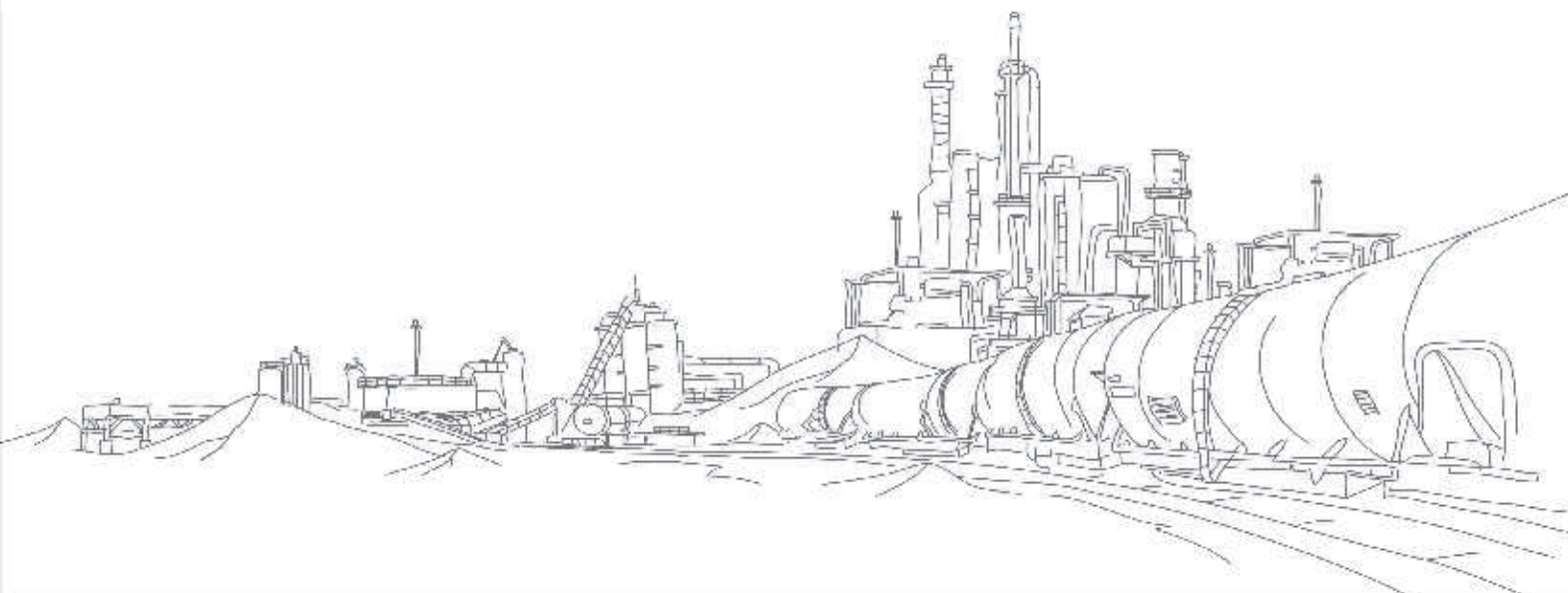


# CONTENTS



USUN pumps and valves are widely used in various industries. We provide quality products and services with international standard for many well known and outstanding companies worldwide. Choose USUN, we will provide you with comprehensive products and professional services.



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## About USUN

Equipment Co Ltd Company Limited specialize and focus on the R&D, design and manufacture of stainless steel instrumentation valves, high pressure valves, control valves, high pressure pumps and boosters with international standard.

The company occupies 54 acres and owns 20,000 square meters of modern workshop and office buildings; an engineering team with more than 6 years of professional fluid control technology; advanced testing and manufacturing equipment; complete quality control system; customer oriented, timely and professional sales team and superior services to provide high quality products and solutions for the global fluid control industry.

USUN passed the ISO9001 quality management system certification and our products passes CE and TUV certification. Our products are recognized by clients and customers in Middle East, European Union, Russia, China and other countries.

After years of hard work, USUN has become an industry leader and has established list of regular customers from around the globe. Our products are being used in oil&gas, petrochemical, energy, mining, aerospace, military, automotive, firefighting and conventional hydraulic machinery Industries.





# usun Air Driven Liquid Pumps

## Features

- ★ Up to 100,000 psi (7000 bar) capability.
- ★ Infinitely variable cycling speed.
- ★ Stall feature at pre-determined pressure to hold that pressure without consuming power .
- ★ Easily automated, with many modification and control options available.
- ★ Suitable for most liquids and liquefied gases.
- ★ Can be manufactured to meet CE.
- ★ Robust, reliable, compact and easy to maintain proven design.
- ★ Unbalanced cycling spool provides immediate response to pressure changes.
- ★ Also available in standard, Configuration required by customer.
- ★ No need for air-line lubrication, which saves costs and prevents contamination.

## Easy handling

### 1. Initial operation

The pump is prepared for operation manually:

- ★ Connect supply lines (compressed air, suction and pressure lines).
- ★ Set air drive pressure.
- ★ Open compressed air supply slowly so that the high-pressure pump starts up .

### 3. Achieve and hold pressure

The pump controls the processes of reaching and holding pressure.

- ★ Pump automatically stops operating when the operating pressure is reached due to equilibrium of forces
- ★ Pressure is held.
- ★ Pressure holding phase with no energy consumption or heat generation .
- ★ Pump restarted automatically if operating pressure drops .

### 2. Build up pressure

The pump technology executes all the steps for pressure build-up automatically:

- ★ Automatic cycling of 4/2-way valve (spoolcycling valve) by means of air pulses from the pilot valve (2/2-way valve)
- ★ Suction of medium.
- ★ Optimum cycling conditions thanks to large cross-sections .

## Applications

- ★ Pressure testing
- ★ Jacking and Lifting.
- ★ Valve actuator control
- ★ Hydraulic cylinder actuation
- ★ Roller tensioning
- ★ Precision lubrication and spraying
- ★ Work holding and power clamping
- ★ Liquefied gas transfer
- ★ Machine tools
- ★ Well Control Panel

## Selection

The pump model is selected according to the use requirements. Such as output pressure, output flow, medium and temperature, available air or gas drive pressure and flow. This guide will help you to pre-select the pump ideally suited for your application. If you have specific questions, Please contact us. We urge you to provide us with details of the duties you require from the pump, available air/gas drive pressure, and pressure/flow requirements, and we will recommend a model and any corresponding accessories.

## The series and its functions

USUN pumps offer the right solution for every application. They are suitable for different or stepped flow rates as well as for different maximum allowable operating pressures. USUN pumps with two or three air drive sections reach the same final pressure as a usun pump with one air drive section with 1/2 or 1/3 of the air drive. Double-acting pumps increase the pump capacity by around 50% in comparison to single-acting pumps and reduce the pulsation equally.

The following model variants are available depending on the series:



Pumps With Handle



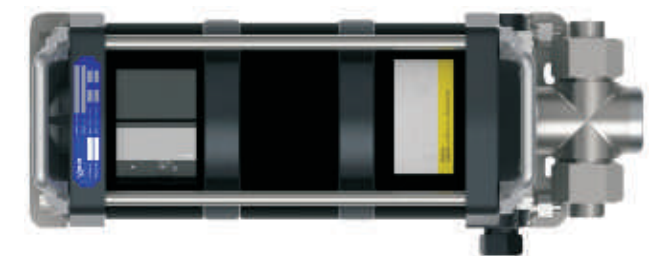
Angular Pumps



Double Air Drive, Single Acting



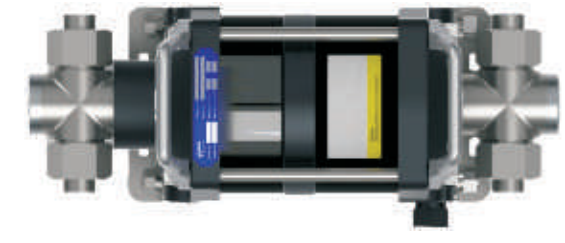
Single Air Drive, Single Acting



Triple Air Drive, Single Acting



Single Air Drive, Double Acting



Double Air Drive, Double Acting

# usun M Series

## Single Drive Single Acting

### Features

- ★ Choice of 9 ratios.
- ★ Flows to 8.3 l/min.
- ★ Choice of wetted materials .
- ★ Pressures to 25,000 psi(1723 bar).
- ★ All Hydraulic fluids, water(plain or DI), solvents, mild chemicals, liquefied gases.



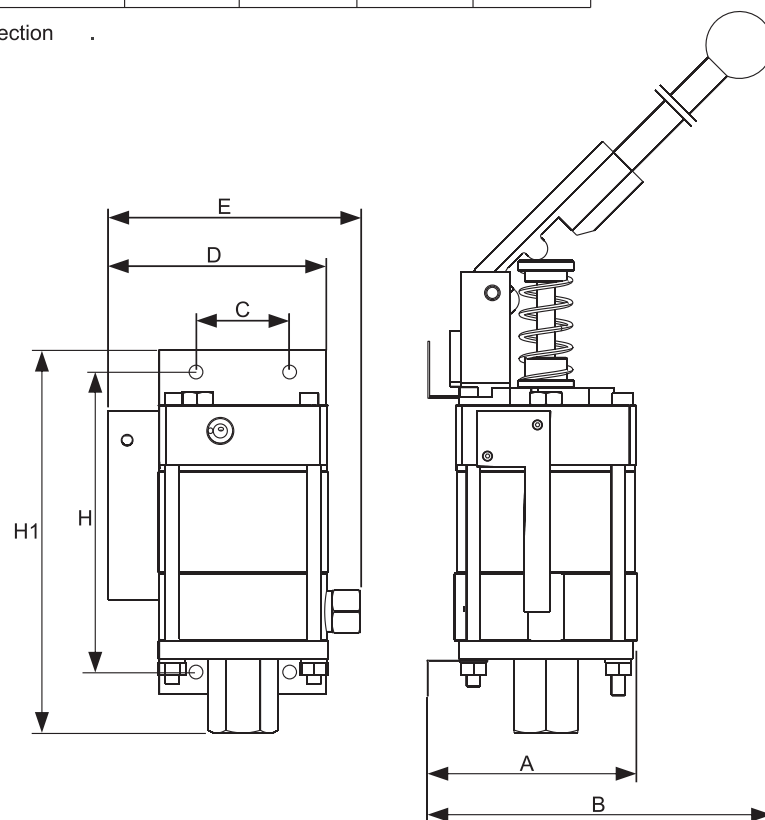
### Performance and Specification

Pump Model Code	Max.Out Press.	Actual Ratio	Dis. /Cycle	Max.Flow	Inlet Port	Outlet Port
M05S	625psi	5.6:1	13.6ml	8.30l/min	3/4"FNPT	1/2"FNPT
M07S	900psi	7.8:1	9.8ml	6.0l/min	3/4"FNPT	1/2"FNPT
M12S	1500psi	14:1	5.9ml	3.83l/min	3/8"FNPT	1/4"FNPT
M21S	2600psi	25:1	3.3ml	2.13l/min	3/8"FNPT	1/4"FNPT
M36S	4500psi	41:1	2.0ml	1.28l/min	3/8"FNPT	1/4"FNPT
M71S	8800psi	82:1	1.0ml	0.64l/min	3/8"FNPT	1/4"FNPT
M110S	13500psi	126:1	0.6ml	0.42l/min	3/8"FNPT	1/4"FNPT
M188S	15000psi	217:1	0.4ml	0.29l/min	3/8"FNPT	1/4"HF
M220S	25000psi	237:1	0.34ml	0.22l/min	3/8"FNPT	1/4"HF

HF means female high pressure connection .

### Dimensions

Size A	3.82in.(97mm)
Size B	10in.(254mm)
Size C	1.65in.(42mm)
Size D	4.13in.(105mm)
Size E	4.8in.(122mm)
Size H	5.59in.(142mm)
Size H1	6.89in.(175mm)
Air IN	1/4 Female NPT

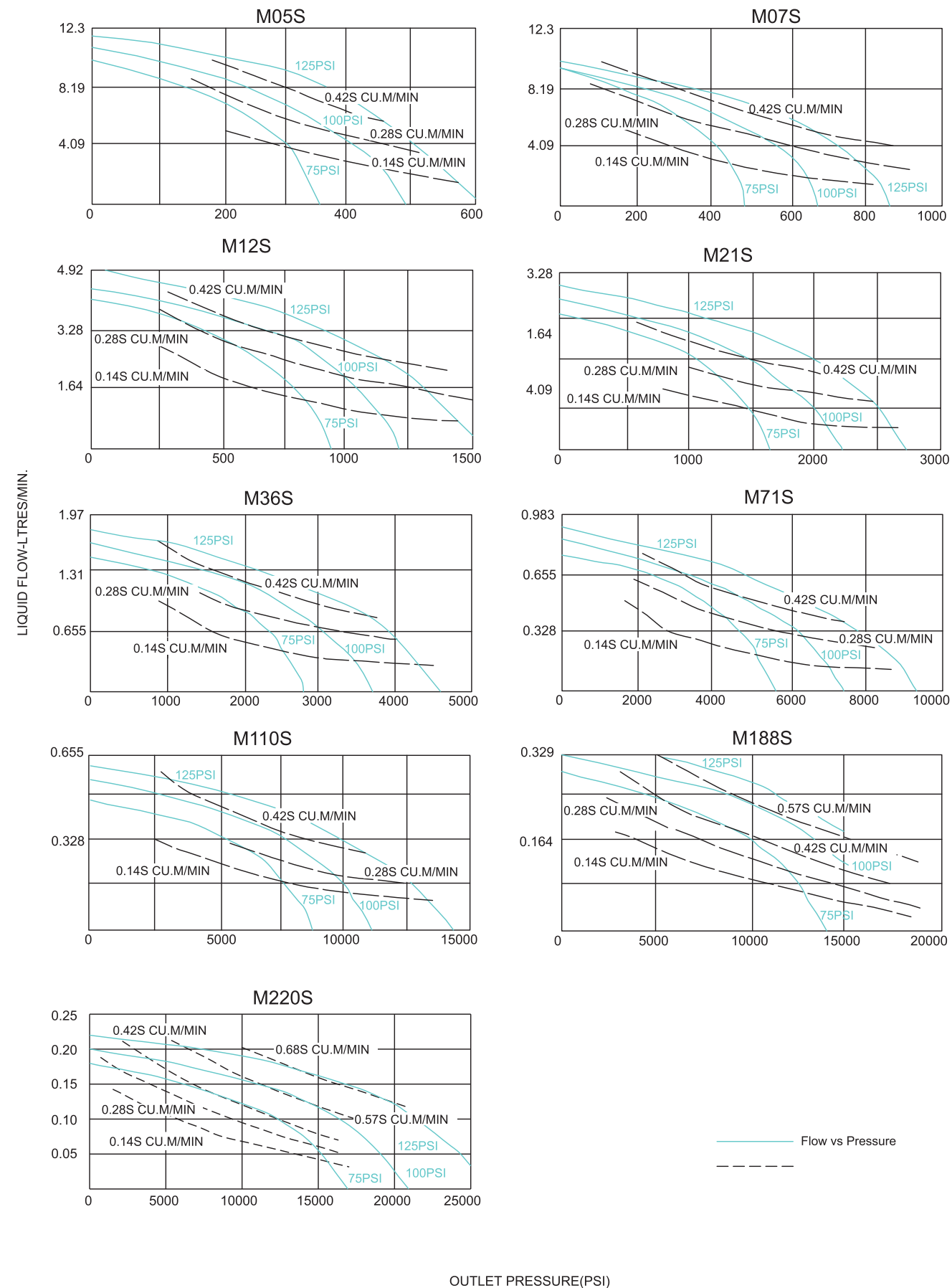


#### EXPLAIN

- All model code listed are standard.  
For pumps with handle add "-H" after the model codes.  
For Pumps with relief valve add "-R" after the model codes.  
For pumps with Viton seals add "-V" after the model codes.  
For pumps with Pressure switch valve add "-S" after the model codes.  
For add "-" after the model codes.

2. Other sizes, materials and types are available upon request. For special requirements, please contact us.

### Performance Curves





# usun AF Series

## Single Drive Single Acting Features

- ★ Choice of 10 ratios.
- ★ Flows to 19.9 l/min.
- ★ Choice of wetted materials
- ★ Output pressures to 60,000 psi (4137 bar).
- ★ Drive pressure 3 to 150 psi (0.2 to 10.3 bar).  
solvents, mild chemicals, liquefied gases.

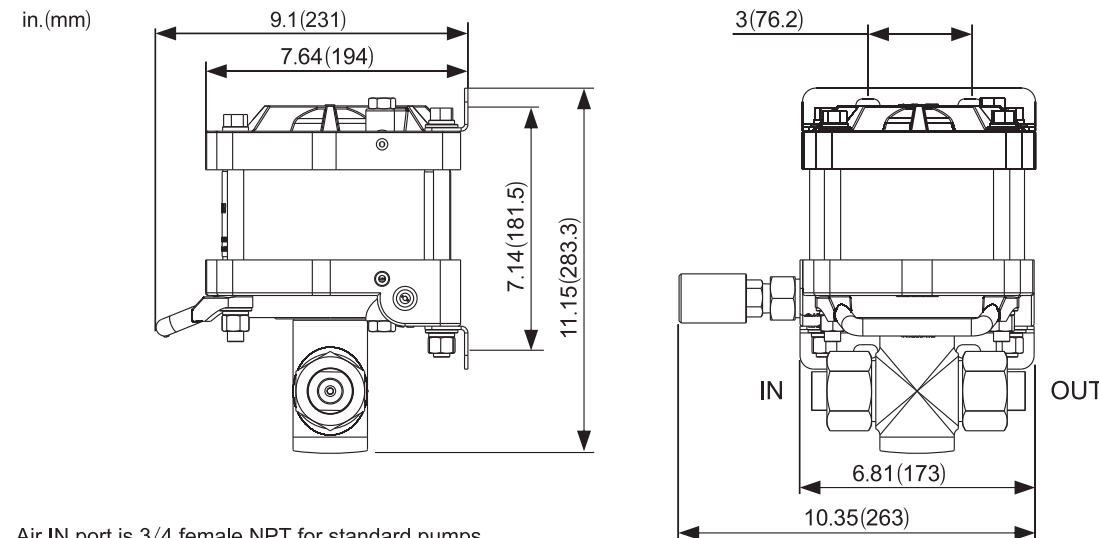


## Performance and Specification

Pump Model Code	Max.Out Press.	Actual Ratio	Dis. /Cycle	Max.Flow	Inlet Port	Outlet Port
AF10	1600psi	14:1	66.4ml	19.9l/min	1"FNPT	1/2"FNPT
AF15	2400psi	18:1	44.3ml	13.3l/min	1"FNPT	1/2"FNPT
AF25	4000psi	30:1	26.6ml	8l/min	1/2"FNPT	1/2"FNPT
AF35	5700psi	45:1	19.0ml	5.7l/min	1/2"FNPT	1/2"FNPT
AF60	10000psi	72:1	11.0ml	3.3l/min	1/2"FNPT	1/2"FNPT
AF100	15000psi	120:1	6.7ml	2 l/min	1/2"FNPT	1/2"FNPT
AF150	22500psi	180:1	4.5ml	1.3l/min	1/2"FNPT	1/4"HF
AF225	33750psi	270:1	3.0ml	0.7l/min	1/2"FNPT	1/4"HF
AF300	45000psi	360:1	2.3ml	0.5l/min	1/2"FNPT	1/4"HF
AF450	60000psi	545:1	1.5ml	0.3l/min	1/2"FNPT	1/4"HF

HF means female high pressure connection.

## Dimensions

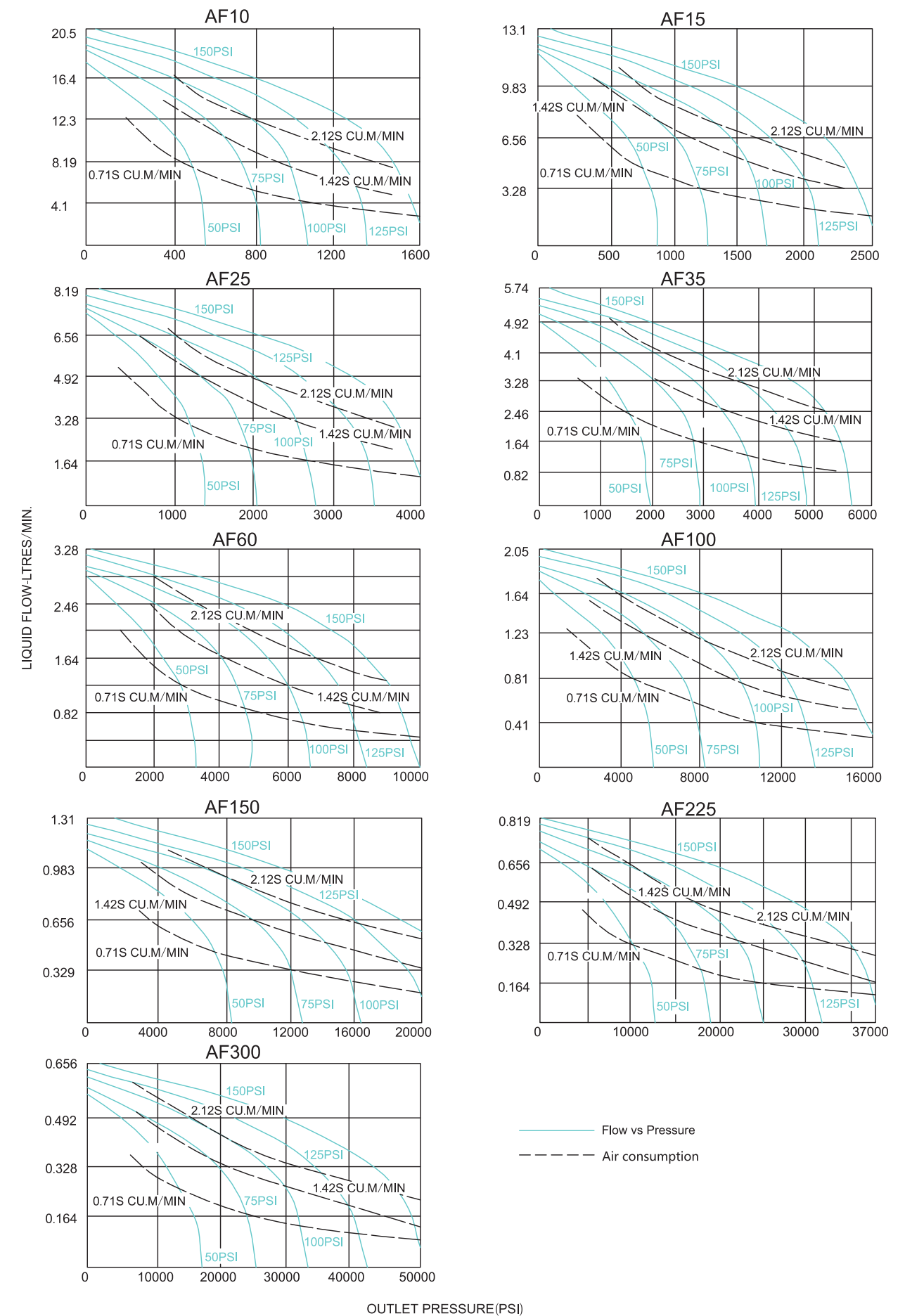


Air IN port is 3/4 female NPT for standard pumps

### EXPLAIN

- All model code listed are standard.  
For angle pumps add "A" after the model codes.  
For Quick repair pumps add "-Q" after the model codes.  
For pumps with relief valve add "-R" after the model codes.  
For pumps with Viton seals add "-V" after the model codes.  
For pumps with Pressure switch valve add "-P" after the model codes.  
For cold area service add "-C" after the model codes.  
For liquid CO<sub>2</sub> add "-C2" after the model codes.
- Other sizes, materials and types are available upon request. For special requirements, please contact us.

## Performance Curves



# usun 2AF Series

## Double Drive Single Acting

### Features

- ★ Choice of 9 ratios.
- ★ Flows to 19.9 l/min.
- ★ Choice of wetted materials.
- ★ Output pressures to 75,000 psi (5171 bar).
- ★ Drive pressure 3 to 150 psi (0.2 to 10.3 bar).



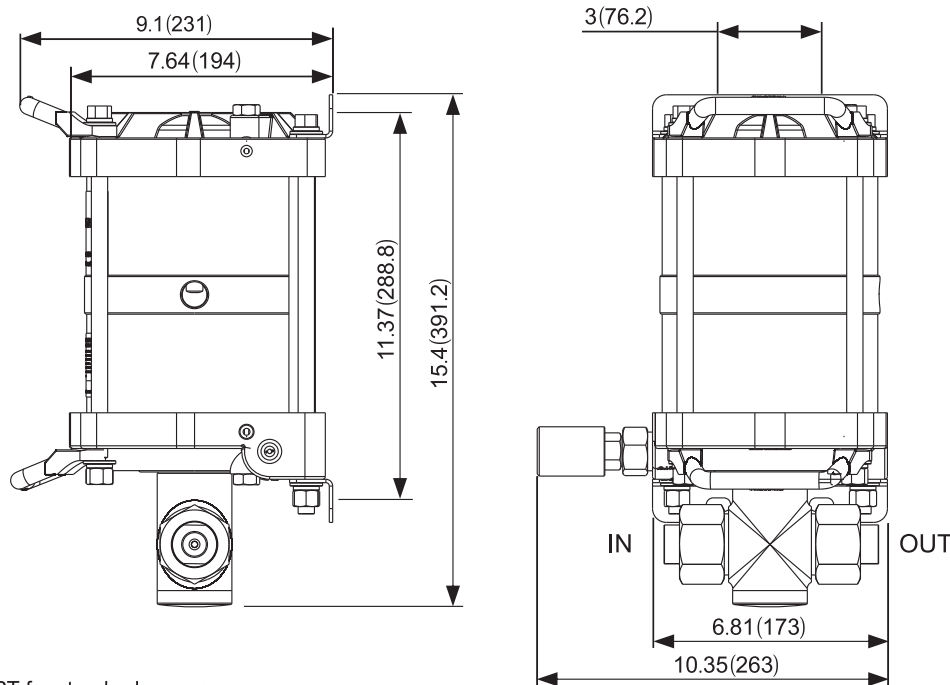
### Performance and Specification

Pump Model Code	Max.Out Press.	Actual Ratio	Dis. /Cycle	Max.Flow	Inlet Port	Outlet Port
2AF20	3200psi	27:1	66.4ml	19.9l/min	1"FNPT	1/2"FNPT
2AF30	4800psi	35:1	44.3ml	13.3l/min	1"FNPT	1/2"FNPT
2AF50	5000psi	60:1	26.6ml	8 l/min	1/2"FNPT	1/2"FNPT
2AF70	11000psi	90:1	19.0ml	5.7l/min	1/2"FNPT	1/2"FNPT
2AF120	19000psi	144:1	11.0ml	3.3l/min	1/2"FNPT	1/2"FNPT
2AF200	33000psi	240:1	6.7ml	1.5l/min	1/2"FNPT	1/4"HF
2AF300	50000psi	360:1	4.5ml	1 l/min	1/2"FNPT	1/4"HF
2AF450	70000psi	540:1	3.0ml	0.7l/min	1/2"FNPT	1/4"SF
2AF600	75000psi	720:1	2.3ml	0.5l/min	1/2"FNPT	1/4"SF

HF means female high pressure connection.  
SF means female super high pressure connection.

### Dimensions

in.(mm)

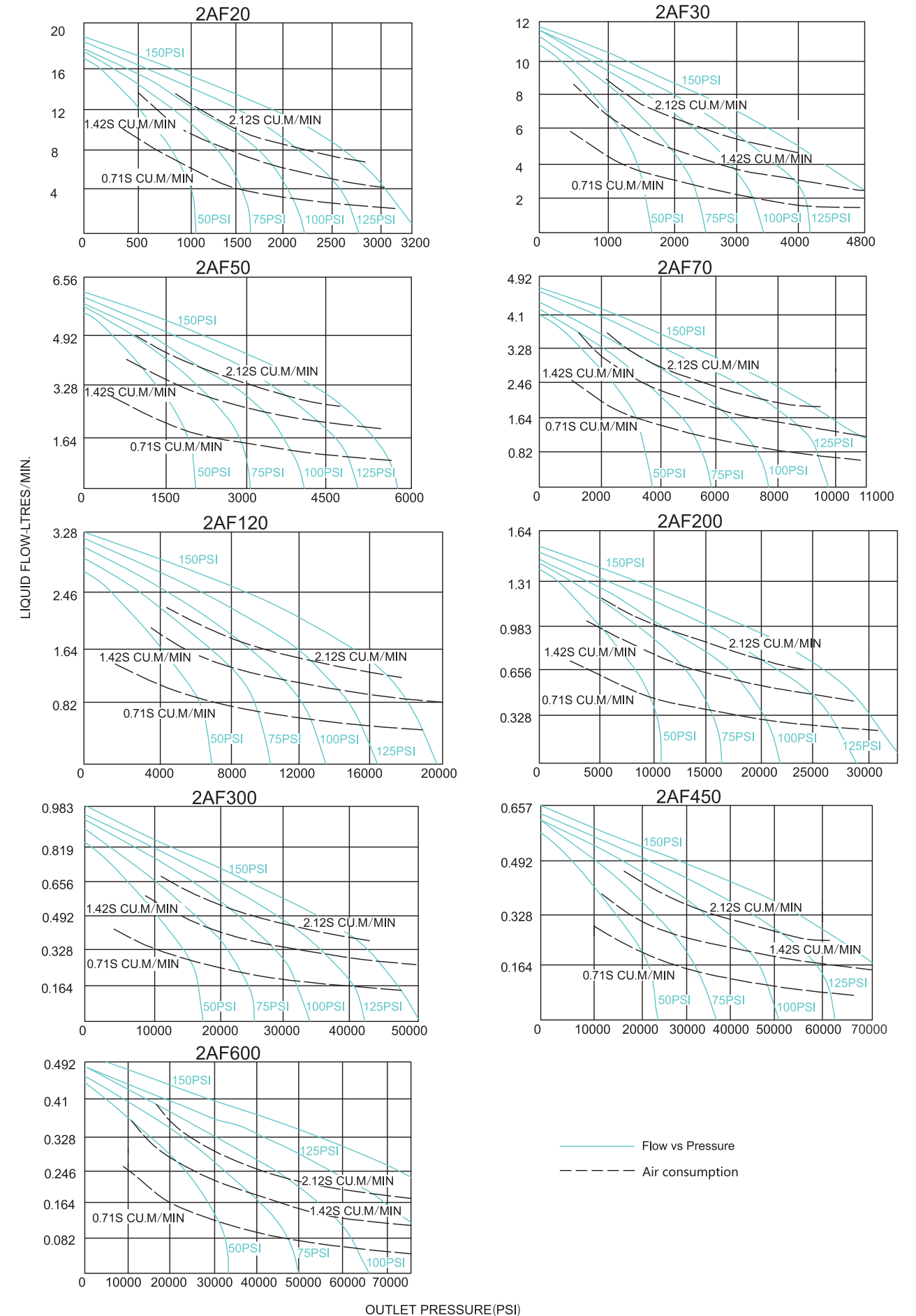


Air IN port is 3/4 female NPT for standard pumps

#### EXPLAIN

- All model code listed are standard.  
For angle pumps add "A" after the model codes.  
For Quick repair pumps add "-Q" after the model codes.  
For pumps with relief valve add "-R" after the model codes.  
For pumps with Viton seals add "-V" after the model codes.  
For pumps with Pressure switch valve add "-P" after the model codes.  
For cold area service add "-C" after the model codes.  
For liquid CO<sub>2</sub> add "-C2" after the model codes.
- Other sizes, materials and types are available upon request. For special requirements, please contact us.

### Performance Curves





# usun 3AF Series

## Triple Drive Single Acting Features

- ★ Choice of 3 ratios.
- ★ Flows to 0.41 l/min.
- ★ Choice of wetted materials.
- ★ Output pressures to 100,000 psi (6896 bar).
- ★ Drive pressure 3 to 150 psi (0.2 to 10.3 bar).  
solvents, mild chemicals, liquefied gases.



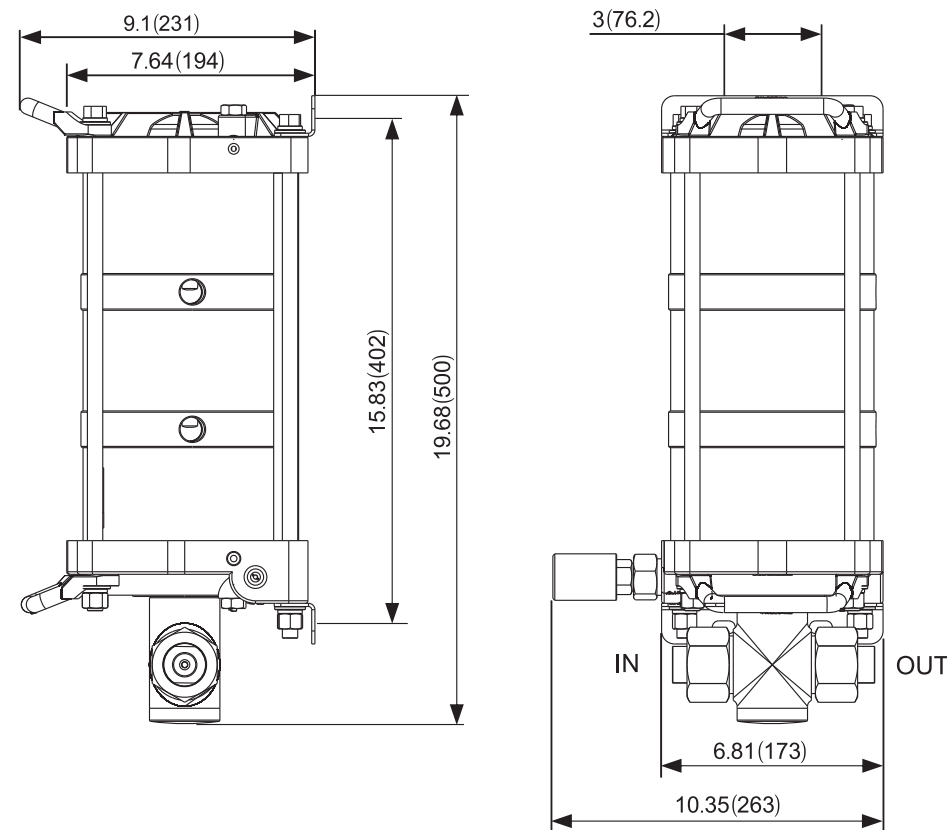
## Performance and Specification

Pump Model Code	Max.Out Press.	Actual Ratio	Dis. /Cycle	Max.Flow	Inlet Port	Outlet Port
3AF675	70000psi	800:1	3.0ml	0.41l/min	1/2"NPT	1/4"SF
3AF900	75000psi	100:1	2.3ml	0.33l/min	1/2"NPT	1/4"SF
3AF1350	100000psi	1500:1	1.5ml	0.20l/min	1/2"NPT	1/4"SF

SF means female super high pressure connection

## Dimensions

in.(mm)



Air IN port is 3/4 female NPT for standard pumps

### EXPLAIN

1. All model code listed are standard.

For angle pumps add "A" after the model codes.

For Quick repair pumps add "-Q" after the model codes.

For pumps with relief valve add "-R" after the model codes.

For pumps with Viton seals add "-V" after the model codes.

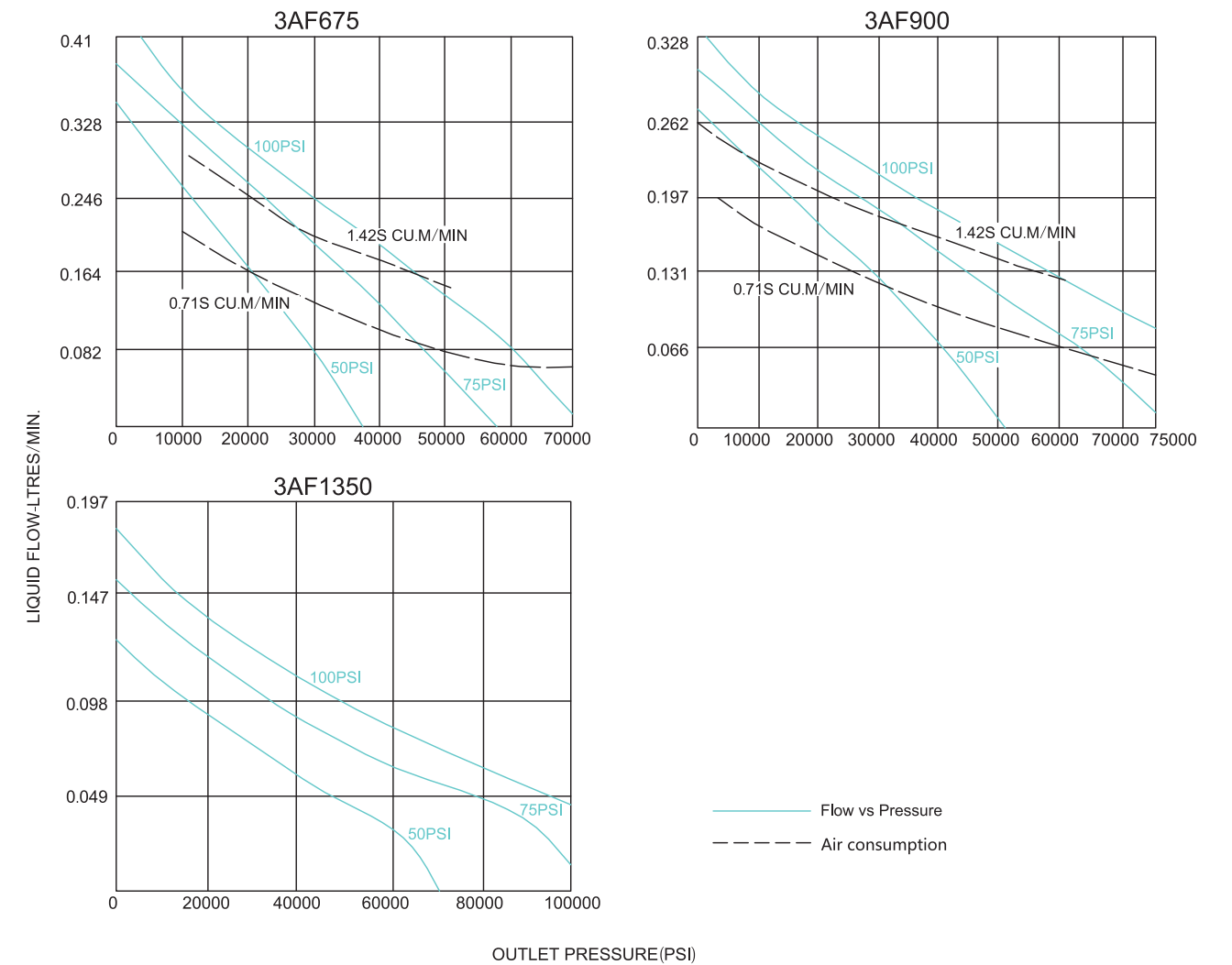
For pumps with Pressure switch valve add "-P" after the model codes.

For cold area service add "-C" after the model codes.

For liquid CO<sub>2</sub> add "-C2" after the model codes.

2. Other sizes, materials and types are available upon request. For special requirements, please contact us.

## Performance Curves



— Flow vs Pressure  
- - - Air consumption

# usun AFD Series

## Single Drive Double Acting Features

- ★ Choice of 7 ratios.
- ★ Flows to 29.9 l/min.
- ★ Choice of wetted materials.
- ★ Output pressures to 20,000 psi (1379 bar).
- ★ Drive pressure 3 to 150 psi (0.2 to 10.3 bar).



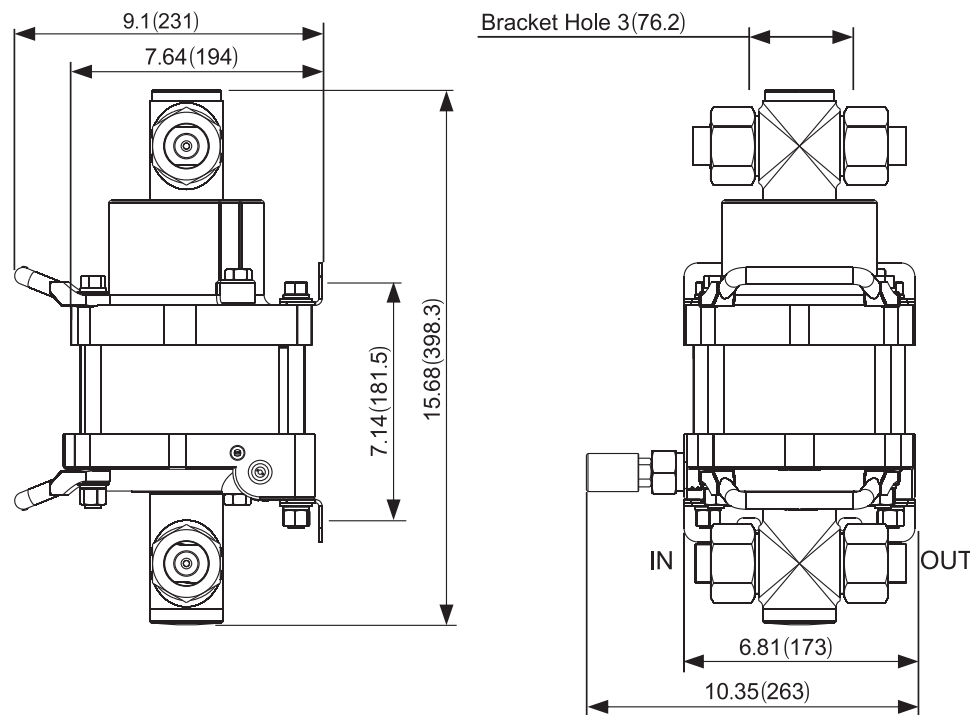
## Performance and Specification

Pump Model Code	Max.Out Press.	Actual Ratio	Dis. /Cycle	Max.Flow	Inlet Port	Outlet Port
AFD10	1600psi	14:1	133ml	29.9l/min	1"FNPT	1/2"FNPT
AFD15	2400psi	18:1	89ml	19.9l/min	1/2"FNPT	1/2"FNPT
AFD25	4000psi	30:1	53.6ml	11.9l/min	1/2"FNPT	1/2"FNPT
AFD35	5700psi	45:1	38ml	8.6l/min	1/2"FNPT	1/2"FNPT
AFD60	9800psi	72:1	22ml	4.9l/min	1/2"FNPT	1/2"FNPT
AFD100	16500psi	120:1	13.4ml	3.0l/min	1/2"FNPT	1/2"FNPT
AFD150	20000psi	180:1	9ml	2.0l/min	1/2"FNPT	1/4"HF

HF means female high pressure connection.

## Dimensions

in.(mm)

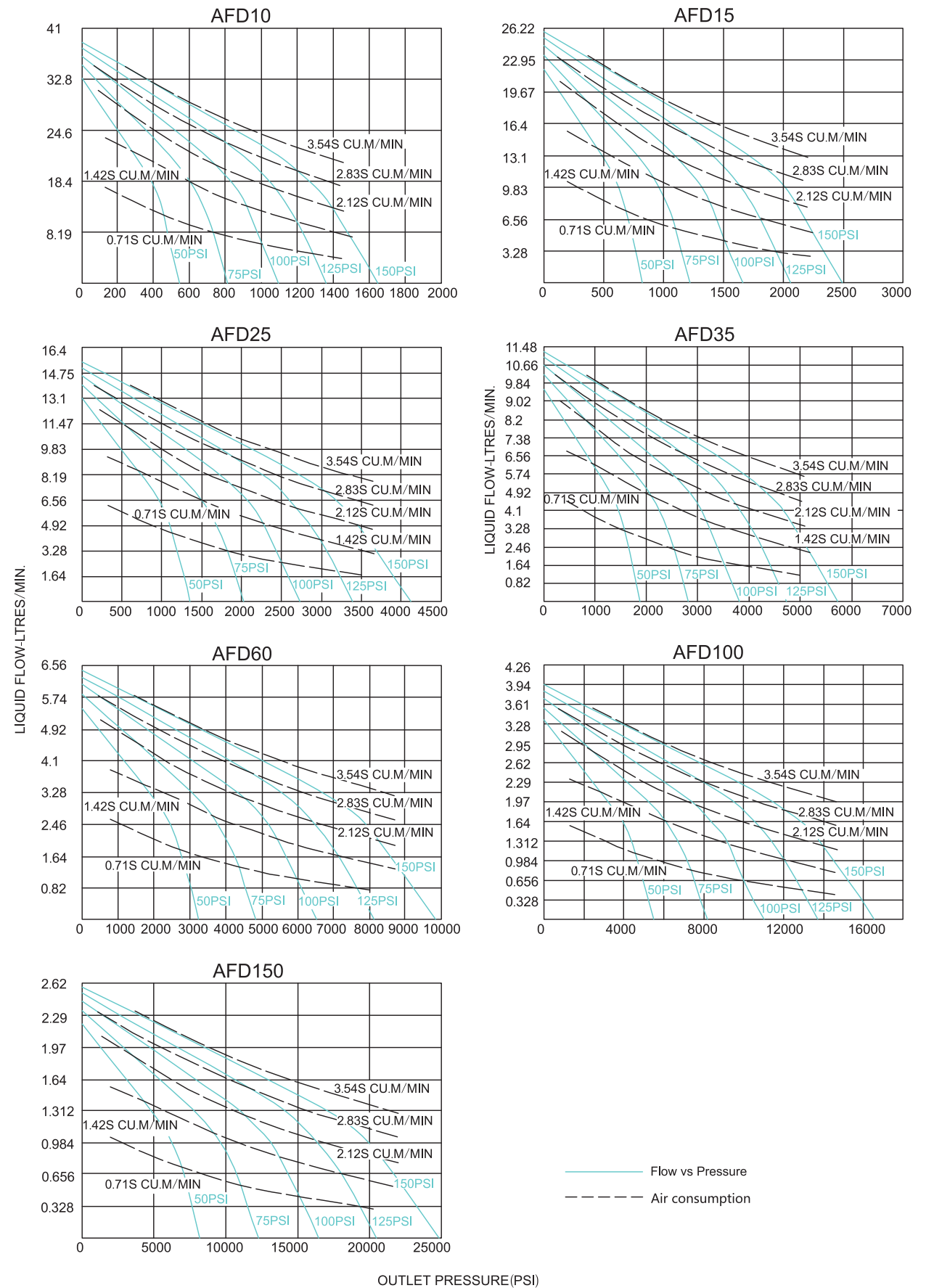


Air IN port is 3/4 female NPT for standard pumps

### EXPLAIN

- All model code listed are standard.  
For angle pumps add "A" after the model codes.  
For Quick repair pumps add "-Q" after the model codes.  
For pumps with relief valve add "-R" after the model codes.  
For pumps with Viton seals add "-V" after the model codes.  
For pumps with Pressure switch valve add "-P" after the model codes.  
For cold area service add "-C" after the model codes.  
For liquid CO<sub>2</sub> add "-C2" after the model codes.
- Other sizes, materials and types are available upon request. For special requirements, please contact us.

## Performance Curves



— Flow vs Pressure  
- - - Air consumption



# usun 2AFD Series

## Double Drive Double Acting Features

- ★ Choice of 4 ratios.
- ★ Flows to 8.6 l/min.
- ★ Choice of wetted materials.
- ★ Output pressures to 50,000 psi (3448 bar).
- ★ Drive pressure 3 to 150 psi (0.2 to 10.3 bar).



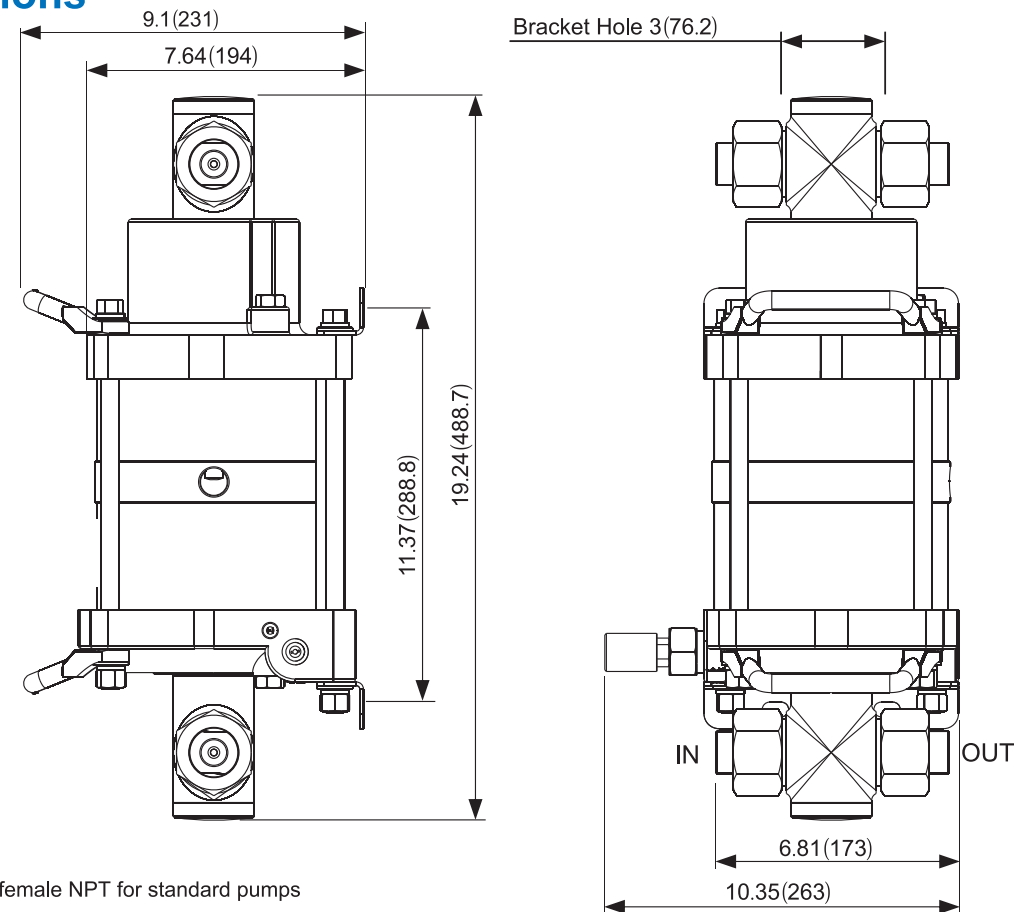
## Performance and Specification

Pump Model Code	Max.Out Press.	Actual Ratio	Dis. /Cycle	Max.Flow	Inlet Port	Outlet Port
2AFD70	11000psi	90:1	38ml	8.6l/min	1/2"FNPT	1/2"FNPT
2AFD120	19000psi	144:1	22ml	4.9l/min	1/2"FNPT	1/2"FNPT
2AFD200	33000psi	240:1	13.4ml	3.0l/min	1/2"FNPT	1/4"HF
2AFD300	50000psi	360:1	9ml	2.0l/min	1/2"FNPT	1/4"HF

HF means female high pressure connection.

## Dimensions

in.(mm)

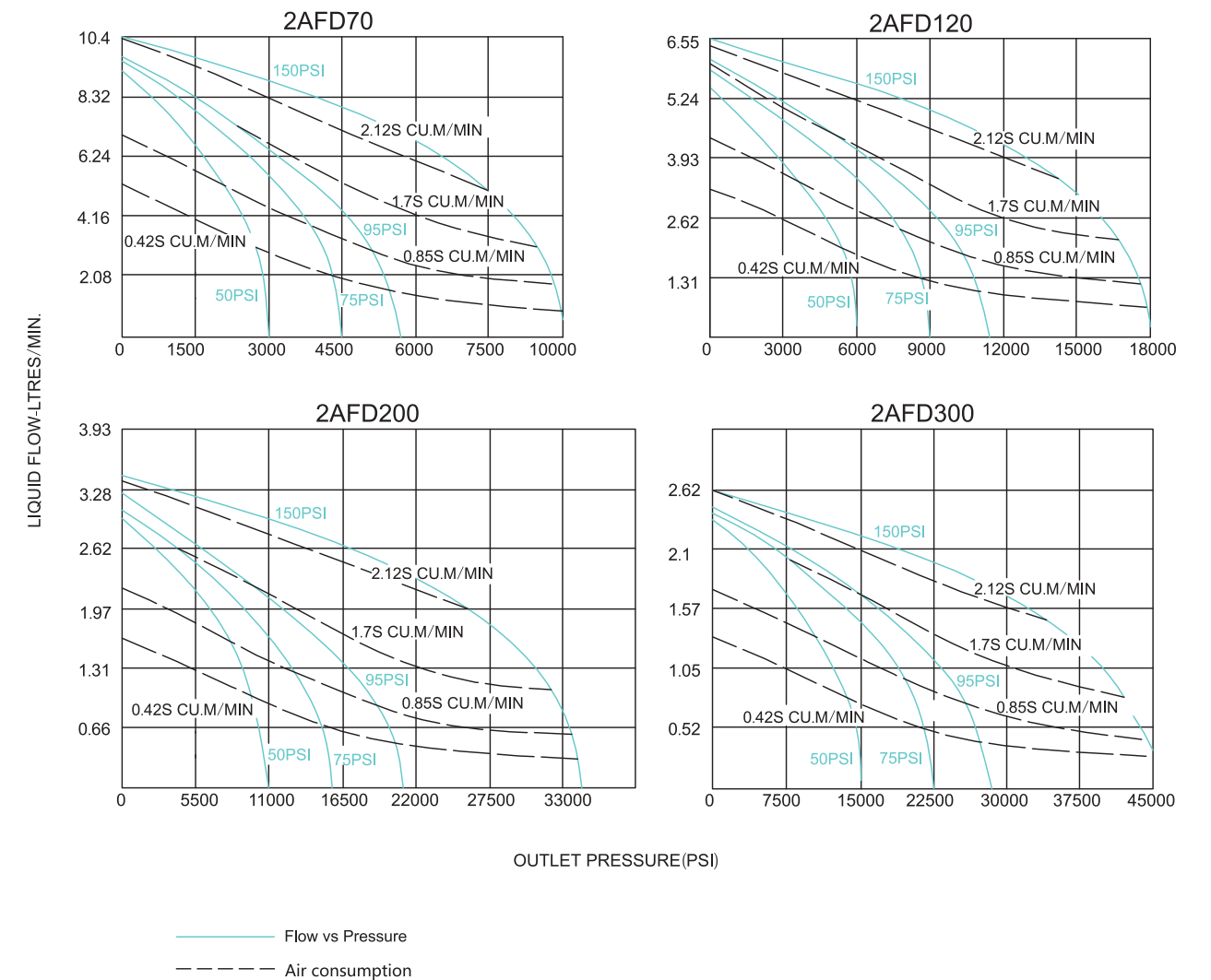


Air IN port is 3/4 female NPT for standard pumps

### EXPLAIN

- All model code listed are standard.  
For angle pumps add "A" after the model codes.  
For Quick repair pumps add "-Q" after the model codes.  
For pumps with relief valve add "-R" after the model codes.  
For pumps with Viton seals add "-V" after the model codes.  
For pumps with Pressure switch valve add "-P" after the model codes.  
For cold area service add "-C" after the model codes.  
For liquid CO<sub>2</sub> add "-C2" after the model codes.
- Other sizes, materials and types are available upon request. For special requirements, please contact us.

## Performance Curves



# usun AGW Series

## Long Stroke Single Drive Double Acting Features

- ★ Choice of 5 ratios.
- ★ Flows to 132 l/min.
- ★ Choice of wetted materials .
- ★ Output pressures to 10,000 psi (690 bar).
- ★ Drive pressure 3 to 125 psi (0.2 to 8.6 bar).
- ★ All hydraulic fluids,water (plain or DI),solvents.

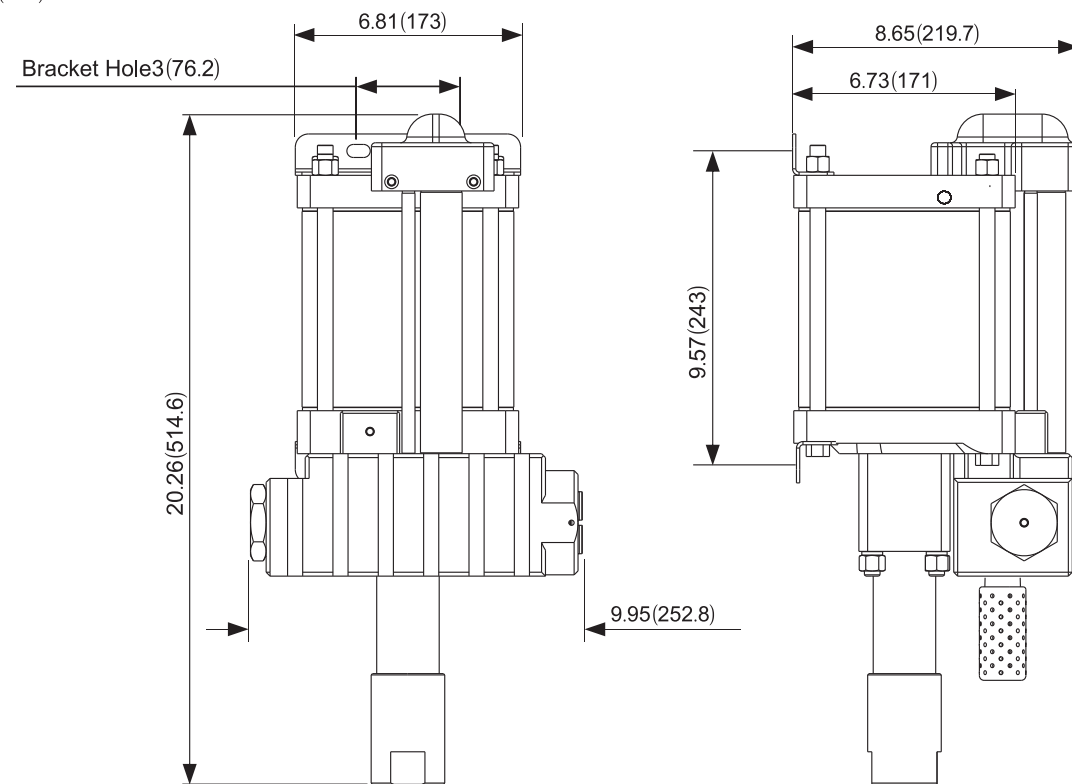


## Performance and Specification

Pump Model Code	Max.Out Press.	Actual Ratio	Dis. /Cycle	Max.Flow	Inlet Port	Outlet Port
AGW7L	1000psi	8.2:1	463ml	132 l/min	1-1/4"FNPT	3/4"FNPT
AGW12L	1850psi	14:1	260ml	82.1 l/min	1-1/4"FNPT	3/4"FNPT
AGW35L	4375psi	40:1	98ml	31 l/min	1-1/4"FNPT	1/2"FNPT
AGW60L	7500psi	69:1	57ml	18.1 l/min	1-1/4"FNPT	1/2"FNPT
AGW100L	10000psi	120:1	32ml	10.7 l/min	1-1/4"FNPT	1/2"FNPT

## Dimensions

in.(mm)

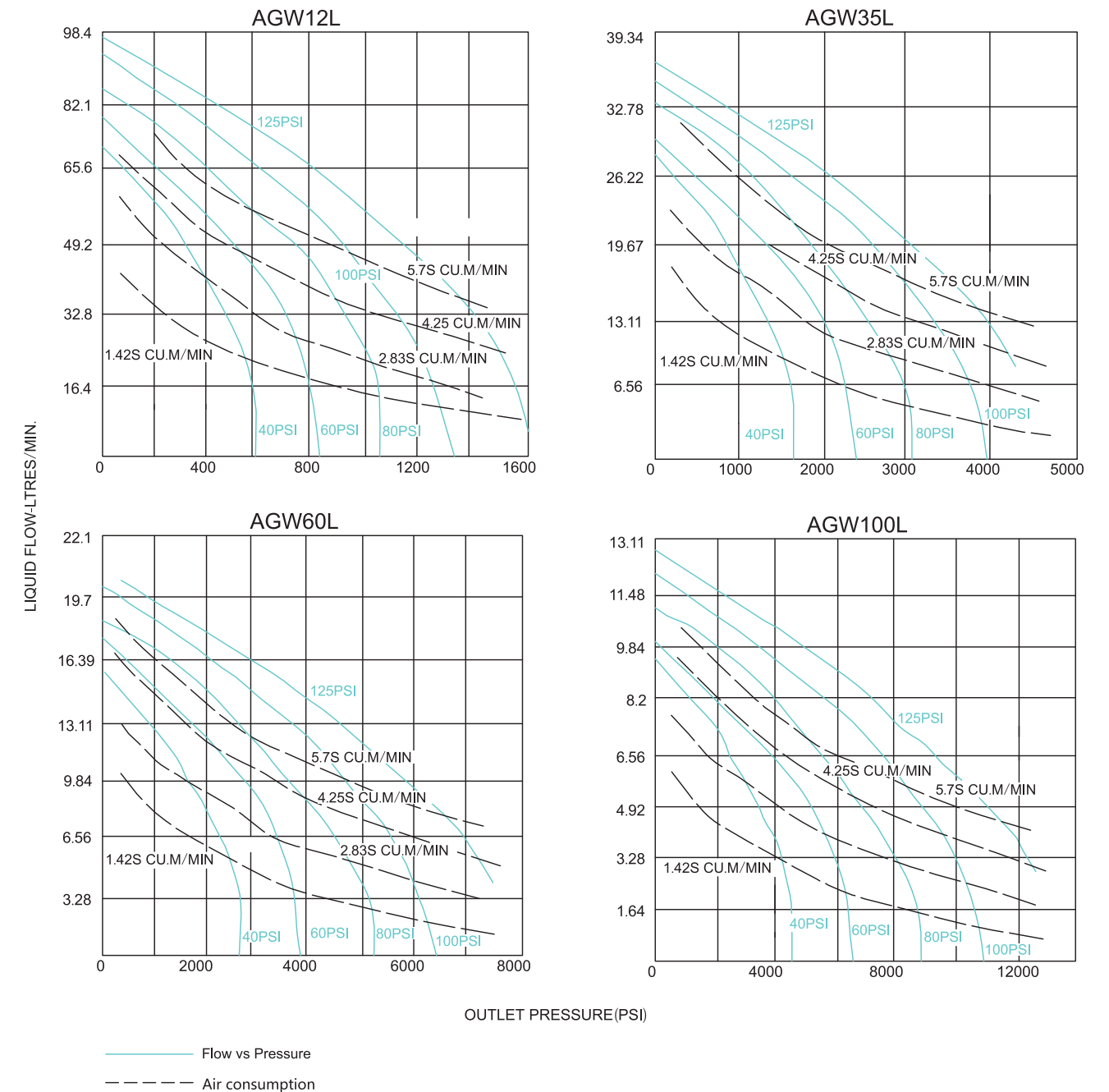


Air IN port is 3/4 female NPT for standard pumps

### EXPLAIN

- All model code listed are standard.  
For pumps with relief valve add "-R" after the model codes.  
For pumps with Viton seals add "-V" after the model codes.  
For pumps with Pressure switch valve add "-P" after the model codes.  
For cold area service add "-C" after the model codes.  
For liquid CO<sub>2</sub> add "-C2" after the model codes.
- Other sizes,materials and types are available upon request. For special requirements, please contact us.

## Performance Curves



— Flow vs Pressure  
- - - Air consumption



# usun GT Series

## Single Drive Double Acting Features

- ★ Choice of 5 ratios.
- ★ Flows to 45.5 l/min.
- ★ Choice of wetted materials.
- ★ Can be quickly repaired.
- ★ Output pressures to 325,00 psi (2241 bar).
- ★ Drive pressure 10 to 125 psi (0.7 to 8.6 bar).
- ★ All hydraulic fluids, water (plain or DI), solvents liquefied gases.



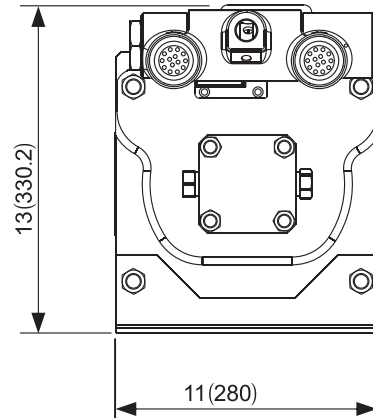
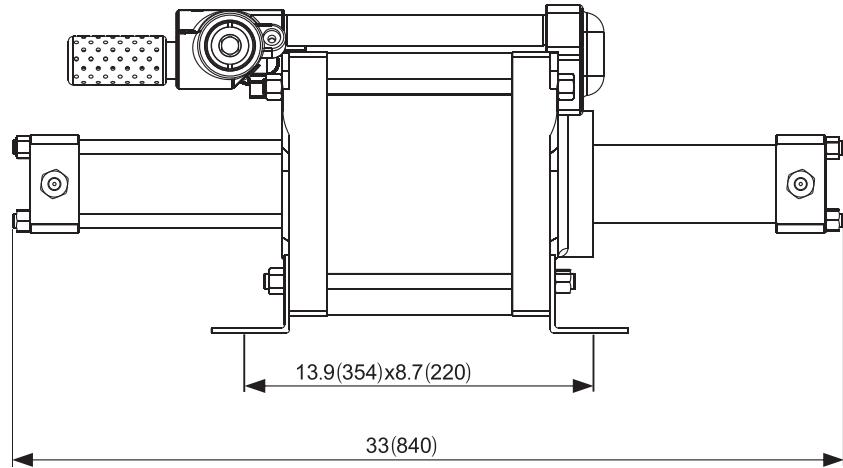
## Performance and Specification

Pump Model Code	Max.Out Press.	Actual Ratio	Dis. /Cycle	Max.Flow	Inlet Port	Outlet Port
GT30	3750psi	34:1	350ml	45.5 l/min	3/4"FNPT	1/2"FNPT
GT60	7500psi	67:1	180ml	23.4 l/min	3/4"FNPT	1/2"FNPT
GT120	15000psi	125:1	98ml	12.7 l/min	3/4"FNPT	9/16"HF
GT180	22500psi	204:1	60.5ml	7.9 l/min	3/4"FNPT	9/16"HF
GT260	32500psi	304:1	40.5ml	5.3 l/min	3/4"FNPT	9/16"HF

HF means female high pressure connection.

## Dimensions

in.(mm)



Air IN port is 3/4" female NPT for standard pumps

### EXPLAIN

1. All model code listed are standard.

For pumps with relief valve add "-R" after the model codes.

For pumps with Viton seals add "-V" after the model codes.

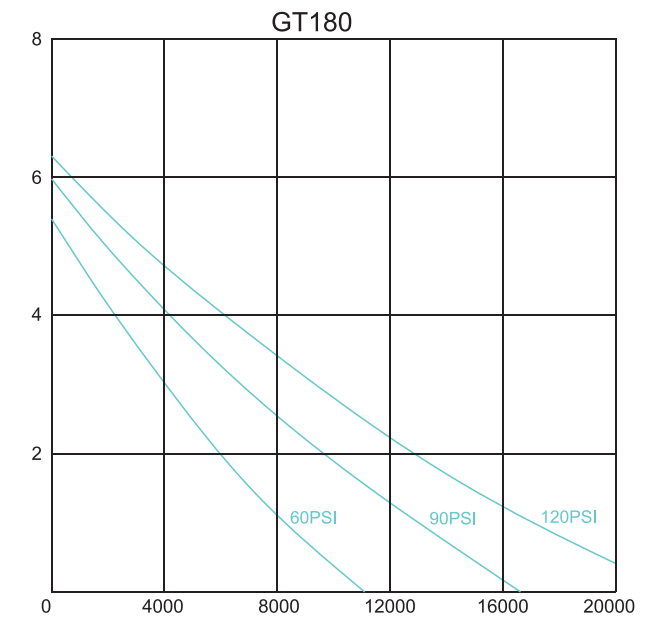
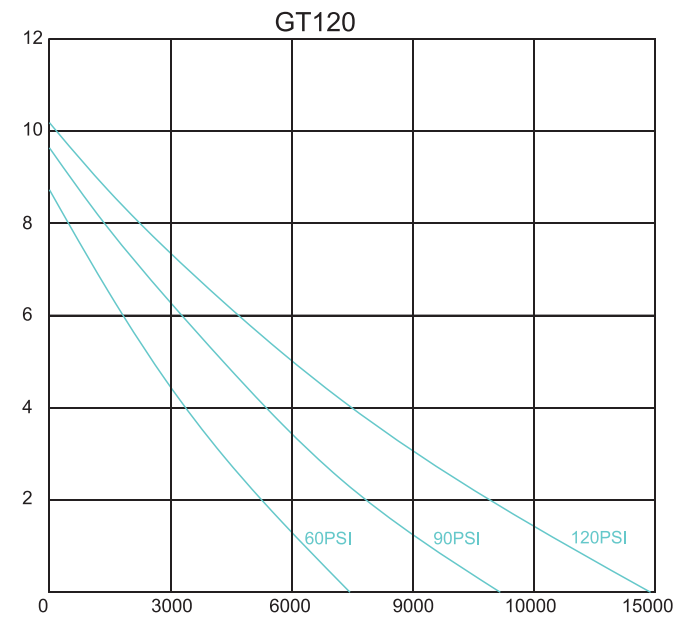
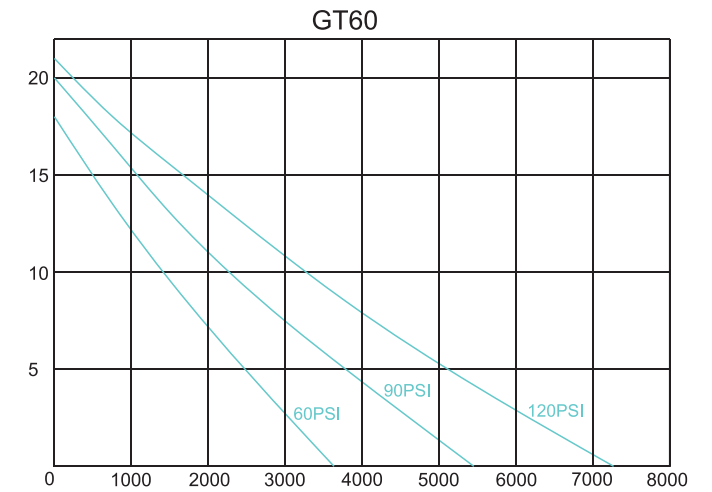
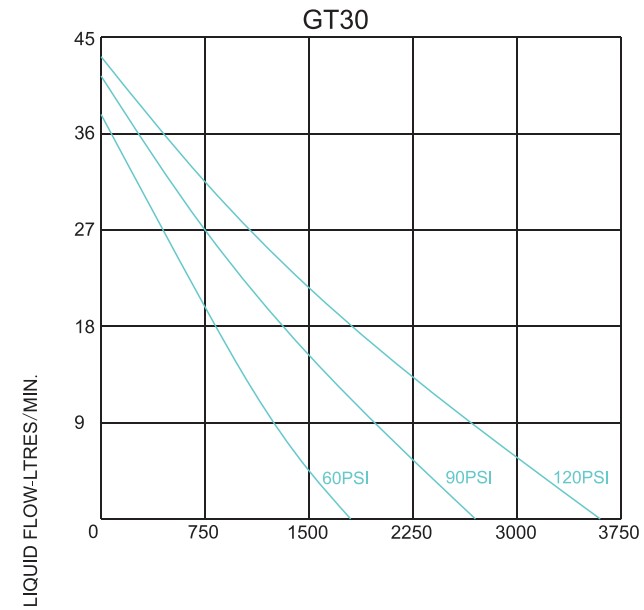
For pumps with Pressure switch valve add "-P" after the model codes.

For cold area service add "-C" after the model codes.

For liquid CO add "-C2" after the model codes.

2. Other sizes, materials and types are available upon request. For special requirements, please contact us.

## Performance Curves



OUTLET PRESSURE (PSI)

# usun 2GT Series

## Double Drive Double Acting Features

- ★ Choice of 5 ratios.
- ★ Flows to 31.5 l/min.
- ★ Choice of wetted materials
- ★ Can be quickly repaired.
- ★ Output pressures to 650,00 psi (4482 bar).
- ★ Drive pressure 10 to 125 psi (0.7 to 8.6 bar).
- ★ All hydraulic fluids, water (plain or DI), solvents liquefied gases.



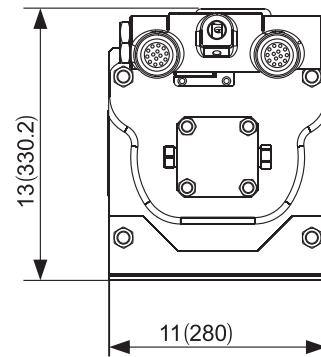
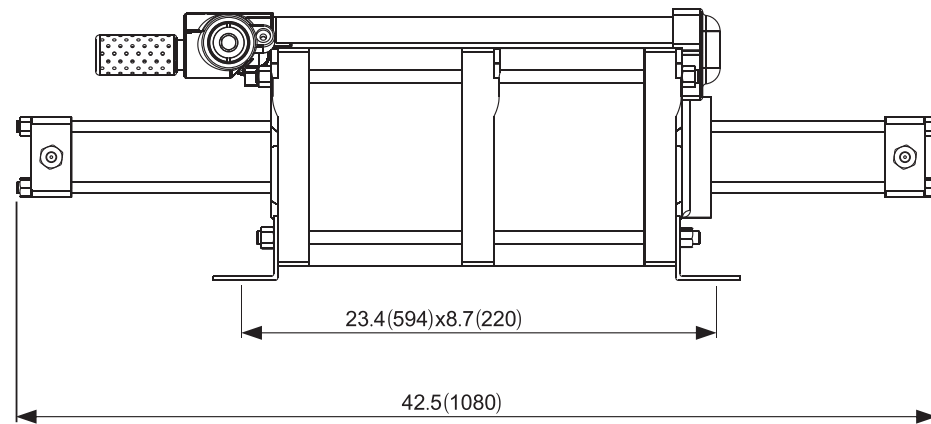
## Performance and Specification

Pump Model Code	Max.Out Press.	Actual Ratio	Dis. /Cycle	Max.Flow	Inlet Port	Outlet Port
2GT60	7500psi	68:1	350ml	31.5 l/min	3/4"FNPT	1/2"FNPT
2GT120	15000psi	134:1	180ml	16.2 l/min	3/4"FNPT	1/2"FNPT
2GT240	30000psi	250:1	98ml	8.8 l/min	3/4"FNPT	9/16"HF
2GT360	45000psi	408:1	60.5ml	5.5 l/min	3/4"FNPT	9/16"HF
2GT520	65000psi	608:1	40.5ml	3.65 l/min	3/4"FNPT	9/16"HF

HF means female high pressure connection.

## Dimensions

in.(mm)

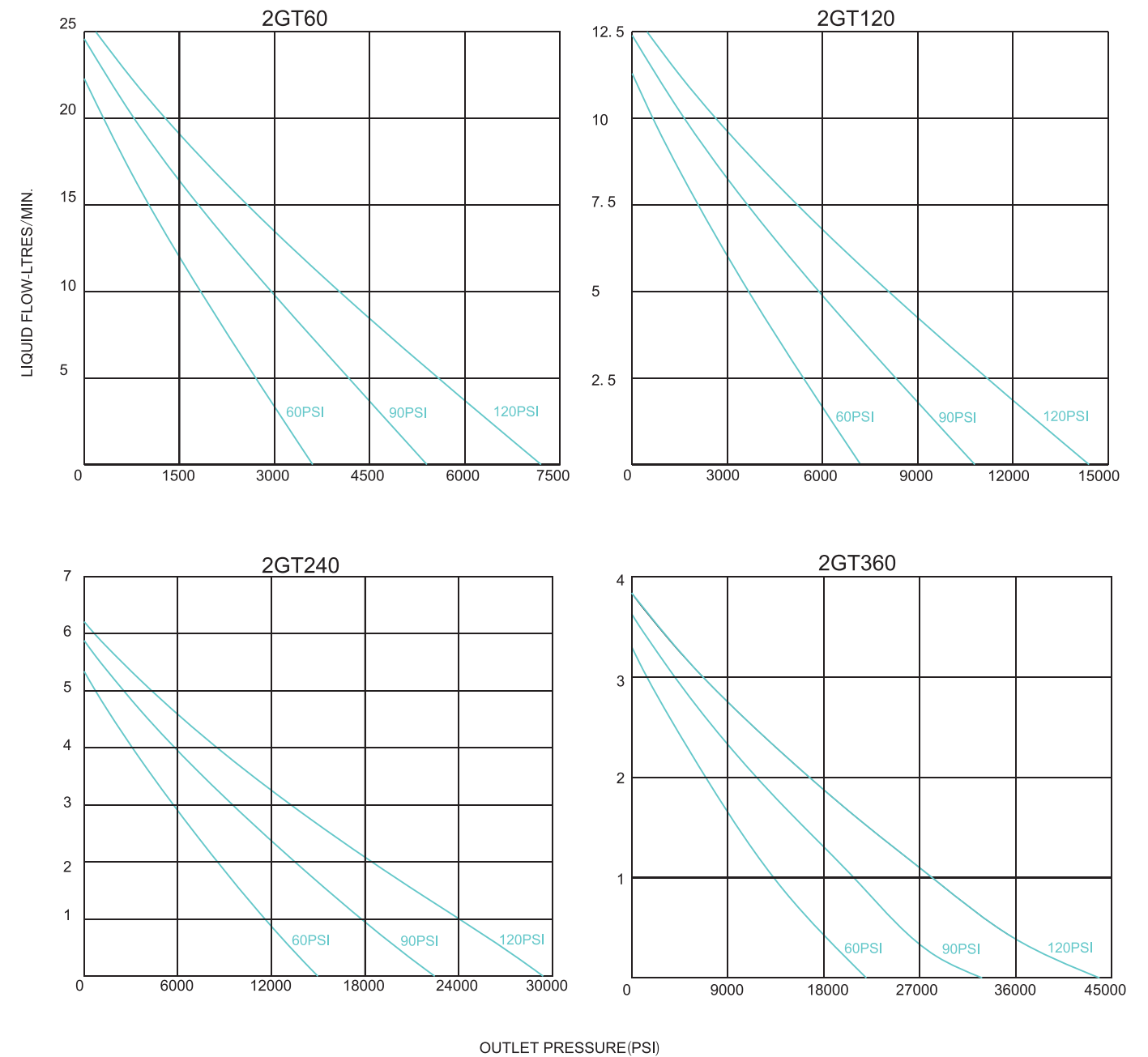


Air IN port is 3/4" female NPT for standard pumps

### EXPLAIN

- All model code listed are standard.  
For pumps with relief valve add "-R" after the model codes.  
For pumps with Viton seals add "-V" after the model codes.  
For pumps with Pressure switch valve add "-P" after the model codes.  
For cold area service add "-C" after the model codes.  
For liquid CO<sub>2</sub> add "-C2" after the model codes.
- Other sizes, materials and types are available upon request. For special requirements, please contact us.

## Performance Curves





# usun Gas Booster

## Features

- ★ Suitable for most gases (Air, N<sub>2</sub>, He, CO<sub>2</sub>, Ne, Ar, O<sub>2</sub>, H<sub>2</sub>, CH<sub>4</sub>, Natural Gas...).
- ★ Industrial gases like Argon, Helium and Nitrogen can be compressed to operating pressures of 25000 psig (1724 bar), Oxygen to 5000 psig (345 bar), Hydrogen to 15000 psig (1034 bar).
- ★ Single, double acting, and two-stage models.
- ★ Reliable, easy to maintain, compact and robust.
- ★ No heat, flame or spark risk.
- ★ Infinitely variable cycling speed and output.
- ★ Air driven boosters are an efficient alternative instead of electrically driven products and can be used in explosion proof areas.
- ★ Easy to apply automatic controls.
- ★ No limit or adverse affect to continuous stop/start applications.
- ★ Seal systems designed for long working life.
- ★ No airline lubricator required.
- ★ Separation between air and gas sections.
- ★ Built-in cooling.
- ★ Ability to stall at any predetermined pressure and hold the fixed pressure without consuming power or generating heat.
- ★ CE
- ★ There is no lubrication in the gas section. It will not pollute the gas and ensure the high purity of the gas.
- ★ The gas supply can be used to extremely low pressure, which improves the gas utilization.

## Applications

- ★ Pressure test & leakage test with gas
- ★ Gas transfer
- ★ Charging of nitrogen accumulators
- ★ Supply for isolating gas systems
- ★ Gas assisted injection moulding
- ★ CO<sub>2</sub> foaming
- ★ Transfer of oxygen cylinders
- ★ Life Support Gas Transfer and Charging
- ★ Gas recovery: Pressurize the remaining lower pressure gases in the cylinder or pipeline and fill the gases into a cylinder.
- ★ Compressed Natural Gas (CNG) Boosting for vehicle refueling stations.
- ★ Hydrogen refueling station compresses hydrogen for fuel cell.

## Technical specifications

There are two distinct sections: the air drive section and the gas barrel section.

### Air Drive Section

Standard Air Drive Seals should perform reliably within a temperature range of (25°F to 150°F) (-4°C to 65°C). Lower temperatures will cause air/gas leakage; higher temperatures reduce seal life.

USUN recommends a minimum Class 4 air quality per ISO 8573.1 standards. For operation at extremely low temperatures, consult factory.

### Gas Barrel Section

Low temperatures normally have little effect on the operation of standard parts and seals. The heat from the compressing gas helps to balance out an acceptable temperature. Maximum average acceptable temperature 115°C (240°F). Generally, the built-in cooling adopts exhaust air cooling. That can keep the temperature not exceeding this value. Also cooling by water is available as an option.

Suction pressures lower than the indicated "Ps min" are not permitted and can cause damages on the unit. Because each booster has a fixed maximum compression ratio. When the air supply pressure is too low, the gas can not be pressurized to a certain pressure in the high-pressure barrel, causing the booster to reciprocate and fail to output gas. The gas will be compressed and released repeatedly in the high-pressure barrel.

### stroke frequency

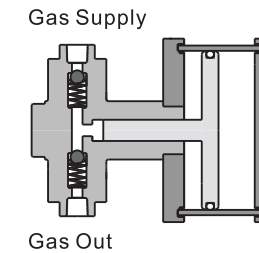
The maximum stroke frequency is at 100 cycles per minute for 50% duty cycle, It is recommended not to exceed 60 cycles/min for long-term operation or heavy-duty applications.

## Air Driven Gas Booster Configurations

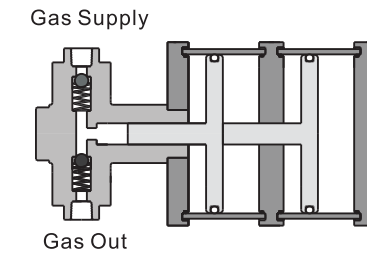
USUN air driven gas boosters have wide range of models it is possible to select the optimum booster for each application. Single stage, double acting or two stage boosters or a combination of these models can be used to achieve different operating pressures and flow capacities. Single acting, single stage boosters are the base model. Double acting, single stage provides twice the delivery of a single acting single stage booster. Two stage models are used for high gas compression ratios.

## Types of the boosters

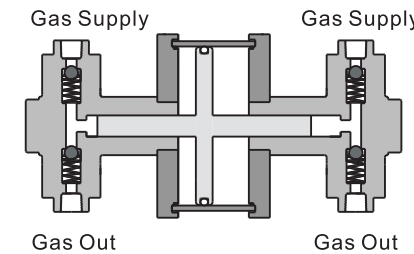
Single Drive, Single Acting



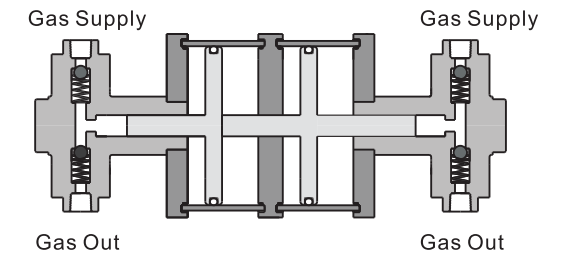
Double Drive, Single Acting



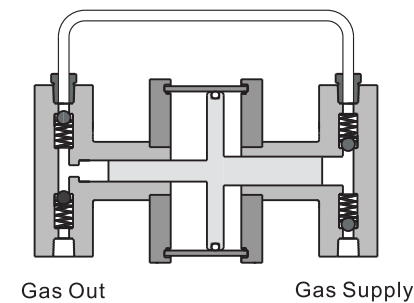
Single Drive, Double Acting



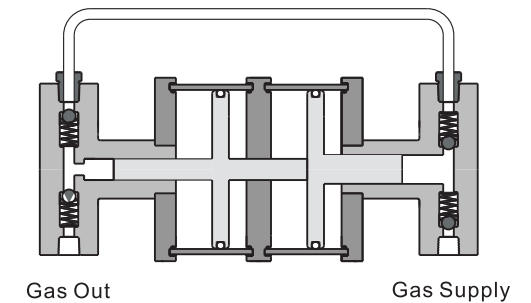
Double Drive, Double Acting



Single Drive, Two Stage



Double Drive, Two Stage



# usun AGB Series

## Single Drive Single Acting

### Features

- ★ Choice of 5 ratios.
- ★ Max. air drive pressure Pa=150 psig(10.3 bar).
- ★ Choice of seal materials.
- ★ Pressure to 11,250 psig(776 bar).
- ★ No lubricator required.



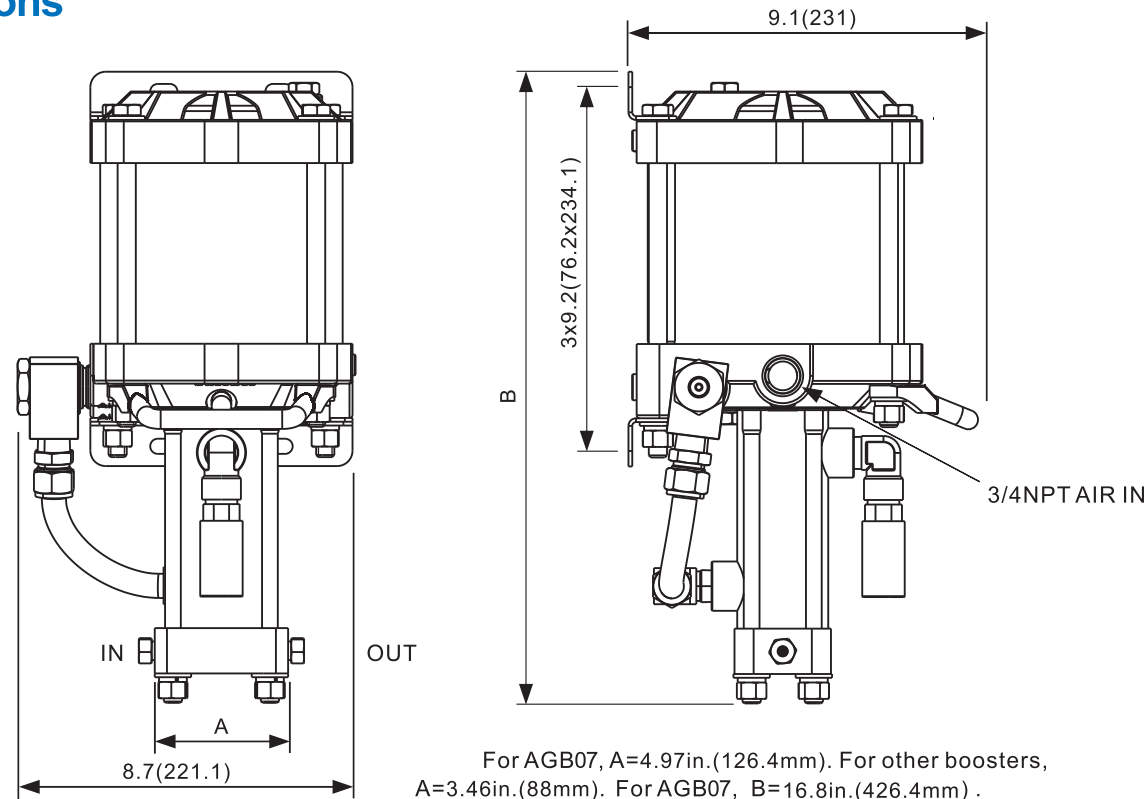
### Performance and Specification

Booster Model Code	Max. Rated Gas Supply	Min. Rated Gas Supply	Max. Rated Gas Outlet (psig)			Actual ML Per Cycle	Outlet Stall Press. Formula	Compression Ratio Max.	Inlet & Outlet Gas Ports
			Inert Gas	Hydrogen	Oxygen				
AGB07	1050psig	25psig	1050	1050	1050	216ML	7 Pa	20:1	3/8"FNPT
AGB15	2250psig	50psig	2250	2250	2250	102ML	15 Pa	20:1	1/4"HF
AGB30	4500psig	100psig	4500	4500	4500	51ML	30 Pa	25:1	1/4"HF
AGB50	7500psig	100psig	7500	7500	5000	32ML	50 Pa	25:1	1/4"HF
AGB75	11250psig	250psig	11250	11250	5000	20ML	75 Pa	25:1	1/4"HF

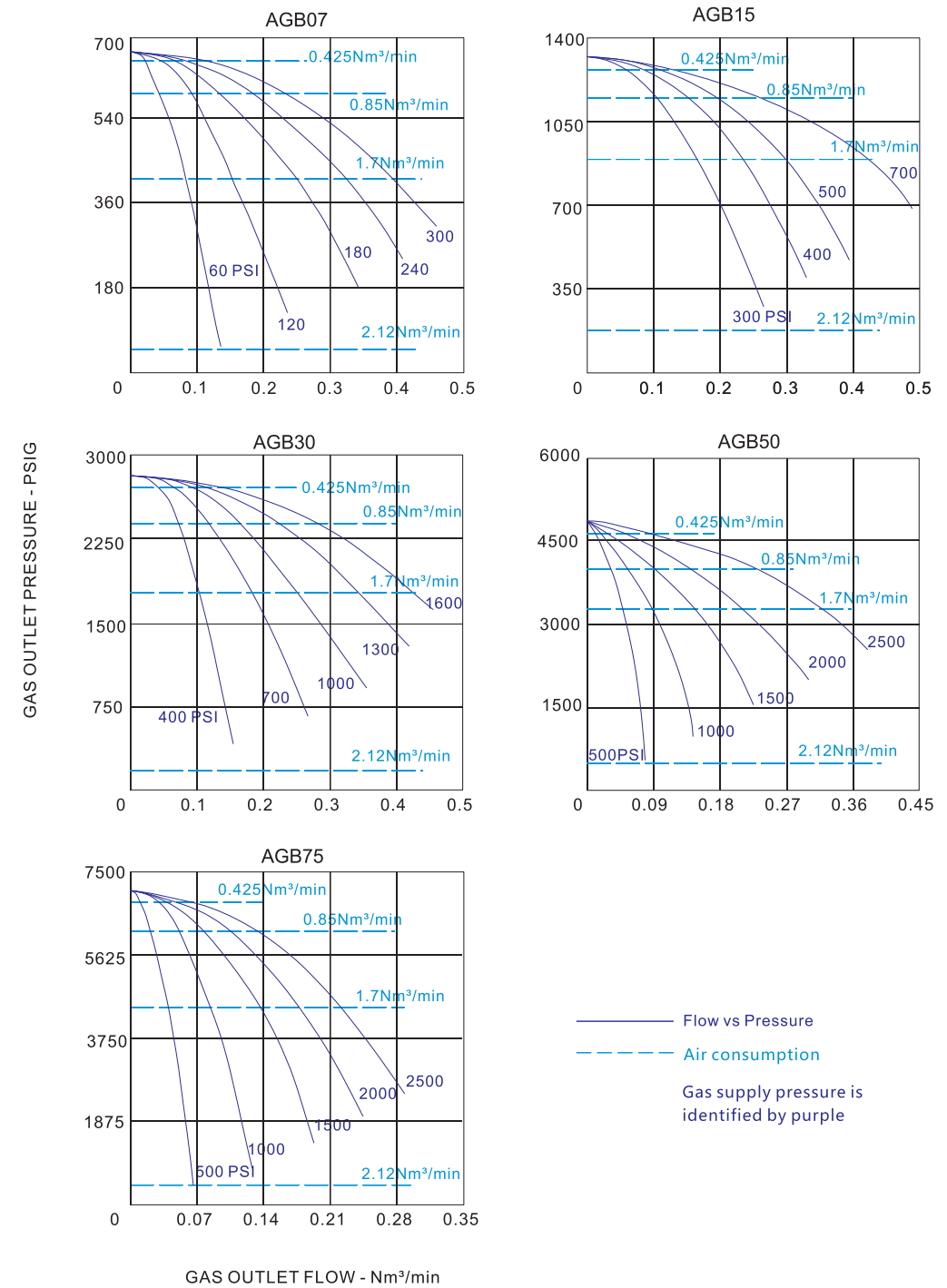
HF means female high pressure connection.

### Dimensions

in.(mm)



### Performance Curves — air drive source of approximately 90 psig



### EXPLAIN

- All model code listed are standard.  
 Oxygen gas service add "-O" after the model codes.  
 Hydrogen gas service add "-H" after the model codes.  
 Replaces all Buna static and dynamic seals in the drive section of the gas booster add "-V" after the model codes.  
 With external pilot port on air drive section add "-X" after the model codes.  
 With external pilot port on air drive section & pressure switch add "-XS" after the model codes.
- Other sizes, materials and types are available upon request. For special requirements, please contact us.



# usun 2AGB Series

## Double Drive Single Acting

### Features

- ★ Choice of 3 ratios.
- ★ Max. air drive pressure Pa=150 psig(10.3 bar).
- ★ Choice of seal materials.
- ★ Higher outlet pressure to 20000 psig(1379 bar).
- ★ No lubricator required.



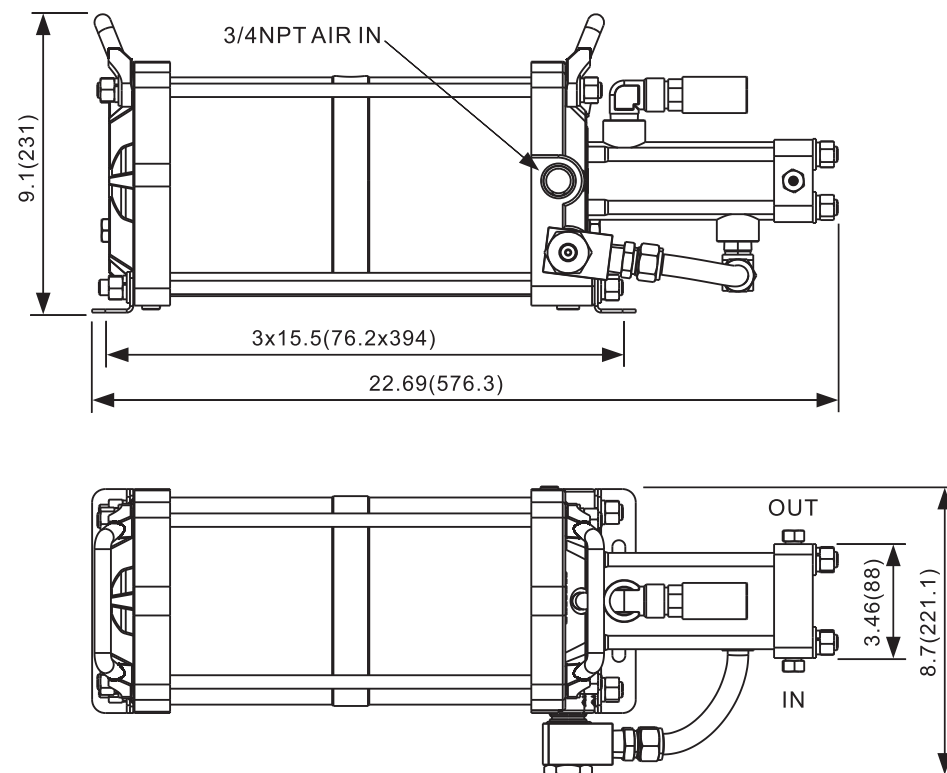
### Performance and Specification

Booster Model Code	Max. Rated Gas Supply	Min. Rated Gas Supply	Max. Rated Gas Outlet (psig)			Actual ML Per Cycle	Outlet Stall Press. Formula	Compression Ratio Max.	Inlet & Outlet Gas Ports
			Inert Gas	Hydrogen	Oxygen				
2AGB60	9000psig	200psig	9000	9000	5000	51ML	60 Pa	25:1	1/4"HF
2AGB100	12000psig	100psig	12000	12000	5000	32ML	100 Pa	25:1	1/4"HF
2AGB150	20000psig	250psig	20000	15000	5000	20ML	150 Pa	25:1	1/4"HF

HF means female high pressure connection.

### Dimensions

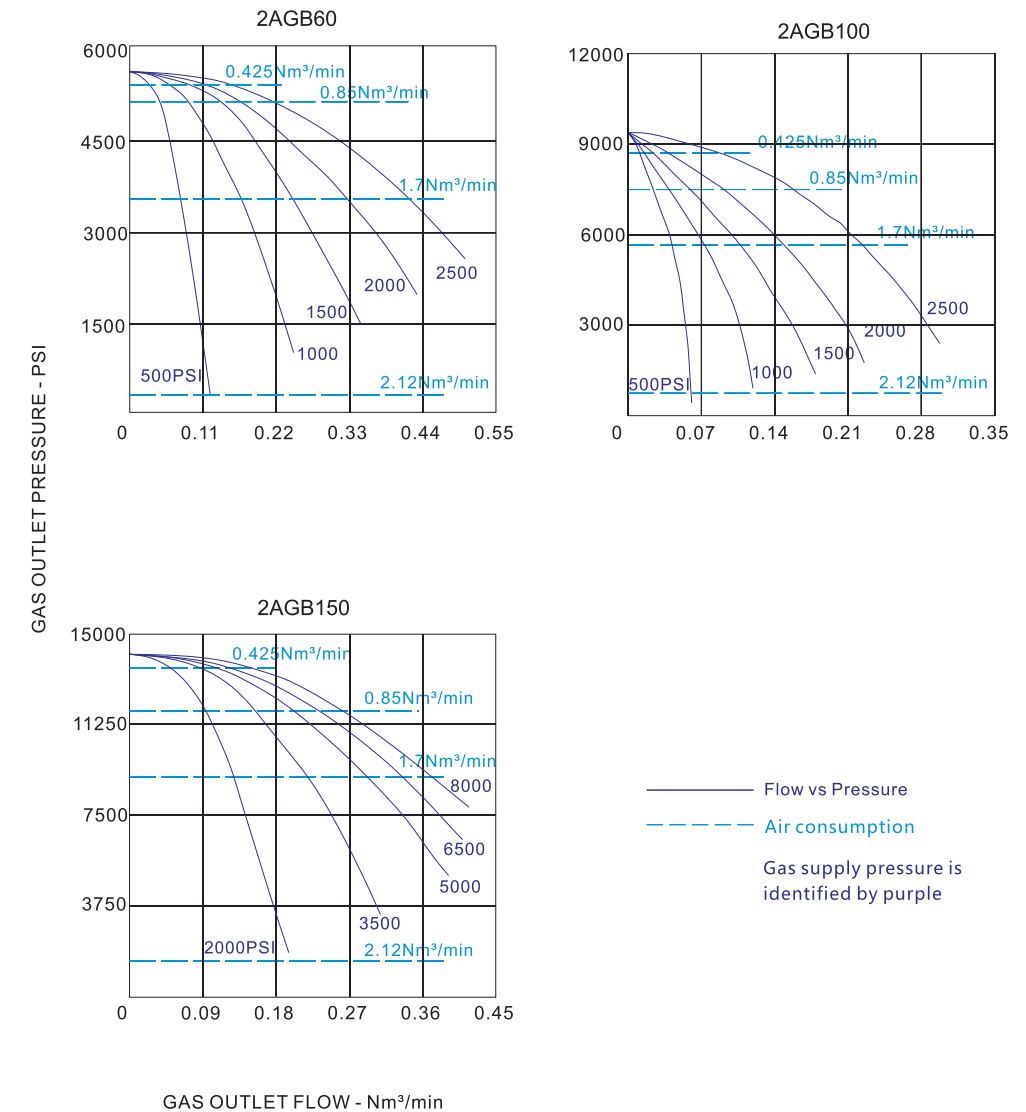
in.(mm)



#### EXPLAIN

- All model code listed are standard.  
 Oxygen gas service add "-O" after the model codes.  
 Hydrogen gas service add "-H" after the model codes.  
 Replaces all Buna static and dynamic seals in the drive section of the gas booster add "-V" after the model codes.  
 With external pilot port on air drive section add "-X" after the model codes.  
 With external pilot port on air drive section & pressure switch add "-XS" after the model codes.
- Other sizes, materials and types are available upon request. For special requirements, please contact us.

### Performance Curves — air drive source of approximately 90 psig



# usun AGBD Series

## Single Drive Double Acting

### Features

- ★ Higher efficiency than single-acting boosters.
- ★ Max. air drive pressure Pa=150 psig(10.3 bar).
- ★ Less restriction on gas supply pressure Ps.
- ★ Choice of seal materials.
- ★ Pressure to 15000 psig(1034 bar).
- ★ No lubricator required.

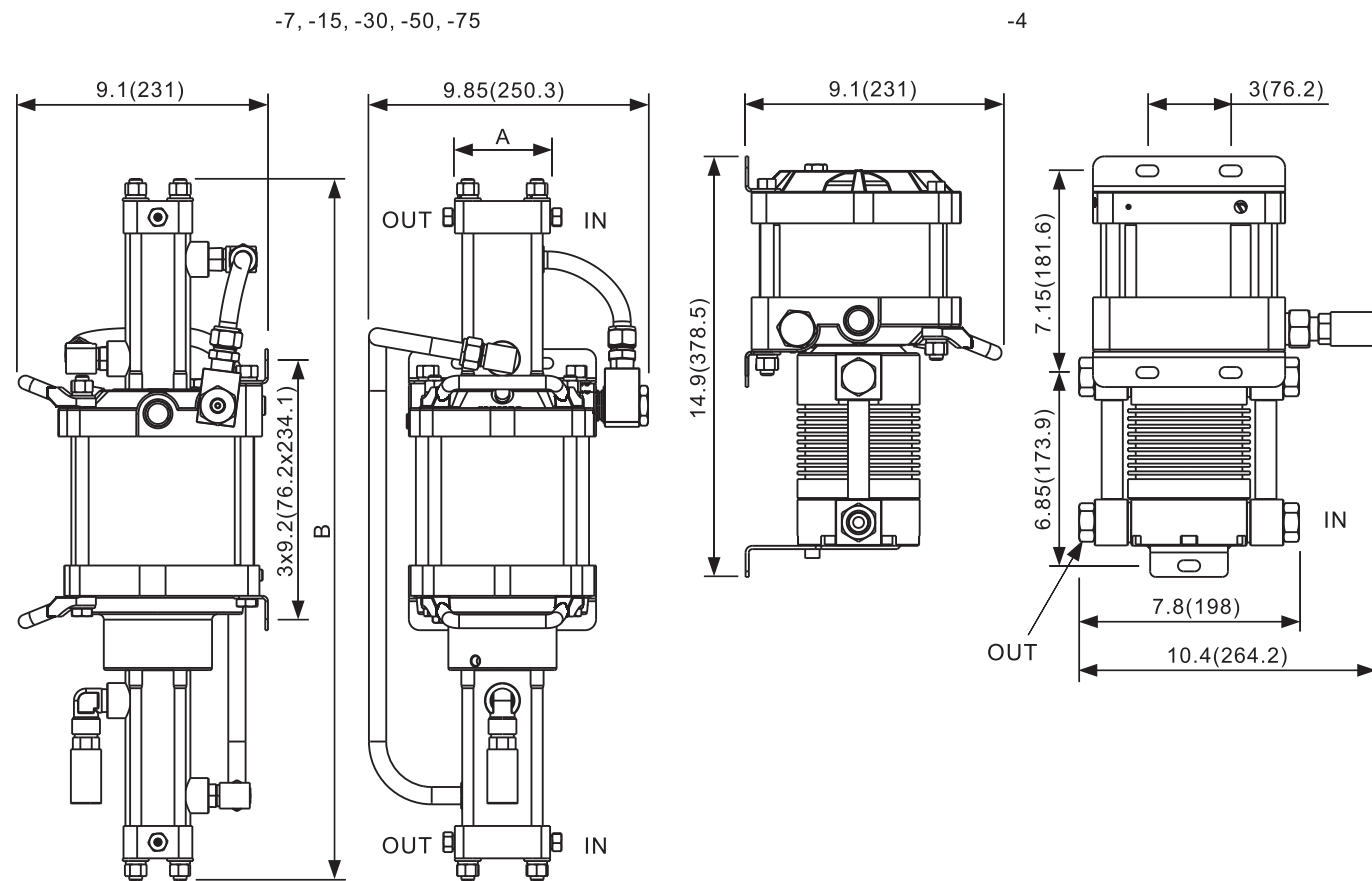
### Performance and Specification

Booster Model Code	Max. Rated Gas Supply	Min. Rated Gas Supply	Max. Rated Gas Outlet (psig)			Actual ML Per Cycle	Outlet Stall Press. Formula	Compression Ratio Max.	Inlet & Outlet Gas Ports
			Inert Gas	Hydrogen	Oxygen				
AGBD04	1250psig	ATM	1250	1250	1250	316ML	4 Pa+Ps	10:1	3/8"FNPT
AGBD07	2500psig	25psig	2500	2500	2500	432ML	7 Pa+Ps	20:1	3/8"FNPT
AGBD15	5000psig	50psig	5000	5000	5000	203ML	15 Pa+Ps	20:1	1/4"HF
AGBD30	9000psig	100psig	9000	9000	5000	102ML	30 Pa+Ps	25:1	1/4"HF
AGBD50	15000psig	100psig	15000	15000	5000	64ML	50 Pa+Ps	25:1	1/4"HF
AGBD75	15000psig	250psig	15000	15000	5000	39ML	75 Pa+Ps	25:1	1/4"HF

HF means female high pressure connection.

### Dimensions

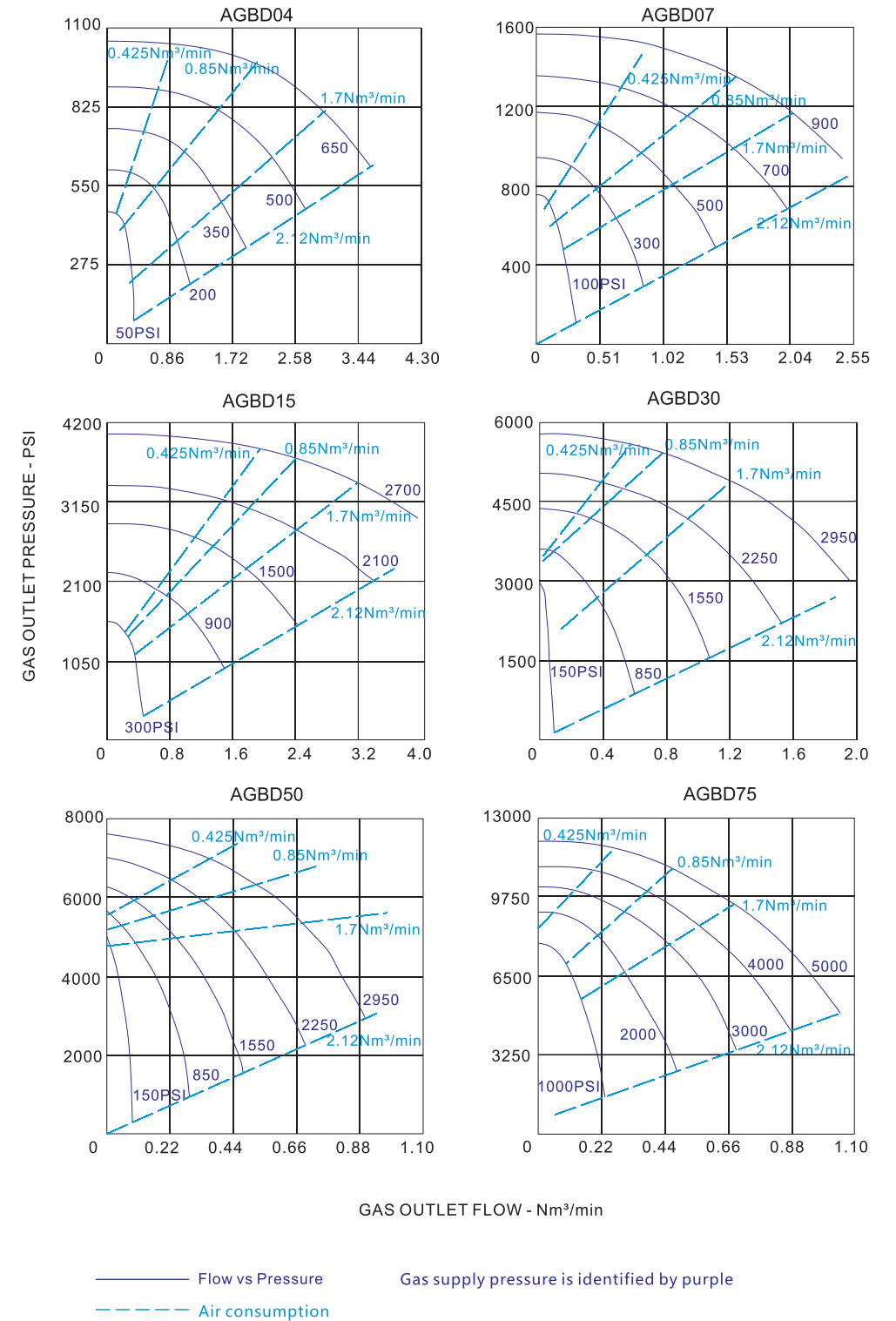
in.(mm)



-7 Boosters: A=4.97in.(126.4mm). -15, -30, -50, -75 Boosters : A=3.46in.(88mm).  
 -7 Boosters: B=26.3in.(668mm). -15, -30, -50, -75 Boosters : B=25.5in.(648mm).  
 3/4 female NPT AIR IN for all models.



### Performance Curves — air drive source of approximately 90 psig



#### EXPLAIN

- All model code listed are standard.  
 Oxygen gas service add "-O" after the model codes.  
 Hydrogen gas service add "-H" after the model codes.  
 Replaces all Buna static and dynamic seals in the drive section of the gas booster add "-V" after the model codes.  
 With external pilot port on air drive section add "-X" after the model codes.  
 With external pilot port on air drive section & pressure switch add "-XS" after the model codes.
- Other sizes, materials and types are available upon request. For special requirements, please contact us.



# usun 2AGBD Series

## Double Drive Double Acting

### Features

- ★ Higher efficiency than single-acting boosters.
- ★ Max. air drive pressure Pa=150 psig(10.3 bar).
- ★ Less restriction on gas supply pressure Ps.
- ★ Choice of seal materials.
- ★ Higher outlet pressure to 25000 psig(1724 bar).
- ★ No lubricator required.



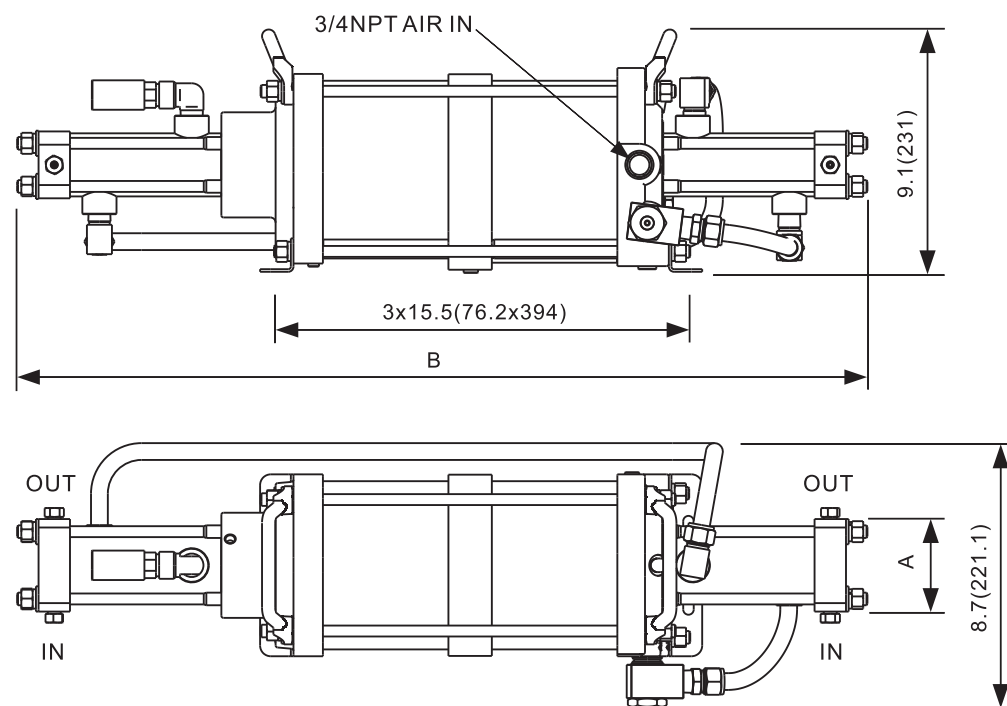
### Performance and Specification

Booster Model Code	Max. Rated Gas Supply	Min. Rated Gas Supply	Max. Rated Gas Outlet (psig)			Actual ML Per Cycle	Outlet Stall Press. Formula	Compression Ratio Max.	Inlet & Outlet Gas Ports
			Inert Gas	Hydrogen	Oxygen				
2AGBD14	3500psig	25psig	5000	5000	5000	432ML	14 Pa+Ps	20:1	3/8"FNPT
2AGBD30	5000psig	50psig	5000	5000	5000	203ML	30 Pa+Ps	20:1	1/4"HF
2AGBD60	9000psig	200psig	9000	9000	5000	102ML	60 Pa+Ps	25:1	1/4"HF
2AGBD100	15000psig	100psig	15000	15000	5000	64ML	100 Pa+Ps	25:1	1/4"HF
2AGBD150	25000psig	250psig	25000	15000	N/A	39ML	150 Pa+Ps	25:1	1/4"HF

HF means female high pressure connection.

### Dimensions

in.(mm)

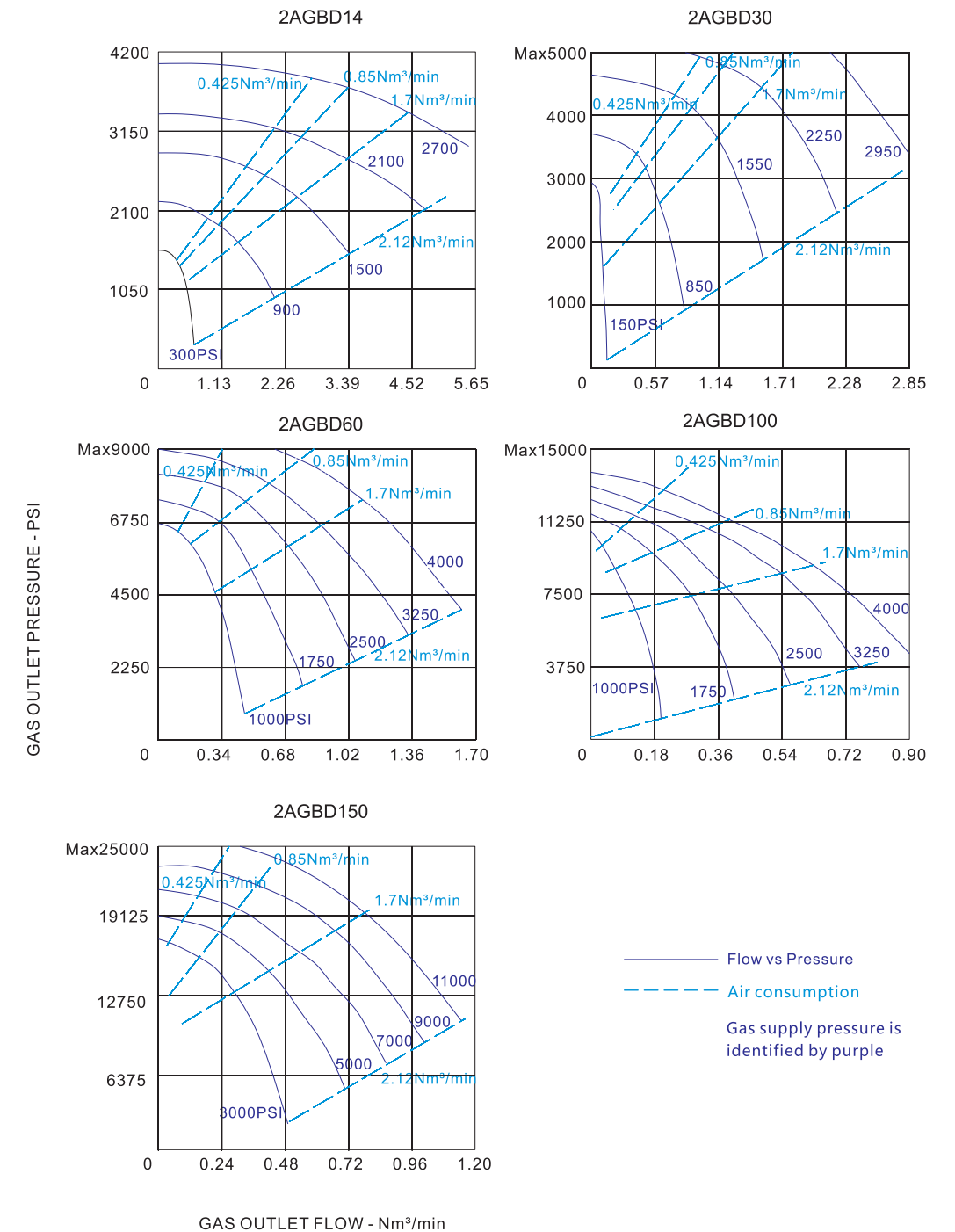


For 2AGBD14, A=4.97in.(126.4mm). For other boosters, A=3.46in.(88mm).  
For 2AGBD14, B=32.64in.(829mm). For other boosters, B=31.85in.(809mm).

#### EXPLAIN

- All model code listed are standard.  
Oxygen gas service add "-O" after the model codes.  
Hydrogen gas service add "-H" after the model codes.  
Replaces all Buna static and dynamic seals in the drive section of the gas booster add "-V" after the model codes.  
With external pilot port on air drive section add "-X" after the model codes.  
With external pilot port on air drive section & pressure switch add "-XS" after the model codes.
- Other sizes, materials and types are available upon request. For special requirements, please contact us.

### Performance Curves — air drive source of approximately 90 psig



# usun AGBT Series



## Single Drive Double Stage

### Features

- ★ Because it has a higher compression ratio, it can work at lower gas supply pressure Ps.
- ★ Max. air drive pressure Pa=150 psig(10.3 bar).
- ★ Choice of seal materials.
- ★ Pressure to 15000 psig(1034 bar).
- ★ No lubricator required.

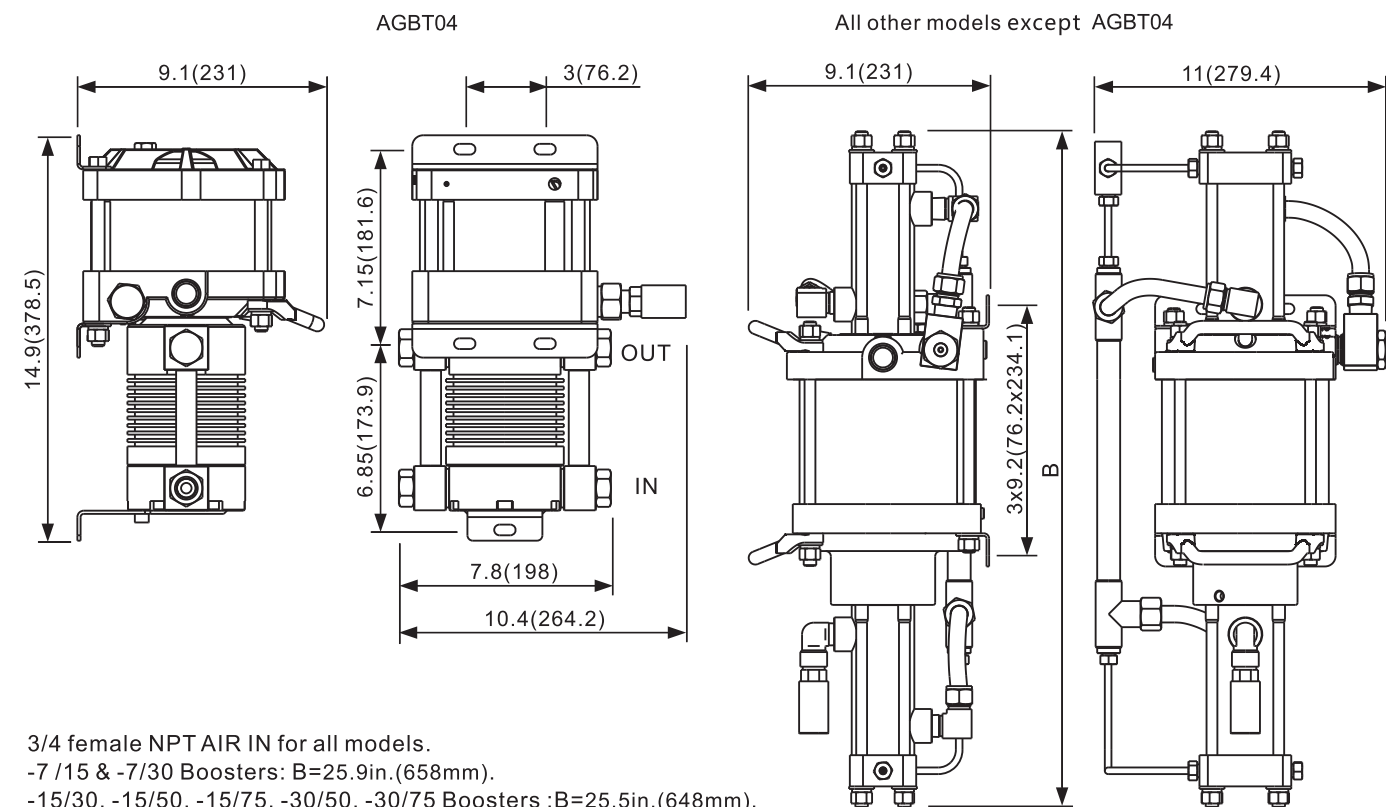
### Performance and Specification

Booster Model Code	Max. Gas Supply	Min. Gas Supply	Max. Rated Gas Outlet (psig)			Actual ML Per Cycle	Outlet Stall Press. Formula	Compression Ratio Max.	Max. barrel Safe Pressure	
			Inert Gas	Hydrogen	Oxygen				First stage	Second stage
AGBT04	1250psig	1/4ATM	1250	1250	1250	164ML	4 Pa+Ps	100:1	1250psig	1250psig
AGBT7/15	6 Pa	25psig	4050	4050	4050	216ML	15 Pa+2 Ps	50:1	2500psig	5000psig
AGBT7/30	2 Pa	25psig	5700	5700	5000	216ML	30 Pa+4 Ps	100:1	2500psig	9000psig
AGBT15/30	15 Pa	50psig	7500	7500	5000	102ML	30 Pa+2 Ps	50:1	5000psig	9000psig
AGBT15/50	6.5 Pa	100psig	10700	10000	5000	102ML	50 Pa+3.3 Ps	75:1	5000psig	15000psig
AGBT15/75	3.5 Pa	100psig	15000	15000	5000	102ML	75 Pa+5 Ps	100:1	5000psig	25000psig
AGBT30/50	45 Pa	100psig	15000	15000	5000	51ML	50 Pa+1.6 Ps	40:1	9000psig	15000psig
AGBT30/75	20 Pa	100psig	15000	15000	5000	51ML	75 Pa+2.5 Ps	60:1	9000psig	25000psig

When the pressure of the first stage exceeds the Max. barrel Safe Pressure listed in the table. Install interstage relief valve set at this pressure.

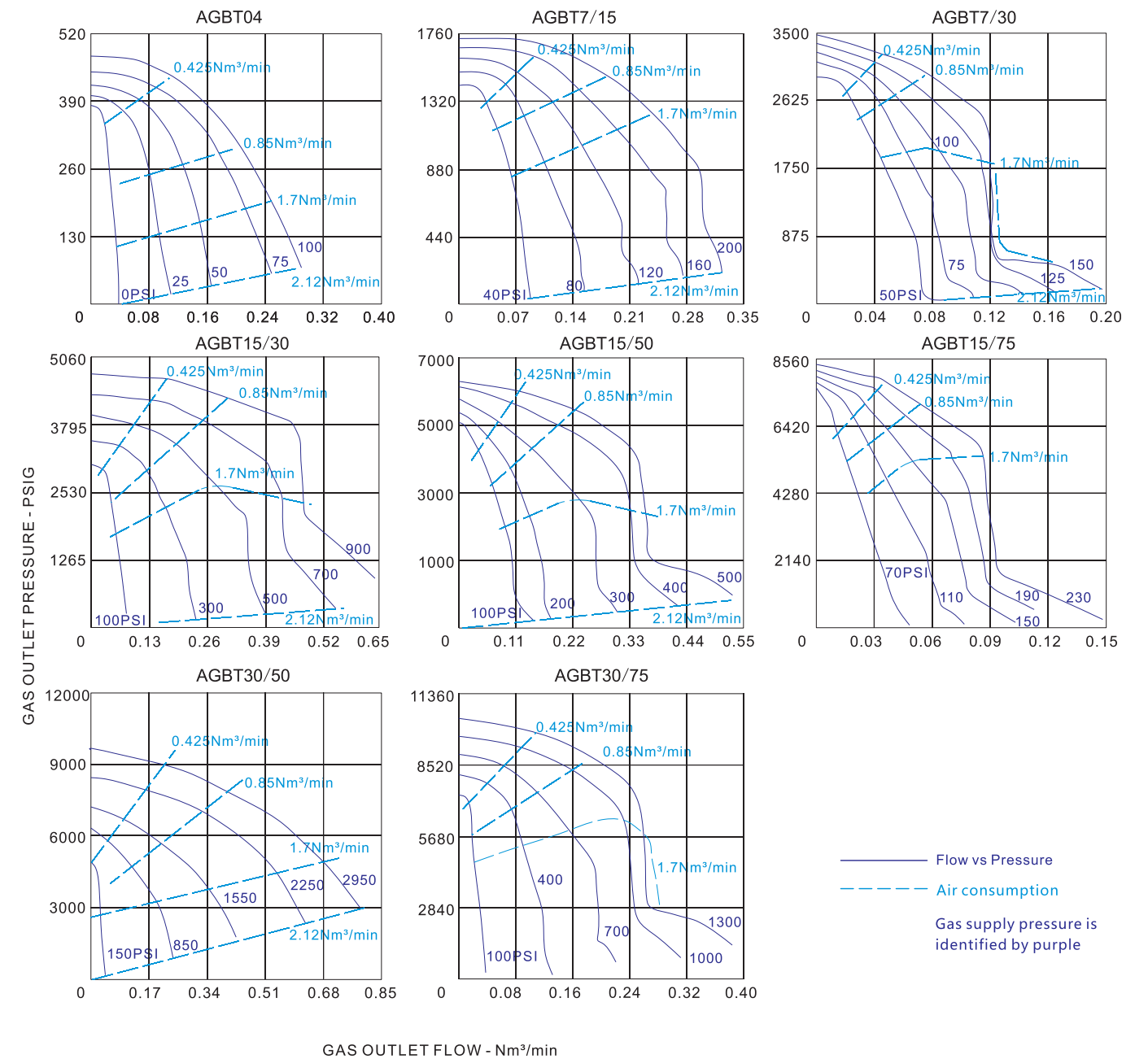
### Dimensions

in.(mm)



3/4 female NPT AIR IN for all models.  
 -7 /15 & -7/30 Boosters: B=25.9in.(658mm).  
 -15/30, -15/50, -15/75, -30/50, -30/75 Boosters :B=25.9in.(648mm).  
 For AGBT7/30 & AGBT7/30 & AGBT04 the inlet ports are 3/8 female NPT. For other boosters the inlet port are 1/4 female high pressure connection. For AGBT04 the outlet port is 3/8 female NPT. For all the other boosters the outlet ports are 1/4 female high pressure connection.

### Performance Curves — air drive source of approximately 90 psig



#### EXPLAIN

- All model code listed are standard.  
 Oxygen gas service add "-O" after the model codes.  
 Hydrogen gas service add "-H" after the model codes.  
 Replaces all Buna static and dynamic seals in the drive section of the gas booster add "-V" after the model codes.  
 With external pilot port on air drive section add "-X" after the model codes.  
 With external pilot port on air drive section & pressure switch add "-XS" after the model codes.
- Other sizes, materials and types are available upon request. For special requirements, please contact us.



# usun 2AGBT Series

## Double Drive Double Stage

### Features

- ★ Because it has a higher compression ratio, it can work at lower gas supply pressure Ps.
- ★ Max. air drive pressure Pa=150 psig(10.3 bar).
- ★ Choice of seal materials.
- ★ Pressure to 25000 psig(1724 bar).
- ★ No lubricator required.

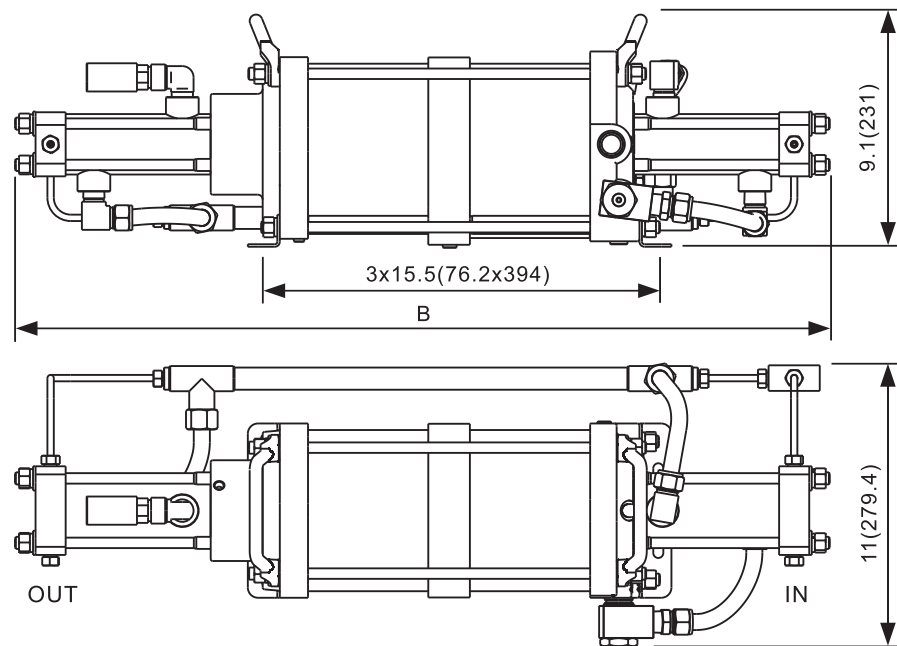
### Performance and Specification

Booster Model Code	Max. Gas Supply	Min. Gas Supply	Max. Rated Gas Outlet (psig)			Actual ML Per Cycle	Outlet Stall Press. Formula	Compression Ratio Max.	Max. barrel Safe Pressure	
			Inert Gas	Hydrogen	Oxygen				First stage	Second stage
2AGBT14/30	12 Pa	25psig	5000	5000	5000	216ML	30 Pa+2 Ps	50:1	2500psig	5000psig
2AGBT14/60	4 Pa	25psig	9000	9000	5000	216ML	60 Pa+4 Ps	100:1	2500psig	9000psig
2AGBT30/60	30 Pa	100psig	9000	9000	5000	102ML	60 Pa+2 Ps	50:1	5000psig	9000psig
2AGBT30/100	13 Pa	100psi	14500	14500	5000	102ML	100 Pa+3.3 Ps	75:1	5000psig	15000psig
2AGBT30/150	7 Pa	100psig	15000	15000	5000	102ML	150 Pa+5 Ps	100:1	5000psig	25000psig
2AGBT60/100	90 Pa	100psig	15000	15000	5000	51ML	100 Pa+1.6 Ps	40:1	9000psig	15000psig
2AGBT60/150	40 Pa	100psig	25000	15000	N/A	51ML	150 Pa+2.5 Ps	60:1	9000psig	25000psig

When the pressure of the first stage exceeds the Max. barrel Safe Pressure listed in the table. Install interstage relief valve set at this pressure.

### Dimensions

in.(mm)



3/4 female NPT AIR IN for all models.

For 2AGBT14/30&2AGBT14/60 : B=32.24in.(819mm). For other boosters :B=31.85in.(809mm).

For 2AGBT14/30&2AGBT14/60 the inlet port are 3/8 female NPT. For other boosters the inlet port are 1/4 female high pressure connection. For all the boosters the outlet ports are 1/4 female high pressure connection.

#### EXPLAIN

1. All model code listed are standard.

Oxygen gas service add "-O" after the model codes.

Hydrogen gas service add "-H" after the model codes.

Replaces all Buna static and dynamic seals in the drive section of the gas booster add "-V" after the model codes.

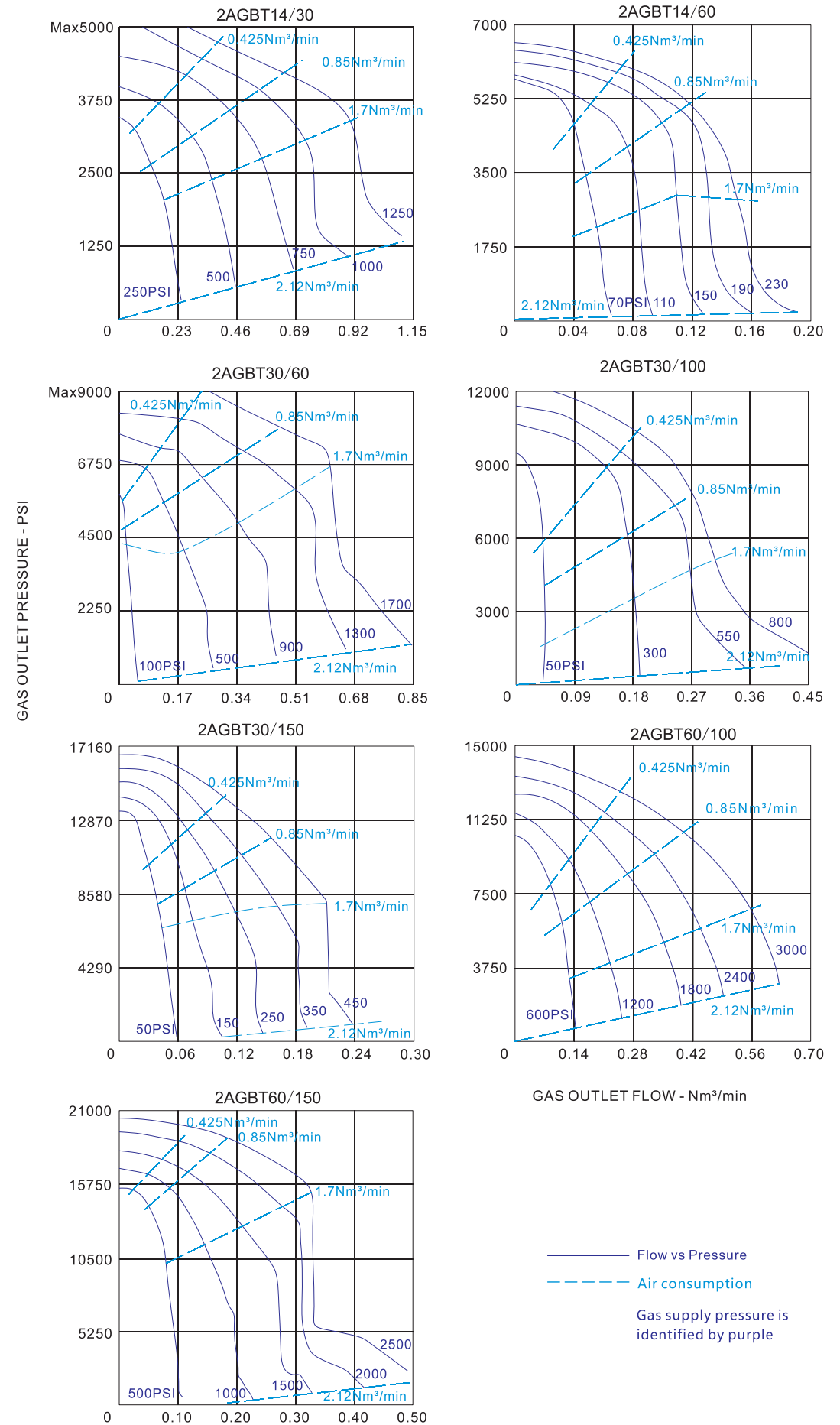
With external pilot port on air drive section add "-X" after the model codes.

With external pilot port on air drive section& pressure switch add "-XS" after the model codes.

2. Other sizes, materials and types are available upon request. For special requirements, please contact us.



### Performance Curves — air drive source of approximately 90 psig



— Flow vs Pressure  
 - - - Air consumption  
 Gas supply pressure is identified by purple