



The relief-before-check cartridge is a CavitySaver™ (multi-function) valve incorporating a normally closed, balanced piston modulating element tee'd in before a check function. The valve incorporates an integral pilot control cavity. The pilot control cavity will accept any T-8A pressure control cartridge. When the pressure at the inlet (port 2) reaches the pilot control valve setting, the modulating element starts to open to tank (port 3), throttling flow to regulate the pressure. The T-8A pilot section is drained to port 4. The check valve flow is from the inlet (port 2) to the system port (port1).

TECHNICAL DATA NOTE: DATA MAY VARY BY CONFIGURATION. SEE CONFIGURATION SECTION.

Cavity	T-21A
Series	1
Capacity	10 gpm
Maximum Operating Pressure	5000 psi
Check Cracking Pressure	25 psi
Factory Pressure Settings Established at	4 gpm
Maximum Valve Leakage at 110 SUS (24 cSt)	2 in ³ /min.@1000 psi
Pilot Control Cavity	T-8A
Pilot Control Valve Installation Torque	20 - 25 lbf ft
Response Time - Typical	10 ms
Valve Hex Size	7/8 in.
Valve Installation Torque	30 - 35 lbf ft
Seal kit - Cartridge	Buna: 990-021-007
Seal kit - Cartridge	EPDM: 990-021-014
Seal kit - Cartridge	Polyurethane: 990-021-002
Seal kit - Cartridge	Viton: 990-021-006

NOTES: • Compound cartridge (pilot and main stage) assembly information is provided for reference only. Cartridges must be ordered separately and assembled at point of use.

OPTION SELECTION EXAMPLE: HVCA8DN

BIAS PRESSURE

(D)

SEAL MATERIAL

(N)

D 75 psi (5 bar)

N Buna-N

E EPDM

V Viton

TECHNICAL FEATURES

- Note! This valve deviates from Sun's normal flow path for relief valves. It is probably not useable in current Sun relief manifolds.
- Cartridges configured with EPDM seals are for use in systems with phosphate ester fluids. Exposure to petroleum based fluids, greases and lubricants will damage the seals.
- The main stage orifice is protected against contamination.
- The check portion of the valve has a maximum leakage rate of less than 1 drop/minute (0,07 cc/min).
- One purpose of this dual function cartridge is to offer pump isolation and relief protection in single and/or multiple pump circuits. Another purpose is to act as a main stage in an accumulator sense, pump unload circuit.
- NOTE: With the -8 control option, the main stage valve should first be installed to the correct torque value. The T-8A pilot control valve should then be installed into the main stage valve to its required torque value.
- The -8 control option allows the pilot control valve to be incorporated directly into the end of the relief cartridge via the T-8A cavity. These pilot control cartridges are sold separately and include electro-proportional, solenoid, air pilot, and hydraulic pilot operation. See Pilot Control Cartridges.
- Incorporates the Sun floating style construction to minimize the possibility of internal parts binding due to excessive installation torque and/or cavity/cartridge machining variations.

PERFORMANCE CURVES

