

## Siken Accumulator Shut-off Valve

Siken Hydraulics provides accumulator shut-off valves, no matter PED accumulator and ASME accumulator ,or any other stanard accumulator safety shut-ff vavles.

An accumulator shut-off valve is a valve used in hydraulic systems to control the flow of hydraulic fluid into or out of an accumulator. The shut-off valve is typically located between the hydraulic pump and the accumulator. It allows for the isolation of the accumulator from the hydraulic system when needed. By closing the shut-off valve, the flow of hydraulic fluid to or from the accumulator is stopped, preventing any further energy transfer. The purpose of the accumulator shut-off valve is to control the charging and discharging of the accumulator, enabling the system to optimize energy storage and release based on operational demands. It also provides a safety measure by isolating the accumulator when maintenance or repairs are required.

The shut-off valve can be manual or automatic, depending on the application and system requirements. Manual shut-off valves are operated manually by an operator, while automatic shut-off valves are actuated by hydraulic or electrical signals.

To fit different standard accumulator,

Siken Hydraulics provides 5 series of accumulator shut-off valve, which are as follows,

- (A) SAF type safety shut-off valve
- (B) AQF type safety shut-off valve
- (C) AJS/AJ1SAJD type safety shut-off valve
- (D) AJF type safety shut-off valve
- (E) QFZ type safety shut-off valve

## (A) SAF type accumulator safety shut-off valve

### 1. Introduction

SAF-type safety shut-off valve block is used for accumulators and hydraulic systems. It controls the flow of hydraulic fluid, overpressure protection, and pressure relief and drainage of the accumulator. It mainly consists of a main shut-off valve, a built-in overflow valve, and a manual unloading valve. The valve block with an electromagnetic directional valve is used to automatically unload the hydraulic system and the accumulator.

It features reliable performance, compact structure, and convenient operation.

### 2. Model

**SAF 20 M 1 2 Y 1 N 210 A S13**  
**(1) (2) (3) (4) (5) (6) (7) (8) (9) (10) (11)**

(1) Product Code: SAF - SAF Series Safety Shut-Off Valve Block

(2) Main Shut-Off Valve Specifications: *Diameter DN10, DN20, DN32*

(3) Unloading Method: *M - Manual Unloading*

*E - Electromagnetic Valve Operation and Manual Unloading*

(4) Valve Block Material: *1 - Carbon Steel*

(5) Seal Material: *2 - NBR 6-FPM*

(6) Electromagnetic Valve Operation:

*Y - Open when not powered Z - Closed when not powered*

(7) Voltage Type: *1 - 24VDC, 3 - 220VAC*

(8) Overflow Valve: N - Adjustable with a wrench

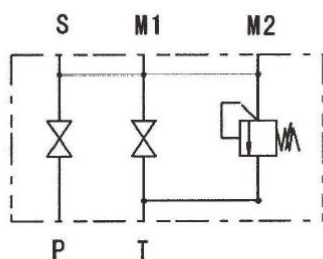
(9) Pressure Setting Value: Up to a maximum of 31.5MPa

(10) Threaded Connection Standard: A - ISO228 (BSP)

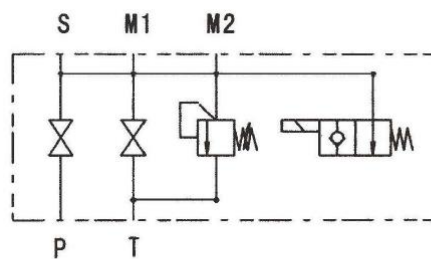
(11) Fitting: Connect to Accumulator (See Appendix), for example, S13-G2A



### 3. Hydraulic Principles



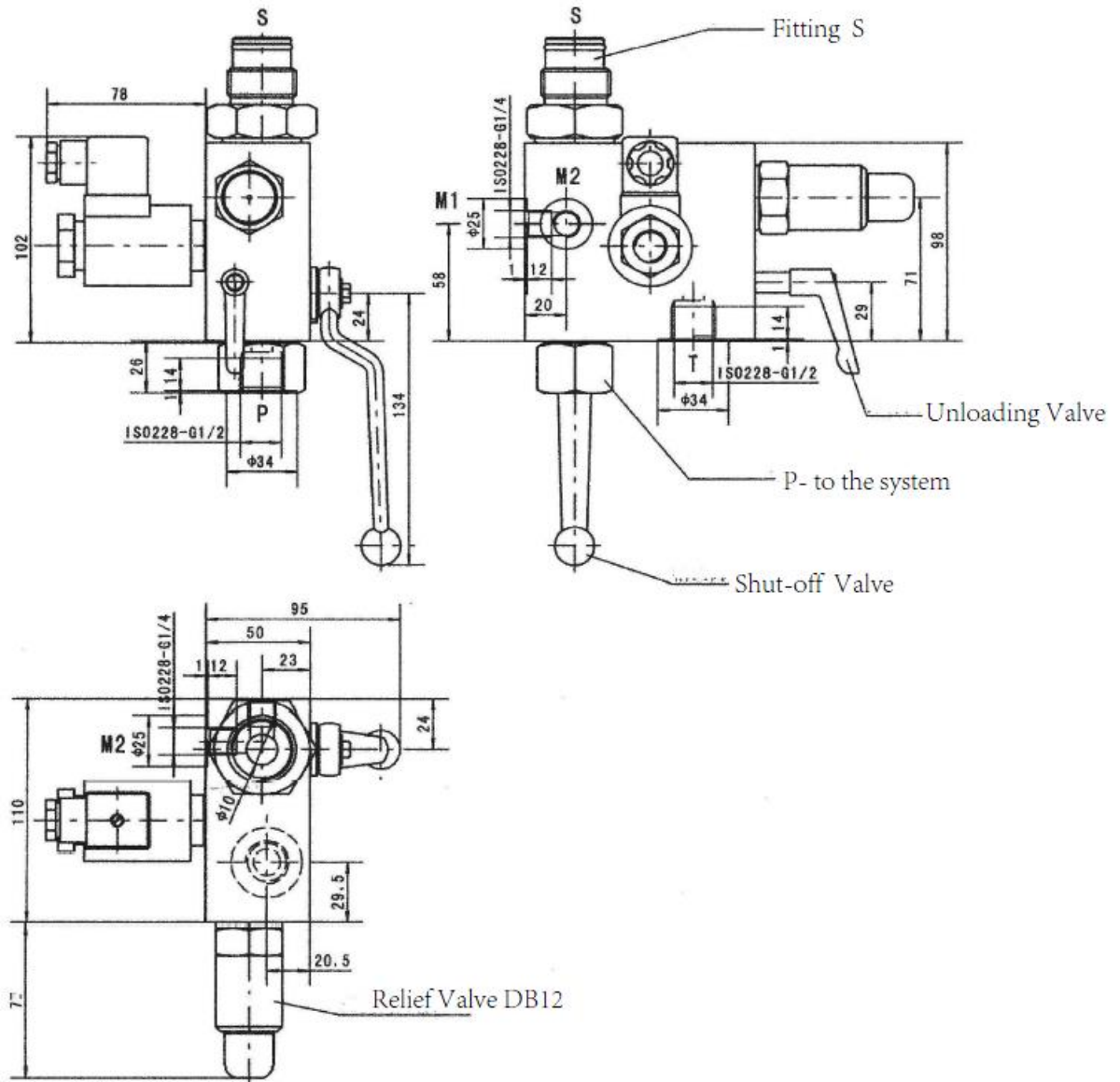
Schematic diagram with manual unloading



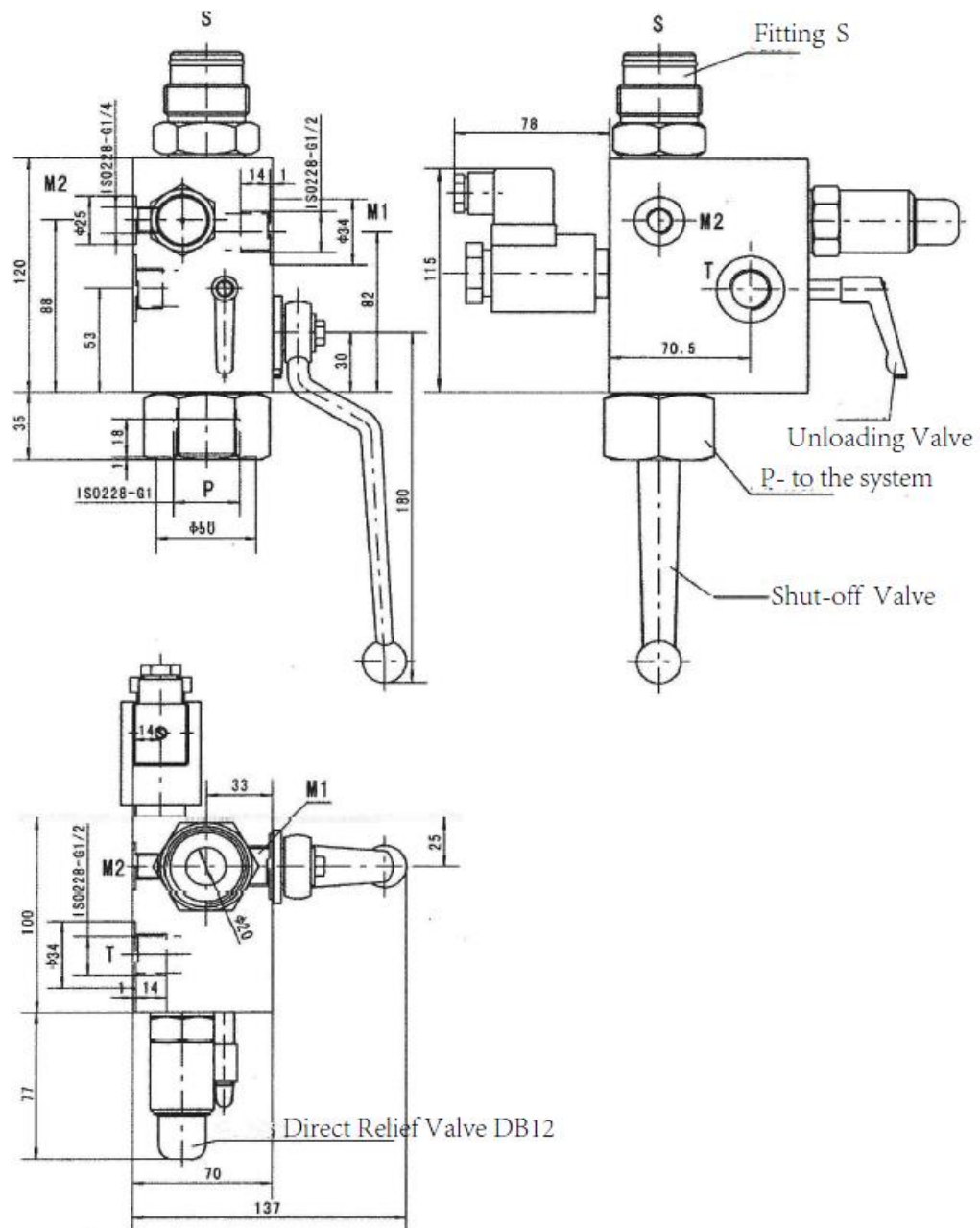
Schematic diagram with solenoid unloading

#### 4. Dimensions

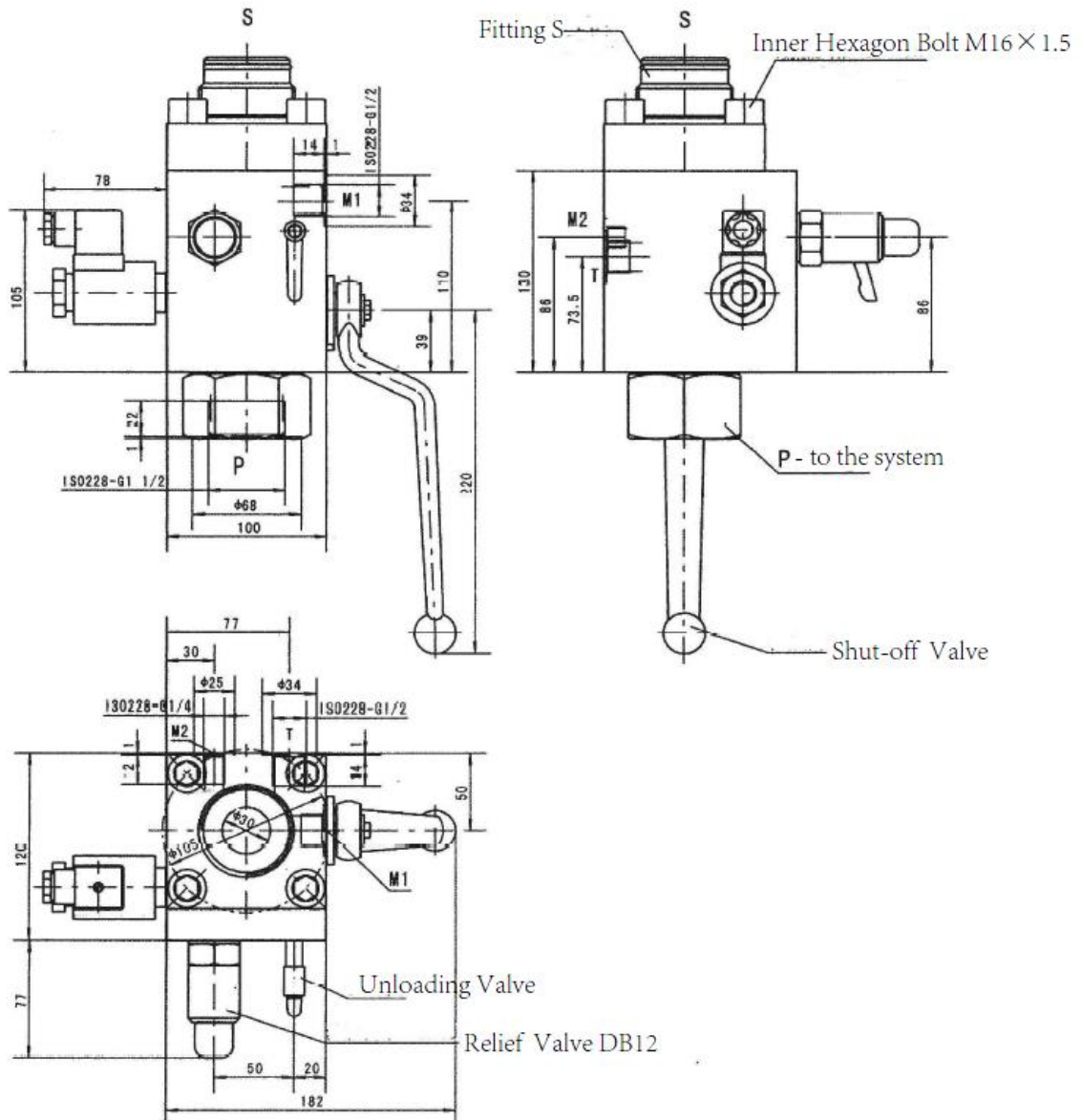
##### a) SAF10 (DN10)



b) SAF20 (DN20)



c) SAF32 (DN32)



## (B) AQF type accumulator safety shut-off valve

### 1. Introduction

AQF-type safety valve is mainly used between the hydraulic system and the accumulator. It controls the flow of hydraulic fluid, protects against pressure overload, and facilitates pressure relief and oil drainage. The safety valve maintains the system's set pressure, and when the pressure exceeds the set value, the safety valve opens to prevent further pressure increase. This is particularly important in closed-loop circuits with accumulators to prevent damage to the system caused by sudden increases in external load. The function of the small shut-off valve is pressure relief and oil drainage.

### 2. Model

**AQF - L 32 h - A / M42X2**  
**(1) (2) (3) (4) (5) (6)**

(1) Product Code: AQF - Safety Ball Valve

(2) Oil Port P Connection Type: L - Straight-through internal thread

LS - Right-angle external thread Lw - Tee-shaped external thread

(3) Nominal Diameter: 25, 32, 40mm

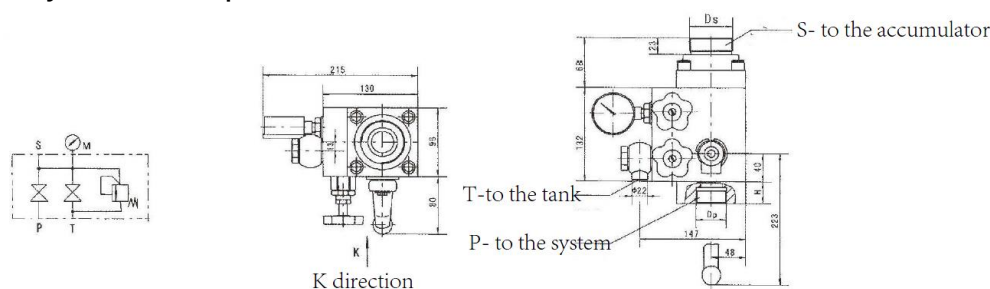
(4) Pressure Adjustment Range: H1—10Mpa H2—20MPa H3—31.5MPa

(5) Safety Valve Structure: A - Direct-acting relief valve

(6) Accumulator fitting thread: M27X2, M42X2, M60X2, M72X2

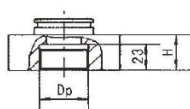


### 3. Hydraulic Principles:

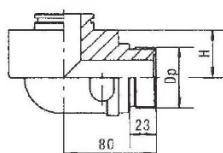


Model	Flow rate(L/min)	Dimension			Suitable Accumulatr (L)	Weight (kg)
		H	Ds	Dp		
AQF-L25H-A	100	31	M27X2 M42X2	M33X2	1.6-10	18
AQF-LS25H-A		42		M42X2		
AQF-LW25H-A						
AQF-L32H-A	160	31	M42X2 M60X2	M42X2	10-100	19
AQF-LS32H -A		42		M52X2		
AQF-LW32H-A						
AQF-L40H-A	250	31	M60X2 M70X2	M48X2	10-100	20
AQF-LS40H-A		42		M60X2		
AQF-LW40H-A						

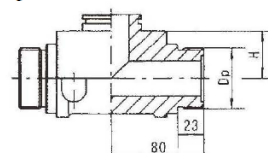
Direct female thread connection



Direct male thread connection



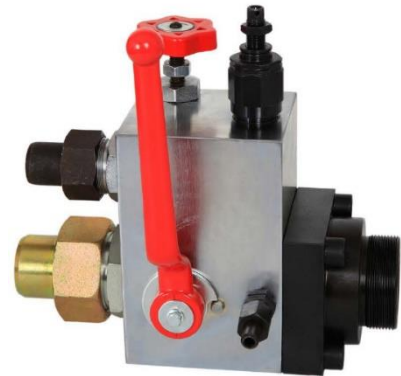
Triplet male thread connection



## (C) AJS、AJ1S、AJD type accumulator safety shut-off valve

### 1. Introduction

AJ type accumulator control valve assembly is installed between the accumulator and the hydraulic system to control the on-off operation of the accumulator, pressure overload protection, and pressure release. Its composition and the functions of each component are as follows: the manual ball valve controls the flow of hydraulic fluid; the threaded cartridge-type direct-acting relief valve provides pressure overload protection; the spool-type check valve and the ball-type solenoid directional valve facilitate pressure release.



### 2. Model description

**AJ**   **\***   **S**   -   **32**   **H**   **Z**   /   **\***   -   **E24**  
**(1)**   **(2)**   **(3)**          **(4)**   **(5)**   **(6)**   **(7)**        **(8)**

(1) Control valve assembly code.

(2) Position of T oil port relative to P oil port: 0 - same side, 1 - opposite side

(3) Unloading form: S - manual, Dk - power-off unloading (with B-type solenoid ball valve),  
DB - power-on unloading (with K-type solenoid ball valve).

(4) Nominal diameter: DN10, DN20, DN32.

(5) Maximum adjustable pressure of safety valve:

a - 6.3 MPa, b - 16 MPa, c - 25 MPa, H - 31.5 MPa.

(6) Relief valve structure code: Z - threaded cartridge-type direct-acting relief valve.

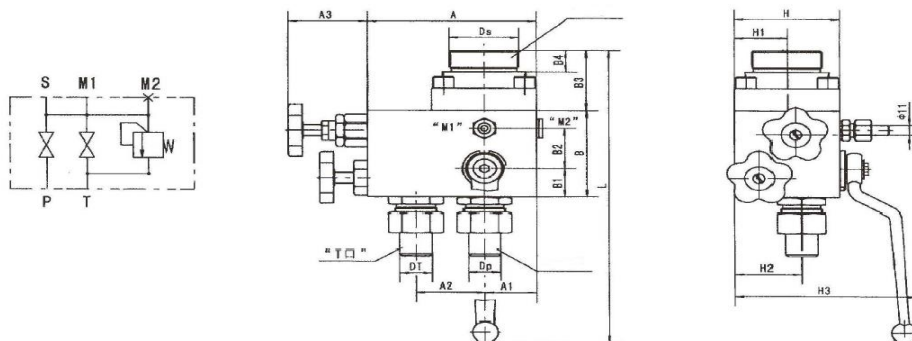
(7) S port (accumulator) connector thread:

M27X2 or M42X2 (DN10), M42X2 or M60X2 (DN20), M60X2 or M72X2 (DN32).

(8) Voltage for electric control unloading: E24 - 24V DC, B220 - 220V AC.

### 3 . Dimensions

AJS manual unloading (T port and P port on the same side).



Model	A	B	H	L	A1	A2	A3	B1	B2	B3	B4	H1	H2	H3	DS	Dp	D1
AJS-10Z	90	85	50	236	25	45	77	21	39	43	16/23	25	27	95	M27X2/M42X2	18	26
AJS-20Z	145	90	90	333	45	59	77	30	40	63	23	45	57	157	M42X2/M60X2	28	28
AJS-32Z	155	100	95	355	47.5	72.5	77	36	49	70	25	47.5	54	175	M60X2/M72X2	42	28



## (D) AJF type accumulator safety shut-off valve

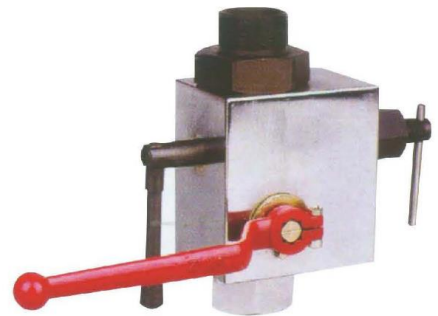
### 1. Introduction

AJF-type safety valve is a new type of hydraulic component designed for use with accumulators. It is installed between the accumulator and the system pipeline and has the functions of controlling the connection between the accumulator and the system, pressure limiting, and pressure release for protecting the accumulator. This valve assembly consists of a ball-type shut-off valve, lever-type pressure relief valve combination, and other components, with a unique structure and convenient operation.

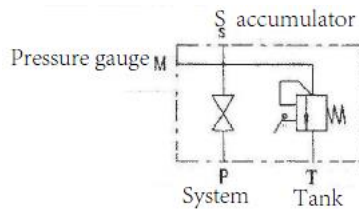
### 2. Model description

**AJF - H\* 40 L\***  
**(1) (2) (3) (4)**

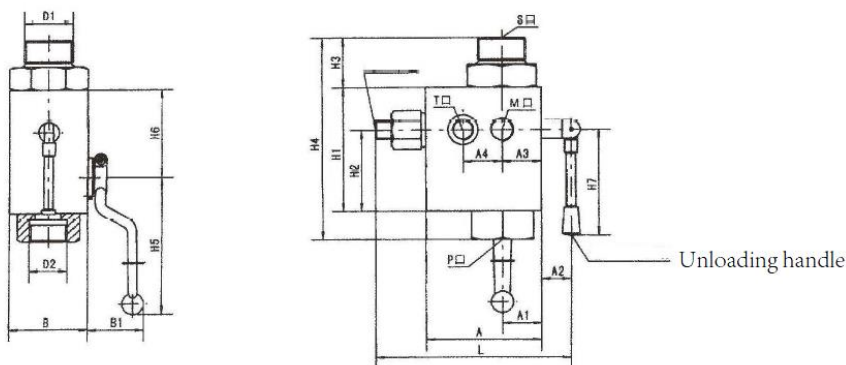
- (1) Product code: AJF - Safety shut-off valve
- (2) Nominal pressure: H1 - 10 MPa, H2 - 20 MPa, H3 - 31.5 MPa
- (3) Nominal diameter: 25, 40, 50 mm
- (4) Connection type: L - Straight threaded



### 3. Hydraulic Principles



### 4. Dimensions



Model	A	A1	A2	A3	A4	B	B1	H1	H2	H3	H4	H5	H6	H7	L	D1	D2	T	M
AJF-H25L	100	34	26	34	34	68	65	110	72	43	179	175	78	94	171	M42X2	M33X2	M18X1.5	M20X1.5
AJF-H40L	130	48	29	48	45	96	80	146	103	55	234	210	104	105	222	M60X2	M48X2	M22X1.5	
AJF-H50L	140	55	29	48	55	110	80	160	113	60	262	217	106	105	232	M72X2	M60X2	M22X1.5	



## (E) QFZ type accumulator safety shut-off valve

### 1. Introduction

QFZ series accumulator control valve assembly consists of a ball-type shut-off valve, direct-acting relief valve, and needle shut-off valve. The ball-type shut-off valve serves as the safety valve, while the needle shut-off valve acts as the pressure release valve. When the ball-type shut-off valve is closed, the needle valve is opened to allow the accumulator to release pressure and discharge oil. The main oil port of this series of accumulator control valve assembly is connected using a welded flange.



### 2. Model

QFZ - H \* 25 F  
(1) (2) (3) (4)

(1) Product code: QFZ - Accumulator control valve assembly

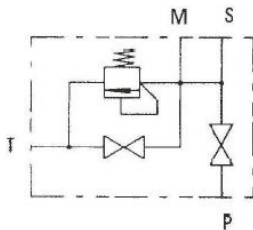
(2) Nominal pressure: *H* - 31.5 MPa

(3) Pressure regulation range: *b* - 2-10 MPa, *c* - 8-20 MPa, *d* - 16-31.5 MPa

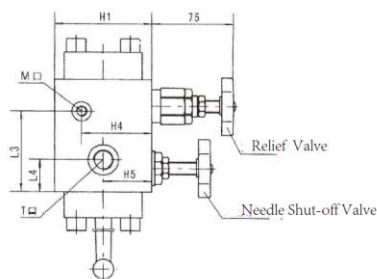
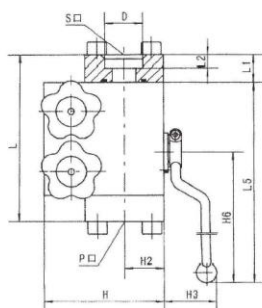
(4) Nominal diameter: 15, 25, 40, 50 mm

(5) Connection type for P and S ports: F – Flange

### 3. Hydraulic Principles



### 4. Dimensions



Model	L	L1	L2	L3	L4	L5	H	H1	H2	H3	H4	H5	H6	D	T	M	Weight(kg)
QFZ-H15F	115	20	11	53	25	169	90	75	28	45	60	40	135	22.5	M14X1.5	M10X1	5
QFZ-H25F	155	25	14	75	30	240	110	90	36	65	65	45	175	35	M18X1.5		9
QFZ-H40F	180	30	15	90	35	283	140	100	48	80	65	45	210	52	M18X1.5	M14X1.5	19
QFZ-H50F	230	35	15	115	56	322	160	120	60	80	70	45	250	61	M22X1.5		27