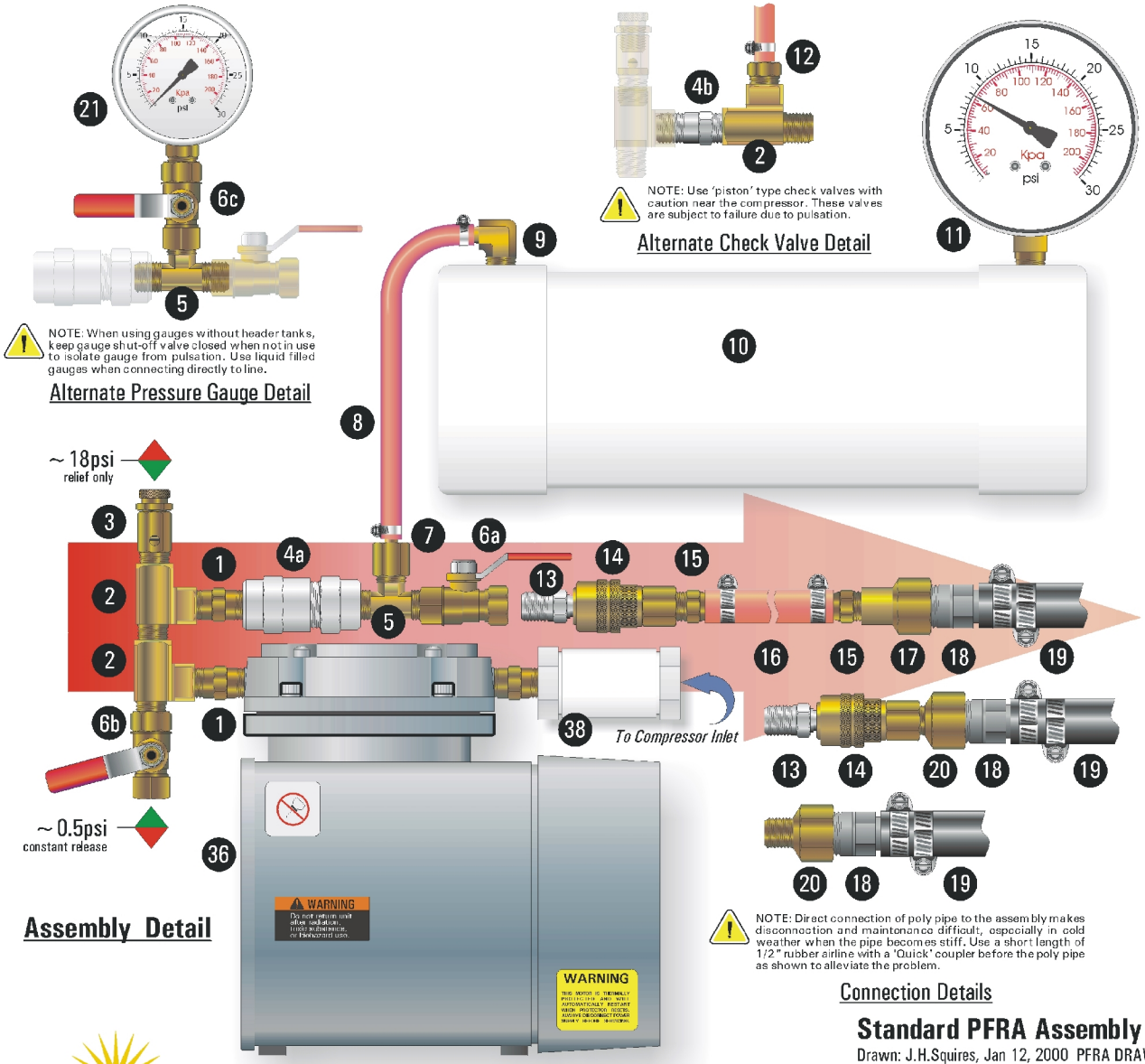

1 Hex Nipple 1/4" mpt x mpt
Or use 90deg Male Elbow 1/4" mpt x 1/4" mpt. Compressors may have different fitting requirements.

2 Branch Tee 1/4" fpt x fpt x mpt

3 Pressure Relief Valve 1/4" mpt
Use Valves with brass or stainless steel mechanisms, aluminum is subject to corrosion.

4a Check Valve (Rubber Diaphragm Mechanism) 1/4" fpt x fpt
Koenders Check valve shown. Piston valves are subject to failure this close to the compressor.

4b Check Valve (Piston/Spring Mechanism) 1/4" mpt x mpt
Stainless steel or brass 'piston' Check Valves are well suited to installations at the diffuser. However installed near the compressor they are subject to damage and failure from pulsation. Use these types of Check Valves with caution in this location.

5 Male Tee 1/4" mpt x mpt x mpt

6a Ball Valve (Assembly Shut-off Valve) 1/4" fpt x fpt
Allows setting of the Pressure Relief Valve and the Bleeder Valve

6b Ball Valve (Bleeder Valve) 1/4" fpt x fpt
A Bleeder Valve is required to allow the low torque compressor motors to start under load

6c Ball Valve (Gauge Shut-off Valve) fpt x fpt
Gauges are subject to damage from compressor pulsation. When mounting directly to assembly a shut-off valve must be used when the gauge is not being read. Using Header Tanks is a better solution.

7 Connector - Tube to Female Pipe 1/4" tube x 1/4" fpt

8 Rubber Air Line 1/4"

9 90deg Elbow - Hose Barb to Male Pipe 1/4" barb x 1/4" mpt

10 Gauge Header Tank
Small ~ 1cfm compressors require approx. 150in³ or about a 12" by 4" dia. tank to eliminate pulsation effects at the gauge. Pulsation and vibration will eventually fail most gauges within months or even weeks. Liquid gauges are also subject to the same damage. Header tanks will eliminate the problem in most cases.

11 Pressure Gauge 4" Face 0-30psi 1/4"mpt

12 Connector - Tube to Male Pipe 1/4" tube x 1/4" mpt

13 Coupler Male Plug (M Style) 1/4" mpt

14 Coupler Female Body (M Style) 1/4" fpt

15 Coupler - Hose Barb to Male Pipe 1/2" barb x 1/4" mpt

16 Rubber Air Line 1/2"

17 Reducing Coupling 1/4" fpt x 1/2" fpt

18 Coupler - Poly Insert to Male Pipe 1/2" Poly Insert x 1/2" Male Pipe

19 Polyethylene Pipe 1/2"
Note that 1/2" Polyethylene pipe is not dimensionally the same as 1/2" tubing or hose. Poly 'insert' couplers are required to connect to Poly Pipe.

20 Reducing Adapter - 1/4" mpt x 1/2" fpt

21 Pressure Gauge 2 1/2" Face 0-30-psi Liquid Filled 1/4" mpt
Although mounting directly with liquid gauges is more convenient, pulsation and vibration from the compressor will eventually fail most gauges. A shut-off valve that isolates the gauge when not in use eliminates pulsation damage, but not vibration. The use of a remotely mounted header tank eliminates both.

36 Single Diaphragm Compressor capable of 0.5 - 1.0 cfm

38 Commercial Air Filter or suitable home made device.

Standard PFRA Assembly for Small Single Diaphragm Aeration Compressors

Drawn: J.H.Squires, Jan 12, 2000 PFRA DRAWING No. 265019 rev 1.00

Agri-Food Innovation Fund
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Agriculture and Agri-Food Canada
Prairie Farm Rehabilitation Administration
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