

FPK & FPS Series Charging & Gauging Units



Description

To maintain system performance HYDAC recommends that the gas precharge pressure is checked regularly. The inevitable loss of gas precharge pressure due to permeability will change the system effectiveness (performance) and could cause damage to the bladder, diaphragm, or piston accumulator.

HYDAC charging and gauging units allow hydro-pneumatic accumulators to be precharged with dry nitrogen. For these purposes, a charging and gauging unit is connected to a commercially available nitrogen bottle via a flexible charging hose.

These units also allow maintenance personnel to check the current gas precharge pressure of an accumulator. For critical systems, consider the use of a permanent gauging block (see page 68) which will provide for continuous monitoring.

All HYDAC charging and gauging units incorporate a gauge and check valve in the charging connection, and a manual bleed valve with a T-handle.

HYDAC offers two types of charging and gauging units:

- FPK for use with HYDAC version 1 gas valve
- FPS for use with HYDAC version 4 gas valve

Model Code

Note: For Oil, Gas & Marine specific charging & gauging units please refer to page 62

	Series	Gauge Pressure Range	Charging Hose	Charging Hose Length	Adapter	Case
	FPK = for use with Gas Valve Version 1 (M28 x 1.5) for SBO and SK FPS = for use with Gas Valve Version 4 (8VI-ISO 4570) for SB, SBO and SK NOTE: SB Top repairable bladder accumulators must use FPK with Adapter A3 (FPK/SB), PN 291533	10 = 0 to 145 psi (0 to 10 bar) 25 = 0 to 350 psi (0 to 25 bar) 100 = 0 to 1400 psi (0 to 100 bar) 250 = 0 to 3500 psi (0 to 250 bar) 400 = 0 to 5800 psi (0 to 400 bar)	F = with cap screw G1 (thread W24, 32x1/14 - DIN477)	2.5 = 8 ft. (2.5 m) 4.0 = 13 ft. (4 m)	G4 = USA (only for CGA 580 gas bottle connections) G4.1 = USA (only for CGA 680 gas bottle connections) only available with 400 bar Gauge and adapter integrated onto 4m high pressure hose G1 = Germany (integral part of charging hose) G2 = Great Britain, India G3 = France, Mexico G5 = Italy G6 = Japan G7 = South Korea G8 = Brazil, Columbia, Peru G9 = Taiwan G10 = Russia, Venezuela G11 = China G12 = Australia	K = plastic carrying case (standard)

Additional Accessories:

ADAPTER A3 (FPK/SB) = adapter for using FPK Charging Unit to fit HYDAC gas valve version 4, including top repairable bladder accumulators

NOTE: for other adapters please consult factory.

6mm Allen Wrench (for HYDAC Gas Valve Version 1, included with FPK Kits)

14mm Open End Wrench (for HYDAC gauge, optional)

Operating and Installation Instructions are included with each charging kit.

This is also available for download in PDF format on our web site: www.hydacusa.com

For spare parts see page 66.

Model FPS

For use with gas valve version 4.
(Except for top repairable bladder accumulators)



Model FPK

For use with gas valve version 1.



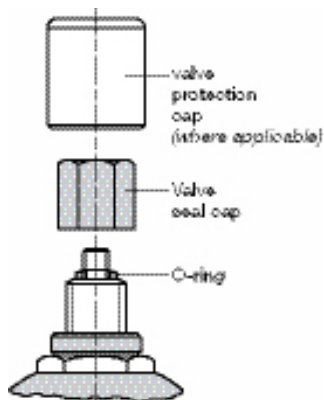
Adapter A3 (FPK/SB)

Part No. 291533

The A3 (FPK/SB) adapter can be used with the FPK to connect to any HYDAC version 4 gas valve for both bottom and top repairable bladder accumulators. The A3 adapter also serves as the required spacer for top repairable bladder accumulators.

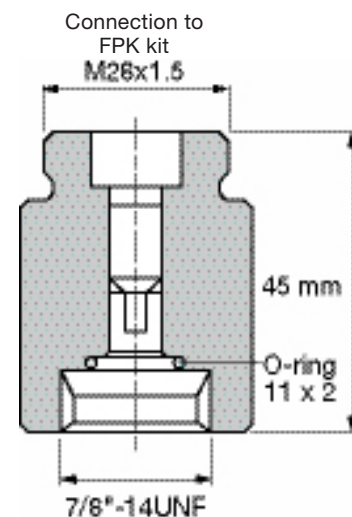
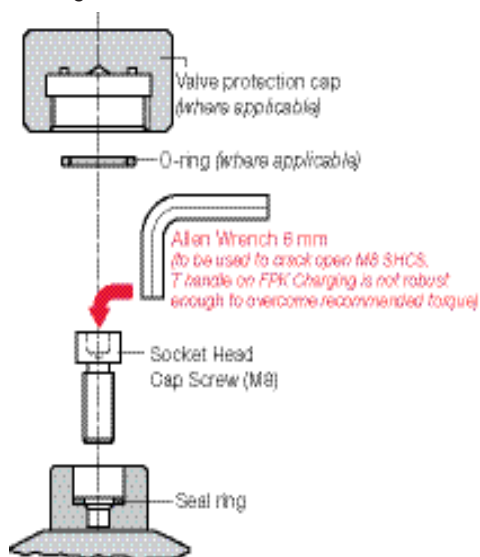
Gas Valve Version 4

On a Bottom Repairable Bladder Accumulator as well as Diaphragm Accumulators with E4 gas valve and piston accumulators with VE Gas Valve.

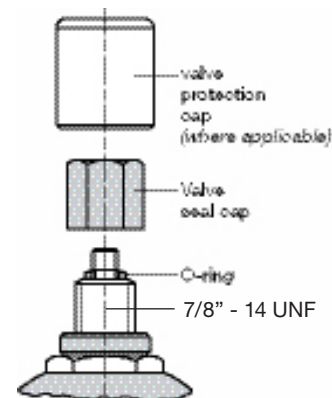


Gas Valve Version 1

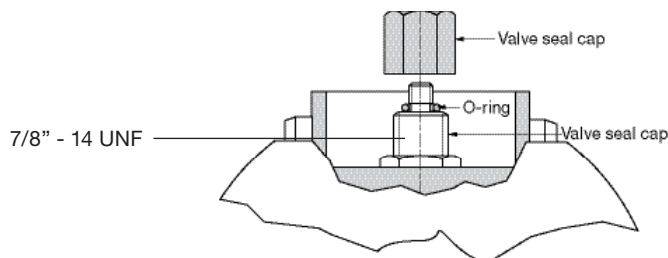
Metric, M28 x 1.5
Used on Diaphragm Accumulators w/ E1 gas valves and Piston Accumulators w/ VA or VB gas valves



Connection to Version 4 Gas Valve



Bottom Repairable



Top Repairable

FPO Series Charging and Gauging Units



Description

To maintain system performance HYDAC recommends that the gas precharge pressure is checked regularly. The inevitable loss of gas precharge pressure due to permeability will change the system effectiveness (performance) and could cause damage to the bladder, diaphragm, or piston accumulator.

HYDAC charging and gauging units allow hydro-pneumatic accumulators to be precharged with dry nitrogen. For these purposes, a charging and gauging unit is connected to a commercially available nitrogen bottle via a flexible charging hose.

These units also allow maintenance personnel to check the current gas precharge pressure of an accumulator. For critical systems, consider the use of a permanent gauging block (see page 68) which will provide for continuous monitoring.

All HYDAC charging and gauging units incorporate a gauge and check valve in the charging connection, and a manual bleed valve with a T-handle.

This charging kit is used for oil & gas / offshore type accumulators having the repairable 2 piece gas valve (denoted by "11" in the gas port segment in the accumulator model code).

Model Code

	FPO 210 F 3 - K
Charging and Gauging Unit	
FPO = for use with Gas Valve Version 4 (8VI-ISO 4570) for SB, SBO and SK	
Gauge Pressure Range	
210 = 0 to 3000 psi (0 to 210 bar)	
Charging Hose	
F = with nitrogen bottle connection CGA-580	
Charging Hose Length	
3.0 = 10 ft. (3 m)	
Case	
K = plastic carrying case (standard)	

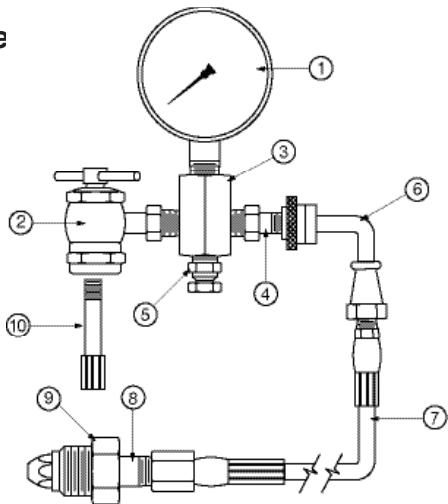
Additional Accessories:

Gas Valve Extension Rod - to be used with top repairable accumulators

Operating and Installation Instructions are included with each charging kit.

This is also available for download in PDF format on our web site: www.hydacusa.com

Spare

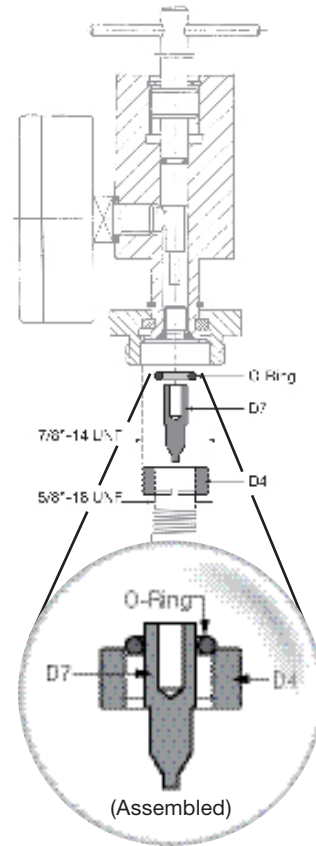
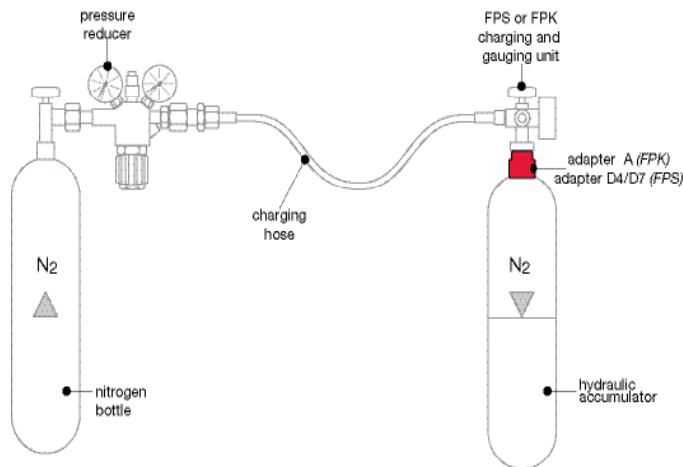


Part Description	Item	Quantity	Part No.
FPO 210 Replacement Kit consists of:			
Pressure Gauge, 3000 PSI	1	1	2701622
T-Handle Lock Chuck	2	1	2701615
Charging Manifold, FPO	3	1	consult factory
Tank Valve	4	1	2701617
Bleeder Valve	5	1	consult factory
Charging Manifold / Bleeder Valve Assembly	3 / 5		2089952
Hose Assembly FPO 210 (CGA 580) consists of:			
High Pressure Coupling (swivel) 1/8" NPT	6	1	2701590
Hose, FPO 3000 PSI, 3m	7	1	2701621
Nipple Gland, CGA-580	8	1	2701620
Nut, CGA-580	9	1	2701619
Top Repairable Gas Valve Extension	10	1	2701741

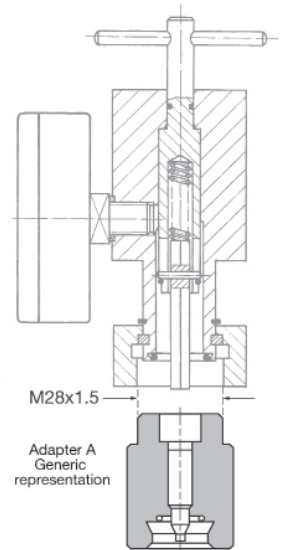
Adapters

Connecting Charging & Gauging Units to 3000 psi Accumulators

FPS Unit with Adapter D4/D7



FPK Unit with Adapter A*



Adapter D4/D7

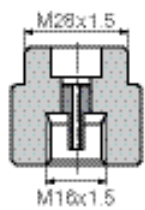
Part Number 02067646

Used with FPS Charging & Gauging Unit

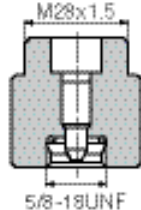
*A Adapters

Used with FPK Charging & Gauging Unit

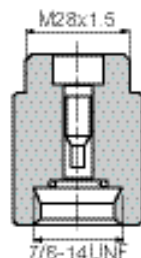
A1
PN 00361619



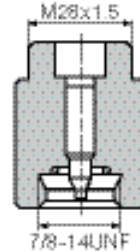
A2
PN 0361606



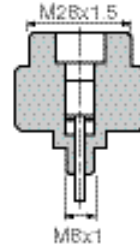
A3 (ADAPTER FPK/SB)
PN 00291533



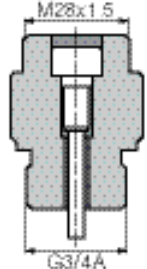
A4
PN 00291536



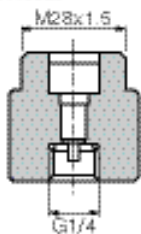
A5
PN 00291531



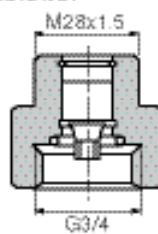
A6
PN 02106819



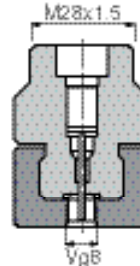
A7
PN 02110629



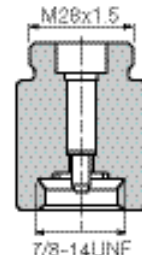
A8
PN 02124524



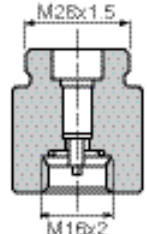
A9
PN 02129638



A10
PN 02129649

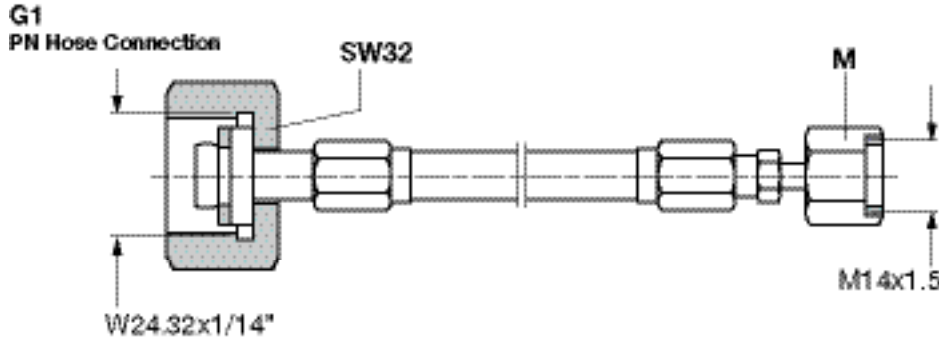


A11
PN 03016210



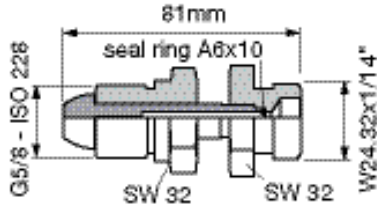
G Adapters - Connects Charging Hose to Gas Bottle

G2 through G11 to be used to adapt from G1 connection on 3000psi hose to N₂ Bottle or regulator

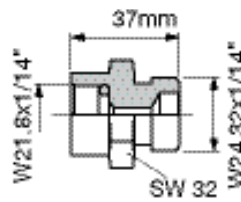


**Included in all charging kits

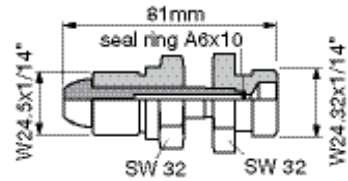
G2
PN 00236376



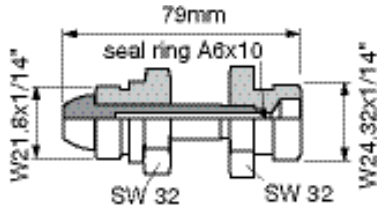
G3
PN 02103421



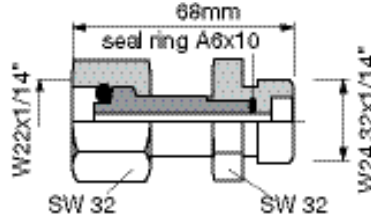
G4
PN 02068737



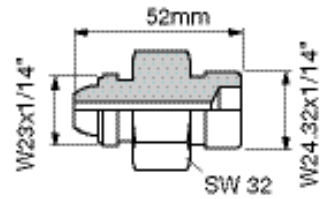
G5
PN 00236373



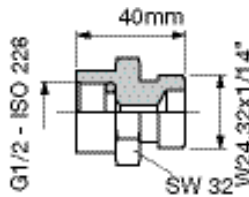
G6
PN 02103423



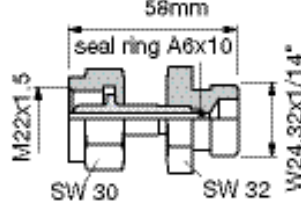
G7
PN 00236377



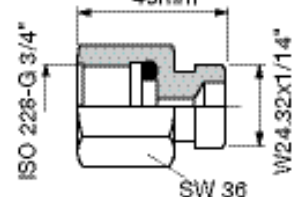
G8
PN 02103425



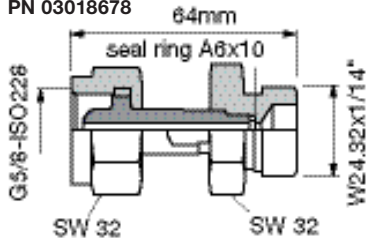
G9
PN 00241168



G10
PN 02103427

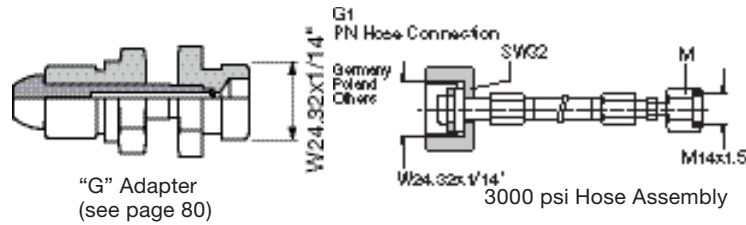
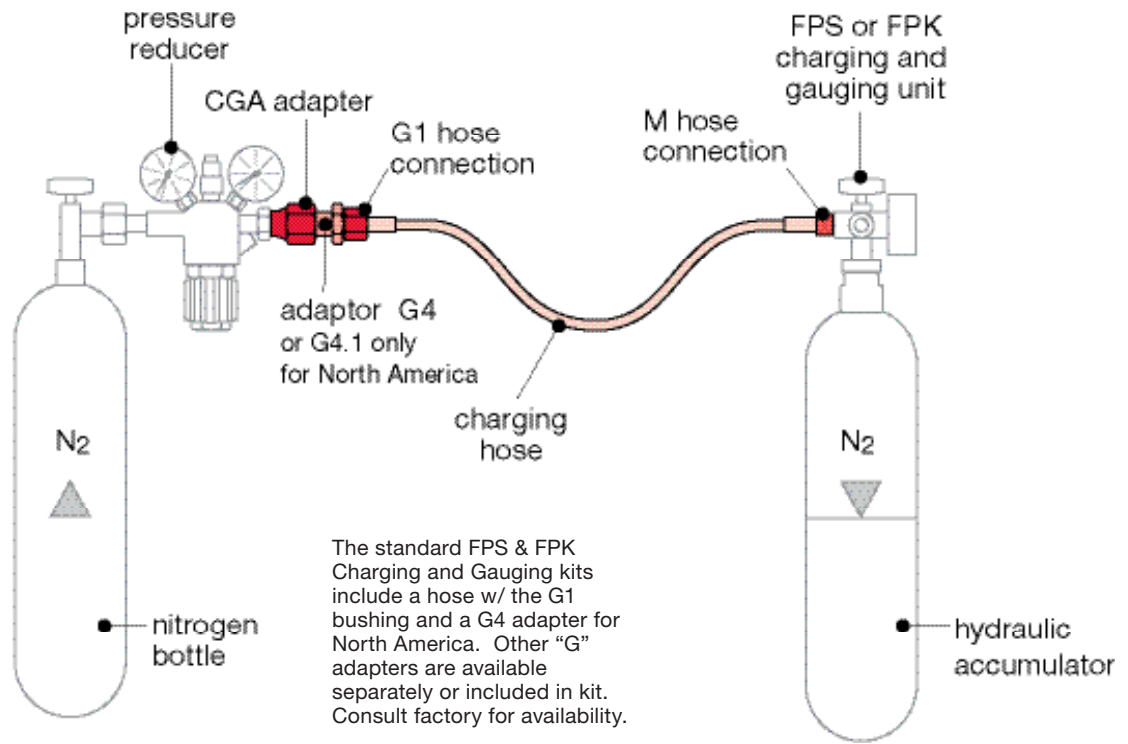


G11
PN 03018678



G1	G2	G3	G4	G5	G6	G7	G8	G9	G10	G11
Germany Poland Others	India Argentina Great Britain Vietnam Indonesia Others	France Egypt Mexico Israel Others	Canada USA Brazil	Italy	Japan	Korea	Peru Columbia Others	Taiwan	Russia Trinidad & Tobago Venezuela	China

Connecting Charging Hose to Gas Bottle

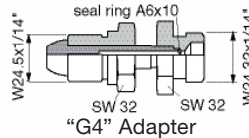
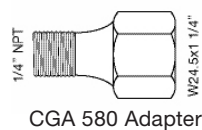


Charging Hoses

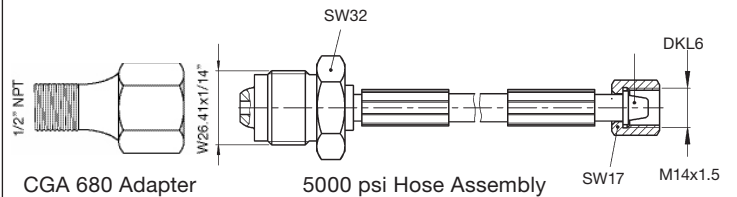
WP	Length	Part No.
3000 psi	2.5 m	236514
	4.0 m	236515
	10.0 m	373405
	15.0 m	2115552
	20.0 m	2109765
	28.0 m	2109574

WP	Length	Part No.
5000 psi	2.5 m	3053703
	4.0 m	3053704
	10.0 m	3117720

CGA 580 Adapter (for USA only)
 PN 02701355
 From G4 Adapter to Regulator



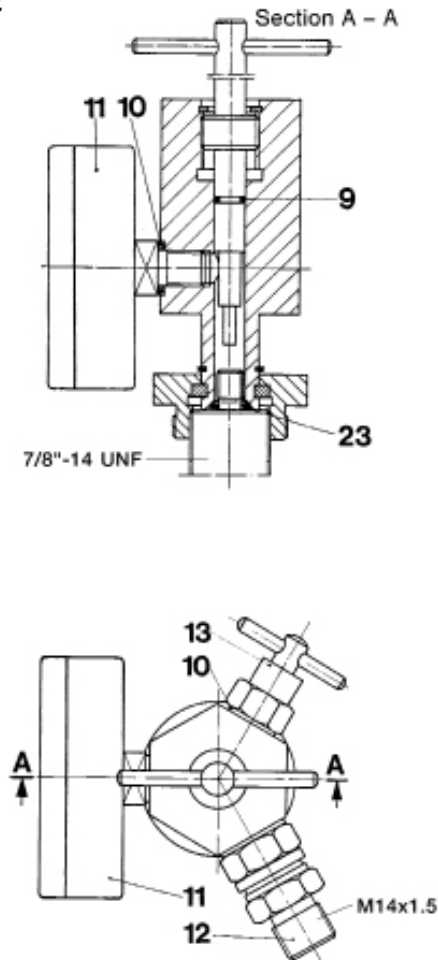
CGA 680 Adapter (for USA only)
 PN 02701356
 From G4.1 Adapter to Regulator



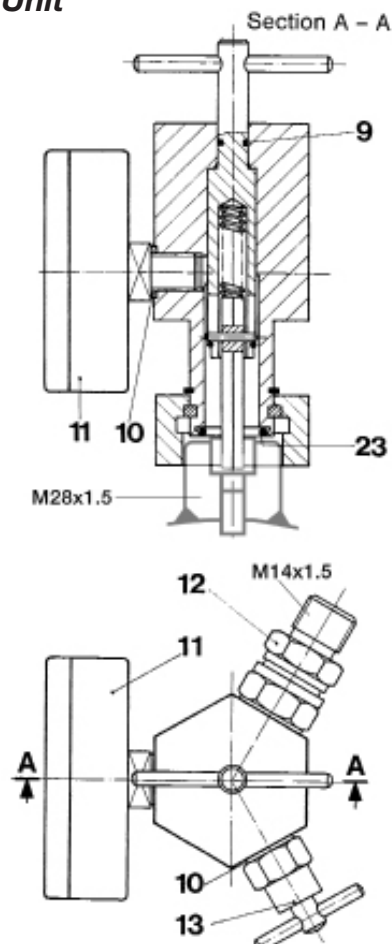
Charging & Gauging Units

Spare Parts

FPS Unit



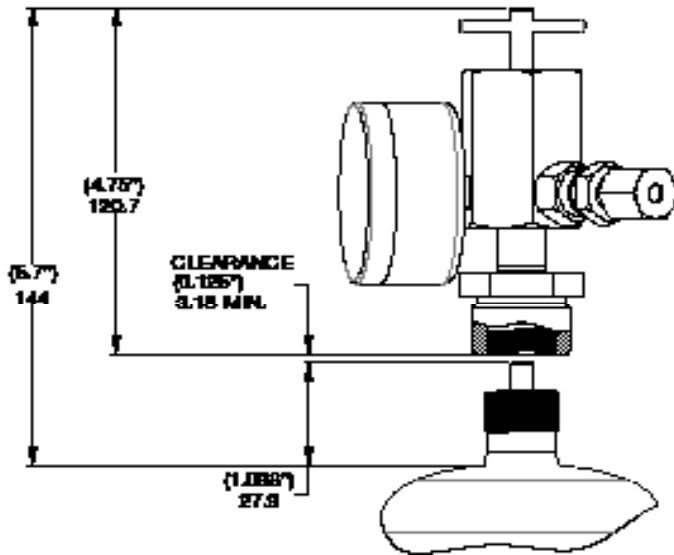
FPK Unit



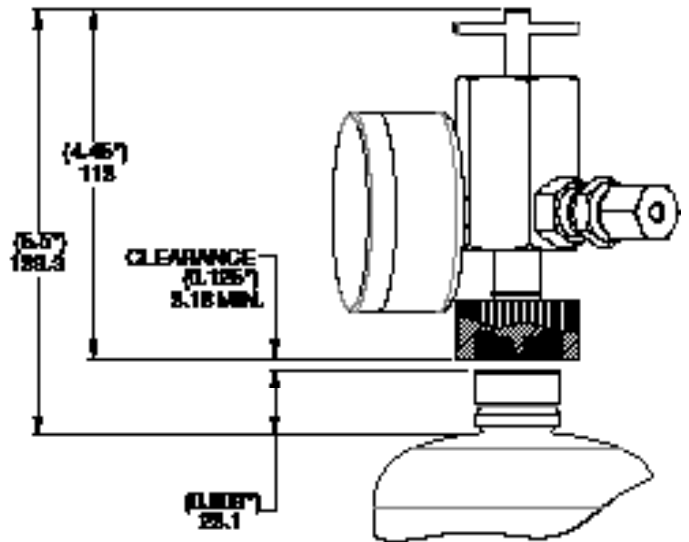
Item	Description	Part No.
9	O-Ring	601032
10	Seal-Ring	601228
11	Gauge (<i>select pressure range below</i>)	
	10 (0 to 145 psi)	606759
	25 (0 to 350 psi)	606760
	100 (0 to 1400 psi)	606761
	250 (0 to 3600 psi)	606762
	400 (0 to 5800 psi)	606763
12	Check Valve	610004
13	Manual Bleed Valve	236445
23	O-Ring - FPS	626488
	O-Ring - FPK	601049
-	2.5m Hose	236514
-	4m Hose	236515
-	10m Hose	373405
-	ADAPTER G4	2068737
-	ADAPTER A3 (FPK/SB)	291533
-	O-Ring - ADAPTER A3 (FPK/SB)	601964

WARNING: Only qualified persons should perform maintenance on any type of accumulator. Complete maintenance instructions are available - Contact HYDAC.

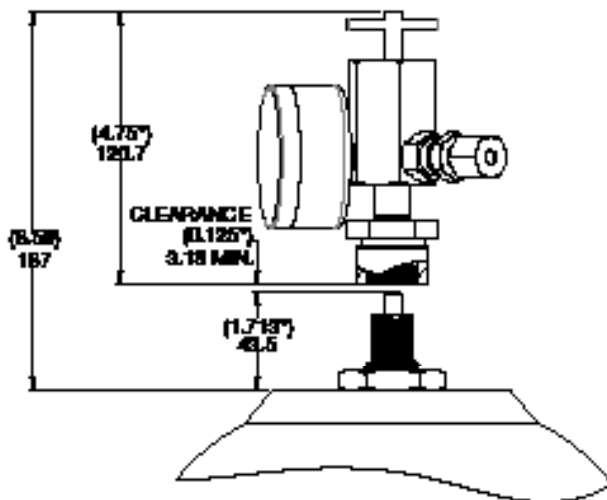
Minimum Clearances for Charging & Gauging Kits Diaphragm (SBO) and Bladder (SB) Accumulators



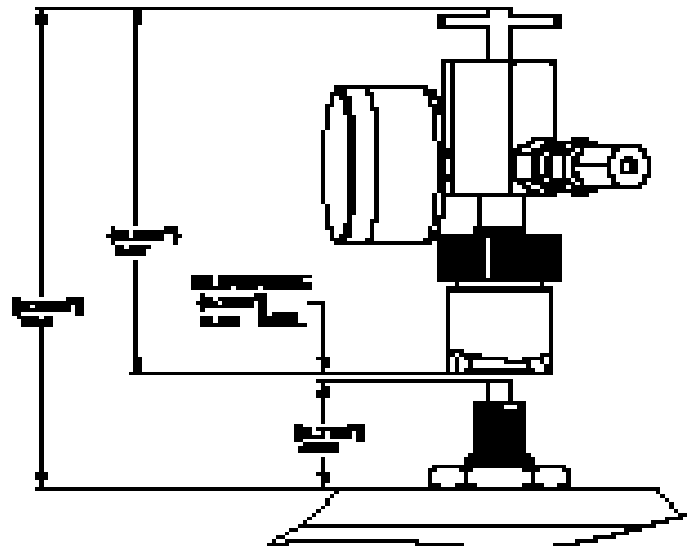
**Diaphragm (SBO), Version 4 Gas Valve
(8VI-ISO 4570) FPS Charging & Gauging Kit**



**Diaphragm (SBO), Version 1 Gas Valve
(M28 x 1.5) FPS Charging & Gauging Kit**



**Bladder (SB), Version 4 Gas Valve
(8VI-ISO 4570) FPS Charging & Gauging Kit**



**Bladder (SB), Version 4 Gas Valve
(8VI-ISO 4570) FPK Charging & Gauging Kit
with A3 Adapter**