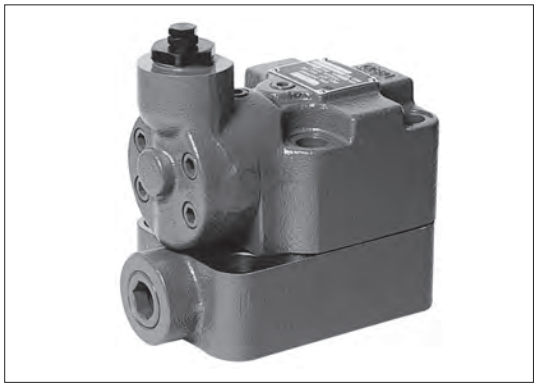
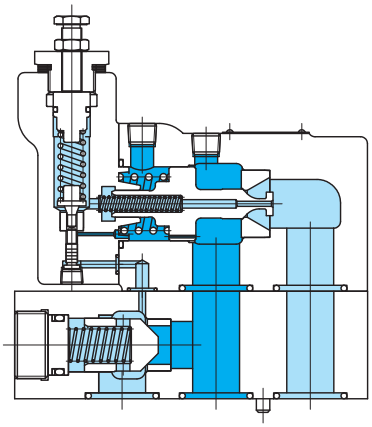
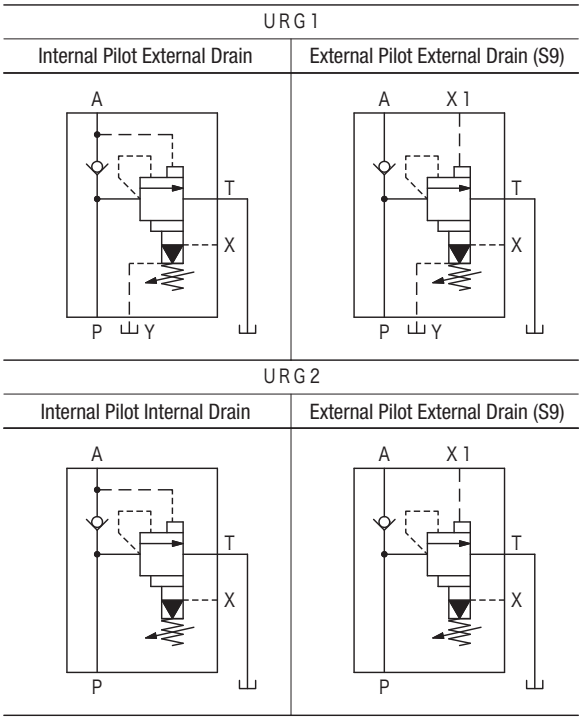
Unloading relief valves URG





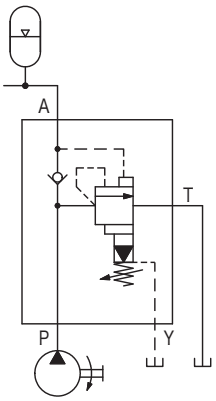
- Valve is used in accumulator circuits. When circuit pressure rises to the setting pressure, valve acts to automatically unloads pump.
- When circuit pressure falls to 85 or 95% of the setting pressure, the valve onloads the pump to recharge the accumulators.

Functional Symbols

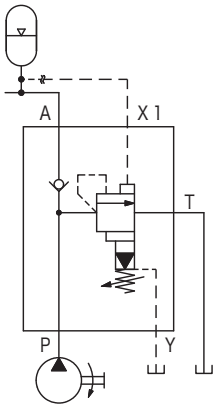


● Application Examples

Internal Pilot



External Pilot



Model Code

(F3)-URG 1-10-B(V)-12-(S9)-JA-(S1)-J/M

1	2	3	4	5	6	7	8	9	10

1 Hydraulic fluid
Omitted for mineral oil based fluid, water-glycol based fluid
F3: phosphate ester fluid

2 Unloading relief valve (gasket mounting)

3 Drain
1: external drain
2: internal drain

4 Size

5 Pressure adjustment ranges
Refer to “Specifications”.

6 Vent pressure
Omitted for low vent pressure (standard)
V: high vent pressure

7 Design no.
12: URG*-10
13: URG*-06

8 Pilot
Omitted for internal pilot (standard)
S9: external pilot

9 Cut-in pressure
Omitted for 85% of setting pressure (standard)
S1: 95% of setting pressure

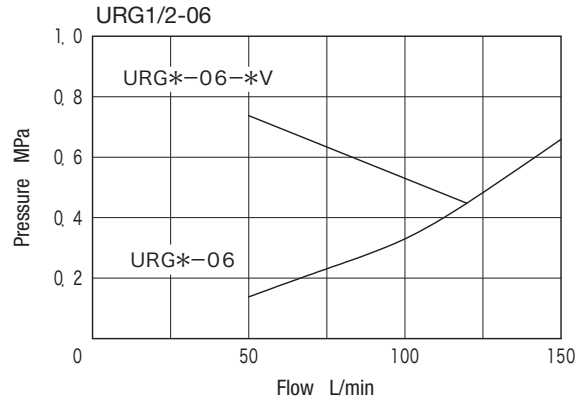
10 Mounting bolts
URG*-06
Enter J (main valve for both unified and metric threads)
URG*-10
J: 3/4-10UNC
M: M20

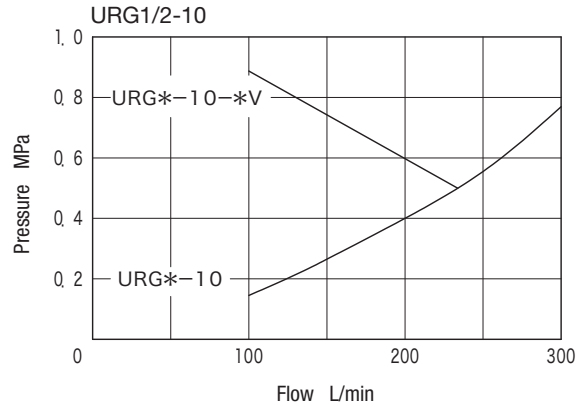
Specifications

Model Code	Size	Max. Working Pressure MPa	Rated Flow L/min	Pressure Adjustment Ranges MPa	Weight kg
URG1-06 URG2-06	06	21	100	B : 2. 5～ 7 C : 3. 5～14 F : 10. 5～21	11. 5
URG1-10 URG2-10	10	21	250		22

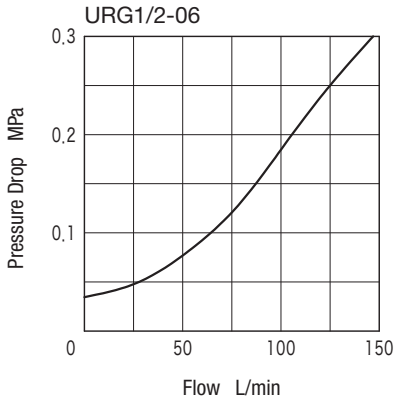
Characteristics Curve (at 20 mm²/s) (typical examples)

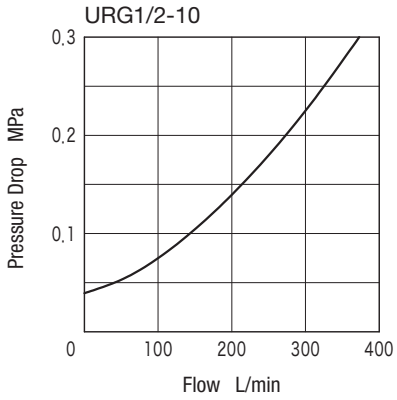
● Flow–Unload Pressure Characteristics





● Check Valve Pressure Drop Characteristics





Notes on Operation

- If distance between valve and accumulator is long (piping) and internal pilot type (standard) valve is used, piping resistance may cause valve to cutoff prematurely before setting pressure of valve is accumulated in the accumulator. In this case, use external pilot type (S9) valve with pilot pressure taken from point close to accumulator and connected to external pilot port X1. (Rc1/4 taper thread connection)
- Internal drain type (URG2) may be used when tank line back pressure is set at 5% or less than the setting pressure. If back pressure exceeds this condition, use external drain (URG1).
- Do not connect drain line with other tank lines and return drain directly to tank. Ensure that end of the piping is always below the fluid level.
- For faster unload to onload response, use high vent pressure type (V).
- Loosen the lock nut and turn pressure adjustment screw clockwise to increase the setting pressure and counterclockwise to decrease the setting pressure.

Mounting Bolts (JIS B 1176, Strength Class 12.9)

Valve Model	Metric Thread	Unified Thread	Qty
URG1-06	M16× 60	5/8-11UNC×57.1	2
URG2-06	M16×130	5/8-11UNC×133.4	4
URG1-10	M20× 80	3/4-10UNC×76.2	2
URG2-10	M20×170	3/4-10UNC×165.1	4

- Mounting bolts must be ordered separately.
- Mounting bolt tightening torque

URG1-06
URG2-06 : 90 to 110 N·m

URG1-10
URG2-10 : 180 to 220 N·m

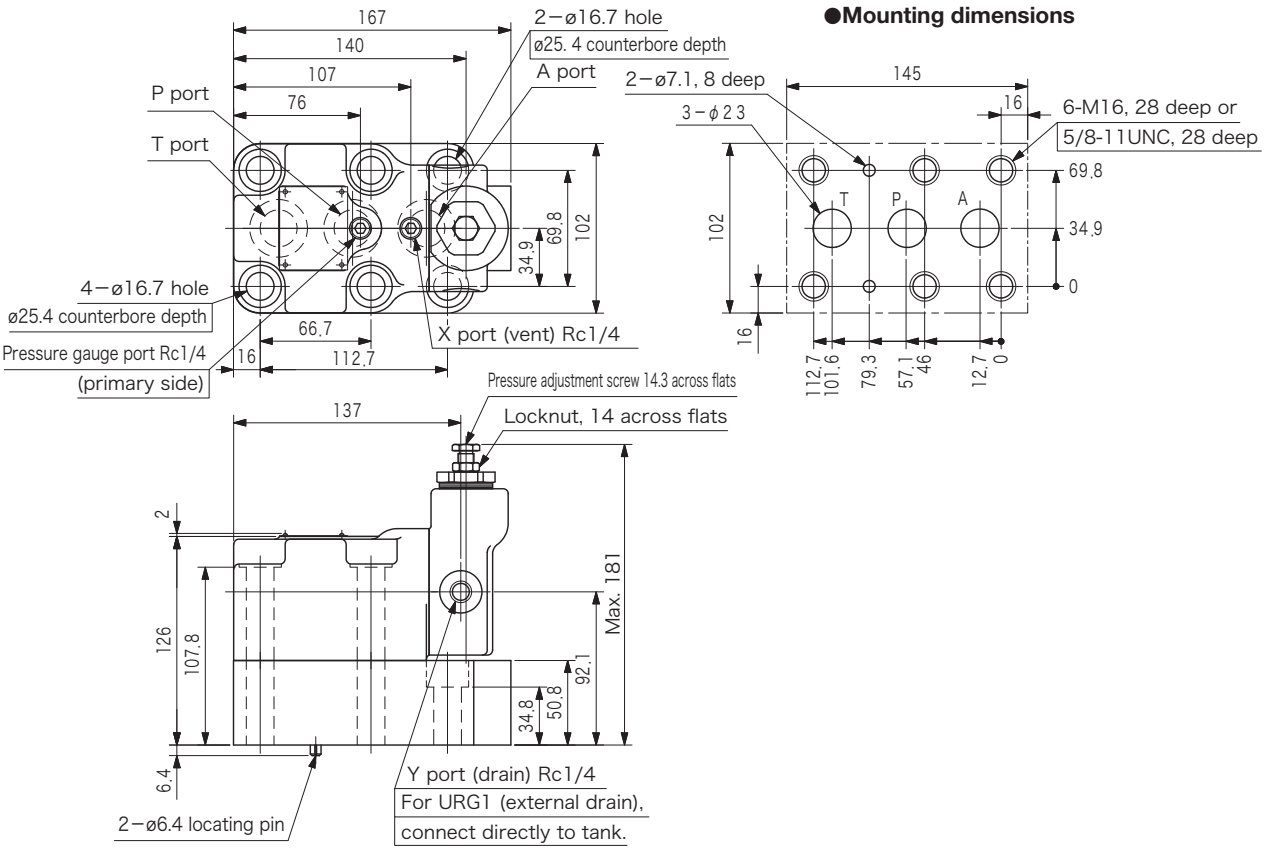
Subplate

Valve Model	Subplate	Connection Port Diameter Rc
URG1-06 URG2-06	URG1M-06-10-JA-J	3/4
URG1-10 URG2-10	URG1M-10-10-JA-J	1-1/4

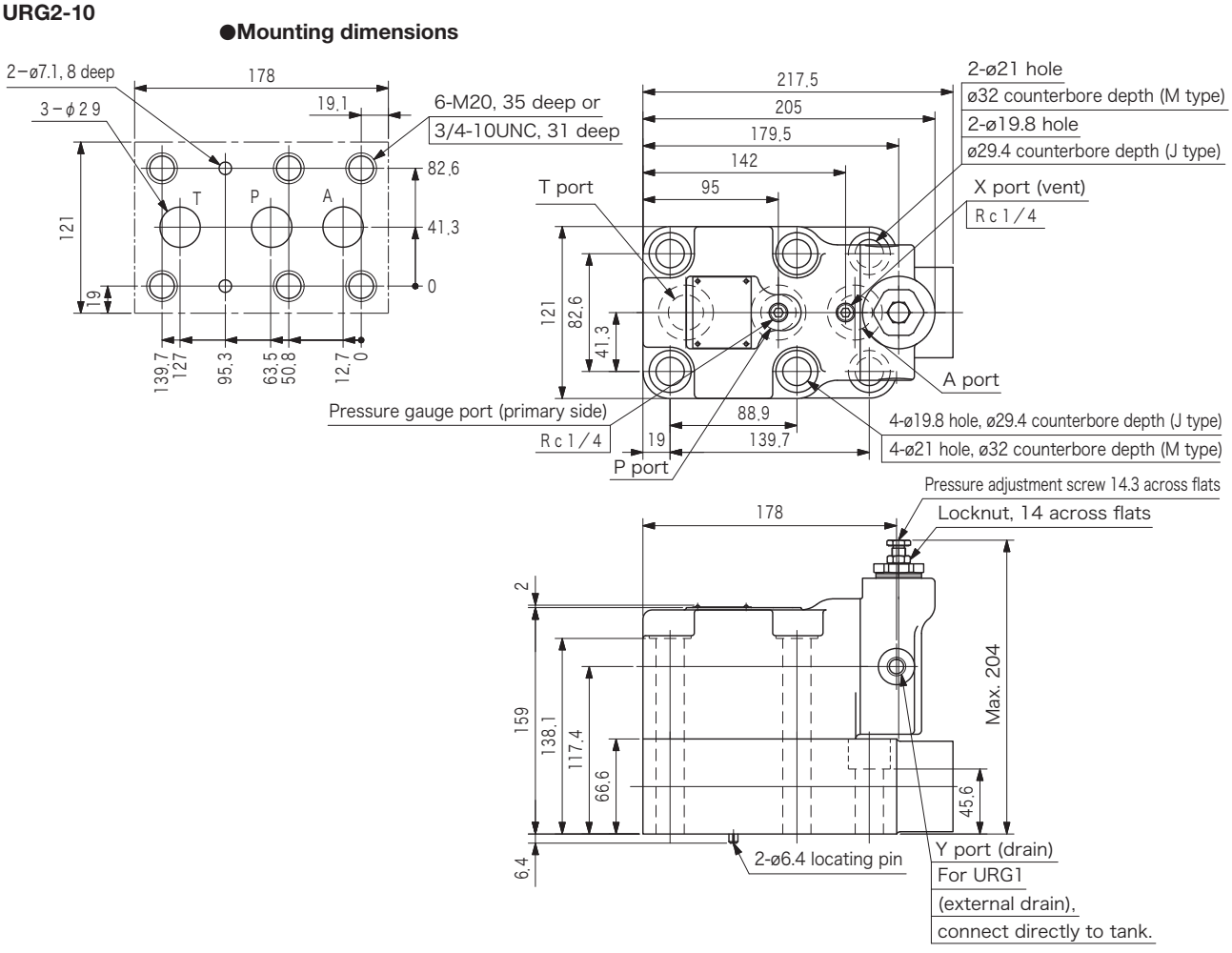
- Subplate must be ordered separately.
- Hex socket bolts for mounting valve included (unified thread).
- See page R6-3 for dimensions.

Dimensions

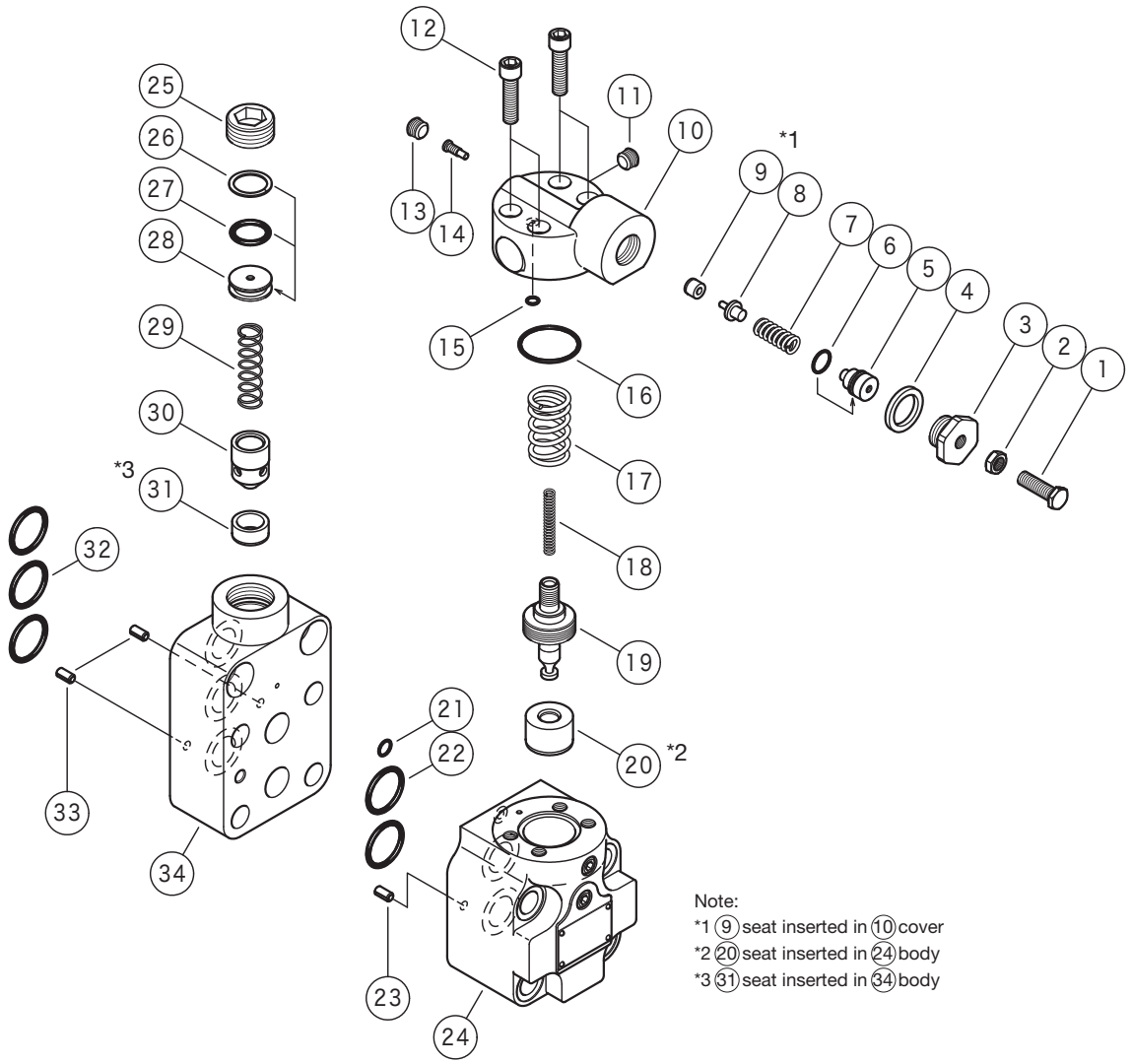
URG1-06
URG2-06



URG1-10
URG2-10



Construction



Note:
*1 (9) seat inserted in (10) cover
*2 (20) seat inserted in (24) body
*3 (31) seat inserted in (34) body

Size		06		10		Qty
No.	Name	Part No.	Standard	Part No.	Standard	
6	O-ring	007901517	AS568–015 (NBR, Hs70)	007901517	AS568–015 (NBR, Hs70)	1
15	O-ring	007901019	AS568–010 (NBR, Hs90)	007901019	AS568–010 (NBR, Hs90)	1
16	O-ring	VA11168	———	007922419	AS568–224 (NBR, Hs90)	1
21	O-ring	007901319	AS568–013 (NBR, Hs90)	007901319	AS568–013 (NBR, Hs90)	1
22	O-ring	007921619	AS568–216 (NBR, Hs90)	007922019	AS568–220 (NBR, Hs90)	2
26	Backup ring	48197629	MS28774–212	48197637	MS28774–220	1
27	O-ring	007921219	AS568–212 (NBR, Hs90)	007922019	AS568–220 (NBR, Hs90)	1
32	O-ring	007921619	AS568–216 (NBR, Hs90)	007922019	AS568–220 (NBR, Hs90)	3