



TOWLE WHITNEY LLC



**TW1000-100G-30
Modular Frame
VARIABLE SPEED BOOSTER PUMP SYSTEM**



TW1000-100G-30 Modular Frame

The **TW1000-100G-30 Duplex Booster System** is equipped with a centrifugal pump regulated by a variable frequency drive that controls the pump to maintain constant pressure regardless of varying demand or fluctuating incoming pressure. This system will supply **100 GPM with a 30 PSI overboost**.

Features and Benefits:

- Commercial application
- Quiet, Compact & Powerful
- Variable Frequency Drive controlled pump
- Energy efficient operation
- Prewired & Factory Tested

Lead-Free* (Wetted) components:

- Centrifugal Pump: Stainless Steel
- Relief valve: LF Brass or SS
- Pressure Gauge: Stainless Steel
- Transducer: Stainless Steel
- Check valve: LF Brass or SS
- Fittings: LF Copper or SS

*All lead-free brass shall contain <.25% Pb



*All parts shown included
Actual system components may vary
Some assembly required*

Technical Specifications:

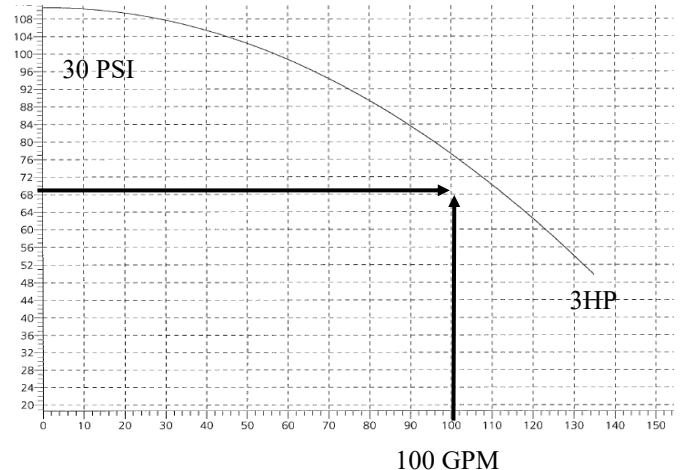
Pump: Gould [2MS]
Horse Power: 3 HP
Controller: Vacon 20 - NEMA 1 Rating
Flow Rate: 100 GPM
Boost: 30 PSI Overboost
Suction: 1-1/2 inch
Discharge: 1-1/4 inch
Tank: Flexcon H2P20 (20Gal)
Frame Size: 16" W x 53 H x 34" D
Decibel rating: <70 db @ 3500 RPM
Weight: 250 lbs (approx.)

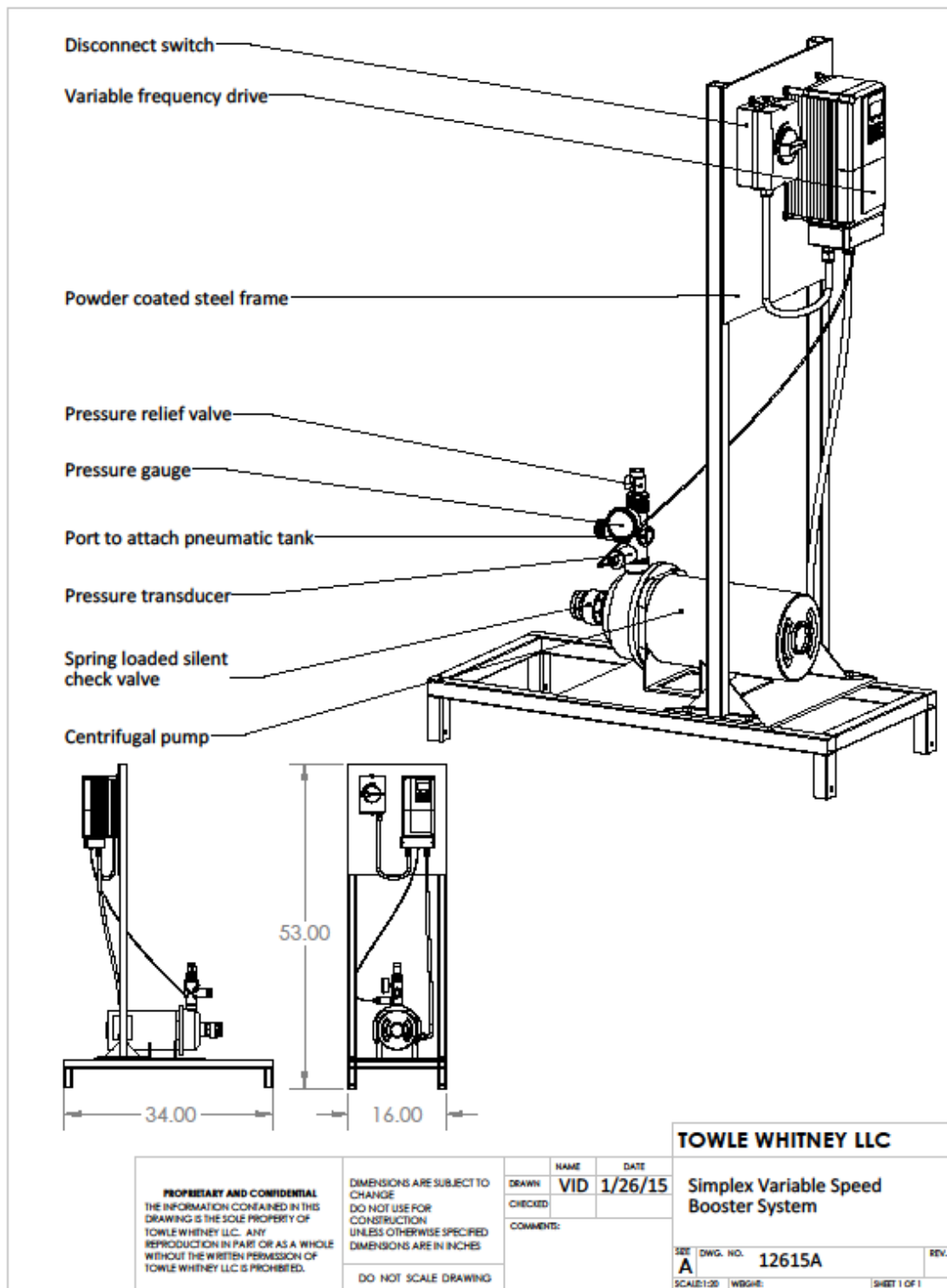
SPECIFY WHEN ORDERING

1. Discharge Pressure: _____ PSI
2. Power: Options
208-220V/1PH
208-220V/3PH
360-480V/3PH

Independent circuit recommended

Performance curve for each pump







GENERAL SPECIFICATIONS

Assembled Units:

- All “wetted surfaces” shall be lead free (<.25% Pb) in conformance with the 1/4/14 federal law
- Shall have a variable frequency drive (VFD) with a pressure transducer, pressure gauge, and relief valve
- System shall have a properly sized air charged pneumatic tank
- Pump shall be connected to a separate and independent disconnect box

Variable Frequency Drive (VFD) shall:

- Shall be rated using specified power requirement, efficiency shall be 98% or better at full speed
- All factory preset values and/or last saved data values must remain available to the operator in the event of a complete power outage
- NEMA 1 rated conduit enclosure
- Operate to a program that protects the pump against damaging hydraulic conditions such as:
 - Motor overload, pump overflow surges, loss of prime due to incoming water supply interruption, hunting, overload through frequency/current optimization, hydraulic damage by restricting the pumps to operate beyond their published end of curve
- Automatically restart after an over-current, over-voltage, under-voltage or loss of input signal protective trip
- Have an operator control panel [keypad] for customization of parameters
- Include a feature to upload / download parameters into an external device to be used with another drive or the same drive
- Have a removable non-volatile memory device
- Be capable of accepting individual analog inputs from transducer. All transducer inputs must be wired to the variable frequency drive for continuous scan and comparison function
- Utilize a proportional ladder logic program - integral - derivative control function
- Display the following values:
 - Pump running/standby, pump speed in Hz, user adjustable parameters such as PID set points
 - Motor frequency, motor current, threshold set points for PID error, minimum operating frequency
 - Troubleshooting and diagnostics of faults

Transducer:

- Shall be provided to supply all pressure signals to the variable frequency drive
- Shall be rated for required system pressure and shall be 4-20 mA analog

Centrifugal pump:

- Shall have a 316 stainless steel shaft sleeve and a replaceable tungsten carbide + HNBR mechanical seal
- Mechanical seal shall be rated to withstand pressure of up to 142 PSI
- Motor shall be totally enclosed fan cooled (TEFC) and manufactured in compliance with CE, RoHS and CSA

Pneumatic expansion tank:

- Shall be rated for use with potable water with an operating pressure of a maximum 125 PSI
- Shall be pre-charged to a pressure of 10 PSI below system operating pressure

Valves and fittings:

- Shall be sized appropriately to allow water velocity not exceeding 10 ft/sec, to minimize cavitation and turbulence
- Check valve shall be spring-loaded and silent

Installation:

- Equipment shall be installed in accordance with applicable local building, electrical and plumbing codes
- Shall be installed indoors (unless otherwise specified) and protected from water spray



VACON 20 - NEMA 1 RATING



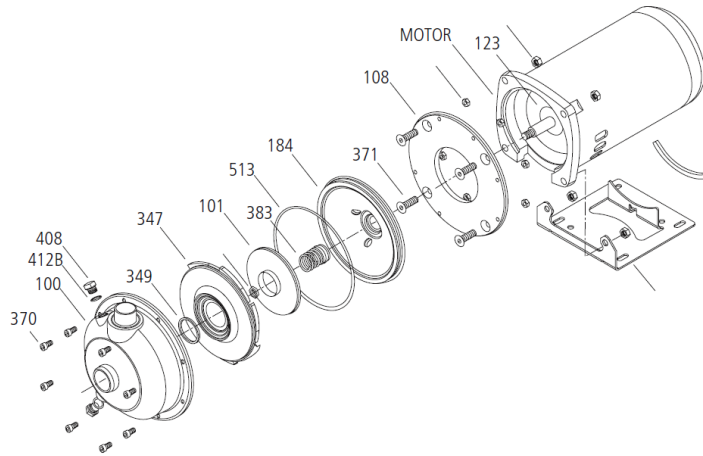
Supply voltage	AC drive type	Output Power and Current High Overload (150%)		
		HP	kW	I _N (A)
110-120 VAC, 1-phase	VACON0020-1L-0001-1-R02	0.33	0.25	1.7
	VACON0020-1L-0002-1-R02	0.5	0.37	2.4
	VACON0020-1L-0003-1-R02	0.75	0.55	2.8
	VACON0020-1L-0004-1-R02	1	0.75	3.7
	VACON0020-1L-0005-1-R02	1.5	1.1	4.8
208-240 VAC, 1-phase	VACON0020-1L-0001-2-R02	0.33	0.25	1.7
	VACON0020-1L-0002-2-R02	0.5	0.37	2.4
	VACON0020-1L-0003-2-R02	0.75	0.55	2.8
	VACON0020-1L-0004-2-R02	1	0.75	3.7
	VACON0020-1L-0005-2-R02	1.5	1.1	4.8
	VACON0020-1L-0007-2-R02	2	1.5	7
	VACON0020-1L-0009-2-R02	3	2.2	9.6
208-240 VAC, 3-phase	VACON0020-3L-0001-2-R02	0.33	0.25	1.7
	VACON0020-3L-0002-2-R02	0.5	0.37	2.4
	VACON0020-3L-0003-2-R02	0.75	0.55	2.8
	VACON0020-3L-0004-2-R02	1	0.75	3.7
	VACON0020-3L-0005-2-R02	1.5	1.1	4.8
	VACON0020-3L-0007-2-R02	2	1.5	7
	VACON0020-3L-0011-2-R02	3	2.2	11
	VACON0020-3L-0017-2-R02	5	4	17.5
	VACON0020-3L-0025-2-R02	7.5	5.5	25
	VACON0020-3L-0031-2-R02	10	7.5	31
	VACON0020-3L-0038-2-R02	15	11	38
380-480 VAC, 3-phase	VACON0020-3L-0001-4-R02	0.5	0.37	1.3
	VACON0020-3L-0002-4-R02	0.75	0.55	1.9
	VACON0020-3L-0003-4-R02	1	0.75	2.4
	VACON0020-3L-0004-4-R02	1.5	1.1	3.3
	VACON0020-3L-0005-4-R02	2	1.5	4.3
	VACON0020-3L-0006-4-R02	3	2.2	5.6
	VACON0020-3L-0008-4-R02	5	3	7.6
	VACON0020-3L-0009-4-R02	6	4	9
	VACON0020-3L-0012-4-R02	7.5	5.5	12
	VACON0020-3L-0016-4-R02	10	7.5	16
	VACON0020-3L-0023-4-R02	15	11	23
	VACON0020-3L-0031-4-R02	20	15	31
	VACON0020-3L-0038-4-R02	25	18.5	38



CENTRIFUGAL PUMP DIMENSIONS AND SPECIFICATIONS

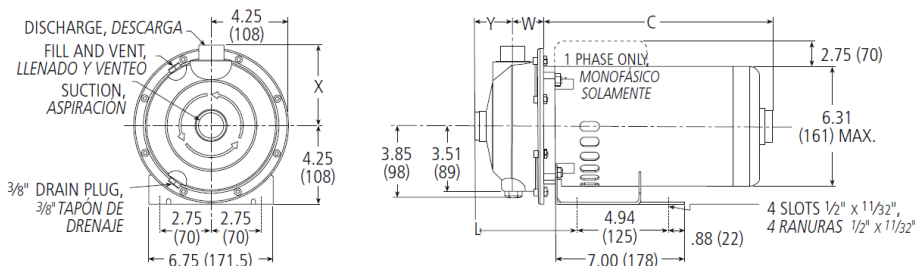
MCS Close Coupled Pump Major Components: Materials of Construction

Materiales de construcción de los principales componentes de la bomba MCS de acoplamiento cerrado



Item No., Parte No.	Description, Descripción	Materials, Materiales
100	Casing, Carcasa	AISI 316L SS,
101	Impeller, Impulsor	AISI 316L Acero inoxidable
108	Motor adapter, Adaptador del motor	Aluminum, Aluminio
123	Deflector, Deflector	BUNA-N
184	Seal housing, Alojamiento del sello	AISI 316L SS, AISI 316L Acero inoxidable
347	Guidevane, Difusor	
349	Seal ring, guidevane; Anillo del sello, difusor	BUNA-N
370	Socket head screws, casing; Encajes de tornillos, carcasa	AISI 410 SS, AISI 410 Acero inoxidable
371	Bolts, motor; Bulones, motor	Steel, Acero
383	Mechanical seal, Sello mecánico	see chart, ver tabla
408	Drain and vent plug, casing; Tapones de drenaje y ventilación, carcasa	AISI 316L SS, AISI 316L Acero inoxidable
412B	O-ring, drain and vent plug; Anillo 'O', tapón de drenaje y ventilación	Viton
513	O-ring, casing; Anillo 'O', carcasa	
Motor	NEMA standard, 56Y flange; Motor NEMA estándar, brida 56Y	

MCS Close Coupled – Dimensions, Weights and Specifications MCS Acople Cerrado – Dimensiones, pesos y especificaciones



Clockwise rotation viewed from drive end. Rotación en dirección de las agujas del reloj visto desde el extremo del motor.

NOTES:

1. Pumps will be shipped with top vertical discharge as standard. For other orientations, remove casing screws, rotate to desired position, and tighten 6mm screws to 5 – 6 lbs./ft.(6.8-8 N·m).
2. Dimensions in inches and millimeters (mm). Weight in pounds and kilograms (kg).
3. Motor dimensions may vary with motor manufacturer.
4. Not to be used for construction purposes unless certified.

NOTAS:

1. Las bombas se entregan con la descarga vertical superior estándar; para una orientación diferente, retirar los tornillos de la carcasa, hacer girar hasta la posición deseada y ajustar los bulones de 6 mm a 5-6 libras/pie (6,8-8 N·m).
2. Dimensiones en pulgadas y milímetros (mm), peso en libras y kilogramos (kg).
3. Las dimensiones del motor pueden variar de acuerdo al fabricante.
4. No utilizar para fines de construcción a menos que estén certificadas.

Dimensions and Weights – Determined by Pump, Dimensiones y peso – Determinados por la bomba

Pump, Bomba	Suct., Aspiración	Disch., Descarga	HP	W	X	Y	L	Wt. Less Motor, Peso sin motor
1 MS	1.25 (32)	1.00 (25)	½-3	1.65 (42)	4.38 (111)	2.00 (51)	5.38 (137)	6 (2.7)
2 MS	1.50 (38)	1.25 (32)	¾-5	2.09 (53)	4.50 (114)	2.12 (54)	5.94 (151)	7 (3.2)
3 MS	2.00 (51)	1.50 (38)	1-5	2.09 (53)	4.62 (117)	2.12 (54)	5.12 (130)	7 (3.2)

Dimensions and Weights – Determined by Motor, Dimensiones y peso – Determinados por el motor

HP	Motor Length and Weights, Longitud y peso del motor							
	1 Phase, Monofásicos				3 Phase, Trifásicos			
	ODP		TEFC		ODP		TEFC	
	C	Weight, Peso	C	Weight, Peso	C	Weight, Peso	C	Weight, Peso
½	10.88 (276)	24 (10.9)	11.56 (294)	30 (13.6)	10.38 (264)	24 (10.9)	10.31 (262)	19 (8.6)
¾	10.88 (276)	26 (11.8)	12.38 (315)	33 (14.9)	10.62 (270)	25 (11.3)	11.06 (281)	21 (9.5)
1	11.62 (295)	27 (12.2)	12.31 (313)	37 (16.8)	11.12 (282)	26 (11.8)	11.06 (281)	23 (10.4)
1½	13.62 (346)	28 (12.7)	13.56 (344)	40 (18.1)	11.62 (295)	28 (12.7)	11.38 (289)	29 (13.1)
2	12.62 (321)	30 (13.6)	13.56 (344)	42 (19)	11.62 (295)	31 (14)	12.81 (327)	36 (16.3)
3	12.44 (316)	36 (16.3)	14.31 (363)	48 (21.7)	12.38 (315)	34 (15.4)	15.06 (383)	40 (18.1)
5	14.03 (356)	48 (21.7)	—	—	14.03 (356)	46 (20.8)	—	—

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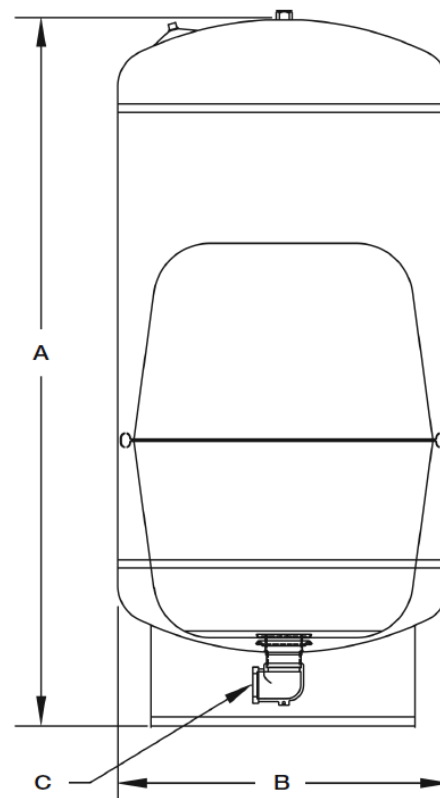


PNEUMATIC EXPANSION TANK SPECIFICATIONS



MATERIALS OF CONSTRUCTION

- **Tank:** 16 gauge cold rolled steel
- **Finish:** Appliance quality paint for indoor or outdoor installation
- **Water chambers:** Top chamber is 100% butyl rubber, lower water chamber is copolymer polypropylene
- **Connection:** Stainless Steel
- **Testing:** High pressure, seam weld, helium, final precharge check
- **Air valve:** Brass valve with o-ring seal
- **Warranty:** Five year



DIMENSIONS & CAPACITIES

Model	Total Tank Volume		A Height		B Diameter		C Connection	Total Weight	
	gal	liters	in	cm	in	cm		lbs	kilos
H2P 14	14	60	22	55.88	16	40.64	1" NPT	28.0	12.7
H2P 20	20	80	29	73.66	16	40.64	1" NPT	36.0	16.3
H2P 25	26	100	34.5	87.63	16	40.64	1" NPT	41.0	18.6
H2P 30	32	120	27.75	70.48	21	53.34	1 1/4" NPT	54.0	24.5
H2P 35	33.4	130	42.75	108.58	16	40.64	1 NPT	49.0	22.2
H2P 45	44	170	36.25	92.07	21	53.34	1 1/4" NPT	67.0	30.4
H2P 65	62	240	48	121.92	21	53.34	1 1/4" NPT	82.0	37.2
H2P 80	81	310	62	157.48	21	53.34	1 1/4" NPT	99.0	44.9
H2P 85	85	325	44.5	113.03	26	66.04	1 1/4" NPT	121.0	54.9
H2P 120	119	450	59.75	150.49	26	66.04	1 1/4" NPT	153.0	69.5

Maximum working pressure 125 psig. Maximum working temperature, internal & external 140° F. Tank pre-charge 38 psig.

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Booster Pump Systems

Three Year Limited Warranty

This warranty applies to booster pump systems built by Towle Whitney LLC, and shall:

- Exist 36 months from the date of shipment.
- Be in effect only after installation photographs are received by Towle-Whitney LLC.

Towle-Whitney LLC liability under this warranty shall be limited to the repair or replacement of any part or parts found to be defective (material or workmanship) within the warranty period. Towle-Whitney LLC shall determine whether the part needs to be returned, or field scrapped. The warranty excludes:

- Any water damage or consequential damage.
- Transducers and pump seals.
- Debris in water causing internal pump damage.
- Systems not installed in accordance with Installation and Maintenance Instructions.
- Labor, transportation, and related costs incurred by the customer.
- Misuse, negligence, inappropriate chemicals or additives in water.
- Inadequate protection from freezing.
- Lightning, high voltage spikes, accidents, floods, or acts of God.
- Re-Installation costs of repaired or replacement equipment.
- Re-Imbursement for the loss caused by interruption of service.

This warranty applies to all states and territories of the United States and Canada only. There are no express or implied warranties, including merchantability or fitness for a particular purpose, which extend beyond those warranties described or referred to above.

Some jurisdictions do not allow the exclusion or limitation of incidental or consequential damages and some jurisdictions do not allow limit actions on how long implied warranties may last. Therefore, the above limitations or exclusions may not apply. This warranty gives you specific legal rights and you may also have other rights which vary from jurisdiction to jurisdiction.