DEPEND ON

DAVEY

Installation and Operating Instructions

SUPERCELL
Suffix ‘P’, ‘PHP16’ and ‘HP25’
PRESSURE TANKS



WARNING: MAXIMUM WORKING PRESSURE RATING FOR :-
SUPERCELL Suffix ‘P’ is 1000kPa (145 psi)
SUPERCELL Suffix ‘PHP16’ is 1600kPa (232 psi)
SUPERCELL Suffix ‘HP25’ is 2500kPa (363 psi)



WARNING: Wherever it is possible that the pump system pressure may reach or exceed the tank pressure rating under any circumstance (e.g. pressure switch incorrectly set), it is strongly recommended that the system is protected by a suitable pressure relief valve set at or below the maximum tank pressure rating. Failure to install a pressure relief valve may result in tank failure causing property damage or serious personal injury.



CAUTION: To prevent personal injury, ensure all water pressure is released from the pressure system prior to work being performed. Ensure pumps are disconnected and/or electrically isolated.

Please pass these instructions on to the operator of this equipment.

READ ALL INSTRUCTIONS BEFORE INSTALLING YOUR NEW SUPERCELL TANK

These instructions have been prepared to acquaint you with the correct method of installing and operating your Supercell Tank. We urge you to study this publication carefully and follow its recommendations. In the event of installation difficulties or the need for further advice, you should contact the Dealer from whom you purchased the system or your nearest Davey Water Products Sales Office.



NOTE:
* All models (Supercell Suffix 'P', 'PHP16' and 'HP25') will accept water up to 90ºC maximum.
* Be sure to protect the Supercell tank and all associated pumps and piping from freezing temperatures.

INSTALLATION MUST BE IN ACCORDANCE WITH LOCAL PLUMBING CODES WHERE APPLICABLE.

Tank Pre-Charge

For correct operation pressure tanks should be pre-charged as follows:

- For pressure switch controlled pumps with cut-in pressure set at 140 kPa (20 psi), pre-charge the tank to 15kPa (2 psi) below the cut in pressure.
- For tanks installed with a pressure switch controlled pump with a differential pressure set up to 200 kPa (30 psi), the pre-charge should be set to 15 kPa (2 psi) below the cut-in pressure.
- For tanks installed with a pump controlled by a pressure switch with a pressure differential greater than 200 kPa (30 psi), electronic controls or variable speed controls, the pre-charge should be set to 65% of the cut-out or maximum system pressure.
- For tanks installed on mains' pressure, the tank pre-charge should be set equal to the mains' pressure. For mains' pressure exceeding 6 bar (88 psi), a suitable pressure regulator should be installed.
- For hot water expansion, pre-charge should be set as per the mains pressure details above.

For your convenience, all suffix 'P' pressure tanks have been factory set at 200kPa (29 psi) and suffix 'PHP16' and 'HP25' models which have 400kPa (58psi).



CAUTION: Never over-charge the tank and use air at ambient temperature only!

Installation

NOTE: To avoid possible water damage to property from ruptured pipes, leaking connections, worn/leaking pump seals, etc., pumps and associated equipment (including this Supercell Pressure Tank) must be installed on a well drained site or in a properly constructed water proof enclosure with drain tray.

Bottom Entry Models

Connect the tank vertically in the outlet piping of the water pump being used. Thread seal tape is necessary.

Do not overtighten!

Base Mounted Models

These units have the inlet positioned on the bottom of the tank. Ensure that any fittings used firmly retain the pipe or hose connected. Thread tape should be used on all threads.

The tank should be placed on a firm base. If vibration is likely to occur in the vicinity the tank should be mounted on a resilient mount.

In order to ensure your tank provides its maximum service life it should always be installed in a covered, dry position. The tank should not be allowed to rub against any surrounding hard surfaces, such as walls, etc.

Installation Inside Buildings: To cater for possible plumbing or tank failure, the installation must include an enclosure that will capture any water spraying from the tank and direct it into a properly constructed drain tray.

Note: When installing a Supercell Tank and/or associated pump system inside a building, allowance for possible high pressure leakage MUST be made.

Note: In order to carry out routine maintenance the Supercell Pressure Tank MUST be easily accessible to the end user or home owner.

Checking and Replenishing Tank Air Charge

Supercell 'P', 'PHP16' and 'HP25' Pressure Tanks do not require regular checks under normal operating conditions. However, if air charge adjustment is required then follow the following procedures:

1. Remove the pressure tank completely from pump installation, ensuring to isolate the pressure tank and release the water pressure from the tank beforehand. OR

   Release all water pressure from the pressure tank by switching off the pump at the power point, and opening the closet tap. For above ground supply tanks it is necessary to close the gate valve between the supply tank and the pump.



CAUTION: To prevent personal injury, ensure all water pressure is released from the pressure system prior to work being performed.

   Leave tap open during air replenishment.

2. When all water pressure has been released from the system, check air pressure at air valve on top of pressure tank. The pre-charge pressure reading should be as detailed on page 3 of this document.

3. If necessary, replenish air charge to the correct pressure indicated. Ensure that a tap in outlet piping of pump is open during replenishment of air pre-charge.



NOTE: During air replenishment the tank should be externally inspected. Any signs of leakage from the tank may indicate a need for immediate replacement.

Periodic Checks

Flushing: Depending on the quality of the pumped water, from time to time your tank may require flushing to remove settled fines such as mud or sand. If sand or mud is allowed to stay in the tank it will accelerate wear on the internal lining and shorten your tanks life.

Safely disconnect the tank from the water supply, discharge all air from the tank and flush the tank several times with clean water. Once the flushing water is clean, reconnect the tank and recharge the air as per above.

External Inspection: A tank in good order will not leak, but over time due to damage through rough handling, impacts or grit and/or impurities in the water the tank shell may fail and/or leak. Should the tank leak or show signs of possible failure the tank should be immediately disconnected and replaced.



WARNING: Do not use tank if it leaks or shows signs of corrosion or damage.

Operational Difficulties & Trouble Shooting

NOTE: Loss of air charge is the most overwhelming cause of difficulties with Supercell Pressure Tanks. Partial or complete loss of air charge will cause any of the following problems:-

a) Rapid pump cycling (i.e. pump stops and starts frequently during operation).
b) Decreased draw-off capacity.

Alternatively, the same problems could be caused by a punctured or leaking diaphragm as indicated by water leaking from the air valve when the valve core is depressed (typically when checking tank pre-charge).

Supercell Suffix 'P', 'PHP16' and 'HP25' models have a diaphragm which is captive and is non-serviceable. In the event of diaphragm failure the whole tank must be replaced.

Symptom	Causes	Remedies
Pump Cycling (Pump stops and starts frequently while operating)	i) Punctured diaphragm (check that water escapes from air valve when depressed) ii) Incorrectly set pressure switch iii) Incorrect pressure tank pre-charge	i) Replace Tank. ii) Reset pressure switch to manufacturers recommendations iii) Adjust tank pre-charge to 15kPa (2psi) below cut-in
Pump stops and starts when all taps are closed	i) Leaking tap or pipework on suction and/or discharge side	i) Isolate suction pipework, if pump continues to stop and start, check for leaks on discharge. If pump stops and does not restart, problem is likely to be leaking checkvalve on suction side of pump system.
Water flow from open tap stops then starts when first opened	i) Tank pre-charge set too high or too low ii) Pressure switch cut-in set too low	i) Adjust tank pre-charge to 15kPa (2psi) below cut-in ii) Adjust pressure switch cut-in
Tank will not hold air pre-charge	i) Faulty air valve ii) Punctured diaphragm	i) Replace air valve core

Nominal Draw Off Capacity in Litres

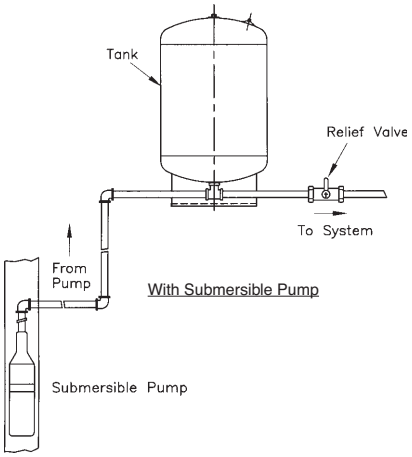
Tank Model	Tank Capacity (litres)	Max Pressure Rating (kPa)	Pressure Switch Range kPa (psi)												Dim. Diameter (mm)	Dim. Height (mm)	Inlet Size (BSP)
			150-250 (22-36)	150-300 (22-44)	200-400 (29-58)	250-400 (36-58)	250-500 (36-73)	300-600 (44-88)	500-800 (73-116)	500-1000 (73-145)	700-1200 (101-174)	1000-1600 (145-232)	1600-2000 (232-290)	2000-2500 (290-363)			
Supercell 8P	8	1000	2.2	3.0	3.2	2.4	3.3	3.4	2.7	3.5	N/A	N/A	N/A	N/A	203	317	1"M
Supercell 18P	18	1000	5.0	6.7	7.2	5.4	7.4	7.6	6.0	8.0	N/A	N/A	N/A	N/A	279	368	1"M
Supercell 40P	40	1000	10.7	14.1	15.2	11.5	16.0	16.5	13.3	17.7	N/A	N/A	N/A	N/A	318	481	1"M
Supercell 60P	60	1000	16.1	21.2	22.8	17.2	23.9	24.8	20.0	26.6	N/A	N/A	N/A	N/A	388	626	1"F
Supercell 100P	100	1000	28.6	37.5	40.0	30.0	41.7	42.9	33.3	45.5	N/A	N/A	N/A	N/A	430	804	1"F
Supercell 200G	200	800	57.1	75.0	80.0	60.0	83.3	85.7	66.7	N/A	N/A	N/A	N/A	N/A	533	1033	$1^{1}/_{4}$"F
Supercell 18PHP16	18	1600	3.0	6.8	7.2	5.4	7.5	7.7	8.2	6.9	6.4	N/A	N/A	N/A	279	367	1"M
Supercell 80PHP16	80	1600	21.5	28.2	30.4	23.0	31.9	28.7	26.7	35.5	30.2	27.9	N/A	N/A	388	790	1"F
Supercell 24HP25	24	2500	6.3	8.3	9.0	6.3	9.4	10.3	8.0	10.5	9.1	8.4	4.5	4.6	260	445	1"M
Supercell 100HP25	100	2500	26.3	34.5	37.3	28.3	39.3	41.3	33.3	43.9	37.7	34.8	18.9	19.1	460	935	1"M

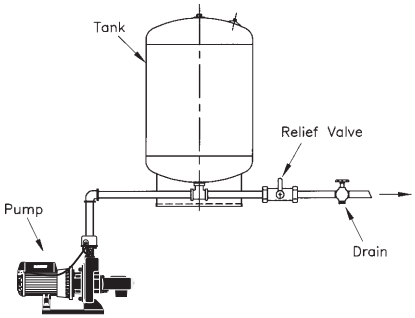
Note: Where a pressure switch differential range exceeds the above, the Acceptance Factor must be calculated and must be less than 0.5. If the AF value exceeds 0.5 then the differential must be reduced by either increasing the cut-in and pre-charge pressures or by reducing the cut-out pressure.

$$AF = \frac{\text{(cut-out kPa – pre-charge kPa)}}{\text{(cut-out kPa + 100)}}$$

TYPICAL INSTALLATIONS

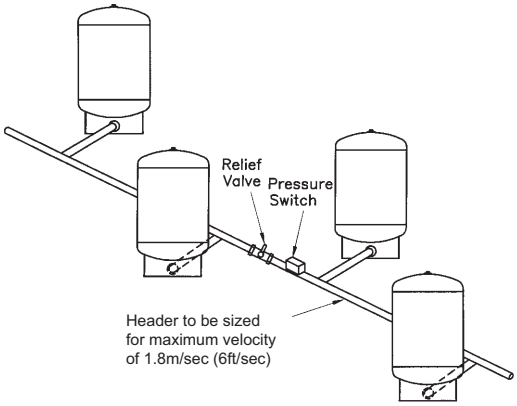
NOTE:
Isolation valves, ball valves and gauges will improve serviceability.





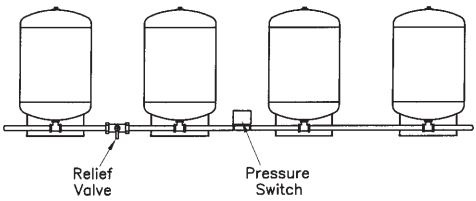
TYPICAL MULTIPLE TANK INSTALLATIONS

NOTE:
Isolation valves, ball valves and gauges will improve serviceability.



NOTE: All tanks must have equal pre-charge.

Either / or



Davey Warranty

Davey Water Products Pty Ltd (Davey) warrants all products sold will be (under normal use and service) free of defects in material and workmanship for a minimum period of one (1) year from the date of original purchase by the customer as marked on the invoice, for specific warranty periods for all Davey products visit daveywater.com.

This warranty does not cover normal wear and tear or apply to a product that has:

- been subject to misuse, neglect, negligence, damage or accident
- been used, operated or maintained other than in accordance with Davey's instructions
- not been installed in accordance with the Installation Instructions or by suitably qualified personnel
- been modified or altered from original specifications or in any way not approved by Davey
- had repairs attempted or made by other than Davey or its authorised dealers
- been subject to abnormal conditions such as incorrect voltage supply, lightning or high voltage spikes, or damages from electrolytic action, cavitation, sand, corrosive, saline or abrasive liquids,

The Davey warranty does not cover replacement of any product consumables or defects in products and components that have been supplied to Davey by third parties (however Davey will provide reasonable assistance to obtain the benefit of any third-party warranty).

To make a warranty claim:

- If the product is suspected of being defective, stop using it and contact the original place of purchase. Alternatively, phone Davey Customer Service or send a letter to Davey as per the contact details below
- Provide evidence or proof of date of original purchase
- If requested, return the product and/or provide further information with respect to the claim. Returning the product to the place of purchase is at your cost and is your responsibility.
- The warranty claim will be assessed by Davey on the basis of their product knowledge and reasonable judgement and will be accepted if:
  - a relevant defect is found
  - the warranty claim is made during the relevant warranty period; and
  - none of the excluded conditions listed above apply
- The customer will be notified of the warranty decision in writing and if found to be invalid the customer must organise collection of the product at their expense or authorise its disposal.

If the claim is found to be valid Davey will, at its option, repair or replace the product free of charge.

The Davey warranty is in addition to rights provided by local consumer law. You are entitled to a replacement or refund for a major failure and compensation for any other reasonably foreseeable loss or damage. You are also entitled to have the goods repaired or replaced if the goods fail to be of acceptable quality and the failure does not amount to a major failure.

For any internet connected products the consumer is responsible for ensuring a stable internet connection. In the event of a network failure the consumer will need to address the concern with the service provider. Use of an App is not a substitute for the User's own vigilance in ensuring the product is working to expectation. Use of a Smart Product App is at the User's own risk. To the fullest extent permitted by law Davey disclaims any warranties regarding the accuracy, completeness or reliability of App data. Davey is not responsible for any direct or indirect loss, damage or costs to the User arising from its reliance on internet connectivity. The User indemnifies Davey against any claims or legal actions from them or others relying on internet connectivity or App data may bring in this regard.

Products presented for repair may be replaced by refurbished products of the same type rather than being repaired. Refurbished parts may be used to repair the products. The repair of your products may result in the loss of any user-generated data. Please ensure that you have made a copy of any data saved on your products.

To the fullest extent permitted by law or statute, Davey shall not be liable for any loss of profits or any consequential, indirect or special loss, damage or injury of any kind whatsoever arising directly or indirectly from Davey products. This limitation does not apply to any liability of Davey for failure to comply with a consumer guarantee applicable to your Davey product under local laws and does not affect any rights or remedies that may be available to you under local laws.

For a complete list of Davey Dealers visit our website (daveywater.com) or call:

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DAVEY

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*** Installation and operating instructions are included with the product when purchased new. They may also be found on our website.**