Operating Instructions

PGHV Parker Global Handvalve Platform

Shut-off valves, hand-regulating valves, check valves and strainers

Original Instructions

PGHV
Parker Global
Hand Valve

Introduction
These operating instructions have been prepared in compliance with the Directive 2014/68/EU, Pressure Equipment Directive, Appendix I, sub-clause 3.4 (DGR or PED). A hazard analysis is available for the valves mentioned in these operating instructions. Activities relating to the installation, commissioning, use and maintenance of the valves described in the following must take place only for the intended purpose and by authorised persons. During commissioning, use and maintenance, the information on wearing Personal Protective Equipment must be observed. The procedure for valves with small nominal diameters that are not subject to the pressure equipment directive is analogous.

1. Installation including the connection of various pressure equipment

1.1 Marking
All valves are marked according to EN 12284 on their housings as follows:
- Manufacturer's name (PARKER)/Year of manufacture
- Material lot number and supplier symbol
- Type designation
- Permissible operating pressure (PS)
- Nominal diameter (DN) – Nominal pressure (PN)
- Material designation
- Flow direction arrow
- CE mark from DN 32

Type designations:

Hand valves, check valves and strainers
Globe body type: 7G
Angle body type: 7A

Small service valves
Globe body type: 8G
Angle body type: 8A

The type designations can contain the following letters or combinations of letters that identify the material or type:

SO	Shut-off valve
RV.SO	Regulating valve with hand shut-off feature
CV	Check valve
CV.SO	Check valve with hand shut-off feature
ST	Strainer

1.2 Surface protection
The valves have the following surface protection:
- plated

After start-up and commissioning, valve stem and packing which exposed to atmosphere should be covered with grease. Using plastic dustproof bag if possible, to keep the valve stem clean, can prevent dirt on stem to avoid o-ring wearing down.

1.3 General installation instructions
Until their installation, the valves must be protected against all kinds of dirt and moisture. This applies in particular to construction sites.
The valves are generally suitable for refrigerant (specified in EN378-1) and cooling mediums. Depending on the fluid and operating conditions, seals of various materials and with various lubricants are used. The valves must be checked for their suitability prior to installation.

Attention!
Valve openings and sealing surfaces are generally protected against damage and fouling by plastic plugs or caps.
It must be ensured prior to installation that these plastic plugs and caps have been removed.
The valves are provided with an arrow indicating the direction of flow. For shut-off valves, this arrow indicates the preferred direction of flow in which minimum pressure loss occurs.
The installation of pipes and their supports must be carried out so that the valve housing is not subjected to harmful shearing and bending forces and vibration.
The connection of pipes to the valves must take place stress-free in order to prevent subsequent damage to the connections.
In case of leakage, fluid (e.g. refrigerant) can escape. Installation in a pipe system must take place so that maintenance and inspection are possible.
For the use of valves in refrigerating systems, the requirements of EN378 must be taken into account.
The valve spindles must be protected against fouling and the effects of weather, e.g. with the supplied caps.

Torque for bolts and stem (Nm)				
Size	Bolts	Stem	Back Sealing (Stem)	Packing nut
DN15/20	20	20	25	20
DN25/32	30	20	30	25
DN40/50	50	25	45	25
DN65/80	90	30	30	30
DN100	60	40	50	30

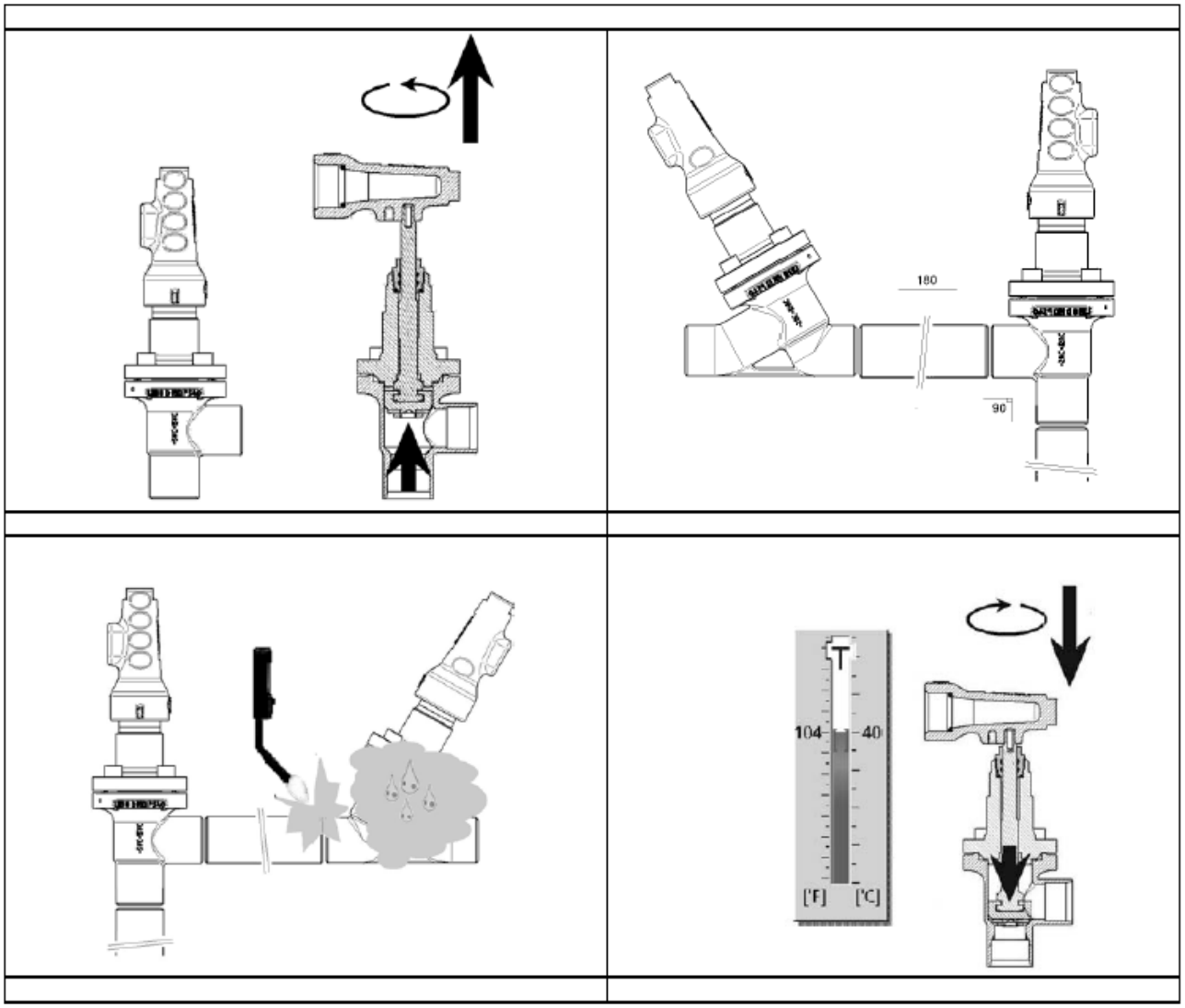
1.4 Instructions for the installation of valves with welding ends

When welding valves, absolute cleanliness must be ensured, as any foreign bodies and dirt introduced into the interior of the housing can damage the sealing surfaces and spindle guides. If necessary, the valve housings must be cleaned on the inside after welding. Prior to the removal of the bonnet, it is recommended to mark the bonnet and housing, e.g. with a punch, so that these can be refitted to the associated valve housing and in the same position. In cases where the valves can be welded in an assembled condition, the valves must be opened. This reliably separates the shut-off element from the sealing surface. For non-return valves, the bonnet and shut-off element must generally be removed for welding.

1.5 Information on shut-off and hand regulating valves

Shut-off valves has blue painted handweels. Regulating valves has yellow painted handweels.

The valves can be installed at any position, but should follow the arrow on valve body which indicate the direction of flow. When install valves in plant, valve seat should be disassembled from valve body before welding, please protect the valve disc seal (PTFE) when place valve seat in a safe area. Absolute cleanliness must be ensured after welding, if necessary, the valve housings must be cleaned on the inside. Apply lubricant to install valve seat disc back, should not damage valve disc seal and bonnet gasket. Please tighten the bonnet screws with the appropriate torque. When installation at the site (condition not allowed), in all cases where valves are installed without disassembly, the valve disc should be in a mid stroke position or fully opened position while welding. Avoid the flame close to valve disc while welding, and wrap with cool wet rag around valve body. Gas tungsten-are welding should be used. Please don't close the valve when valve body has not been cooled.



Warning!

- Only qualified personnel should install and maintain the valves
- Installation and maintenance should comply with National regulation
- Only can use valves within the operation range of products
- Point welding is not enough for valve port connection
- Valve body should be painted besides stem to against external corrosion after installation
- Keep clean on packing gland nut and stem, provide grease if needed, to against corrosion
- Be careful of overheating while valve welding
- Be careful refrigerant leakage while remove valve packing gland nut, use safety glasses or a safety face shield to protect eyes, protective equipment should be readily available

1.6 Information on check valves

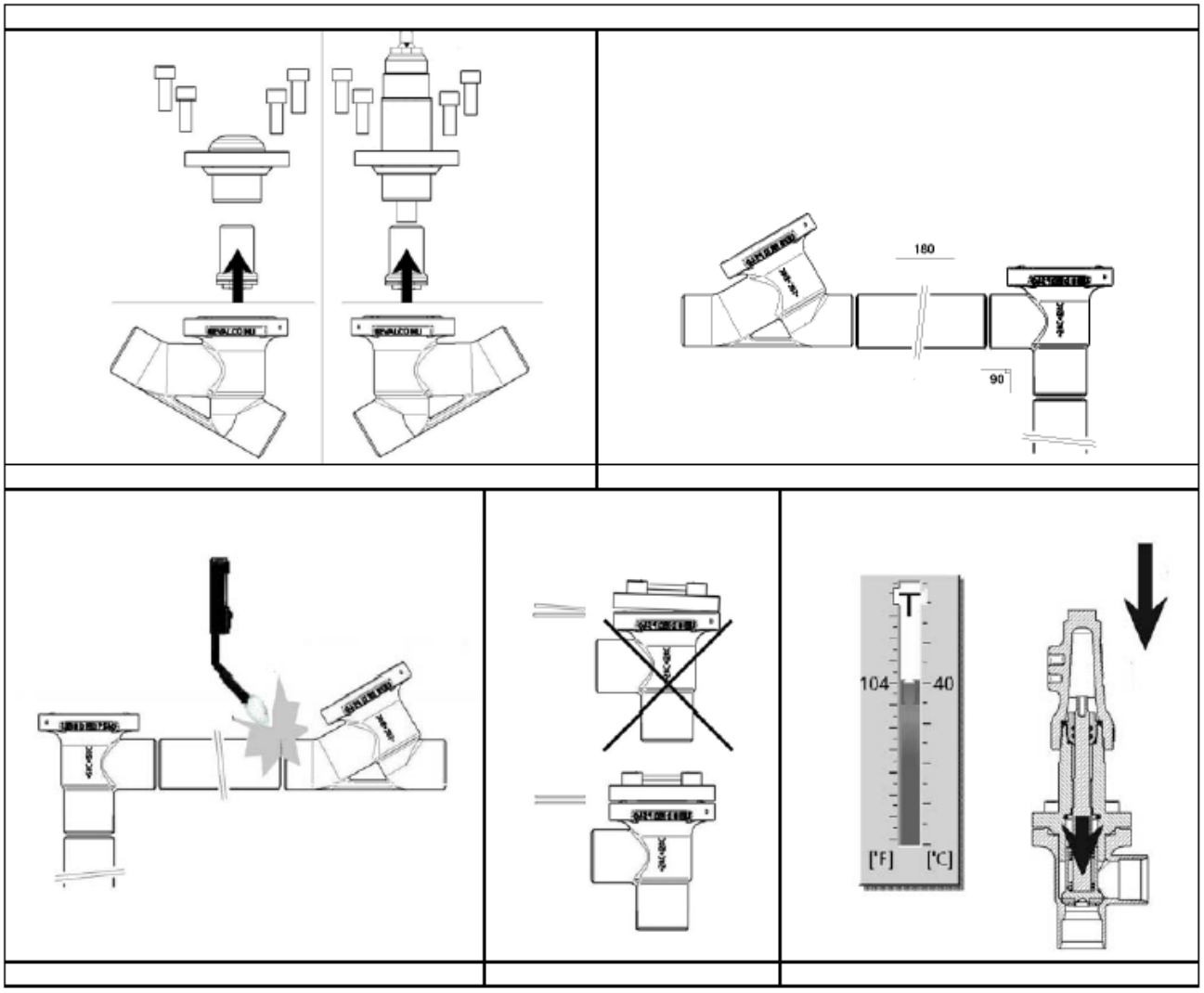
Marking on the valve bonnet: CV. Stop/check valves has red painted handweels.

The valves can be installed at any position, but should follow the arrow on valve body which indicate the direction of flow.

Should disassemble valve bonnets before welding, to avoid disc seal gasket to contact valve body. Please protect the valve disc seal (PTFE) and place valve seat in a safe, clean area. Gas tungsten-are welding should be used. Please don't assemble the valve when valve body has not been cooled.

Should clean the valve housing on the inside before re-assemble the seat disc and spring back into valve body, and assemble bonnet with bolts, cross tightening 4 bolts first, then tightening all the bolts with wrench.

For stop/check valve after reassembling, should turn valve stem in to close valve to press valve disc seat tightly. When opening valve, should turn stem out to fully open the valve, ensure the opening of the valve for normal operation, metallic chattering should be avoided to ensure operating performance and life cycle.



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1.7 Information on strainers

Marking on the valve bonnet: ST

When fitting filters, it must be ensured that the bonnet points vertically downwards as far as possible. This enables the bonnet to be removed together with the screen insert downwards without dirt residues remaining in the filter.

2. Commissioning
When commissioning new systems and after completing repairs, shut-off valves must be opened fully as far as possible. Any dirt and foreign bodies in the system will be collected in the filters and can be removed.
The function and tightness of the installed valves must be checked during the leak test and after reaching operating pressures and temperatures. For this purpose, the valve caps must be removed. Any leakage of the stuffing box can be stemmed by re-tightening the gland nut.

Caution!
Liquid refrigerant can discharge from leaky stuffing boxes of valves in pipes of refrigerating systems. Risk of burns! Suitable personal protective equipment (e.g. safety goggles, protective gloves) should be worn.
Leaks at the bonnet seal should be stemmed preferably by tighten-ing the bonnet screws crosswise and evenly with a torque wrench, whereby the valve must be fully open to avoid pressing the shut-off element against the valve seat. The bonnet must lie plan on the body

3. Use
Valves must only be used for the intended purpose. This can only be ensured when the operating instructions of the system manufacturer are observed.

Shut-off and control valves
Shut-off and control valves (when looking on to the bonnet) can be closed by turning the handwheel clockwise and opened by turning the handwheel anticlockwise.
Shut-off valves must only be operated when fully open, i.e. against the back seal or operated fully closed, i.e. on the valve seat. Constriction of the fluid flow must be reserved for control valves only. An excessive fluid flow in the gap between the shut-off element and valve seat of shut-off valves can lead to cavitation and erosion and in turn to leaks.

Caps
The caps must be removed for operating the valves.
Caution! When unscrewing the cap, suitable personal protective equipment (e.g. safety goggles, protective gloves) should be worn.
Prior to removal, the caps must be freed from ice if necessary. In the area of the cap thread is a pressure relief hole to allow fluid to escape. This hole must be kept free in any event. When cleaning a clogged pressure relief hole, the operator should stand so that the hole points away from his body to avoid possibly being sprayed by discharging fluid.

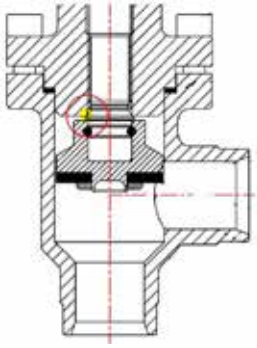
Note!
If the pressure relief hole releases the interior space, then the sufficient supporting thread is still present at the cap. If screwing on caps, then the seal must be fitted. The caps must be firmly tightened to prevent the ingress of moisture into the interior space.

Attention!
Attention! Sealed cap valves must only be operated in an emergency or for maintenance purposes during shutdown periods. After these situations, the valves must immediately be resealed by a specialist (according to EN 13 313). Incorrect valve adjustment can result in the pressure limits in pressure equipment being exceeded!
Contact temperature Valves are occasionally installed in pipes in which very low or high temperatures prevail. For the operation of these valves, suitable personal protective equipment (e.g. protective gloves) should be worn.

4. Maintenance including inspection by the user

4.1 General
PGHV valves are largely maintenance free. The materials have been selected so that wear, especially between components subject to friction, is kept to a minimum. For reliability reasons, all valves, particularly those that are rarely operated or difficult to access, should be tested for tightness and smooth operation as part of system inspections. Leaks at the valve stuffing boxes and bellow units, if sealed with caps, can only be located after their removal. The procedure de-scribed under Item 3 should be followed. If the valve bonnet is disassembled for maintenance purposes, new seals must be used when reassembled.

4.2 Back seal
With the shut-off and regulating valves fully open, the back seal of the spindles seals the stuffing box space against the valve interior, so that repacking of the stuffing box is also possible under pressure in the valve interior.



Attention!
Deposits and dirt can cause leakage.
Suitable protective equipment (e.g. safety goggles and protective gloves) should be worn.

Working steps:
1. Turn the spindle with the handwheel in the “open” direction (anticlockwise), until the sealing surface of the spindle makes contact with the sealing surface of the bonnet.
2. Screw for half turn the stem and turn off back suddenly to achieve a good seal
3. Remove the handwheel to prevent the spindle moving.

4.3 Chang of packing and o-ring

The maintenance of changing packing and o-ring can be done while system is operating without depressurization. Should follow below steps:

1. Fully open the valve until the sealing surface of the stem makes contact with the sealing surface of the bonnet.
2. Remove hand wheel, and remove gland nut in anticlockwise direction.
3. Remove and clean stuffing box gland and packing, assemble with new o-ring and packing by turning clockwise, tighten gland nut.
4. Don't over tighten the gland nut while reassembling, in the event of leaks at the stuffing box, the gland nut should be re-tightened. Clean valve stem shaft before reassembling, certain grease can be used for valve stem if needed.

Attention!

When retightening the gland nut, suitable personal protective equipment (e.g. safety goggles and protective gloves) should be worn.

4.5 Opening valves and strainers in refrigerant circuits

The interior space of valves and strainers in refrigerating systems is subject to system pressure. The valves and filters must be rendered pressureless prior to opening and free from liquid refrigerant (see operating instructions of refrigerating system). With a drop in pressure, the valves can become very cold through the expansion of liquid refrigerant. In order to prevent the ingress of air moisture, the valves must only be opened after heating to ambient temperature. An open flame should not be used to accelerate heating!

Attention!

Suitable personal protective equipment (e.g. safety goggles and protective gloves) should be worn.

4.6 Strainers

For cleaning the strainer insert, the operating instructions of the system manufacturer must be observed. Suitable cleaning agents and methods depend on the fluid.
When refitting the upper part, a new seal must be used and the screws tightened crosswise with the torque specified in the tightening torque table.

Note!

A tightness test must be carried out on completion of all maintenance work.

4.7 Service Pointer

Symptom	Possible cause	Solution
Leak at stuffing box between stem	gland nut not be tightened	tighten gland nut clockwise
	O-ring wearout	change O-ring and packing
	stem damaged or bended	change stem
Leak at bonnet flange	cover bolts not be tightened	retighten cover bots
	force on bolts not equal	reassemble bonnet
	flange gasket damaged	change flange gasket
Not be colsed tightly (internal leak)	valve seal disc is damaged	change valve seal disc
	valve body deat surface damaged	polish valve body seat surface
	valve seal disc not be fully closed by spring, stem is over tightened while fully open valve	loose valve stem a little in clockwise
Stem stuck	no maintenance on stem	supply grease on stem thread
	system too dirty	clean an service the stem or change seat disc

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