

WILDEN®

A DOVER COMPANY

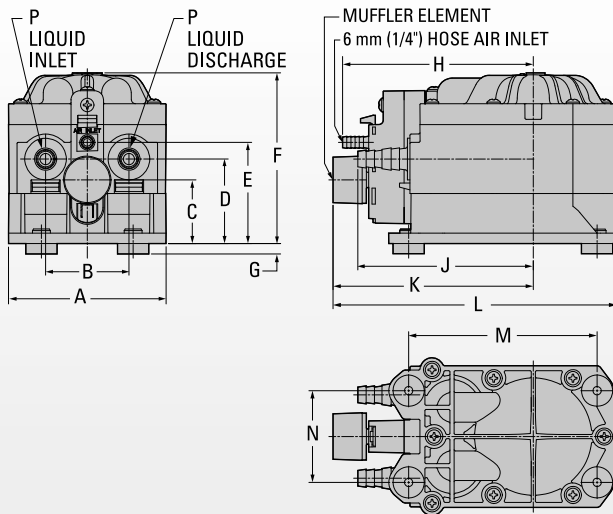


HU38
HU100

EOM

Engineering
Operation &
Maintenance

The Hornet™ pump was specifically designed for industrial and general commercial use. This pump can be applied to chemical transfer and dispensing, automotive recycling and cleaning, and car wash systems. The bolted configuration ensures total product containment while the liquid path design maximizes the output and efficiency. Offered with a polypropylene wetted material, Wilden's Hornet™ pump provides the reliability, flexibility and efficiencies needed in today's demanding applications.



DIMENSIONS

ITEM	METRIC (mm)	STANDARD (inch)
A	97	3.8
B	51	2.0
C	38	1.5
D	51	2.0
E	61	2.4
F	104	4.1
G	8	0.3
H	117	4.6
J	107	4.2
K	122	4.8
L	173	6.8
M	114	4.5
N	56	2.2
P	10	3/8" MNPT
	10	3/8" HOSE
	13	1/2" HOSE

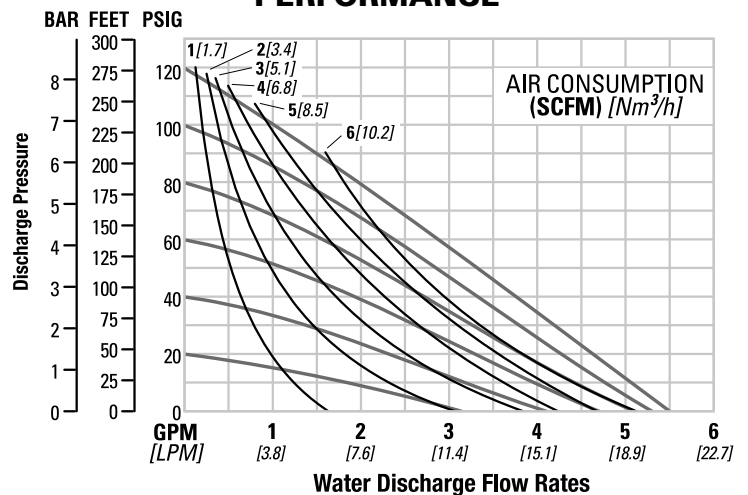


TECHNICAL DATA

Height	112 mm (4.4")
Width	97 mm (3.8")
Depth	173 mm (6.8")
Est. Ship Weight	Polypropylene 0.9 kg (2.0 lbs)
Air Inlet - Hose	6 mm (1/4")
Liquid Inlet	Hose - 10 mm (3/8")
	Hose - 13 mm (1/2")
	MNPT - 10 mm (3/8")
Liquid Discharge	Hose - 10 mm (3/8")
	Hose - 13 mm (1/2")
	MNPT - 10 mm (3/8")
Suction Lift	3.3 m Dry (10.9')
	9.3 m Wet (30.6')
Max. Flow Rate	20.8 lpm (5.5 gpm)

NOTE: Do not exceed 8.6 bar (125 psig) gas or air supply pressure. Flow rates indicated were determined by pumping water with HU100 model.

PERFORMANCE



CAUTIONS – READ FIRST!

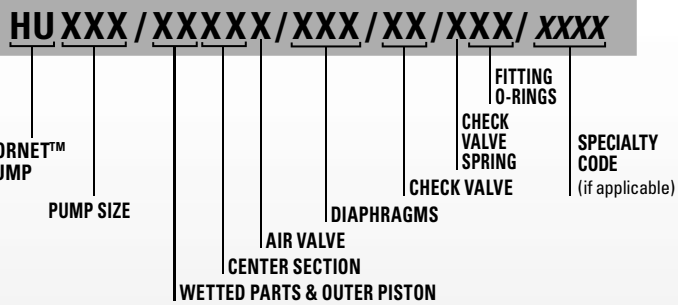


- CAUTION:** Do not apply compressed air or gas to the exhaust port – pump will not function.
- CAUTION:** If used with CO₂ or N₂ be sure the area is well ventilated.
- CAUTION:** Do not lubricate air supply. Excess lubrication will reduce pump performance. Pump is pre-lubed and does not require in-line lubrication.
- WARNING:** Do not pump gasoline or flammable liquids or use where flammable vapors are present.
- TEMPERATURE LIMITS:**
Polypropylene 0.0°C to 79.4°C (32°F to 175°F)
Wil-Flex™ (Santoprene®) –40.0°C to 107.2°C (–40.0°F to 225°F)
- CAUTION:** Process fluid and cleaning fluids must be chemically compatible with all wetted pump components. Consult Wilden’s Chemical Resistance Guide for chemical compatibility.
- CAUTION:** When choosing pump materials, check the temperature limits for all wetted components. Example: Wil-Flex™ has a maximum limit of 107.2°C (225°F) but polypropylene has a maximum limit of only 79.4°C (175°F).
- CAUTION:** Always wear safety glasses when operating pump. If diaphragm rupture occurs, material being pumped can be forced out air exhaust.
- CAUTION:** Before removing pump from application, the compressed air line to the pump should be disconnected and all air pressure allowed to bleed from pump. Disconnect all intake, discharge and air lines. Drain the pump by turning it upside down and allowing any fluid to flow into a suitable container.
- CAUTION:** Maximum temperature limits are based upon mechanical stress only. Certain chemicals will significantly reduce maximum safe operating temperatures. Consult Wilden’s Chemical Resistance Guide for chemical compatibility and temperature limits.
- NOTE:** Tighten all hardware prior to installation.
- CAUTION:** Do not exceed 8.6 bar (125 psig) air or gas supply pressure.
- NOTE:** Wilden’s Hornet™ pump cannot be used in submersible applications. If your application requires a submersible pump, contact your authorized Wilden Distributor for an alternative pump model.

PUMP DESIGNATION SYSTEM



LEGEND



MATERIAL CODES

PUMP SIZE
38 = 10 mm (3/8") MNPT
100 = 13 mm (1/2") MNPT

WETTED PARTS & OUTER PISTON
PZ = POLYPROPYLENE/NO PISTON

CENTER SECTION
PP = POLYPROPYLENE

AIR VALVE
E = POLYETHYLENE

DIAPHRAGMS/O-RINGS
WBL = WIL-FLEX™ (Santoprene®)
w/BUNA BACK-UP O-RING,
IPD (cream)

CHECK VALVE
WF = WIL-FLEX™ (Santoprene®)

CHECK VALVE SPRING
H = ALLOY C

MANIFOLD/FITTING O-RING
WF = WIL-FLEX™ (Santoprene®)

NOTE: ½ threaded connection is not available.

SPECIALTY CODES

0645 HOSE CONNECTION

SUGGESTED INSTALLATION



Wilden's Hornet™ pump is designed to meet the performance requirements of even the most demanding pumping applications. Designed and manufactured to the highest standards, this pump is well suited for general commercial and industrial applications. Refer to the performance information in this manual for an in-depth analysis of the performance of your pump.

HOSE CONNECTIONS: Use flexible suction and discharge hose ONLY. This is done to avoid excess stress on the pump port fittings. The suction hose size should be at least the equivalent or larger than the diameter size of the suction inlet on your pump. The suction hose must be non-collapsible, reinforced type as these pumps are capable of a high vacuum. Discharge hose should also be the equivalent or larger than the diameter of the pump discharge which will help to reduce friction losses. It is critical that all fittings and connections are airtight or a reduction or loss of pump suction capability will result.

Final determination of the pump site should not be made until the piping challenges of each possible location have been evaluated. The impact of current and future installations should be considered ahead of time to ensure that inadvertent restrictions are not created for any remaining sites.

INSTALLATION: Months of careful planning, study, and selection efforts can result in unsatisfactory pump performance if installation details are left to chance. Premature failure and long term dissatisfaction can be avoided if care is exercised throughout the installation process.

For best results, the pump should use a 5μ (micron) air filter, needle valve and regulator. The use of an air filter will ensure that the majority of any pipeline contaminants will be eliminated.

Pumps in service with a positive suction head are most efficient when inlet pressure is limited to 0.5-0.7 bar (7-10 psig). Premature diaphragm failure may occur if positive suction is 0.7 bar (10 psig) or higher.

Every pump location should have a gas supply line large enough to supply the volume of gas necessary to achieve

the desired pumping rate. Use gas pressure up to a maximum of 8.6 bar (125 psig).

LOCATION: Noise, safety, and other logistical factors usually dictate where equipment will be situated.

ELEVATION: Selecting a site that will be within the pump's dynamic lift capability will assure that loss-of-prime issues will be eliminated. In addition, pump efficiency can be adversely affected if proper attention is not given to site location.

ACCESS: The location should be accessible. If it's easy to reach the pump, maintenance personnel will have an easier time doing routine inspections and adjustments. Should major repairs become necessary, ease of access can play a key role in speeding the repair process and reducing total downtime.

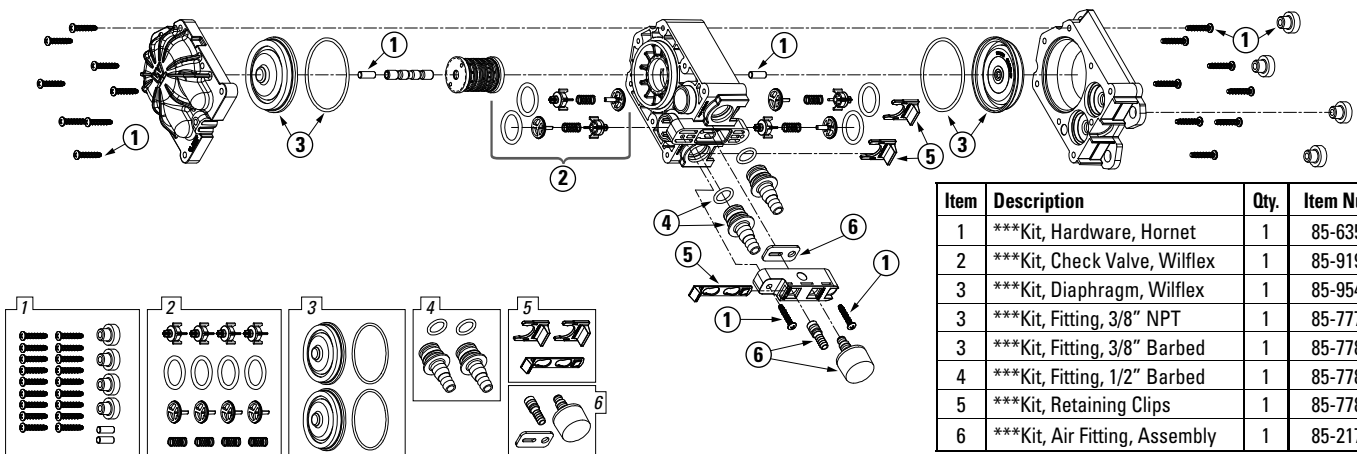
OPERATION: Pump discharge rates can be controlled by limiting the volume and/or pressure of the gas supply to the pump (preferred method). An air regulator is used to regulate pressure. A needle valve is used to regulate volume. Pump discharge rates can also be controlled by throttling the pump discharge by partially closing a valve in the discharge line of the pump. This action increases friction loss which reduces flow rate. This is useful when the need exists to control the pump from a remote location.

When the pump discharge pressure equals or exceeds the gas supply pressure, the pump will stop; no bypass or pressure relieve valve is needed, and pump damage will not occur. The pump can be restarted by reducing the fluid discharge pressure or increasing the inlet gas pressure. The Wilden Hornet™ pump runs solely on clean-dry gas and generates little heat. Therefore, your process fluid temperature will not be affected.

SUBMERSIBLE APPLICATIONS: The Wilden Hornet™ pump design is not suited for submersible applications.

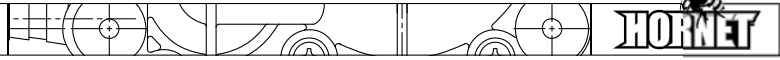
WARNING: The Hornet™ pump is intended for use with fluids having little or no particulates in the process media. Excessive or large particulates in the process media will adversely affect pump performance and service life.

REPLACEMENT KITS



Item	Description	Qty.	Item Number
1	***Kit, Hardware, Hornet	1	85-6350-99
2	***Kit, Check Valve, Wilflex	1	85-9190-58
3	***Kit, Diaphragm, Wilflex	1	85-9545-58
3	***Kit, Fitting, 3/8" NPT	1	85-7779-99
3	***Kit, Fitting, 3/8" Barbed	1	85-7780-99
4	***Kit, Fitting, 1/2" Barbed	1	85-7782-99
5	***Kit, Retaining Clips	1	85-7783-99
6	***Kit, Air Fitting, Assembly	1	85-2175-99

*** Item number and price are for individual kits, minimum order quantity is 12.



Pump will not run or runs slowly.

1. Ensure air pressure is at least 0.3 bar (5 psig) above start up pressure and differential pressure (the difference between air inlet and liquid discharge pressures) is not less than 0.7 bar (10 psig),
2. Check air inlet filter for debris. A 5 μ (micron) air filter must be installed at the air inlet of the pump to prevent air compressor particulate from entering and damaging the air distribution system.
3. Check for air leakage (blow by) at the exhaust of the pump. This could indicate worn seals/bore in the air valve.
4. Disassemble pump and check for obstructions in the air passage-ways or objects which would obstruct the movement of internal parts.
5. Check for sticking check valves. If material being pumped is not compatible with pump elastomers, swelling may occur. Also, as the check valves wear, they become smaller and can become stuck in the seats.
6. Diaphragms may have a pinhole allowing air to escape to the liquid side of the pump reducing performance.

Pump runs but little or no product flows.

1. Check for pump cavitation; slow pump speed down to allow thick material to flow into liquid chambers.
2. Verify that vacuum required to lift liquid is not greater than the vapor pressure of the material being pumped (cavitation).

3. Check for sticking check valves. If material being pumped is not compatible with pump elastomers, swelling may occur. Also, as the check valve wear, they become smaller and can become stuck in the seats.
4. Pump may be operating (cycling) too fast. In this situation, to prime the pump you must lower the air inlet pressure to achieve maximum suction lift. Once pump is primed the inlet air pressure can be raised to meet system requirements.

Pump air valve freezes.

1. Check for excessive moisture in compressed air line. Either install a dryer or hot air generator at the compressor. A coalescing filter may also be used to remove the water from the compressed air line some applications.

Air bubbles in pump discharge.

1. Check for ruptured diaphragm.
2. Check tightness of fasteners and integrity of o-ring and seals.
3. Ensure hosing connections are airtight

Product comes out air exhaust.

1. Check for diaphragm rupture.



Each and every product manufactured by Wilden Pump & Engineering, LLC is built to meet the highest standards of quality. Every pump is functionally tested to insure integrity of operation. Wilden Pump & Engineering, LLC warrants that pumps, accessories and parts manufactured or supplied by it to be free from defects in material and workmanship for a period of one (1) year from date of installation or two (2) years from date of manufacture, whichever comes first. Failure due to normal wear, misapplication, or abuse is, of course, excluded from this warranty. Since the use of Wilden pumps and parts is beyond our control, we cannot guarantee the suitability of any pump or part for a particular application and Wilden Pump & Engineering, LLC shall not be liable for any consequential damage or expense arising from the use or misuse of its products on any application. Responsibility is limited solely to replacement or repair of defective Wilden Pump & Engineering, LLC. All decisions as to the cause of failure are the sole determination of Wilden Pump & Engineering, LLC. Prior approval must be obtained from Wilden for return of any items for warranty consideration and must be accompanied by the appropriate MSDS for the product(s) involved. A Return Goods Tag, obtained from an authorized Wilden distributor, must be included with the items which must be shipped freight prepaid. The foregoing warranty is exclusive and in lieu of all other warranties expressed or implied (whether written or oral) including all implied warranties of merchantability and fitness for any particular purpose. No distributor or other person is authorized to assume any liability or obligation for Wilden Pump & Engineering, LLC other than expressly provided herein.

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