- H. Lifting chains - not shown - 1.5m deep chamber only.

The following diagrams confirm the internal pipework supplied with your choice of pumps. Most deliveries in London will see the system fully built, but where we use external couriers, the chamber, pump(s) and pipework will be delivered as individual items.



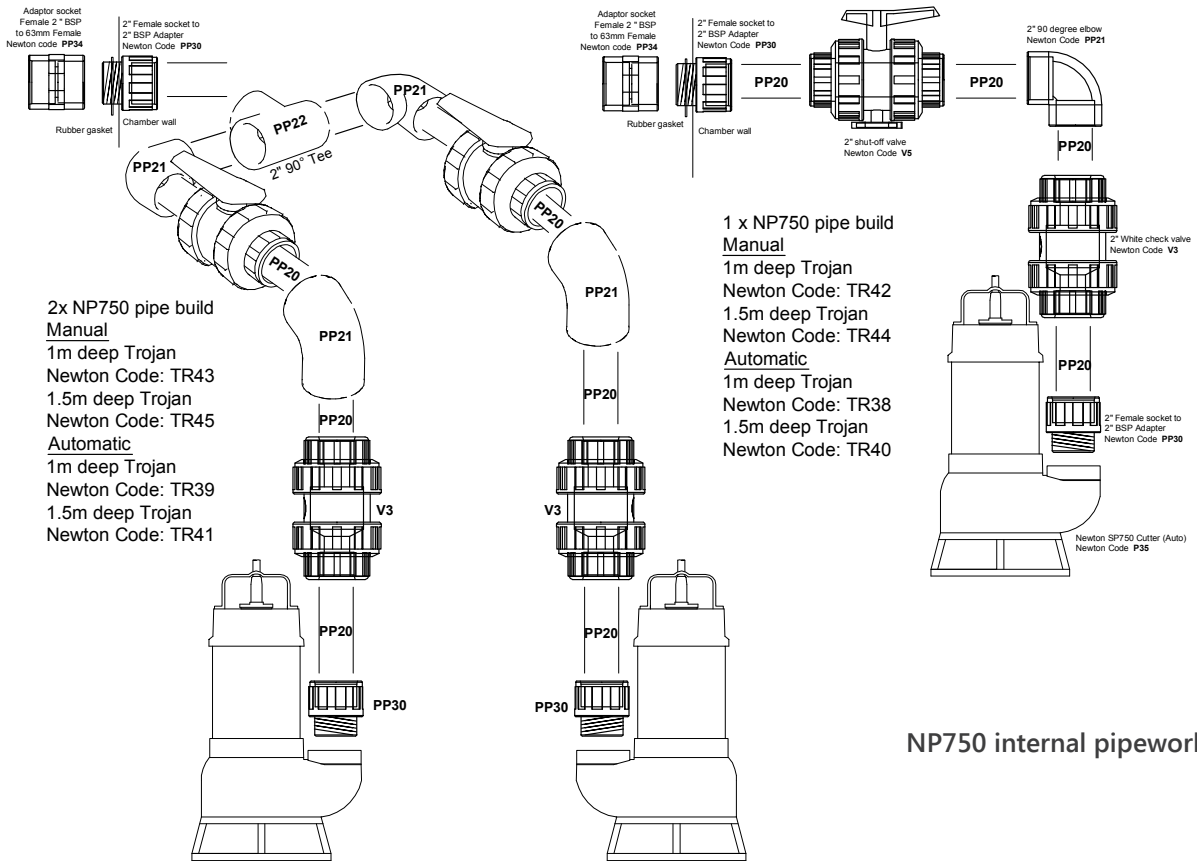
NEWTON TROJAN

Multi-Use Pumping System

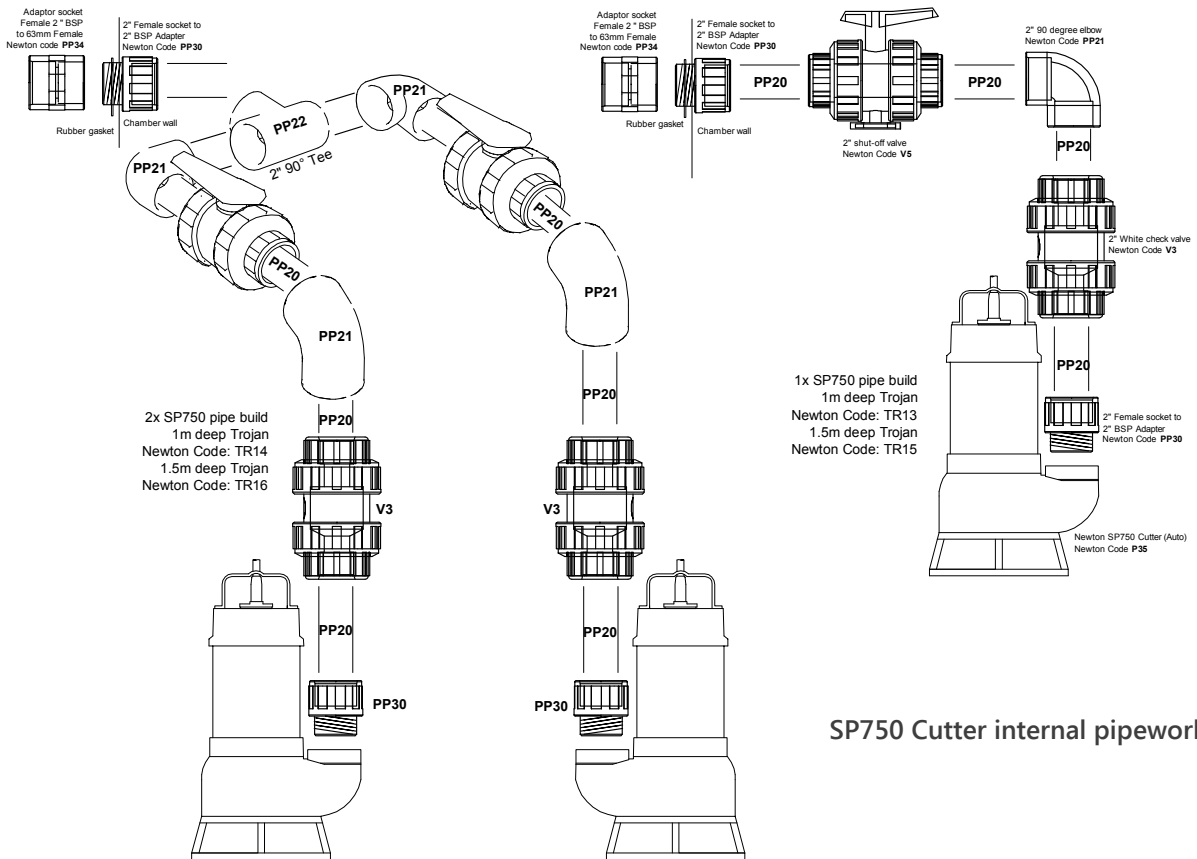


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Multi-Use Pumping System



NP750 internal pipework



SP750 Cutter internal pipework

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Multi-Use Pumping System

TECHNICAL DATA

	CP400	NP400	CP750	NP750	SP750 CUTTER
Pump Design	Vortex	Semi-Vortex	Vortex	Vortex	Cutter
Discharge Bore	50mm	50mm	80mm	50mm	50mm
Max Soft Solids Handling	10mm	7mm	15mm	35mm	20mm (cut by pump)
Recommended Discharge Pipe	50/63mm	50/63mm	63mm	63mm	63mm
Pumping Head (Max)	10.0m	12.2m	11.0m	12.5m	13.0m
Flow Rate (Max)	290 litres/min	220 litres/min	410 litres/min	360 litres/min	430 litres/min
Flow Rate at 4m Head	220 litres/min	160 litres/min	295 litres/min	320 litres/min	360 litres/min
Pump Switching	Auto	Auto or Panel	Auto	Auto or Panel	Auto or Panel
Float Switch	Vertical	Vertical	Vertical	Vertical	Sewage Paddle
Pump Start Level (auto)	Fully Adjustable	Fully Adjustable	Fully Adjustable	Fully Adjustable	675mm
Min Stop Water Level (auto)	80mm	90mm	127mm	115mm	145mm
Length	215mm	241mm	260mm	236mm	255mm
Width	155mm	185mm	160mm	173mm	190mm
Height	395mm	328mm	434mm	380mm	445mm
Weight	12.0kg	11.3kg	15.0kg	8.5kg	19.9kg
Clean Water Pumping	Yes	Yes	Yes	Yes	No
Effluent Pumping	No	No	No	Yes ¹	Yes
Sewage Pumping	No	No	No	No	Yes
Fluid Temperature Range	0 to 40° C	0 to 35° C	0 to 35° C	0 to 35° C	0 to 35° C
Motor Output	400W	400W	750W	750W	750W
Power Supply	Single Phase	Single Phase	Single Phase	Single Phase	Single Phase
Starter	Capacitor Type	Capacitor Type	Capacitor Type	Capacitor Type	Capacitor Type
Body Material	Stainless Steel	Cast Aluminium	Stainless Steel	Stainless Steel	Stainless Steel
Shaft Material	Stainless Steel	Stainless Steel	Stainless Steel	Stainless Steel	Stainless Steel
Shaft Seals	Carbon Ceramic	Silicon Carbide	Carbon Ceramic	Silicon Carbide	Carbon Ceramic

¹ Only with manual pumps with control panel and sewage type paddle floats.

PUMP(S) PIPEWORK INSTALLATION

Identify whether which pump you have and check that the pipework that was supplied is correct using the pipe builds shown above.

Fit the pump(s) into the chamber before inserting the chamber into the ground to ensure that the pipework and fittings fit correctly - adjust if necessary. Remove the pumps using the release union at the top of the vertical pipe after the pipework fit and replace after the bottom of the sump is concreted in - see stage F on page 6.

Glue the pipe parts as per the applicable pipe build drawing for your pump(s) ensuring that the pipe ends and sockets are fully abraded and cleaned before gluing. Apply the Newton Wet'R Dry uPVC solvent to both the pipe and the sockets.

ALARM

The Trojan is not supplied with an alarm as standard. If an alarm is required, please ensure one is ordered to be supplied with the main system. If a control panel is to be used, a separate alarm is not required. Please see the alarm choices under Ancillaries & Options on page 4.

INLET CONNECTIONS

The Trojan is supplied with 1 x 110mm wall flange and 1 x hole cutter of the correct size for the wall flange. Cut the hole to correspond with the invert due to enter the chamber. 63mm or further 110mm wall flanges can be purchased for extra connections into the sump. Please see page 4.

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Multi-Use Pumping System

ANCILLARIES & OPTIONS

Alternative Frame and Lid

Polypropylene Frame - Galvanised Steel 80mm recess block paviour lid for external use	TPLS2
Polypropylene Frame - Polypropylene Flat Patterned Lid for external use	TPLS3
Galvanised Frame - Galvanised Steel 600x600x45mm lid for higher quality internal use	TPLS4
Galvanised Frame - Galvanised Steel 600x600x45mm lid with brass edging for very high quality internal use	TPLS5
Galvanised Frame - Galvanised Steel 600x600x45mm lid with stainless edging for very high quality internal use	TPLS6

Sump Options

Wet Install Kit - Included three shut of valves, Tremie Pipe and Water plug	TPK9
Wall flange for 63mm inlet - supply only	TPO1
Wall flange for 110mm inlet - supply only	TPO2

Power back-up

800W Vicron MultiPlus Battery Back-up System for pumps up to 250W	BB1
1200W Vicron MultiPlus Battery Back-up System for pumps up to 400W	BB2
3000W Vicron MultiPlus Battery Back-up System for pumps up to 750W	BB3
3000W Vicron Quattro Generator Battray Back-up System for pumps up to 750W	BB4

Extra batteries and ancillaries

ABX-AGM M31 - 12v, 90Ah deep cycle battery	BB20
Odyssey PC2150 - 12v, 100Ah deep cycle battery	BB21
Odyssey PC1800 - 12v, 214Ah deep cycle battery	BB22
Set of cables for parallel connection of further batteries	BBC
Battery Box - does not fit the PC1800	PA4

Alarm Options

9V battery alarm - Clean water alarm	PA50
Sewage Alarm - Alarm with sewage float	CP5
Sewage Alarm with Beacon - Alarm with sewage float	CP6

Pump Control & Alarm

Pump Controller Pro - Sophisticated twin pump control with alarm	CP2
Sewage Control Panel - Twin pump panel with alarm for sewage systems	CP8
Newton Pump Controller - Twin pump panel with weekly start cycle and alarm	CP9

uPVC Pressure Rated Discharge Pipe

50mm Pipe - 2.5m lengths	PP1
50mm 90 degree elbows	PP2
50mm 45 degree elbows	PP3
50mm female-female sockets	PP4
50mm Tee	PP5
50mm wall mount clips	PP6
50mm Hose tail Spigot for flexi pipe	PP38
63mm Pipe - 2.5m lengths	PP10
63mm 90 degree elbows	PP11
63mm 45 degree elbows	PP12
63mm female-female sockets	PP13
63mm Tee	PP14
63mm wall mount clips	PP15
63mm Hose tail Spigot for flexi pipe	PP39
uPVC Wet 'R Dry solvent for wet conditions & quick pipe use - 240ml	G2

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HEALTH AND SAFETY AT WORK

The dangers of working with water and electricity pose severe threats to health if obvious and fundamental precautions are not taken. Therefore if you are in any doubt to any of the following, please do not hesitate to contact us.

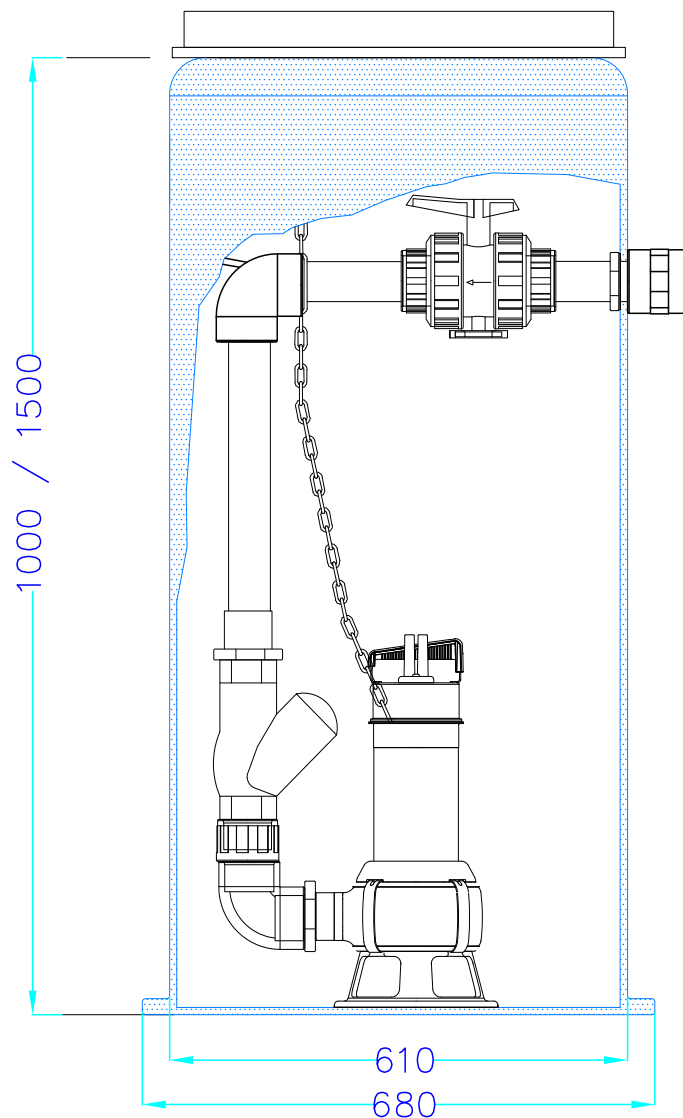
The pumps should be installed by a competent person in accordance with Part P of the building regulations.

SUMP INSTALLATION - GENERAL

VERY IMPORTANT NOTE: THIS HDPE CHAMBER IS A LINER AND MUST ALWAYS BE SUPPORTED BY A CONCRETE BASE AND CONCRETE SURROUND OF ADEQUATE THICKNESS FOR THE GROUND CONDITIONS. INSTALLATION MUST BE AS PER THE FOLLOWING INSTRUCTIONS.

THE CHAMBER REQUIRES A MINIMUM OF 100mm OF GOOD GRADE CONCRETE SURROUNDING IT TO PREVENT BUOYANCY. DECISIONS AS TO THE VOLUME AND MASS OF THE SURROUNDING CONCRETE MUST BE TAKEN BY A STRUCTURAL ENGINEER IF THE CHAMBER IS PLACED WITHIN A STRUCTURAL SLAB OR RAFT.

- 1) Select a suitable location for the chamber. Ensure that the sump lid is accessible once all the finishing works are complete. Pay particular attention to the proposed line of stud and block walls that may be built after the sump installation.
- 2) Check that no underground cables, pipes or service ducts lie beneath.
- 3) Ensure that sufficient space is available to receive the chamber, pipe work and surrounding concrete.
- 4) If water pressure exists during the installation, a method of dewatering will be required and a Wet Install Kit - TPK9 is available. Please contact Newton Waterproofing Systems for further information.



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SUMP INSTALLATION

NOTE: It is vitally important that builders debris is not introduced to the sump during installation. Clean the sump out completely prior to final fitting and commissioning of the pumps if debris does enter the sump.

STEP 1.

A. Excavate a hole ready for the sump chamber. The hole should be at least 200mm larger diameter than the sump chamber to allow for sufficient concrete to surround the chamber to prevent flotation. Where the sump is to be installed within a structural slab, an engineer should advise on the volume and mass of concrete surrounding the chamber. The depth of the excavation or concrete box will depend on your finished floor height.

B. Create a concrete supporting base with a minimum of 100mm of concrete which is of a consistency that will support the chamber during the levelling process.

STEP 2.

C. Place the sump chamber into the excavation with the base directly on to the freshly laid concrete base. Rotate the chamber so that the outlet is in line with your preferred discharge line route. Use a long builders level and adjust the chamber so it is level. Pour and then compact about 200mm of concrete to the sides of the chamber and the excavation. With each 100mm of concrete poured, place an equivalent depth of water into the sump chamber. Keep checking the level and height periodically and adjust if necessary. Let the concrete go off sufficiently so that the sump is locked in place and then go to Step 3.

STEP 3.

D. Fit the connecting parts to the sump ready for final concreting in of the sump chamber:

D1. Fit inlet(s) into the sump chamber through the wall flange(s).

D2. Fit the 32mm vent pipe. Run the pipe to a suitable connection such as a stack pipe. Use the supplied saddle clamp to make the connection to the stack pipe.

E. Connect 63mm pressure pipe to the outlet socket (Part D) or 50mm pressure pipe to the reducer for CP250, NP400 and CP400 pumps, after gluing the reducer into the socket. 50mm pipe can be used for the CP750 and NP750 pumps but 63mm pipe is recommended. The SP750 Cutter must use 63mm pipe and fittings. Use a 90 degree elbow at the wall if the pipe is to rise vertically at this point. Continue with pipe fitting to final connection if possible, but at a minimum the vertical pipe should extend higher than the finished floor level by about 100mm. Once all pipe work is cut to the correct size, glue the pipe parts with the uPVC solvent weld glue.

F. Place the pump(s) into the chamber and connect the pipe-work using the screw union(s). Open the shut off valve. Run the pump power cables and control panel floats or alarm cables through the two 32mm conduits. Low voltage and high voltage cables should not be run through the same conduit so that if the 12V Alarm PA12 is used, ensure that the alarm cable is in a separate conduit to the pump cables. If a control panel is used, an alarm is not required. Use one conduit for the pump power cables and one conduit for the control float cables. If the cables are to run through the conduits at a later time, run a pull cable through the two conduits ready for pulling through the cables when they are ready to be fitted. Once the power, alarm and control cables are pulled through the conduits, seal the conduits with mastic sealant so that smells from the sump do not escape from the conduits.

G. Place Lid and Frame on to the sump chamber ready for final concreting.

H. Fill the sump with water and then concrete around the sump to match slab.

I. Make final connection of discharge pipework and then make electrical connections and then test and commission the pump(s).