

**XP HOME PRESSURE SYSTEM
WITH TORRIUM®**
Model Numbers: XP350T

DEPEND ON
DAVEY

WATER PRODUCTS



XP PRESSURE SYSTEM

PRODUCT DESCRIPTION

Robust & compact, single stage, jet assisted centrifugal pump with Torrium® constant flow control and loss of prime device for automatic water pressure.

Designed for small to medium size, single storey homes.

APPLICATIONS

Ideal for pumping clean, non-volatile liquids without fibres or solids in such applications as :-

- Household water supply
- Irrigation
- Water transfer
- Washing systems

FEATURES & BENEFITS

SYSTEM

The XP Pressure System consists of a XP pump fitted with a Torrium® controller. The Torrium® is supplied connected electrically to the XP pump motor for:

- Easy non-tradesmen installation and assembly
- Positive safety under varied weather conditions

The combination of the high pressures supplied by the jet assisted XP pump and constant flow control provided by the Torrium® enables consumers to enjoy the benefits of a strong comfortable shower from a pump that does not cycle plus the reliability of adaptive technology.

The complete XP Pressure System is compact and quiet providing for:

- Easy installation, especially where space is at a premium
- Non-intrusive operation, for consumer enjoyment

All parts of the entire system that are in contact with the water are manufactured from safe, corrosion resistant materials for:

- Consumer confidence that their water supply will be as good coming out as it was going into the system
- Ability to use the XP pressure system on a variety of water qualities

Compliance with the strict requirements of ISO 9001.2000 quality standards ensures consistency of quality of the system.

OPERATING LIMITS

Maximum system pressure*	450kPa
Capacities to	35 lpm
Maximum total head	33m
Maximum suction head	6m
Maximum ambient temperature	50°C
Maximum water temperature	50°C
Minimum water temperature	1°C

Torrium® cut-in pressure is normally 80% of the pumps last shut-off head.

*Note: See high pressure operation note on page 4.



TECHNICAL SPECIFICATIONS

FEATURES & BENEFITS continued...

PUMP

Made from corrosion resistant engineering plastic materials ensuring:-

- Long service life
- Low maintenance
- Reliable water quality

Single stages jet assisted centrifugal pump with closed vane impeller for:-

- Compact size
- High pressure performance

High quality, low-drag mechanical shaft seal for long life and reliable starting.

MOTOR

The Davey manufactured TEFC motor has an IP55 enclosure providing:-

- Excellent corrosion resistance
- High levels of resistance to dust and rain

All XP pump motors are class F insulation rating and have higher than normal ambient temperature ratings of 50°C, providing for longer life, improved tolerance to voltage variations and peace of mind, even on the hottest days.

All XP pump motors are single phase permanently split capacitor design for:-

- Reliable starting even in low voltage circumstances
- Superior frequent starting performance

Single phase motors are protected against both high operating temperatures and high current by a built in, automatically resetting thermal overload.

Double contact C3-HTG sealed bearings for quieter running and longer life.

Corrosion resistant feet on motor shell, include three point bolt-down facility.

Standard models are 220/240 volt, 50Hz, single phase. XP models in 60Hz 110/115 volt and 220/230 volt single phase available on request.

TORRIUM® CONTROLLER

Torrium® starts pump on pressure drop and stops pump on low flow (~2 lpm), thus reducing pump cycling for constant and even water pressure.

Torrium® measures the pump shut off head each time the pump stops, and sets the cut-in pressure at 80% of shut-off head, so that the consumer is unlikely to notice any pressure change when the pump is switched on. Torrium® adapts each time the pump stops, thus allowing the system to accommodate variations in pump performance or site conditions.

Torrium® has a simple indicator and fault LED system. Red constant means that the system is in standby. Green constant means the pump is running.

An Amber constant LED indicates that the system has gone to Cistern Fill mode. Cistern Fill mode is activated when the Torrium® detects frequent short cycling, such as may be encountered with a very slow filling toilet cistern. The Torrium® will then ensure the pump continues to operate for at least 2 minutes.

Torrium® stops the pump in "loss of prime" circumstances and activates the loss of prime LED indicator sequence (red LED single flash per sequence), thus:-

- Protecting the pump from dry run damage
- Helps identify installation faults

When the Torrium® detects "loss of prime" it waits 5 minutes then goes into auto retry mode, whereby it will restart the pump to see if prime can be re-established automatically. Auto retry occurs at 5 minutes, 30 minutes, 1 hour, 2, 4, 8, 16 and 32 hours. Torrium® will also retry if it detects flow through the system (eg from mains water pressure returning).

If Torrium® detects excessive electrical current, such as when a the pump motor is subjected to lock rotor or when someone tries to manually override the Torrium® by holding in the prime button, the Torrium® will shut the pump down and indicate 2 red flashes per sequence.

Should the Torrium® detect low incoming voltage (below 180 volts) it will allow the pump to continue to operate if possible, but it will flash two red flashes per sequence over the green run LED.

Water over-temperature cut-out fail safe protection, provides a second level of protection against loss of prime and / or closed head operation and / or repetitive cycling for added security and longer life. In the event of the Torrium® detecting water over-temperature above 70°C it will shut the pump down and flash 3 red LED flashes per sequence. Once the water temperature has dropped to below 60°C, the Torrium® will allow the pump to restart.

Torrium® also detects slow leaks and attempts to overcome the short run times such leaks can cause by dropping temporarily the cut-in pressure to 50% of the last shut-off head. Torrium® will return to 80% cut-in pressure after 100 cycles or if a manual reset is initiated.

Torrium® has no moving parts in the waterways:-

- No parts to jam means improved reliability
- Less reduction of pump performance
- Reliable usage with varying water quality

Corrosion and scale resistant flow and pressure sensors mounted on a high grade titanium plate. Special anti scaling electronic functions allow Torrium® to be used with water of varying quality.

Torrium® has an in-built spring loaded pressure tank, overcoming the need for regular pressure vessel air charging and checking.

Right angle discharge rotatable around full 360°, with optional pressure tank mounting position on top, facilitates:-

- Easier installation and connection to plumbing
- Use with a choice of optional pressure tank sizes

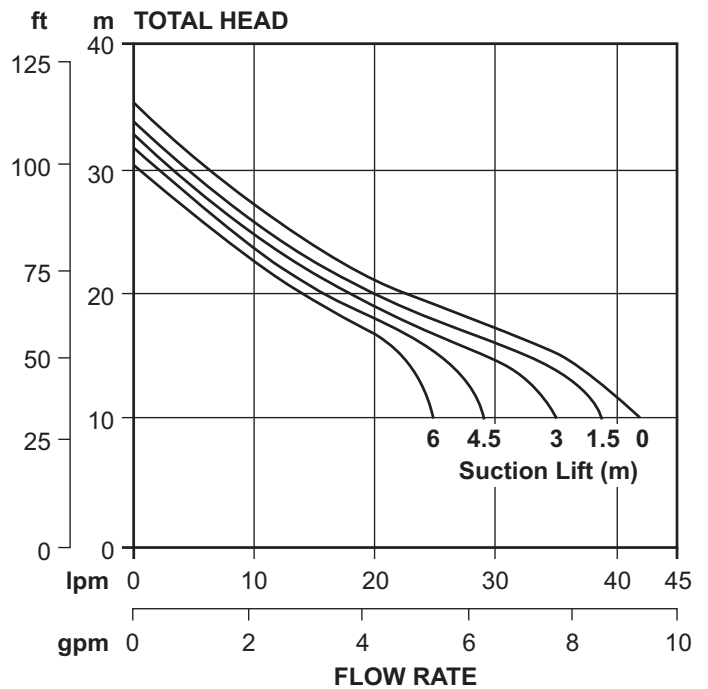
Comes complete with 2 metre long power lead fitted with an Australian three pin plug for easy installation.

TECHNICAL SPECIFICATIONS

MATERIALS OF CONSTRUCTION

PART	MATERIAL
PUMP	
Impellers	Glass filled polycarbonate
Pump casing	Glass filled noryl
Pump shaft	303 stainless steel
Check valve spring	303 stainless steel
Seal ring (stationary)	Ceramic
Seal ring (rotating)	Carbon (synthetic)
Seal spring	304 stainless steel
O-rings	Nitrile rubber
Jet	Acetyl
Venturi/coverplate	Glass filled noryl
Seal ring elastomer	Nitrile rubber
Stage spacer	Glass filled nylon (3 stage models)
Priming plug	Glass filled noryl
Motor shell	Marine grade aluminium
Pressure tank diaphragm	Nitrile/butadiene rubber
Shell	Baked polyester
TORRIUM®	
Housing	Glass fibre reinforced nylon
Pressure tank diaphragm	Santoprene 87
Pressure tank springs	Molybond coated tempered steel
Sensor plate	High grade TITANIUM
Flange adaptor	Glass fibre reinforced nylon
Locking nut	Glass fibre reinforced nylon
O-rings	Nitrile

HYDRAULIC PERFORMANCE



ELECTRICAL DATA

Supply voltage	220-240V
Supply frequency	50Hz
Nominal speed	2850rpm
Input power (P1)	0.6kW
Output power (P2)	0.3kW
Full load current	2.4 amps
Locked rotor current	12 amps
Starting	P.S.C.
Insulation class	Class F
Pressure switch cut-in	140kPa

Note: All performance at 240V 50Hz

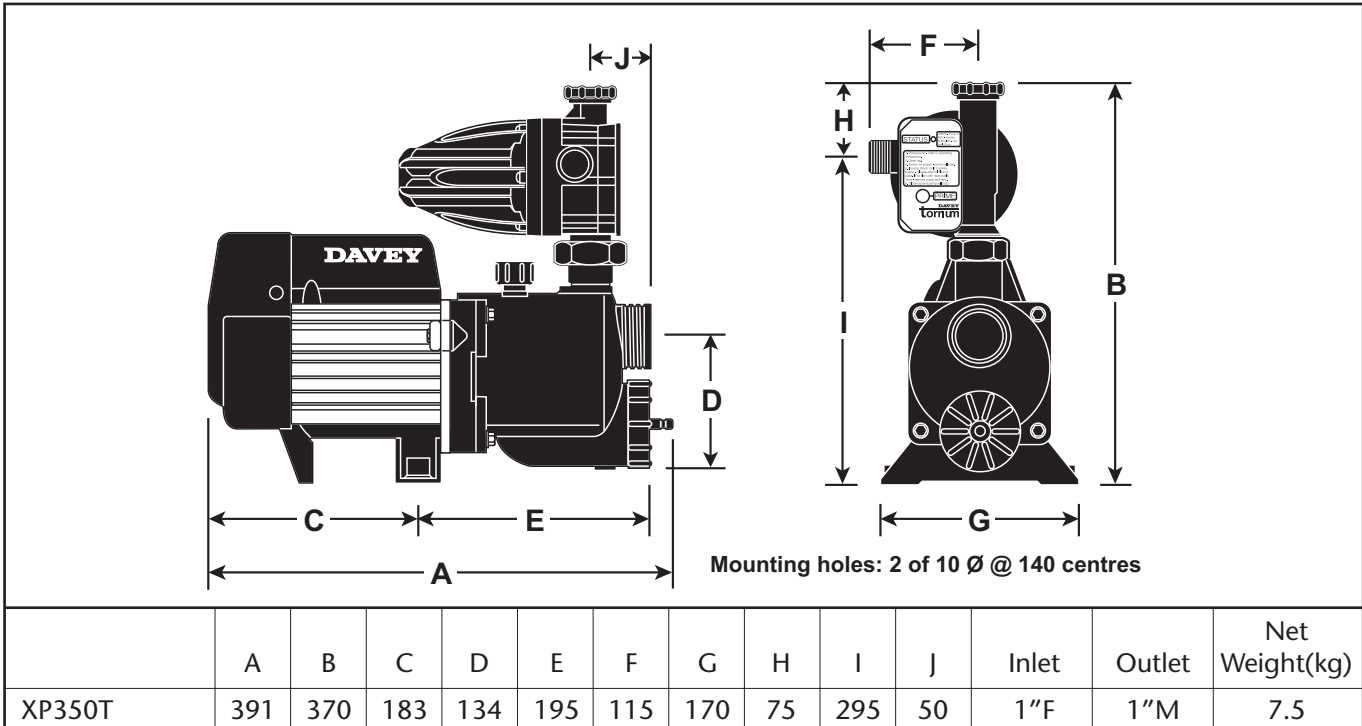
	TORRIUM®
Voltage	220V-240V ± 10%
Phase	Single
Hz	50 / 60
IP rating	56
Maximum load current	10A
Maximum motor size*	1.8kW
Surge protection	Varistor

INSTALLATION & PRIMING

- Installations with suction lift require a good quality foot valve to avoid loss of prime - remove in-built check valve.
- To prime, fill pump body and suction line through priming plug hole located above suction inlet and replace plug.

TECHNICAL SPECIFICATIONS

DIMENSIONS



All dimensions in mm unless otherwise stated.



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