

# CHAPTER 6

## CHANGEOVER VALVES IN SERIES 3032, 3032N, AND 3032E



### APPLICATIONS

Changeover valves in series 3032, 3032N and 3032E perform the role of a service valve for a pair of safety valves, allowing the use of one and the exclusion of the other. This device allows the user to work on the isolated valve, for periodic inspection or replacement, while the line is completely operative and the system safety is integral. N.B.: each safety valve located on the changeover valve must have sufficient capacity to protect the vessel alone.

Valves models 3032/33, 3032N/33 and 3032E/33 are supplied with:

- Two female 3/8" NPT threaded connections with swivel nut, Castel code 3039/3
- Two O-Rings for these connections

These components ensure perfect alignment of a pair of safety valves 3060/33, 3060/34, 3060/36 or 3061/3.

Valves models 3032/44, 3032N/44 and 3032E/44 are supplied with:

- Two female 1/2" NPT threaded connections with swivel nut, Castel code 3039/4
- Two O-Rings for these connections

These components ensure perfect alignment of a pair of safety valves 3060/45, 46/46 or 3061/4.

Valves, models: 3032/64, 3032N/64, and 3032E/64; 3032/66, 3032N/66, and 3032E/66; 3032/88, 3032N/88, and 3032E/88; and 3032/108, 3032N/108, and 3032E/108 do not have threaded connections with swivel nuts on the outlet connection. Therefore, valve models 3030/44, 3030/66, 3030/88, 3065/4 and 3065/6 are screwed directly on to the changeover valve.

The valves in this chapter can be used with the same fluids foreseen for safety valves series 3030, 3060, 3061 and 3065, specifically:

- Valves in series 3032 can be used with the following refrigerant fluids:
  - HCFC (R22)
  - HFC (R134a, R32, R404A, R407C, R410A or R507)

- HFO and HFO/HFC mixtures (R1234yf, R1234ze, R448A, R449A, R450A or R452A)

- Valves in series 3032N can be used with the following refrigerant fluids:

- HFC (R134a, R32, R404A, R407C, R410A or R507)
- HFO and HFO/HFC mixtures (R1234yf, R1234ze, R448A, R449A, R450A or R452A)
- HC (R290, R600, R600a)

**CAUTION! Valves in series 3032N cannot be installed on systems that use HCFC (R22) refrigerants or other refrigerants blended with mineral oils or alkylbenzenes.**

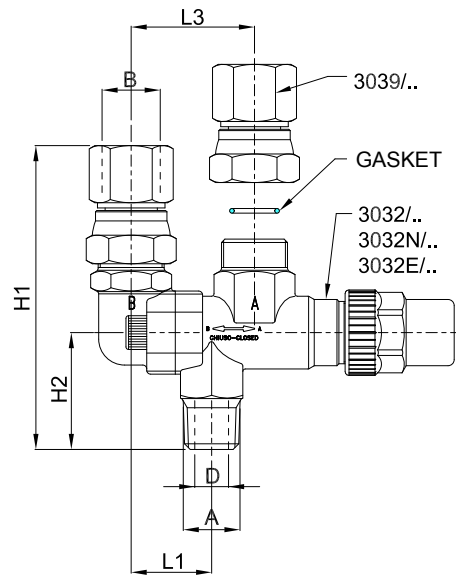
- Valves in series 3032E can be used only with refrigerant fluid R744.

### CONSTRUCTION

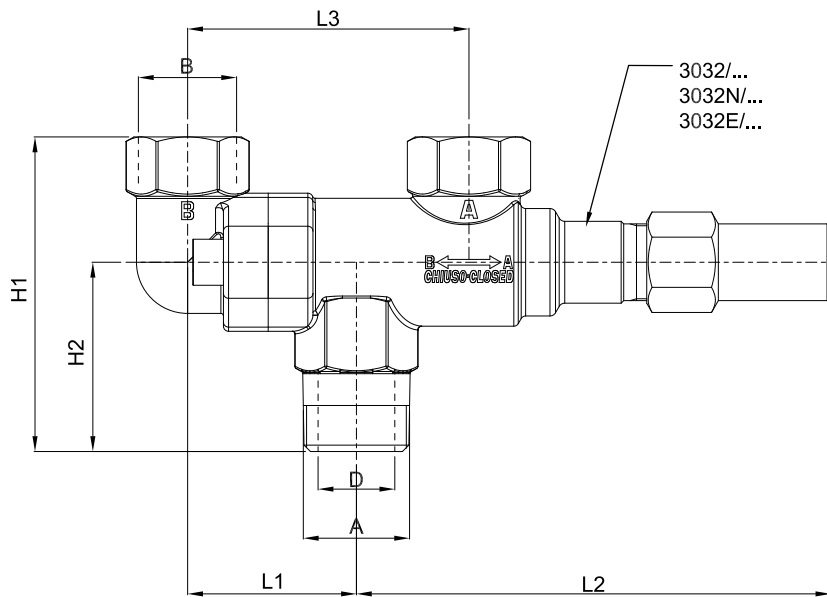
Valves in series 3032, 3032N and 3032E are designed so that it is never possible to exclude both safety valves simultaneously. Under working conditions, the shutter must be clamped against one of the two seats of the valve, front port or back port, in order to ensure always full discharge to the corresponding safety valve. Intermediate shutter positions must be avoided in order not to affect the operation of both safety valves. The valve ensures a pressure drop perfectly compatible with the safety valve operation under saturated vapour and superheated vapour discharge conditions.

The main parts of the valves in series 3032, 3032N, and 3032E are made from the following materials:

- Hot forged brass EN 12420 – CW 617N for the body
- Steel, with proper surface protection, for the spindle.
- Chloroprene rubber (CR) for outlet seal gaskets in valves series 3032
- Hydrogenated nitrile butadiene rubber (HNBR) for outlet seal gaskets in valves series 3032N
- Ethylene propylene diene monomer rubber (EPDM) for outlet seal gaskets in valves series 3032E
- Glass reinforced PBT for the protective cap that covers the spindle.
- Hot forged steel EN 12420 – CW 617N for the protective cap of the spindle for models from 1" to 1-1/4" NPT.



3032/33  
3032/44  
3032N/33  
3032N/44  
3032E/33  
3032E/44



3032/64  
3032/66  
3032/88  
3032/108  
3032N/64  
3032N/66  
3032N/88  
3032N/108  
3032E/64  
3032E/66  
3032E/88  
3032E/108

**TABLE 19: General characteristics, dimensions and weights of valves 3032**

Catalogue Number	Designed for valve	Kv Factor [m³/h]	PS [bar]	TS [°C]		TA [°C]		Dimensions [mm]							Inlet connection wrench torque (min/max) [Nm]	Weight [g]	Risk Category according to PED Recast	
				min	max	min	max	D	A	B	H1	H2	L1	L2				L3
3032/33	3060/33C 3060/34C 3060/36C 3061/3C	2,5	80	-40	+120	-40	+50	13	3/8" NPT	3/8" NPT	117	45	33	91	50	14/20	775	Art. 4.3
3032/44	3060/45C 3060/46C 3061/4C	3,3						13	1/2" NPT	1/2" NPT	117	45	33	91	50	21/30	775	
3032/64	3030/44C 3065/4C	9,0						17,5	3/4" NPT	1/2" NPT	95	52	48	133	80	32/45	1750	
3032/66	3030/66C 3065/6C	9,0			17,5			3/4" NPT	3/4" NPT	95	52	48	133	80	32/45	1750		
3032/88	3030/88C	14,5			22,0			1" NPT	1" NPT	120	71	66	185	110	50/65	3200		
3032/108		20,0			31,0			1. 1/4" NPT	1" NPT	123	74	66	185	110	60/80	3200		

**TABLE 20: General characteristics, dimensions and weights of valves 3032N**

Catalogue Number	Designed for valve	Kv Factor [m³/h]	PS [bar]	TS [°C]		TA [°C]		Dimensions [mm]								Inlet connection wrench torque (min/max) [Nm]	Weight [g]	Risk Category according to PED Recast
				min	max	min	max	D	A	B	H1	H2	L1	L2	L3			
3032N/33	3060/33C 3060/34C 3060/36C 3061/3C	2,5	80	-40	+150	-40	+50	13	3/8" NPT	3/8" NPT	117	45	33	91	50	14/20	775	Art. 4.3
3032N/44	3060/45C 3060/46C 3061/4C	3,3						13	1/2" NPT	1/2" NPT	117	45	33	91	50	21/30	775	
3032N/64	3030/44C 3065/4C	9,0						17,5	3/4" NPT	1/2" NPT	95	52	48	133	80	32/45	1750	
3032N/66	3030/66C 3065/6C	9,0						17,5	3/4" NPT	3/4" NPT	95	52	48	133	80	32/45	1750	

**TABLE 21: General characteristics, dimensions and weights of valves 3032E**

Catalogue Number	Designed for valve	Kv Factor [m³/h]	PS [bar]	TS [°C]		TA [°C]		Dimensions [mm]							Inlet connection wrench torque (min/max) [Nm]	Weight [g]	Risk Category according to PED Recast	
				min	max	min	max	D	A	B	H1	H2	L1	L2				L3
3032E/33	3060/33C 3060/34C 3060/36C 3061/3C	2,5	120	-40	+150	-40	+50	13	3/8" NPT	3/8" NPT	117	45	33	91	50	14/20	775	Art. 4.3
3032E/44	3060/45C 3060/46C 3061/4C	3,3						13	1/2" NPT	1/2" NPT	117	45	33	91	50	21/30	775	
3032E/64	3030/44C 3065/4C	9,0						17,5	3/4" NPT	1/2" NPT	95	52	48	133	80	32/45	1750	
3032E/66	3030/66C 3065/6C	9,0						17,5	3/4" NPT	3/4" NPT	95	52	48	133	80	32/45	1750	
3032E/88	3030/88C	14,5						22,0	1" NPT	1" NPT	120	71	66	185	110	50/65	3200	
3032E/108		20,0						31,0	1. 1/4" NPT	1" NPT	123	74	66	185	110	60/80	3200	