

Wheel & Key operated small Acetylene valves for "B" & "MC" style cylinders

Detailed Series Catalogue



BSWN-12/D-30 & BAWN-12/D-30



BSKN-12/D & BAKN-12/D



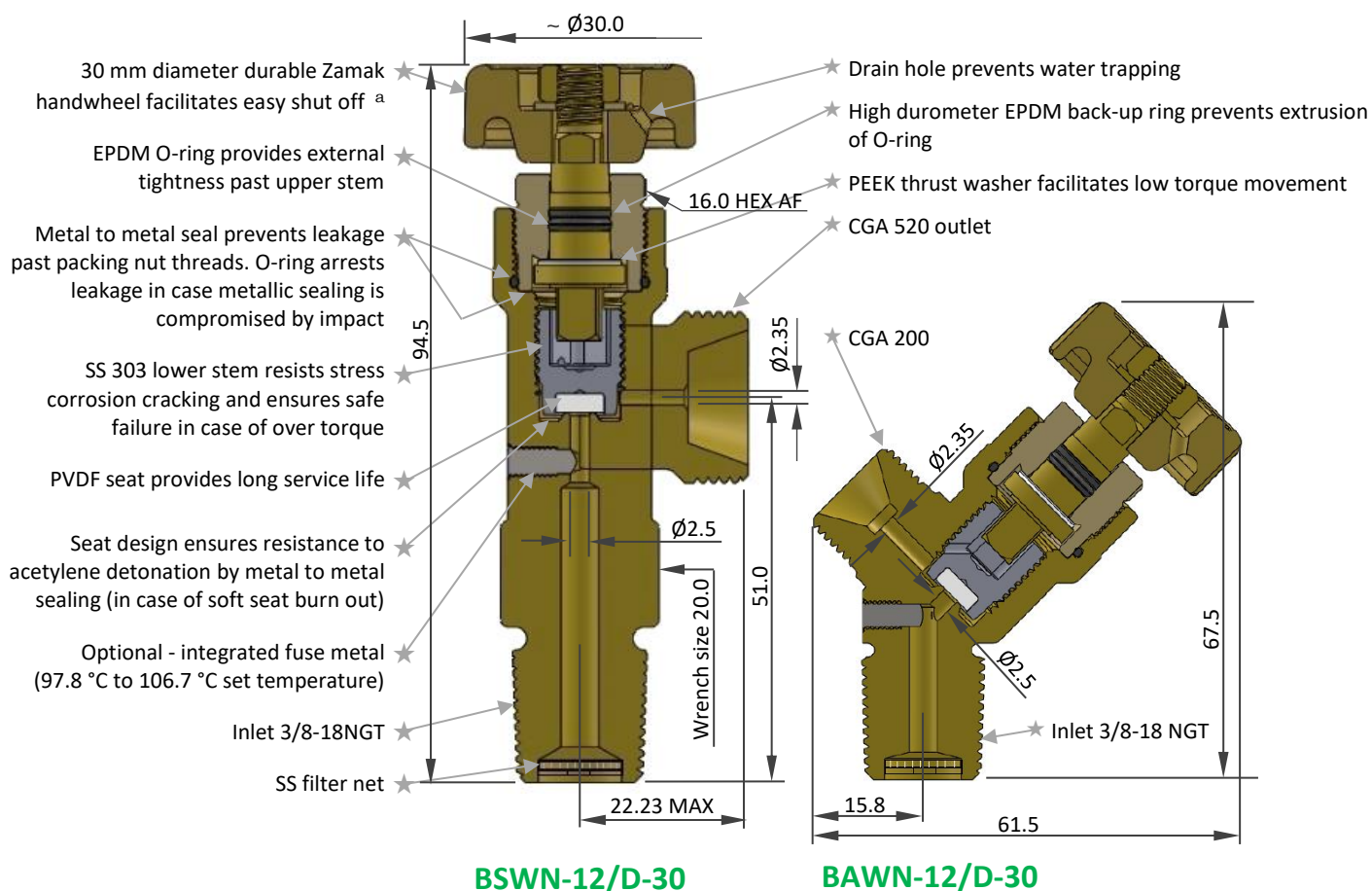
Your safety is valued

ISO 9001 & TPED certified valve manufacturer



Features & Benefits for Best-in-class Performance

Wheel operated small cylinder Acetylene valves



All Dimensions are in mm

- ^a Gold color for valves with fuse metal and
Red color for valves without fuse metal (for manifold application)

Design Specifications

	Metric	English
Operating mechanism (identical for BSWN and BAWN)	O-ring seal design	
MIN life	2000 cycles	
Temperature range	-46 °C to +85°C	-51 °F to +185 °F
MIN closing torque	2 Nm	1.5 ft.lb
Packing nut installation torque	45 Nm	33 ft.lb
Handwheel nut installation torque	5 Nm	3.7 ft.lb
Pressure rating	60 bar	870 psig
Hydraulic burst test pressure	909 bar	13180 psig
Lubricant	Krytox [®] GPL 225	
Flow coefficient (Cv)	0.15	
Fuse metal yield temperature (if provided)	97.8 °C to 106.7 °C	208 °F to 224 °F
MAX weight of package mass without valve protection	11.1 kg	24.4 lb
Filter net size	250 micron	60 mesh

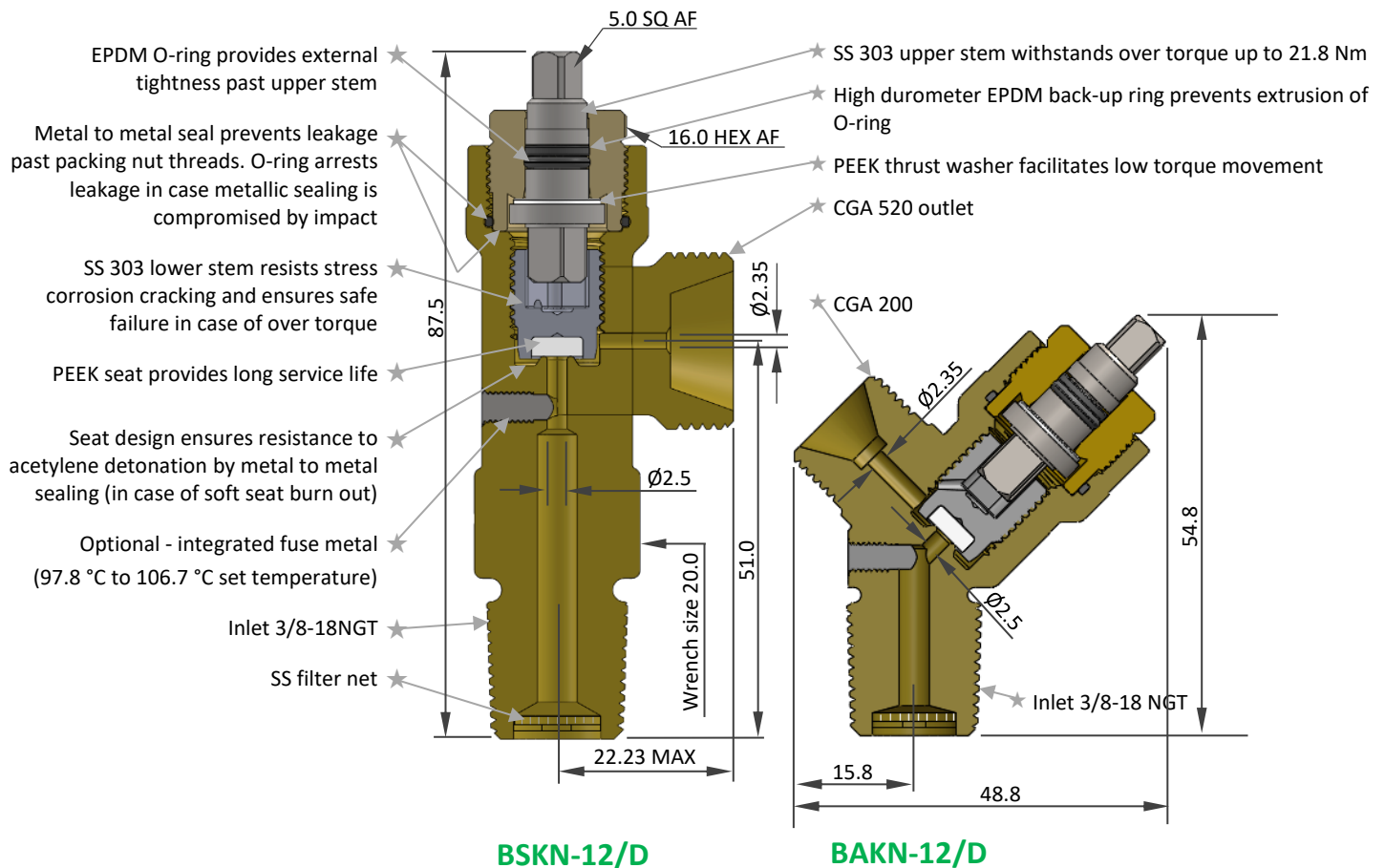
Testing & Certification

- Valves meet EN ISO 10297:2017, tested by BAM
- Valves without fuse metal are certified by BAM to European Transportable Pressure Equipment Directive (TPED) & available with TT mark
- Fuse metal complies with CGA S-1.1
- Production testing as per EN ISO 14246



Features & Benefits for Best-in-class Performance

Key operated small cylinder Acetylene valves



All Dimensions are in mm

Design Specifications

	Metric	English
Operating mechanism (identical for BSWN and BAWN)	O-ring seal design	
MIN life	2000 cycles	
Temperature range	-46 °C to +85°C	-51 °F to +185 °F
MIN closing torque	2 Nm	1.5 ft.lb
Failure torque	>27 Nm	>20 ft.lb
Packing nut installation torque	45 Nm	33 ft.lb
Handwheel nut installation torque	5 Nm	3.7 ft.lb
Pressure rating	60 bar	870 psig
Hydraulic burst test pressure	909 bar	13180 psig
Lubricant	Krytox [®] GPL 225	
Flow coefficient (Cv)	0.15	
Fuse metal yield temperature (if provided)	97.8 °C to 106.7 °C	208 °F to 224 °F
MAX weight of package mass without valve protection	11.1 kg	24.4 lb
Filter net size	250 micron	60 mesh

Testing & Certification

- Valves meet EN ISO 10297:2017, tested by BAM
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BSWN-12/D-30 & BAWN-12/D-30

These are handwheel operated O-ring seal design valves with two-piece stem construction in CGA 520 & CGA 200 outlet respectively. The free-floating upper stem & the threaded lower stem interface through a square drive to open & close the valve. The design uses O-ring to create a seal around the upper stem. PEEK thrust washer is capsuled with the upper stem & acts as anti-friction ring when the upper stem rotates to operate the valve under pressure. Leakage through the packing nut thread is protected by metallic sealing with secondary protection provided by an O-ring below the packing nut thread. Lower stem has PVDF soft seat for easy shut off.

BSKN-12/D & BAKN-12/D

These are key operated O-ring seal design valves with two-piece stem construction in CGA 520 & CGA 200 outlet respectively. The operating mechanism is similar to wheel operated valves except for change in material of upper stem (SS-303 in place of brass and PEEK soft seat in place of PVDF), to allow the valves to withstand high torques which may be imparted using an external key.

All these designs satisfy special tests for Acetylene service as per EN ISO 10297:2017 ensuring the valve will be leak tight even if the soft seat is fully burnt out in the event of an Acetylene flashback.

Recommended opening procedure

It is recommended that the valve always be opened gradually in anticlockwise direction until the required flow is achieved. Opening the valve fully causes the lower stem to ride upwards on its threads until it contacts the upper stem. Valve in fully open position can be mistaken as closed by inexperienced operators. The operator should check whether the valve is open or close by attempting to close the valve, never by trying to open the valve.

Recommended closing procedure

Close the cylinder valve by rotating the handwheel or upper stem in the clockwise direction.

Valve installation

We recommend hand tight + 3 turns wrench tight to install the valve in the cylinders.

(refer http://teknovalves.com/Information_Center)

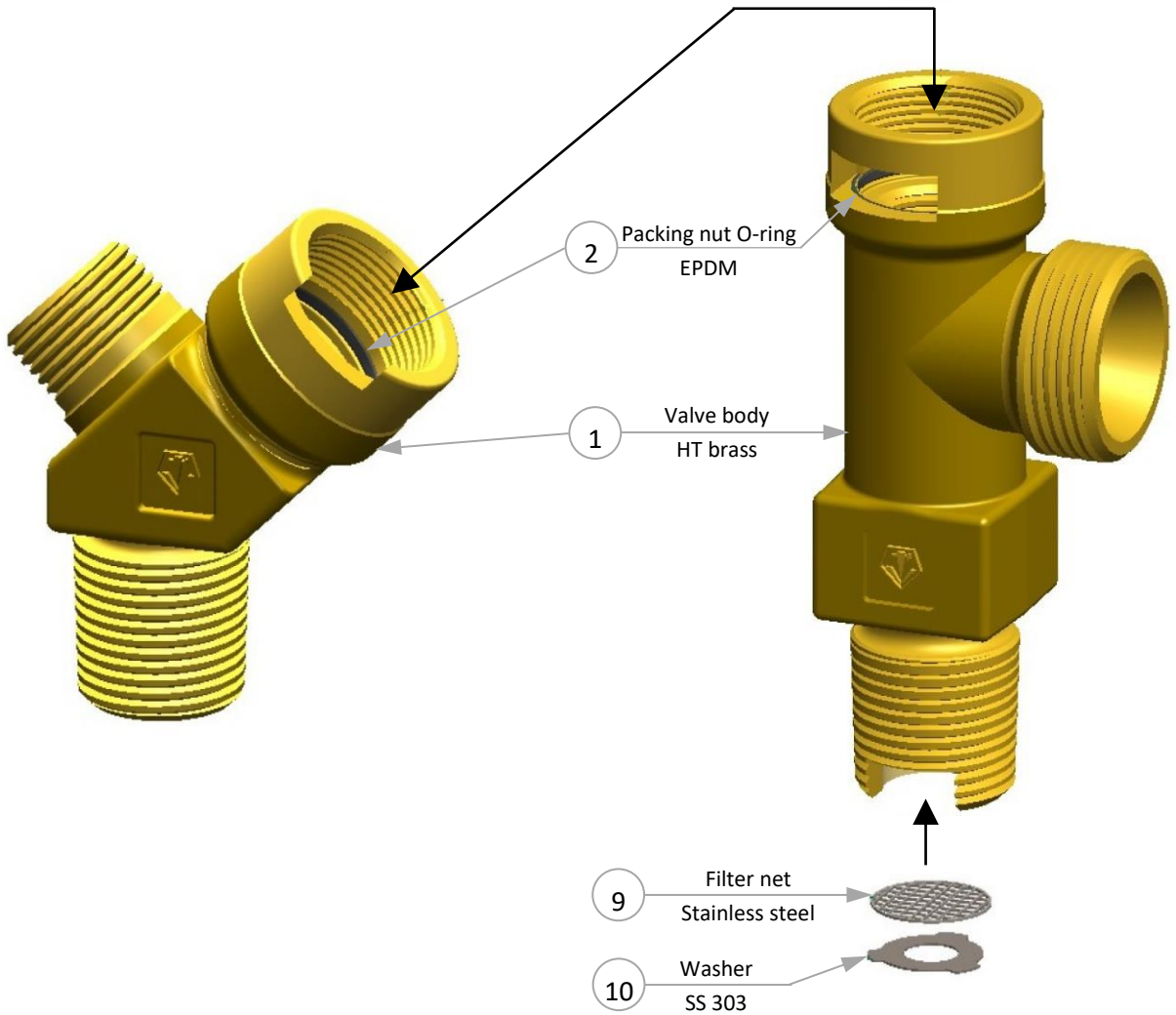
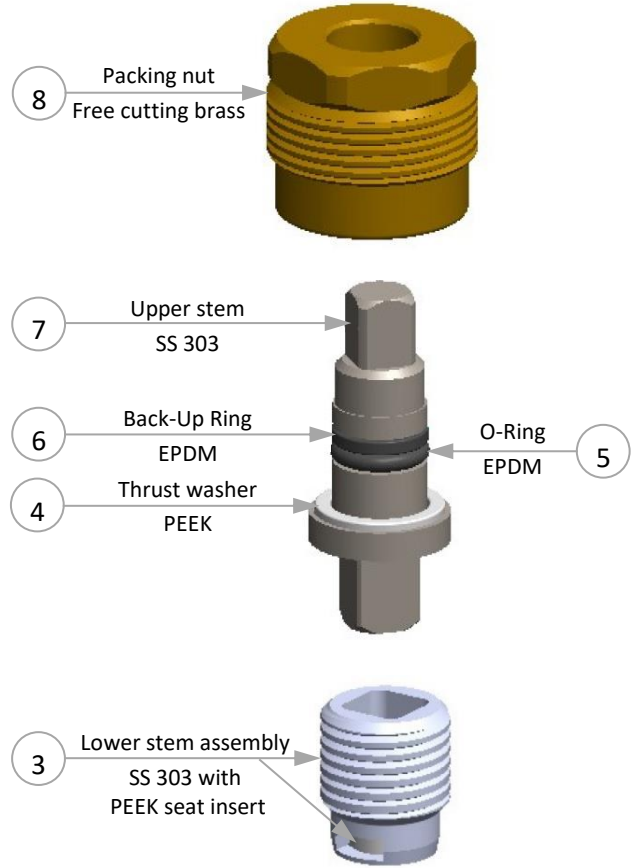
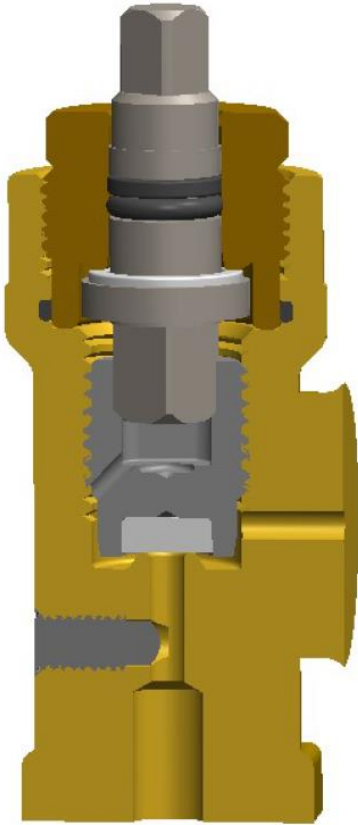
⚠ CAUTION

1. Valving tools (e.g. sockets or jaws) used to screw the valve into the cylinder must only contact the flats provided in the valve body.
2. As upper stem is non-rising, do not over torque the valve in open direction.
3. Repair & maintenance should only be carried out by trained personnel.
4. Use correct size stem key to operate BSKN-12/D & BAKN-12/D series valves.
5. Over-torquing the valve into the cylinder must be avoided as they cause high stresses in the cylinder neck, leading to overload failures. Over-torquing also leads to irreparable damage to the valve inlet thread.

Material of Construction & Assembly Arrangement



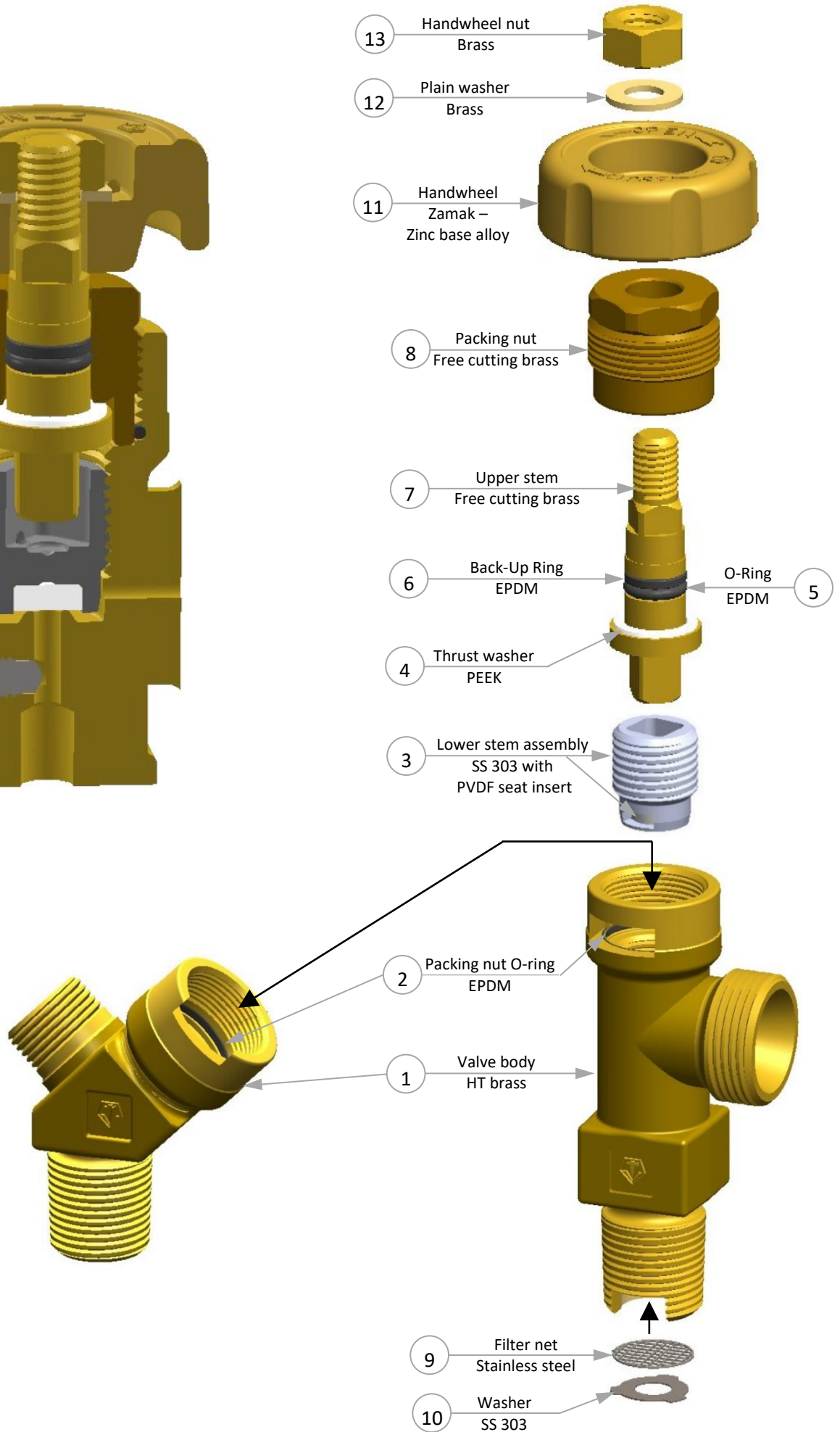
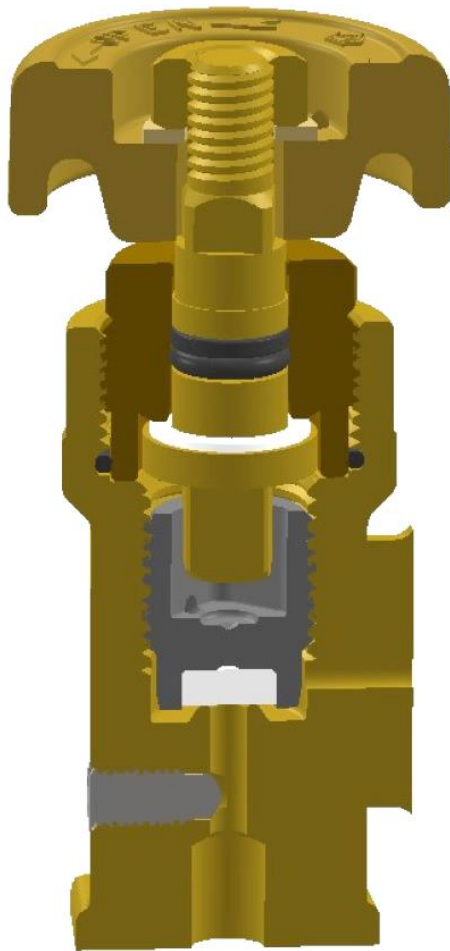
BSKN-12/D & BAKN-12/D





Material of Construction & Assembly Arrangement

BSWN-12/D-30 & BAWN-12/D-30





BSWN-12/D-30, BAWN-12/D-30, BSKN-12/D & BAKN-12/D

Disassembly of Valve

1. Place the valve assembly in a vice or similar holding fixture after removing from the cylinder. The holding fixture must securely grip the valve body (1) on the wrench flats so that there is no damage to the valve body, internal bores and inlet and outlet threads.
2. For BSWN-12/D-30 and BAWN-12/D-30,
 - a) Use a 3/8" HEX box wrench to unscrew the handwheel nut (13) by turning it counter clockwise.
 - b) Remove the handwheel (11) from the upper stem (7) square. The handwheel nut and plain washer (12) will come out with the handwheel.
3. Using a 16 mm HEX box wrench, unscrew the packing nut (8) in counter clockwise direction. The upper stem assembly with O-ring (5) and Back-Up Ring (6) and thrust washer (4) will come out with the packing nut. Remove the upper stem assembly from the packing nut by pushing the upper stem from the top. Be careful not to scratch the packing nut sealing surface.
4. Use the upper stem to remove the lower stem assembly (3) from the valve chamber, by rotating it counter clockwise.

Inspection of Valve & Components

1. Valve body (1)
 - a. Inspect the valve body chamber for dirt, debris or damage. Where possible, blow out the valve body chamber using clean, dry, compressed Air or Nitrogen to remove any foreign particles.
 - b. Inspect the valve body for seat damage and thread wear.
 - c. Inspect if packing nut O-ring (2) is inside valve body groove.
 - d. Do not attempt to repair the valve body if damaged.
2. Components
 - a. Inspect all parts visually for wear, damage. Replace parts as necessary. In case of damage to upper stem (7), thrust washer (4) and / or elastomers, replace with new upper stem subassembly consisting of upper stem, O-ring (5), Back-Up Ring (6) and thrust washer.
 - b. Inspect lower stem (3) threads and soft seating for any sign of wear / damage. Replace lower stem assembly if necessary.
 - c. Inspect fusible metal (if integrated to valve body) for any damage/extrusion/porosity.

Assembly of Valve

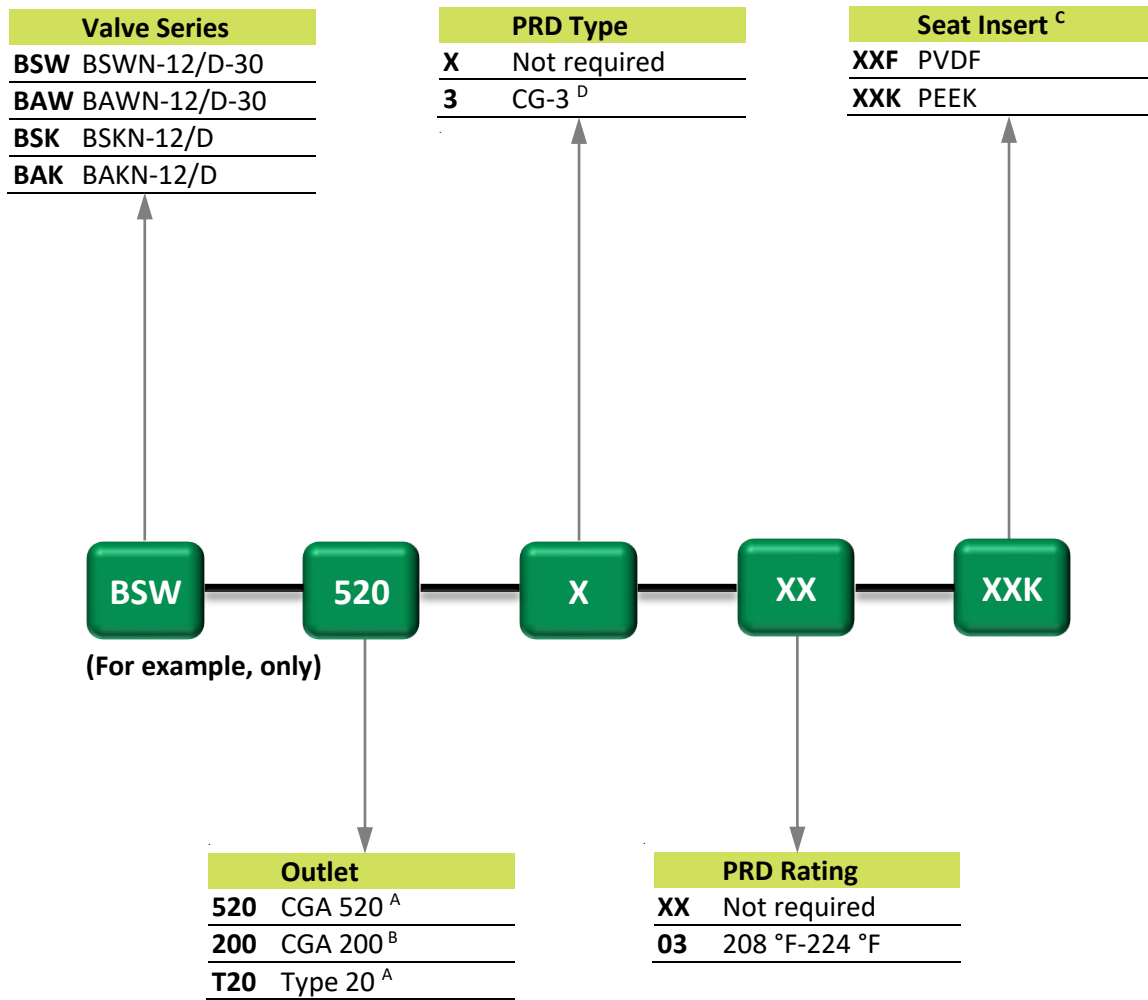
1. Receive parts / spare kits in lubricated condition.
2. Invert the valve body (1) and push fit the filter net (9) and washer (10) inside the inlet counter bore.
3. Push thrust washer (4) to rest inside the upper stem (7) collar groove.
4. Use special tool to fit O-ring (5) and Back-Up Ring (6) in upper stem groove. Care should be taken to place the Back-Up Ring above the O-ring.
5. Fit packing nut O-ring (2) inside the groove provided in the valve body below the packing nut (8) threads.
6. Insert upper stem subassembly inside packing nut with a twisted motion to avoid damage to elastomers and insert until it rests on packing nut counter bore.
7. Place the lower stem assembly (3) into the valve body. Position the upper stem to engage with the lower stem square and screw in packing nut into the valve body by rotating the upper stem square. This will also drive the lower stem assembly to rest on the valve body seat.
8. Clamp valve body in bench vice between nylon clamps. Tighten packing nut using a 16 mm HEX box wrench at 45 ± 2 Nm in clockwise direction.
9. For BSWN-12/D-30 and BAWN-12/D-30,
 - a) Place handwheel (11) on the upper stem square.
 - b) Fit handwheel by tightening the handwheel nut (13) over plain washer (12) using a 3/8" socket wrench or HEX box wrench at 5 ± 1 Nm in clockwise direction.

NOTE Refer "Material of construction and assembly arrangement" page to identify the part No. given in the bracket.



Product Selection Guide – Valve Item Code Matrix

BSWN-12/D-30, BAWN-12/D-30, BSKN-12/D & BAKN-12/D



A - BSWN-12/D-30 and BSKN-12/D are available with CGA 520 & Type 20 outlet

B - BAWN-12/D-30 and BAKN-12/D are available with CGA 200 outlet

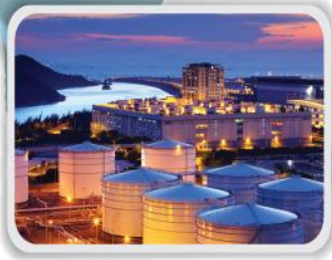
C - BSKN-12/D and BAKN-12/D are available with PEEK seat insert and BSWN-12/D-30 and BAWN-12/D-30 are available with PVDF seat insert

D - Fuse metal integrated with valve body

6 Continents
65+ Countries



tekno valves
driven by excellence



Your safety is valued

Tekno Valves

Natun Rasta, Bilkanda, 24 Parganas (N), Kolkata

INDIA

+91 33 25956767

www.teknovalves.com

International Distributors

USA & CANADA

Tekno Valves North America, Inc.

+1 (225) 330 - 6590

www.tvnainc.com

EUROPE

GBP Gas Business Partner GmbH

+49 (0)6468-917 99 52

www.gas-business-partner.com