

**LIMITS OF USE (CONTINUED)**

- Maximum operating pressure reduces as service temperature increases. Pressure and temperature limitations are shown by the valve body marking or on the identification plate.
- Crane valves have not been designed as fire safe valves.

**STRESS CORROSION CRACKING**

The use of chemicals for system dosing must be determined by the user as all aspects of the system must be established and considered, and the effect of the chemicals used (including compounds arising from chemical combinations) must also be established in order to accurately determine compatibility.

Crane (and its related brands) manufacture hardware (valves, couplings, etc) for the Building Services industry and Utilities industries. However, we are not system designers or operators and cannot make recommendations regarding chemical compatibility for the system, as a result of the above variables. Any comments from Crane regarding chemical compatibility shall relate solely to the Crane product and

does not constitute a recommendation on compatibility for the wider system, resultant chemical compounds, components, substances or materials, in whole or in part.

For reference, and not exhaustive, certain austenitic stainless steels and aluminium alloys crack in the presence of chlorides, mild steel cracks in the presence of alkali and nitrates, copper alloys crack in ammoniacal solutions and iron with almost any caustic species (hydrogen presence notwithstanding).

For more information on how SCC can occur, please visit [www.cranefs.com](http://www.cranefs.com)

**PRESSURE TEMPERATURE RATING**

**Class 150**

Temperature °C	-29 to 38	425
Pressure (Bar)	19.6	5.5

**Class 300**

Temperature °C	-29 to 38	425
Pressure (Bar)	51.1	28.8

**CRANE** FLUID SYSTEMS

**STEEL GATE VALVE**

47XU-F | 33XU-F

Gate valves provide complete shut off, providing the seats remain undamaged, and offer very little resistance to flow in the open position. Gate valves are best suited to infrequent valve operation, as any dirt in the system can cause scuffing of the seats. Gate valves are not recommended for use in the partially open position because vibration and erosion of the disc may occur.



47XU-F



To visit our Video Library go to: [www.youtube.com/user/CraneBSU](http://www.youtube.com/user/CraneBSU)

**CRANE** FLUID SYSTEMS

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**GENERAL INSTALLATION**

**Preparation**

- Ensure valve is suitable for service conditions e.g. pressure, temperature, service media.
- Remove dust caps/flange protectors, where fitted.
- The installation shall be designed to provide adequate means of draining and venting to permit cleaning, inspection and maintenance in the correct manner.
- If slinging the valve using rope, chain or wire (make sure breaking strain is correct for valve weight) only sling through yoke legs. Never sling through valve bore or under/through spokes of hand wheel. Hand wheels cannot be used for lifting.
- The complete piping system must be flushed through prior to commissioning to ensure all foreign matter is removed. Subsequent valve failure is frequently caused by dirt and other matter left in the pipeline.

**GENERAL INSTALLATION (CONTINUED)**

**Valve Location**

- Valves should be located to ensure ease and safe operation of the valve.

**Piping Supports**

These must be carefully aligned and at the correct distance between centres for the size and type of pipe. Please refer to the current best practice for details of correct spans and installation details.

**Flange Joints**

- Make sure the pipe flanges are correctly aligned.
- Always use the correct size and number of bolts.
- Appropriate gaskets, bolting, and correct assembly torques should be used to ensure integrity of joint. Do not match flat-faced flanges to raised face flanges.

**Assembly**

- Make sure the mating faces are free of any defect that can lead to leakage. All flange faces must be clean and free of foreign bodies. The valve must be well supported. Take care to ensure alignment of the flanges. Use a suitable lubricant on bolt threads. Sequence the bolt tightening to ensure the contact between flanges and gasket is flat and parallel. Tighten bolts (not in rotation but by the cross over method) gradually and uniformly to avoid any tendency to twist one flange relative to another.
- It is bad practice to install valves with the hand wheels pointing downwards, as damage may be caused to the gland packing and stem seal, by debris in the system.

**OPERATION**

- Steel Gate valves are designed to seat with standard handwheel. Levers, wrenches or other tools should not generally be used to operate a valve. Excessive torque can cause damage to seating faces and/or stem/handwheel. With larger valves the use of a 'pinch bar' is acceptable providing the bar length does not exceed 1.5 x the handwheel diameter.
- The operating conditions shall be consistent with the requirements in the performance specification.
- Where gate valves are installed for permanent end of line service, a full faced blanking flange shall be used. In the lack of a blanking flange, only temporary end of Line isolation is allowed.
- Occasionally operate valves that remain open or closed for long periods to ensure they are in good working order, thus avoiding the possibility of being inoperable in a time of emergency.

**GENERAL CONSIDERATIONS**

- The surfaces of valves in service may be subject to extreme temperatures; care should be taken when handling.

**LIMITS OF USE**

These valves have been categorised in accordance with the Pressure Equipment Directive 2014/68/EU.

**The fluid to be transported is limited to those shown in the product table below. On no account must these valves be used on any unstable fluids, or for the fluids groups not specified in the product table.**

**Note:** Valves that are classified as SEP (Sound Engineering Practice) are not CE marked and therefore do not require a declaration of conformity.

Fig. No.	Material	PED category by valve size (DN)				Product applications			
		SEP	1	2	3	Group 1 Gas	Group 2 Gas	Group 1 Liquid	Group 1 Liquid
47XU-F	Steel	2"	2.1/2"-4"	5"-10"	12"-24"	-	✓	✓	✓
33XU-F	Steel	-	-	2"-10"	12"	-	✓	✓	✓

- Valves must be installed into a well-designed system and it is recommended that the system be inspected in accordance with the appropriate national and regional legislation.
- Valves must be installed by trained personnel only.
- Service temperature and pressure indicated on the identification plate or body marking should not be exceeded.
- The installation should be designed to provide adequate means of draining and venting to avoid harmful effects such as water hammer, vacuum collapse, corrosion and uncontrolled chemical reactions and to permit cleaning, inspection and maintenance in the correct manner.
- Valves are not designed to operate under high shock loadings. Where pressure increases occur due to shock loading (water hammer), they should be added to the working pressure to obtain the total pressure acting on the valve. The total must not exceed the pressure rating of the valve. A pressure surge, or shock, is usually caused by the rapid closure of a check valve or quarter turn valve resulting in a sudden reduction in flow rate.
- It is the responsibility of the installer to ensure that the valves do not exceed the allowable limits of pressure. However, the equipment is designed to withstand a momentary pressure surge of up to 10% above the maximum working pressure.
- The product has not been designed to include corrosion, erosion or abrasion allowances. Any queries regarding service applications should be addressed to the Crane Fluid Systems - Technical Sales Department.
- The valves have been designed for loadings, appropriate to its intended use and other reasonably foreseeable operating conditions. Loadings caused by traffic, wind and earthquake have not been taken into account.
- Not suitable for fatigue loading, creep conditions, fire testing, fire hazard environment, corrosive or erosive service, transporting fluids with abrasive solids.
- The piping system shall be designed to reduce the risk of fatigue due to vibration of pipes.