

# POWER SOURCES

ELECTRIC/HYDRAULIC

HYDRAULIC INTENSIFIER

AIR/HYDRAULIC



## Power Source Information

Hytec power workholding systems use constant pressure or demand-type power sources. This means that the power source continuously supplies pressure to the circuit control valves for instantaneous response when the valves are shifted. The power source then automatically starts to maintain system pressure, but when the demand is met, shuts off to conserve energy and prevent heat build-up.

Hytec offers two basic hydraulic pump types – electric and air powered. Hytec also has a line of control valves for use with these pumps. The valves have virtually zero leakage and are ideally suited for constant pressure hydraulic workholding systems. **Note that valves with internal leakage (such as spool valves) are not appropriate for use with Hytec pumps and pallet valve systems.**

### Electric/Hydraulic Pumps

All of Hytec's electric/hydraulic pumps are two-stage, continuous pressure (demand) pumps that contain all the necessary controls and circuitry for powering any single- or double-acting, continuous pressure workholding system. They contain a pressure switch and pressure regulator, and each is infinitely adjustable throughout the operating pressure range of 1,000 to 5,000 psi. An internal safety relief valve prevents possible damage from exceeding the maximum rated pressure.

The first stage provides high flow at low pressure to rapidly extend clamps and cylinders. The second stage piston pump builds and maintains pressure in the system at a preset level.

The pumps' electrical controls include a RUN/JOG switch. When the pump is started in the RUN mode, it automatically

starts and runs any time the pressure switch indicates the need for oil. When pressure builds to the switch setting, the pump stops until the next demand for oil lowers the pressure, causing the switch to start the pump again. The pump continues to cycle in this manner without operator intervention.

In the JOG mode, useful for set up and special applications, the pump will run only when the operator activates and holds the start switch. When released, the pump will stop immediately. If the pump builds pressure to the pressure switch setting, it will also stop. The pump cannot be forced to run after the pressure switch setting has been reached in either the RUN or the JOG mode.

Pumps having thermal overload protection have an integral "electrical shut-down" circuit which prevents the pump from restarting without manual intervention after either thermal overload or electrical service interruption.

Motor electrical specifications are listed for each pump. For voltages and frequencies not listed, contact Hytec for more information.

An optional fluid level temperature gauge is available. See page 135.

### Air/Hydraulic Pumps

Hytec's air/hydraulic pumps are all continuous pressure, reciprocating, stall-type pumps: air pressure is simply converted to hydraulic pressure. Operated by any compressed air source, these pumps save energy by stalling when pressure is developed, and require no energy use to maintain system pressure. Single- and two-stage pumps are available.

Pumps of this type typically have much more usable oil capacity than ordinary boosters. Boosters stop after only one stroke, and if pressure is not built by the end of the stroke, or if any leakage is present, system pressure will not be maintained. Hytec air/hydraulic pumps will maintain pressure levels because they continue to reciprocate until

pressure develops. Once pressure is developed, the pump stalls and maintains consistent system pressure. If additional flow is necessary for maintaining pressure, the pump will again reciprocate any time the end of its stroke is reached.

These pumps all operate within an air pressure range of 40-125 psi. Hydraulic operating pressures range from 400-5,000 psi.

Selected Hytec air/hydraulic pumps come with an air supply filter/lubricator/regulator for making hydraulic pressure adjustments. There is even a version that includes a selector valve and the circuitry required to provide control of single acting circuits without the need for additional directional control valves.

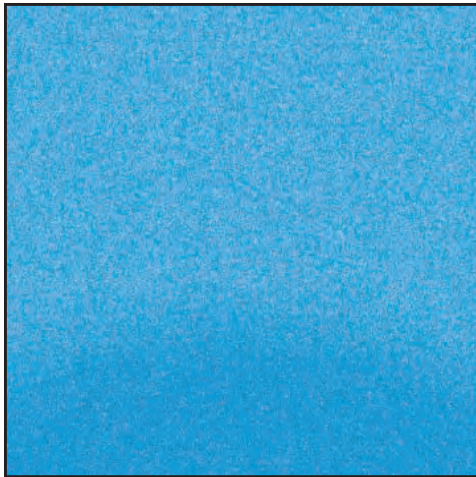
### Intensifiers

Intensifiers are used in applications where an existing low pressure hydraulic source is available. They amplify low pressure to a range better suited to workholding systems.

Intensifiers use a reciprocating pumping mechanism to generate the high pressure flow so their volume is not limited as with piston style intensifiers. This allows the intensifier to compensate for any oil consumption on the high pressure side. The outlet pressure is directly proportional to the inlet pressure. High pressure adjustment is achieved by varying the inlet pressure.

Flow from the low pressure source is directed through the intensifier to the downstream circuit. As system pressure increases, the intensifier begins to cycle and intensifies the system pressure by the ratio specified.

Models without a dump valve do not allow reverse flow so directional control must take place downstream in the pressure circuit. Models with the dump valve allow directional control in the low pressure supply circuit. The optional directional valve manifold block has an industry standard size-10 four-way cavity to accept a variety of manual and solenoid valves.



This two-stage, continuous pressure (demand) pump contains all the necessary controls and circuitry for powering single- or double-acting continuous pressure workholding systems. It has a pressure switch and pressure regulator, both infinitely adjustable throughout the operating pressure range of 1,000 to 5,000 psi. An internal safety relief valve prevents damage from exceeding the maximum rated pressure. It's an economical gerotor/radial piston pump designed for remote mounted valves only. Consult

Hytec for information on pump mounted valves. Shipped with 1.5 gallons of oil.

**Features:**

- Drip proof induction motor
- CSA approved
- Filtered filler/breather cap
- Liquid filled gauge
- Carrying handle
- Thermal overload protection
- 2-gallon, high density polyethylene reservoir
- 1/4" NPTF outlet manifold
- 33 cu. in./min. oil flow at max. pressure
- 295 cu. in. usable oil





100220

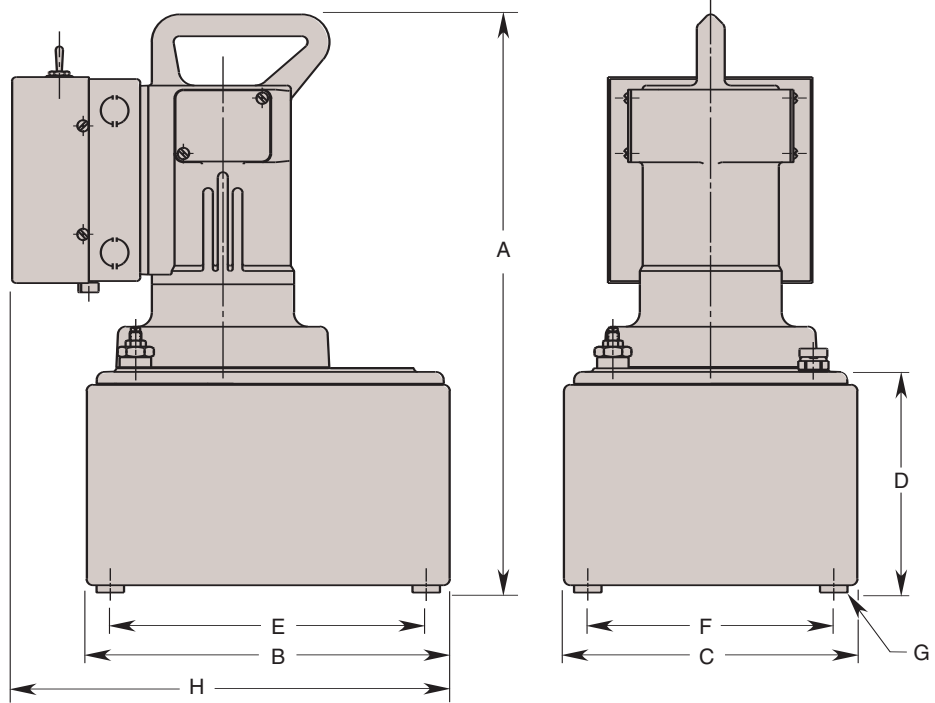
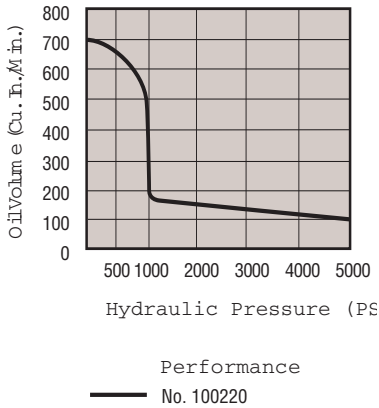
This electric/hydraulic pump is a two-stage, continuous pressure (demand) pump that contains all the necessary controls and circuitry for powering any single- or double-acting continuous pressure workholding system. It has a pressure switch and an external pressure regulator, both infinitely adjustable throughout the operating pressure range of 1,000 to 5,000 psi. An internal safety relief valve prevents damage from exceeding the maximum rated pressure.

It's a gear/axial piston pump designed for use in single or multiple station applications. Its high torque universal motor is low voltage

tolerant. Includes a 1/4" NPTF outlet manifold and will accept any Hytec pump-mounted valve. Shipped with two gallons of oil.

**Features:**

- CSA approved model available
- Drip proof universal motor
- Filtered filler/breather cap
- Liquid filled gauge
- Carrying handle
- 2.5-gallon metal reservoir
- 525 cu. in. usable oil
- Oil flow at max. pressure: 100 cu. in./min.



Cat. No.	Specifications			Dimensions (In Inches)							
	Electric Motor	Supply Voltage	Noise Level @ Idle/Max. Press. (dBA)	A	B	C	D	E	F	G Thread Size	H
100220	1½ hp; 12,000 rpm; 115 VAC; 25 amps max.; 50/60 Hz; single phase	115 VAC	80/85	18.250	12.500	10.500	7.000	10.000	8.000	½-20 UNF	14.000
100220-230	1½ hp; 12,000 rpm; 230 VAC; 14 amps max.; 50/60 Hz; single phase	230 VAC									

NOTE: An optional fluid level / temperature gauge is available, see page 135.

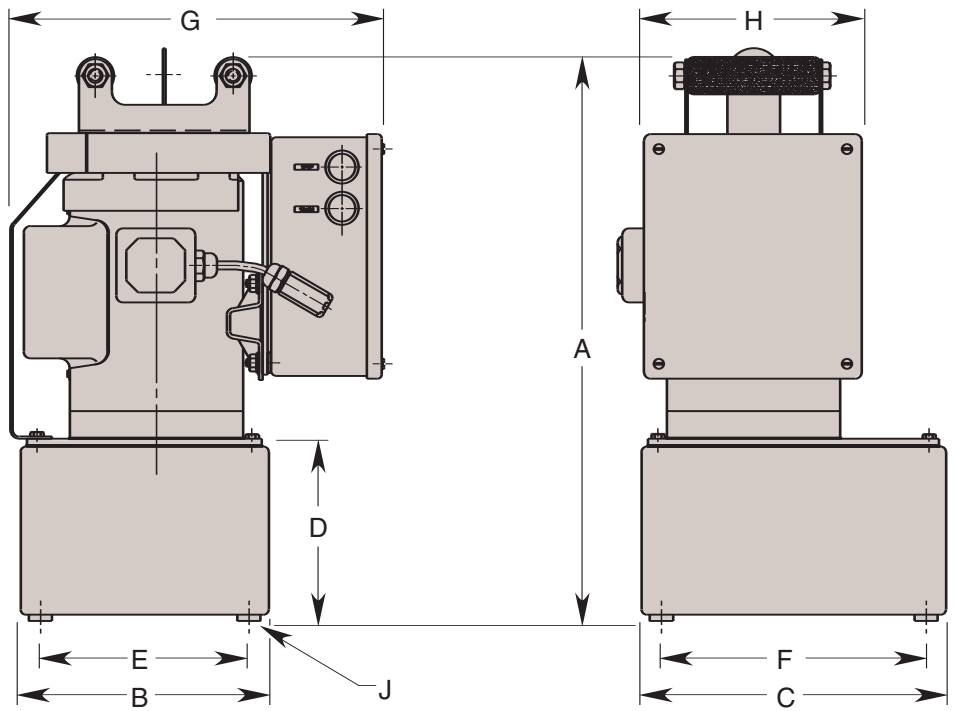
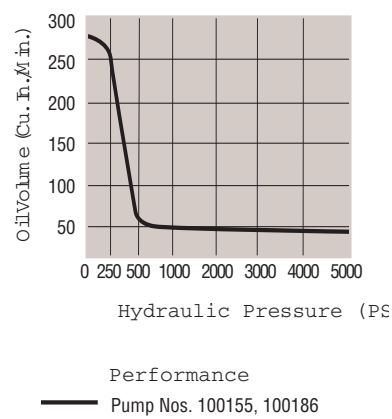


These electric/hydraulic pumps are two-stage, continuous pressure (demand) pumps that contain all the necessary controls and circuitry for powering any single- or double-acting continuous pressure workholding system. They have a pressure switch and an external pressure regulator, both infinitely adjustable throughout the operating pressure range of 1,000 to 5,000 psi. An internal safety relief valve prevents damage from exceeding the maximum rated pressure.

They are gerotor/axial piston pumps with a totally enclosed fan cooled (TEFC) induction motor. The 1/4" NPTF outlet manifold can be replaced by any Hytec pump-mounted valve. Shipped with two gallons of hydraulic oil.

**Features:**

- NEMA 12 electrical enclosure and controls
- CSA approved
- Drip/chip cover
- Liquid filled gauge
- Dual carrying handles
- Thermal overload protection
- 2.5-gallon metal reservoir
- 44 cu. in./min. oil flow at max. pressure
- 590 cu. in. usable oil



Cat. No.	Specifications			Dimensions (In Inches)								
	Electric Motor	Supply Voltage	Noise Level @ Idle/Max. Press. (dBA)	A	B	C	D	E	F	G	H	J Thread Size
100155	1 hp; 1,725 rpm; 230/460 VAC; 3.8/1.9 amps max.; 60 Hz; three phase	460 VAC	70	21.375	9.500	11.500	6.500	8.000	10.000	14.125	9.500	1/2-20 UNF
100155-230		230 VAC										
*100186	115 VAC											
100186-230	230 VAC											

NOTE: \*For field conversion to 230 VAC, order conversion kit No. 250186. An optional fluid level / temperature gauge is available, see page 135.



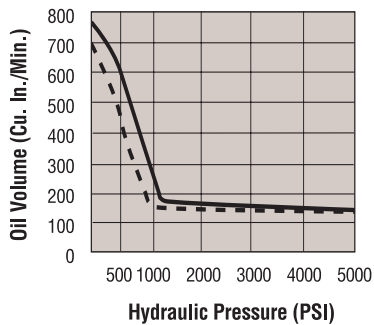
100211

These electric/hydraulic pumps are two-stage, continuous pressure (demand) pumps that contain all the necessary controls and circuitry for powering any single- or double-acting continuous pressure workholding system. They contain a pressure switch and pressure regulator that are infinitely adjustable throughout the operating pressure range of 1,000 to 5,000 psi.

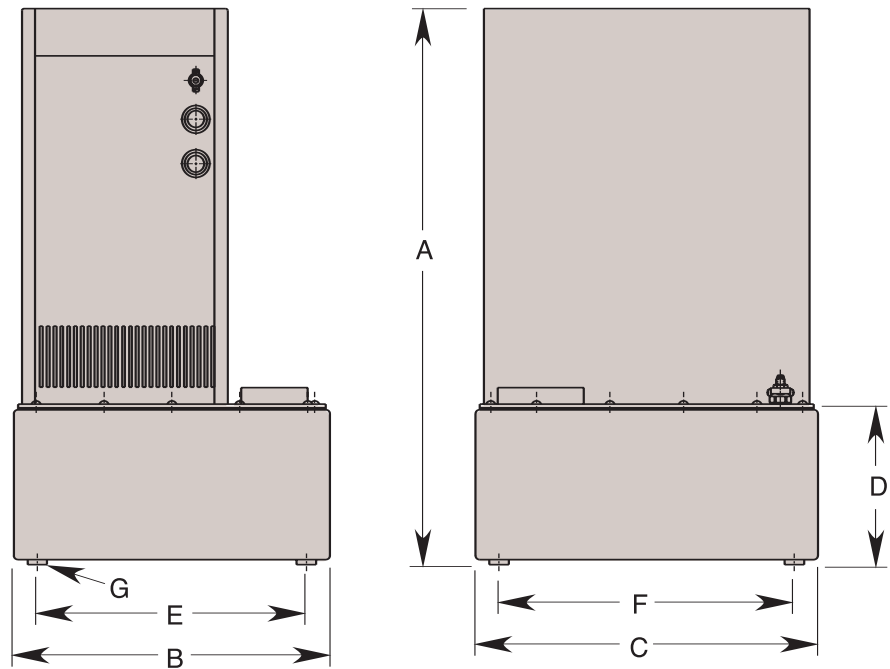
They are gerotor/axial piston pumps, ideal for use in single or multiple station applications, and include a 1/4" NPTF outlet manifold and will accept any Hytec pump-mounted valve. Shipped with four gallons of oil.

**Features:**

- Enclosed induction motor
- Filtered filler/breather cap
- Liquid filled gauge
- Carrying handles
- Thermal overload protection
- 5.7-gallon metal reservoir
- Oil flow at max. press.: 125 cu. in./min.
- 1,250 cu. in. usable oil
- External pressure regulator
- Pressure switch



**Performance**  
 — No. 100211  
 - - - No. 100213



Cat. No.	Specifications			Dimensions (In Inches)						
	Electric Motor	Supply Voltage	Noise Level @ Idle/Max. Press. (dBA)	A	B	C	D	E	F	G Thread Size
100211†	2 hp; 1,725 rpm; 115/230 VAC; 27/14 amps max.; 50/60 Hz; single phase	115/230 VAC	74/76	25.125	14.250	15.500	7.250	12.125	13.312	1/2-20 UNF

NOTE: † CSA Approved.



Intensifiers are used in applications where an existing low pressure hydraulic source is available. They amplify low pressure to a range better suited to workholding systems

Intensifiers use a reciprocating pumping mechanism to generate the high pressure flow so their volume is not limited as with piston style intensifiers. This allows the intensifier to compensate for any oil consumption on the high pressure side. The outlet pressure is directly proportional to the inlet pressure. High pressure adjustment is achieved by varying the inlet pressure.

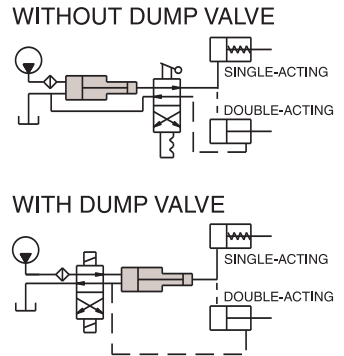
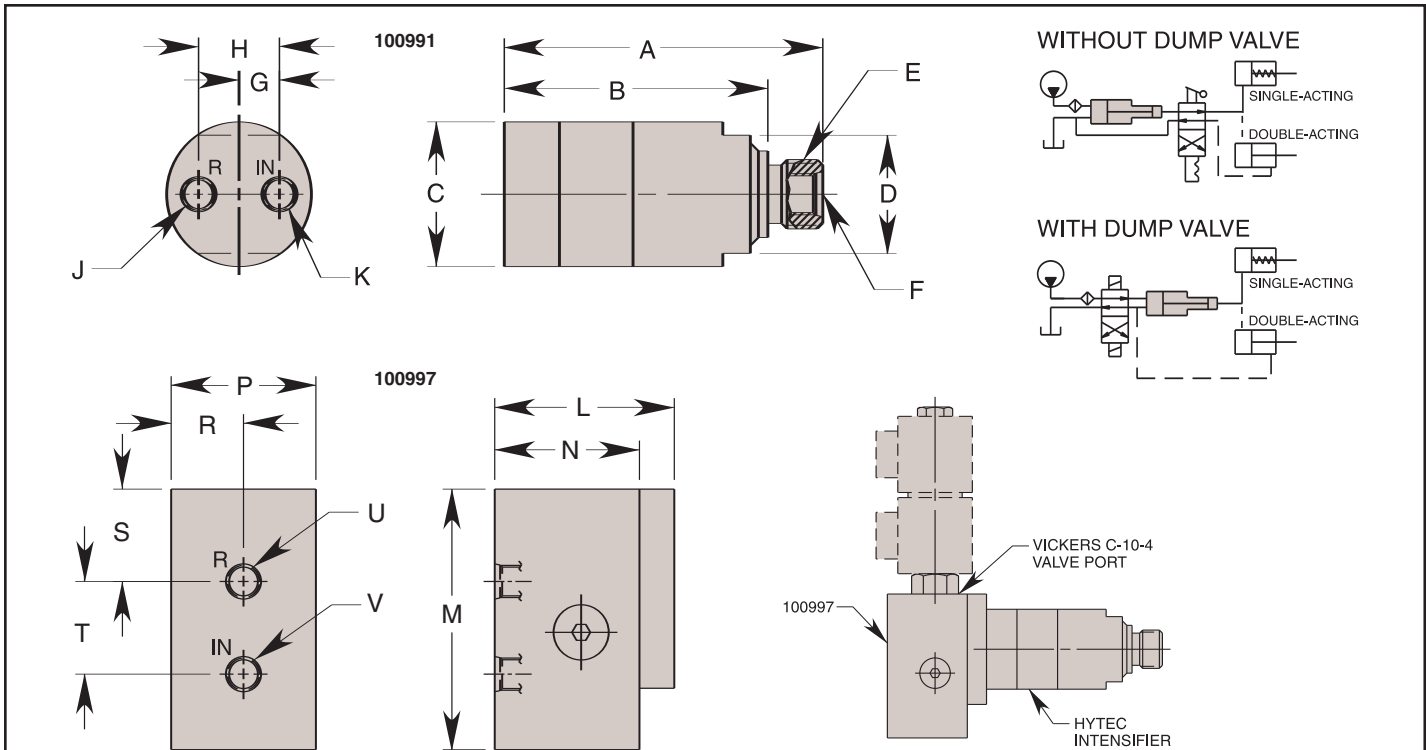
Flow from the low pressure source is directed through the intensifier to the downstream circuit. As system pressure increases, the intensifier begins to cycle and intensifies the system

pressure by the ratio specified.

Models without a dump valve do not allow reverse flow so directional control must take place downstream in the high pressure circuit. Models with the dump valve allow directional control in the low pressure supply circuit. The optional directional valve manifold block has a standard Vickers C-10-4 cavity to accept a variety of manual and solenoid valves. Fitting No. 253288 can be used with part No. 100997. See page 126 for specs.

**Features:**

- 5,000 psi max.
- 3.2, 4 and 5.1 ratios available
- Optional valve manifold
- Extremely compact size



Cat No.		Specifications			Dimensions (In Inches)							
		Pressure Intensification Ratio	Inlet Flow Max. (Cu. in./min.)	Outlet Flow Max. (Cu. in./min.)	Inlet Pressure		A	B	C Dia.	D Flats	E Thread Size	F Outlet Thread Size
With Dump Valve	W/O Dump Valve				Min. (psi)	Max. (psi)						
100991	100994	3.2 to 1	610	150	300	1,560	4.331	3.583	1.968	1.606	M24 x 1.5	3/16-18 UNF SAE-6
100992	100995	4.0 to 1	580	120								
100993	100996	5.0 to 1	550	95								

Cat No.		Dimensions (In Inches)			
		G	H	J Return Thread Size	K Inlet Thread Size
100991	100994	.551	1.102	3/16-20 UNF SAE-4	3/16-20 UNF SAE-4
100992	100995				
100993	100996				

Cat No.	Dimensions (In Inches)								
	L	M	N	P	R	S	T	V Return Thread Size	V Inlet Thread Size
100997	2.441	3.543	1.968	1.968	.984	1.256	1.260	3/8 BSPP	3/8 BSPP

**NOTE:** Approximate inlet to outlet leakage is 1 cu. in./min. Requires 10 micron nominal filtration. Hytec filter 100919 is ideal for protecting the inlet port. M24-1.5 nut included.

**IMPORTANT:** Demands created by the addition of this device to an existing hydraulic system can cause fluctuations in available pressure and flow to that system. The effects of these fluctuations on the original system must be evaluated by the designer of that system.



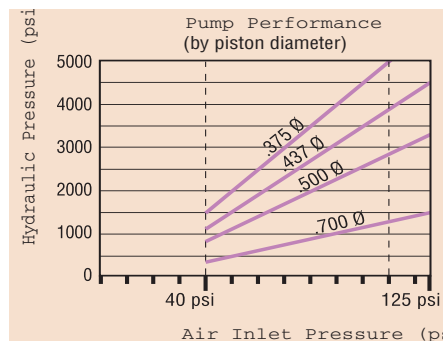
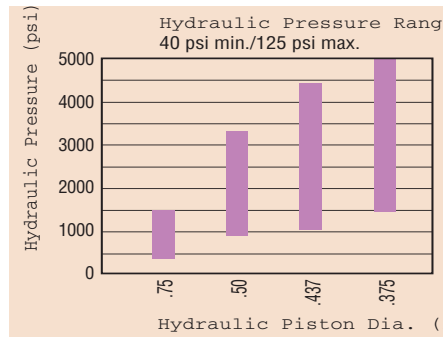
**Use this guide to determine the right pump for your application.**

Some of Hytec's pumps can be used for many different applications – and others are intended for specific applications.

- Reciprocating piston pump mechanism available in any of four pressure ranges
- Hydraulic pressure is varied by changing air pressure at the pumps inlet
- Filtered breather and dipstick built into filler cap
- Elevated fill port keeps contaminants out of reservoir
- More usable oil capacity than ordinary boosters

Once pressure is developed, these pumps stall and then no energy is required to maintain consistent system pressure. Boosters stop after only one stroke, and if pressure is not built after that first stroke, or if leakage is present, system pressure will not be maintained. Hytec air/hydraulic pumps will maintain pressure levels because they continue to reciprocate until pressure develops. If additional flow is necessary for maintaining pressure, the pump again reciprocates to meet that demand.

All of Hytec's air/hydraulic pumps can be built in any of 4 different pressure ranges by changing the size of the pump piston. All of the most common versions are available from stock. Any other combinations can be easily assembled to order.



\* Air pressures higher than 110 psi will open the pump's internal relief valve to protect the pump and the circuit. The pump will continue to reciprocate rather than stall. This will cause unnecessary wear, noise, heat and air usage.



**100190**

This single-stage design is the flagship of Hytec air/hydraulic pumps. Used

with a hydraulic directional control valve, these pumps are **suited for either single-acting or double-acting systems**. Primarily for use with their manifold and remote mounted valves, they are used to power systems with a single valve or as the centralized pump for systems using multiple valves. Pump mounted valves can simplify plumbing but limit the application to one circuit per pump. The built-in air filter/regulator/lubricator provides hydraulic pressure adjustment. A metal case increases durability and resists contamination.



**100200**

This pump style provides all of the same operational and design features

of the pump style discussed above but **provides much higher low pressure flow rates**. Under the cover are two of Hytec's reciprocating air/hydraulic pumps. Both share the same inlet and outlet ports. This two-stage design provides higher flows at lower pressures. The first stage pump receives full airline pressure. When its maximum hydraulic pressure is reached, it stalls and allows the second stage pump (usually a higher pressure version) to take over to develop system pressure. The second stage pump is controlled by the built-in air filter/regulator/lubricator.



**100280**

This pump style provides all of the same operational features of the

single-stage pumps discussed above except that it **makes use of a user-supplied air filter/regulator/lubricator to control pressure**. External shrouding is removed to decrease its overall size and allow mounting in tight quarters; either on or off the fixture. Primarily for use with their manifold and remote mounted valves. Pump mounted valves can simplify plumbing but limit the application to one circuit per pump. Like the pumps above, a pressure gauge and a manifold with pressure



and return ports are included.  
**58219**

This series of pumps has a **built-in directional control valve**.

Circuits using this pump require only a single line between the pump and the workholding circuit. For single-acting systems only, directional control is provided by a two-position air valve mounted on the pump. This valve can be remote mounted with two, user-supplied air lines between the valve and the pump. Supply (air) pressure is then connected to the valve. This pump is not intended for use with additional directional control valves and allows only one circuit per pump. This simple, inexpensive design eliminates the cost and clutter of a separate hydraulic directional control valve.



**100279**

This style of pump is designed specifically for **use with our**

**manual pallet valve**. It is controlled by the foot pedal. Rocking it toe-down releases hydraulic pressure. Rocking it back to the heel-down position causes the pump to start. When released, the pedal returns to a center position and the pump stops. Because the pump runs only when holding the pedal down, this style of air/hydraulic power source is not suitable for constant pressure workholding systems. Use this pump for single-acting systems where an operator is in control of the pump, hold and release functions. In addition to our manual pallet valve, this pump can be useful for non-clamping process functions like pressing or positioning.

**Contact Hytec or your distributor**

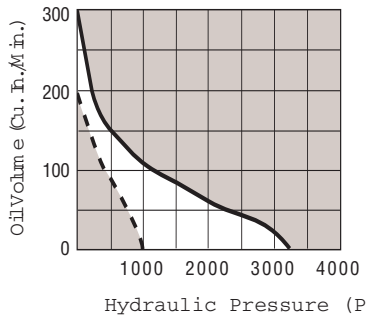




Available with all piston options, this single-stage pump is a continuous pressure, reciprocating, stall-type pump: air pressure is simply converted to hydraulic pressure. Operated by any compressed air source, this pump saves energy by stalling when pressure is developed, and requires no energy to maintain system pressure. It features single-stage operation, and can accept any Hytec pump-mounted valve. An air supply filter/lubricator/regulator (not included) is required for making hydraulic pressure adjustments.

**Features:**

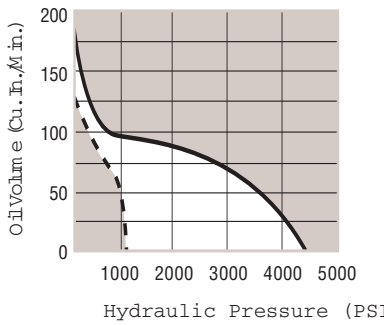
- Filtered fill cap with dipstick
- Liquid filled gauge
- 105 cu. in., high-density polyethylene reservoir
- 1/4" NPTF outlet manifold
- 1/4" NPTF air inlet port
- 98 cu. in. usable oil
- Shipped filled with oil
- Operating Pressure Range (nominal):
  - 100280-** 4,475 psi @ 125 psi air, max.  
1,150 psi @ 40 psi air, min.
  - 100987-** 3,325 psi @ 125 psi air, max.  
925 psi @ 40 psi air, min.
- .437 dia. piston size
- .50 dia. piston size



**Performance**

No. 100987

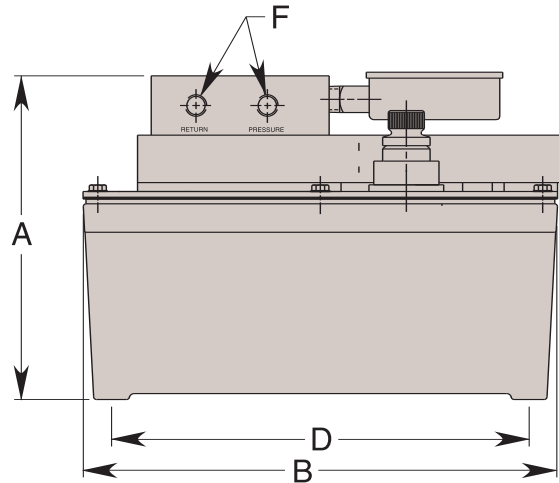
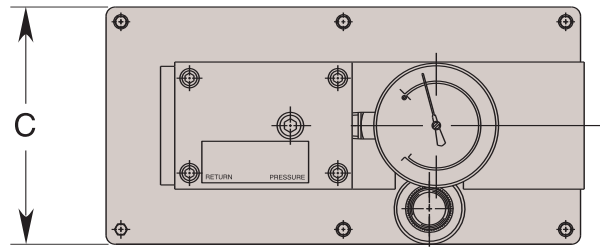
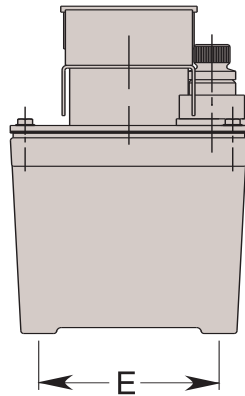
- - - 40 psi Air Pressure
- 125 psi Air Pressure



**Performance**

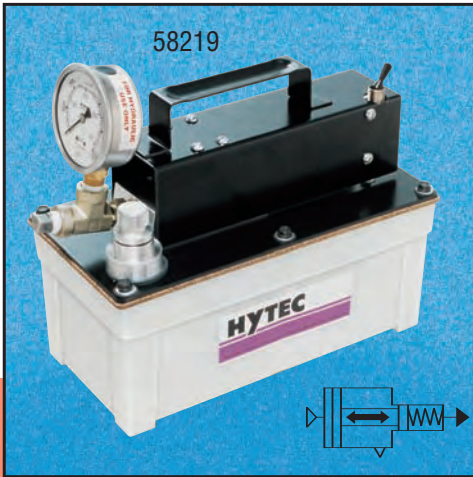
Cat. No. 100280

- - - 40 psi Air Pressure
- 125 psi Air Pressure



Cat. No.	Specifications			Dimensions (In Inches)					
	Piston Dia.	Operating Pressure Range		A	B	C	D	E	F Ports
		@ 125 psi Air Max.	@ 40 psi Air Min.						
100280	.437	4,475	1,150	7.000	10.000	5.000	9.000	4.000	1/4 NPT
100987	.500	3,325	925						

**NOTE:** Mounting screws included (9-15 x 1.000 Lg.).  
**AIR REQUIREMENTS:** 20 CFM (max.) at low hydraulic pressure decreasing to 0 CFM when pump stalls.

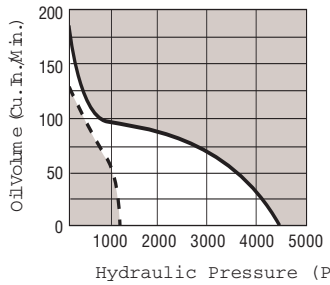


Available with all piston options, this single-stage power source is a continuous pressure, reciprocating, stall-type pump. Air pressure is simply converted to usable hydraulic pressure. Operated by any compressed air source, this pump saves energy by stalling when hydraulic pressure is developed and then requires no additional energy to maintain system pressure.

Designed for single acting systems, this pump has a built-in selector valve to choose either the pressurize or release mode. No additional valving is required. An air supply filter/regulator/lubricator (not included) is required for making pressure adjustments.

**Features:**

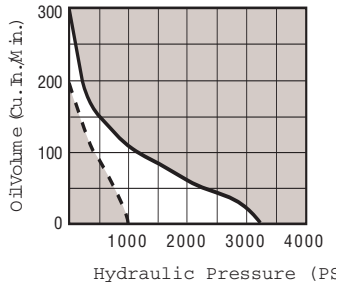
- Filtered fill cap with dipstick
- Liquid filled gauge
- 105 in<sup>3</sup>, high-density polyethylene reservoir
- ¼" NPTF outlet port
- ⅛" NPTF air inlet port
- 98 cu. in. usable oil
- Shipped filled with oil
- Carrying handle for easy portability
- Operating Pressure Range (nominal):
  - 100921**- 5,000 psi @ 110 psi air, max. 1,500 psi @ 40 psi air, min., .375 dia. piston size
  - 58219**- 4,475 psi @ 125 psi air, max. 1,150 psi @ 40 psi air, min., .437 dia. piston size
  - 100918**- 3,325 psi @ 125 psi air, max. 925 psi @ 40 psi air, min., .50 dia. piston size



Performance

No. 58219

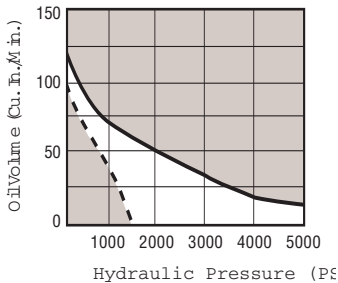
- 40 psi Air Pressure
- 125 psi Air Pressure



Performance

No. 100918

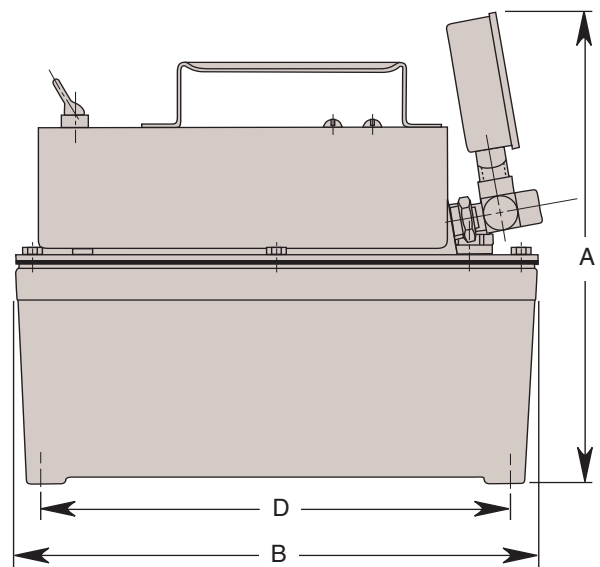
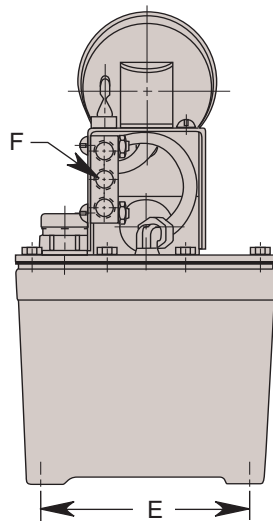
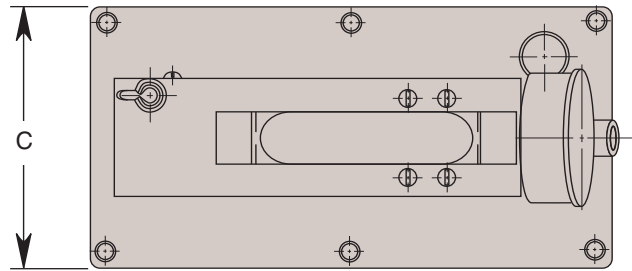
- 40 psi Air Pressure
- 125 psi Air Pressure



Performance

No. 100921

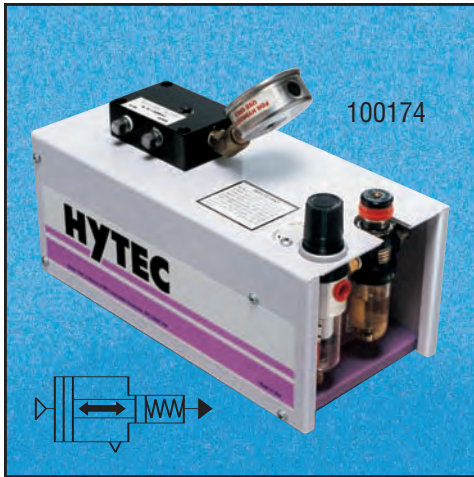
- 40 psi Air Pressure
- 110 psi Air Pressure



Cat. No.	Specifications			Dimensions (In Inches)					
	Piston Dia.	Operating Pressure Range		A	B	C	D	E	F Air Inlet Port
		@ 125 psi Air Max.	@ 40 psi Air Min.						
100921	.375	5,000	1,500	9.032	10.000	5.000	9.000	4.000	⅛ NPT
58219	.437	4,475	1,150						
100918	.500	3,325	925						

NOTE: Mounting screws included (9-15 x 1.000 Lg.).  
AIR REQUIREMENTS: 20 CFM (max.) at low hydraulic pressure decreasing to 0 CFM when pump stalls.

# Air/Hydraulic Pumps

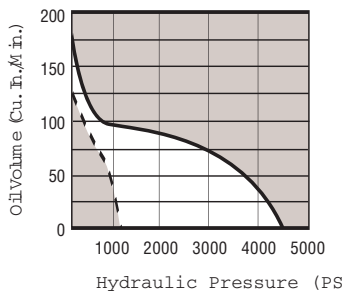


These single-stage pumps are continuous pressure, reciprocating, stall-type pumps: Air pressure is simply converted to hydraulic pressure. Operated by any compressed air source, these pumps save energy by stalling when pressure is developed, and require no energy use to maintain system pressure. They will accept any Hytec pump-mounted valve.

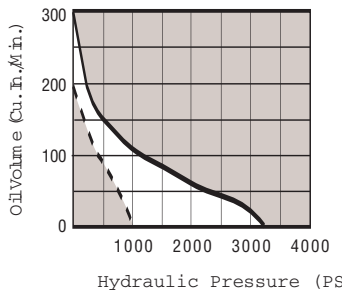
**Features:**

- 105 cu. in., high-density polyethylene reservoir
- Filtered fill cap with dipstick
- Liquid filled gauge
- 1/4" NPTF outlet manifold

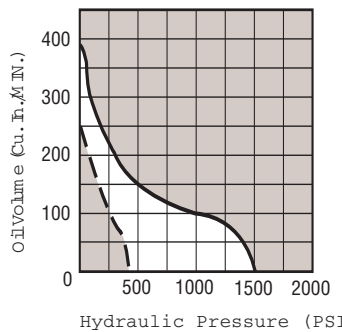
- 1/4" NPTF air inlet port
- 98 cu. in usable oil
- Shipped filled with oil
- Operating Pressure Range (nominal):
  - 100920** – 5,000 psi @ 110 psi air, max. 1,500 psi @ 40 psi air, min. .375 dia. piston size
  - 100190** – 4,475 psi @ 125 psi air, max. 1,150 psi @ 40 psi air, min. .437 dia. piston size
  - 100174** – 3,325 psi @ 125 psi air, max. 925 psi @ 40 psi air, min. .50 dia. piston size
  - 100191** – 1,500 psi @ 125 psi air, max. 400 psi @ 40 psi air, min. .75 dia. piston size



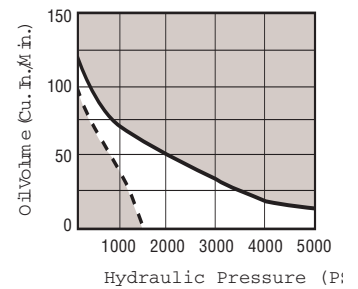
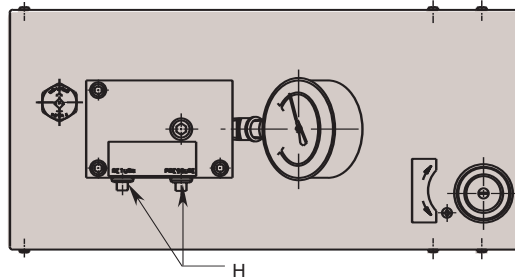
Performance  
No. 100190  
- - - 40 psi Air Pressure  
— 125 psi Air Pressure



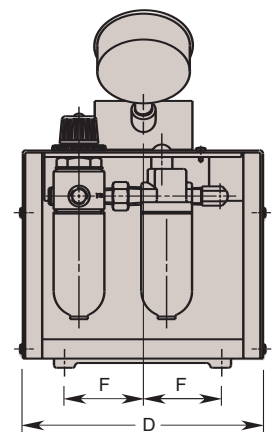
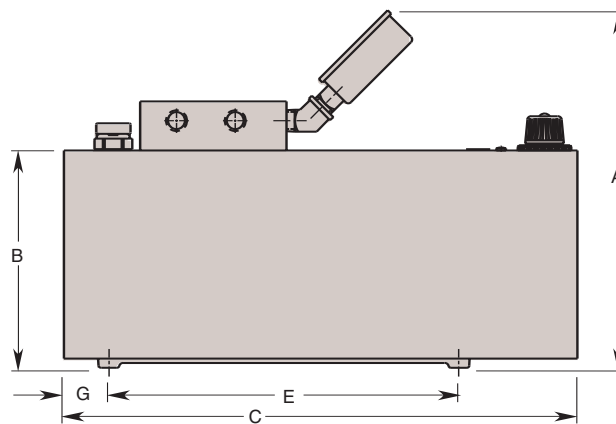
Performance  
No. 100174  
- - - 40 psi Air Pressure  
— 125 psi Air Pressure



Performance  
No. 100191  
- - - 40 psi Air Pressure  
— 125 psi Air Pressure



Performance  
No. 100920  
- - - 40 psi Air Pressure  
— 110 psi Air Pressure



Cat. No.	Specifications			Dimensions (In Inches)							
	Piston Dia.	Operating Pressure Range		A	B	C	D	E	F	G	H Ports
		@ 125 psi Air Max.	@ 40 psi Air Min.								
100920	.375	*	1,500	9.500	5.500	13.062	6.125	9.000	2.000	1.250	1/4 NPTF
100190	.437	4,475	1,150								
100174	.500	3,325	925								
100191	.750	1,500	400								

**NOTE:** Mounting screws included (9-15 x 1.000 Lg.).  
**AIR REQUIREMENTS:** 20 CFM (max.) at low hydraulic pressure decreasing to 0 CFM when pump stalls.  
 \* Air pressure higher than 110 psi will cause the pump to exceed its 5,000 psi maximum rating. The internal relief valve will open to protect the pump and the circuit, but the pump will continue to reciprocate rather than stall. This will cause unnecessary wear, noise, heat and air usage.



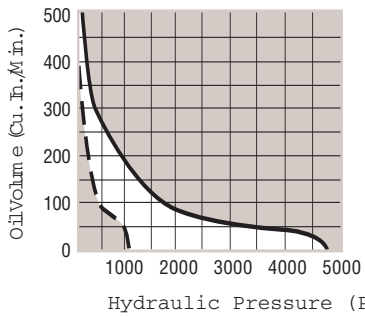
Available with any combination of available pistons, this pump is designed for applications where air is the preferred source of energy, this two-stage pump gives you high speed oil advance. The first stage provides high flow at low pressure for rapid advance of clamps and cylinders. The second stage builds and maintains pressure at a preset level. And because it has a manifold, it will accept any Hytec pump-mounted valve.

Each stage is an individual air/hydraulic pump which stalls when hydraulic pressure exceeds the air pressure times the pump ratio. Only the second stage pump is controlled by the built-in adjustable pressure regulator. The first stage is limited only by air supply pressure.

**Features:**

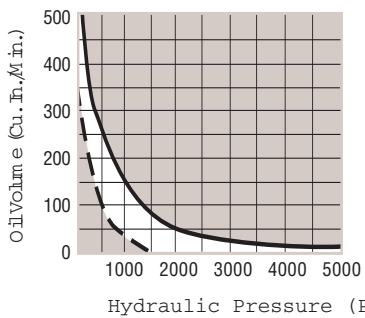
- Filtered fill cap with dipstick
- Liquid filled gauge
- 2-gal.n. high-density polyethylene reservoir
- ¼" NPTF air inlet port
- ¼" NPTF outlet manifold
- Shipped with 1.5 gallons hydraulic oil
- 425 cu. in. usable oil

- 100922** - 5,000 psi @ 110 psi air, max.  
 1,500 psi @ 40 psi air, min.  
 .75 and .375 dia. piston size
- 100200** - 4,475 psi @ 125 psi air, max.  
 1,150 psi @ 40 psi air, min.  
 .75 and .437 dia. piston size



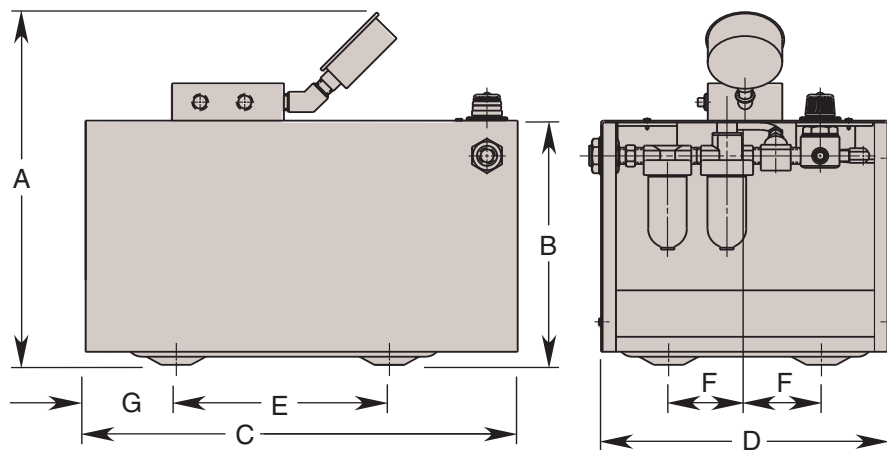
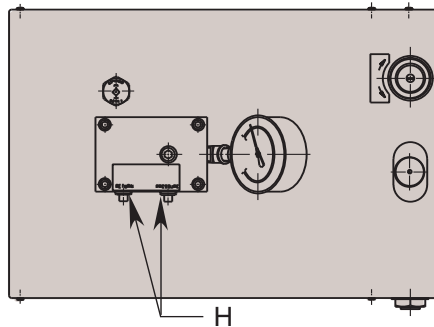
**Performance**

- No. 100200
- 40 psi Air Pressure
- 125 psi Air Pressure



**Performance**

- No. 100922
- 40 psi Air Pressure
- 125 psi Air Pressure



Cat. No.	Specifications			Dimensions (In Inches)							
	Piston Dia.	Operating Pressure Range		A	B	C	D	E	F	G	H Ports
		@ 125 psi Air Max.	@ 40 psi Air Min.								
100922	.750/.375	*	1,500	12.000	8.500	14.250	9.625	7.125	2.562	1.438	¼ NPTF
100200	.750/.437	4,475	1,150								

**NOTE:** Mounting screws included (¼-10 x .875 Lg.).

To properly control system pressure in low pressure applications, air supply pressure should be limited to less than 6% (125 psi max.) of desired hydraulic pressure.

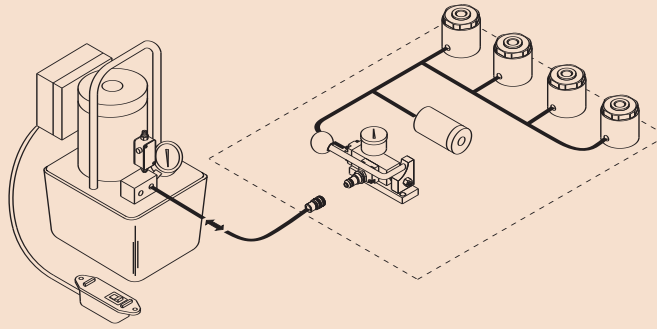
**AIR REQUIREMENTS:** 37 CFM (max.) at low hydraulic pressure decreasing to 0 CFM when pump stalls.

\* Air pressure higher than 110 psi will cause the pump to exceed its 5,000 psi maximum rating. The internal relief valve will open to protect the pump and the circuit, but the pump will continue to reciprocate rather than stall. This will cause unnecessary wear, noise, heat and air usage.



While Hytec has a pump applicable to most applications, not all pumps can be used in all systems. Please use the application chart below and the following pages to identify the pump that best fits your needs.

## Powering a Single Acting Manual Pallet Coupling System



Pallet Coupling Pumps



### 100179

Similar to the 100178, this economical pump has a special electrical circuit as well as an automatic dump valve. This pump is well suited for use with Hytec's manual pallet valve.  
Page 113



### 100879, 100888

These pumps are based on Hytec's popular one horsepower, TEFC, NEMA 12, hydraulic power source. They are modified both electrically and hydraulically for use with our pallet valve.  
Page 114

### 100279

For  
for ou  
Page



For faster flow rates, these are the highest capacity, standard Hytec pumps



### 100279

Like all of the others above, this air powered, reciprocating hydraulic pump is designed and outfitted specifically for the manual pallet valve.  
Page 116