

Combustion

North American Air/Oil Ratiotrols™

7052 Ratiotrols proportion oil flow to combustion air flow in cross-connected control systems. Outlet oil pressure from the Ratiotrol is proportional to the impulse air signal. Therefore, as combustion air is turned up or down, the Ratiotrol causes oil to follow it in proportion. Desired air/oil ratio is set with a manual valve (1813 Sensitrol™ Oil Valve) at the burner.

MULTIPLE BURNERS

A single Ratiotrol can serve several burners when it is cross-connected downstream of the zone air control valve **if** burners are on one side of furnace and difference in their elevation is less than 12".

PISTON ACCUMULATORS

If Ratiotrol is in light oil line between valves that are closed when burners are shut off, radiant heat from furnace could expand oil trapped in the line, bursting Ratiotrol diaphragms and damaging gauges. Install one or more 8521-01 Accumulators downstream of Ratiotrol to prevent this. See page 2 for selection data.

SPECIFICATIONS

Maximum oil temperature:

180 F for standard 7052

300 F for 7052- -V (with Viton diaphragms)

Oil grades:

7052-01: light oils only

7052-0: #1 through #6 oils

Optional gauges (and thermometer):

7052-01-WG: inlet and outlet oil pressure gauges with gauge cocks, air impulse pressure gauge

7052-0-WTG: inlet and outlet oil pressure gauges with gauge cocks, air impulse pressure gauge, dial thermometer

Recommended Inlet Pressures

Size	Air impulse (osi)	Inlet pressure (psig)
7052-01	6-32	25
	36	30
	40	35
7052-0	6-16	25
	20	30
	24	35
	34	45

Multiplication Factor

Size	Low flow	Maximum flow
7052-01	9:1	7:1
7052-0	14:1	10.5:1

Spring Bias: 7052-01: +1.9/-1.5 psi
7052-0: +3.2/-2.5 psi

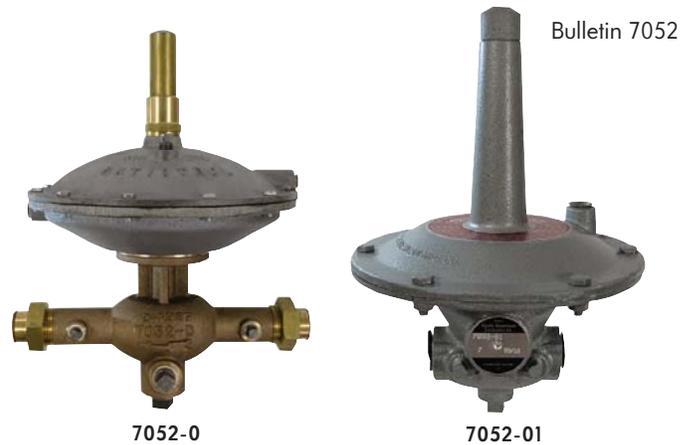


Table 1

CAPACITIES gph (#2 oil)

Ratiotrol	air impulse pressure, osi			
	8	12	16	24
7052-01	55	67	78	95
7052-01-V	36	45	52	63
7052-0	161	197	227	274
7052-0-V	101	123	142	171

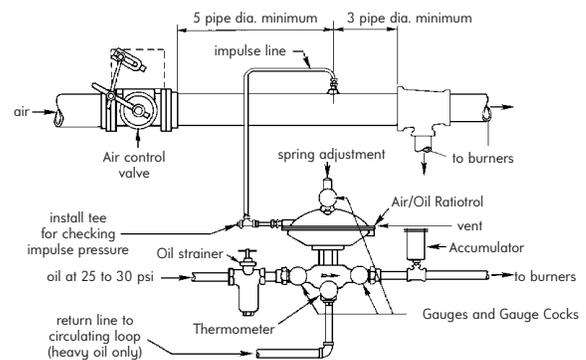


Figure 1. Piping of Ratiotrol used for several burners on light or heavy oil, or single burner on heavy oil.

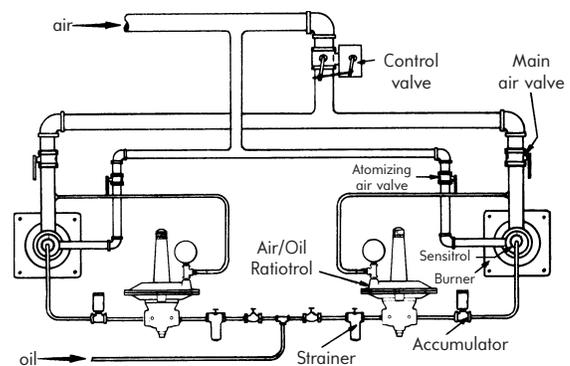
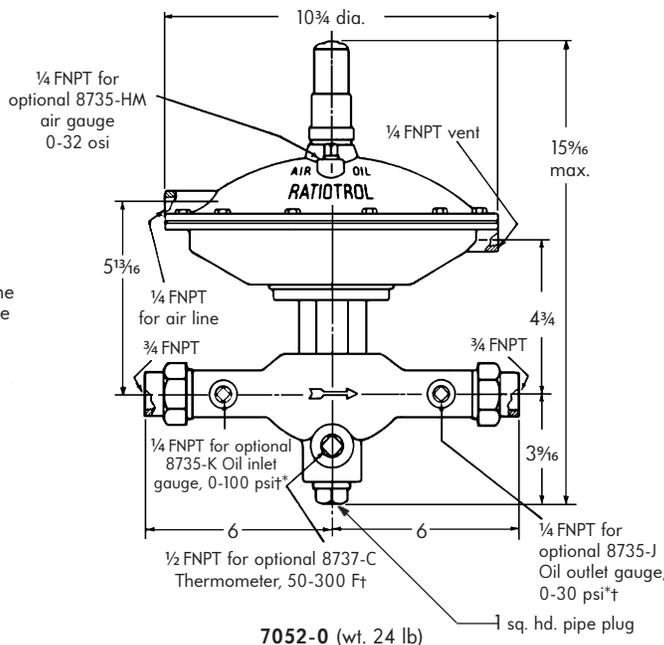
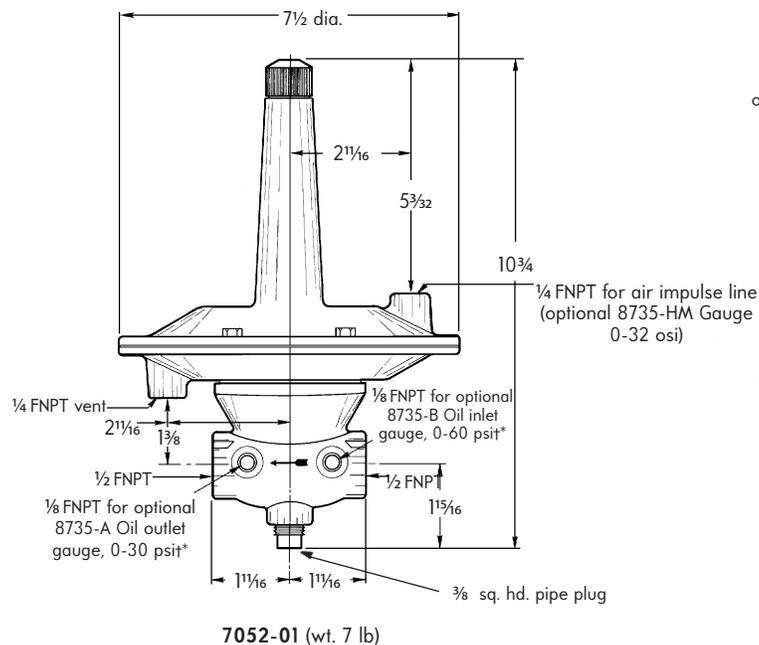


Figure 2. Arrangement for burning light oil with a separate Ratiotrol for each burner.

DIMENSIONS inches



See photograph on front for actual vent and impulse locations.

Thermometer and gauges not standard equipment.

† On both sides of body.

* Gauges shall be isolated from pulsation damage during operation of the burner system with the use of 1836-04 gauge cocks on -01 and 1836-03 on -0 size.

DIMENSIONS SHOWN ARE SUBJECT TO CHANGE. PLEASE OBTAIN CERTIFIED PRINTS FROM FIVES NORTH AMERICAN COMBUSTION, INC.
IF SPACE LIMITATIONS OR OTHER CONSIDERATIONS MAKE EXACT DIMENSION(S) CRITICAL.

Ratiotrols™ must be mounted horizontally, and diaphragm case should be above the pipe.

8521-01 Piston Accumulator
(for light oil only)

Oil that becomes heated after it is trapped in a line will expand and can build up enough pressure to rupture regulator diaphragms unless provision is made to absorb expansion. It is good practice to install 8521-01 Accumulators downstream of Ratiotrols to protect them in light oil installations.

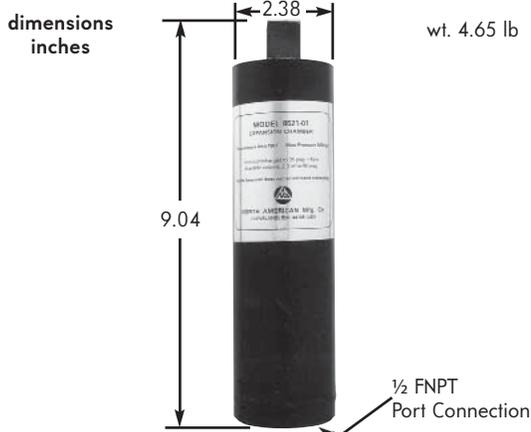
Heavy oil systems normally use recirculating loops in oil lines, with a relief valve to return oil to main tank.

This table of pipe lengths accommodated by one 8521-01 Accumulator is based on a 10 F oil temperature rise on Schedule 40 pipe.

nominal pipe size	length, feet
1/4"	800
3/8"	435
1/2"	270
3/4"	155
1"	95
1 1/4"	55
1 1/2"	40

If temperature rise exceeds 10°F, the length of pipe accommodated decreases proportionally.

WARNING: Situations dangerous to personnel and property may exist with the operation and maintenance of any combustion equipment. The presence of fuels, oxidants, hot and cold combustion products, hot surfaces, electrical power in control and ignition circuits, etc., are inherent with any combustion application. Parts of this product may exceed 160F in operation and present a contact hazard. Fives North American Combustion, Inc. urges compliance with National Safety Standards and Insurance Underwriters' recommendations, and care in operation.



SPECIFICATIONS

Capacity: 15.26 cu. in. (.25 Liters)

Design: For systems with oil pressures 30 psi or less cold.

When heat causes system pressure to reach 50 psi, 8521-01 Accumulator has absorbed 4.94 cu. in. of oil.

Maximum ambient temperature: 212 F

Maximum pressure: 4000 psi (275 Bar).

Charged with 35 psi dry nitrogen non-rechargeable.

Construction: FKM. Steel body.

Meets European pressure equipment directive 97/23/EC



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