

# HYDRAULIC CETOP SOLENOID VALVES

Hydraulic solenoid CETOP valves are electrically operated directional control valves used in hydraulic systems to control the flow of pressurized fluid. They follow CETOP (European Committee for Oil-Hydraulic and Pneumatic Systems) standards, which ensure compatibility across different manufacturers and systems.

## FEATURES

- **Solenoid Operation** – These valves use an electromagnetic solenoid to shift the spool inside the valve, directing fluid to different ports.
- **CETOP Standardization** – Ensures interchangeability across brands by specifying mounting patterns, flow rates, and pressure ratings.
- **Directional Control** – They determine the direction of hydraulic fluid flow, influencing actuator movement (e.g., cylinders or motors).
- **Various Configurations** – Available in 2-way, 3-way, and 4-way configurations with different spool positions (e.g., 2/2, 3/2, 4/2, 4/3).



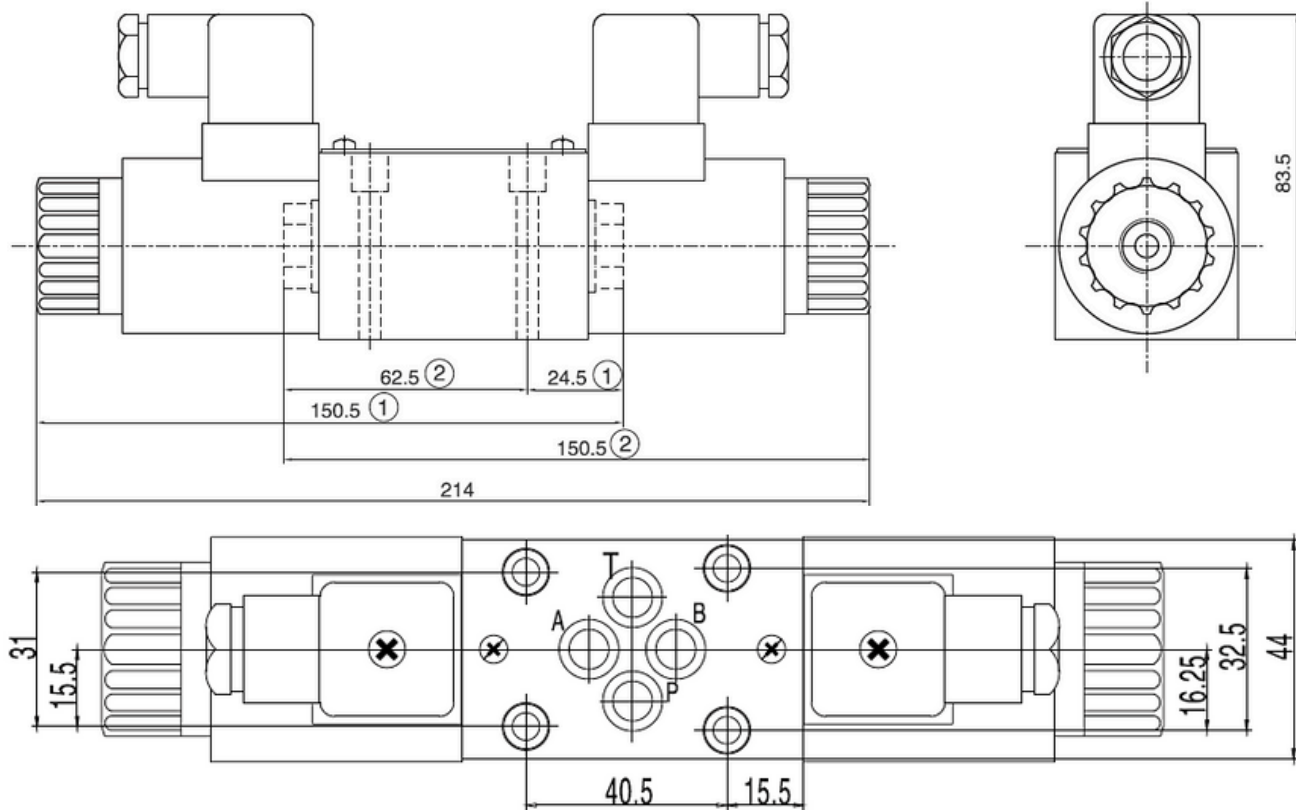
## CETOP Valve Sizes

- CETOP 3 (NG6/D03) – Used for lower flow applications.
- CETOP 5 (NG10/D05) – Medium-flow applications.
- CETOP 7 (NG16/D07) – High-flow industrial applications.
- CETOP 8 (NG25/D08) – High-flow industrial applications.
- CETOP 10 (NG32/D10) – High-flow industrial applications.

# CETOP 3 SOLENOID VALVES

A CETOP 3 solenoid valve is a compact, electrically operated directional valve for hydraulic systems. It follows the CETOP 3 (ISO 4401-03) standard, allowing easy interchangeability and control of actuators like cylinders and motors.

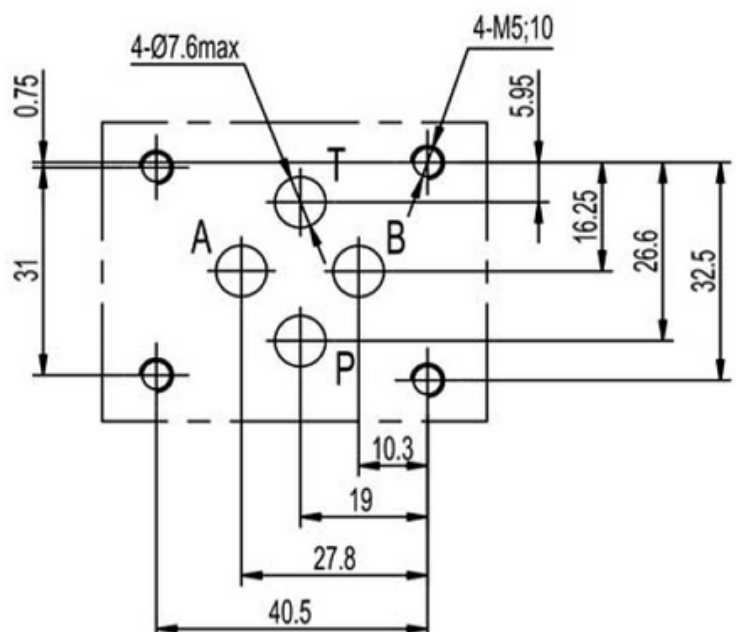
## VALVE DIMENSIONS



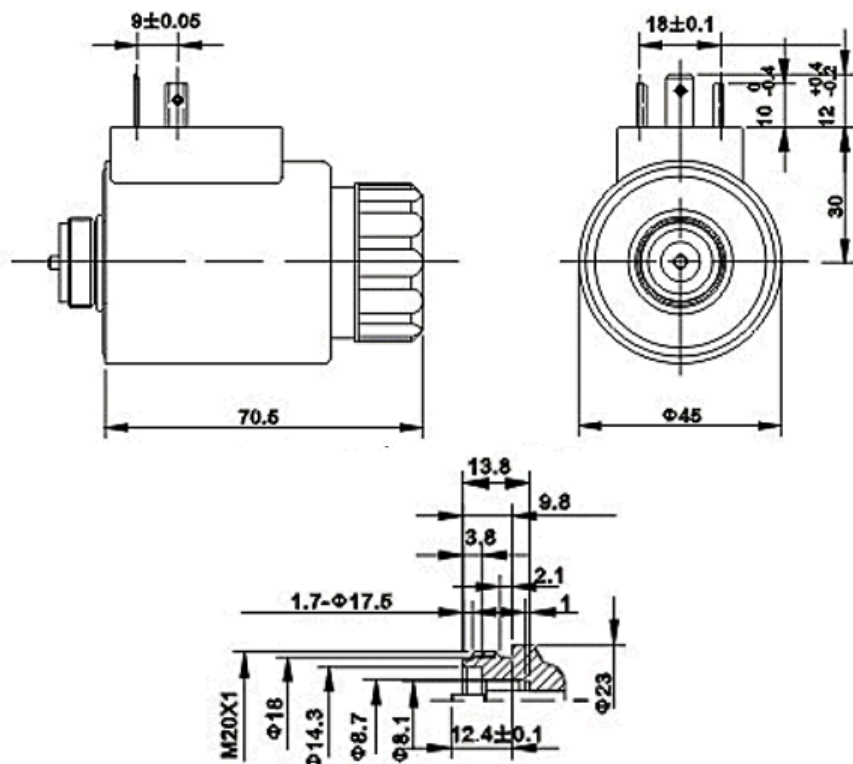
## TECHNICAL INFORMATION

Max flow rate (l/min)		80
Max working pressure (Mpa)	A,B, P Port	31.5
	T Port	16
Weight (Kgs)	Single solenoid	1.6
	Double solenoid	2.2
Hydraulic fluid		Mineral oil
Seal material		NBR seals
Temperature range (°C)		-30 to +80
Viscosity range (mm <sup>2</sup> /s)		2.8 to 500
Oil cleanliness class according to ISO4406		Class 20/18/15

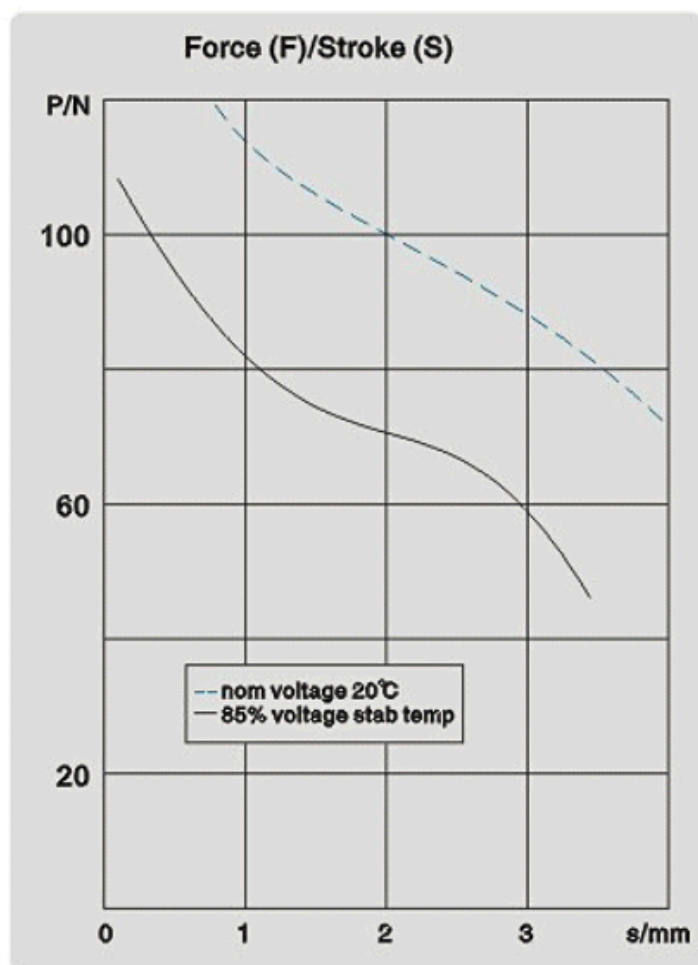
## SUBPLATE DIMENSIONS



# CETOP 3 SOLENOID VALVES



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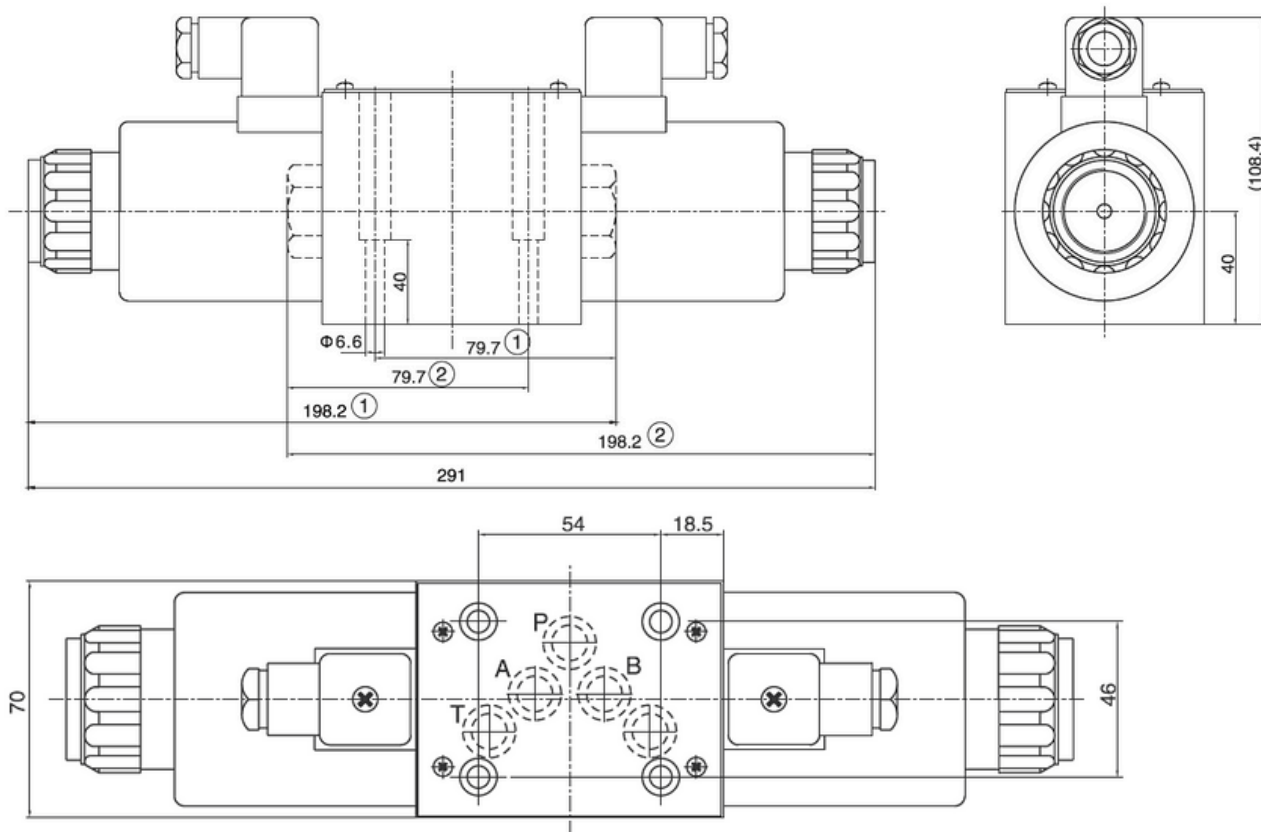


Rated voltage (v)	DC 12, 24 AC 110, 220
Rated force (N)	50
Rated stroke (mm)	3
Total stroke (mm)	6.5
Duty cycle (%)	100
Insulation class	B
Max operation frequency (t/h)	12000
Supply voltage tolerance (5)	+10 - 15
Protection class	IP65
Working pressure (Mpa)	21
Power consumption (W)	32
Working life (t)	10X10
Weight of armature (kg)	0.05

# CETOP 5 SOLENOID VALVES

A CETOP 5 solenoid valve is an electrically operated directional valve for medium-to-high flow hydraulic systems. Following the CETOP 5 (ISO 4401-05) standard, it offers higher flow than CETOP 3 and suits demanding industrial and mobile applications.

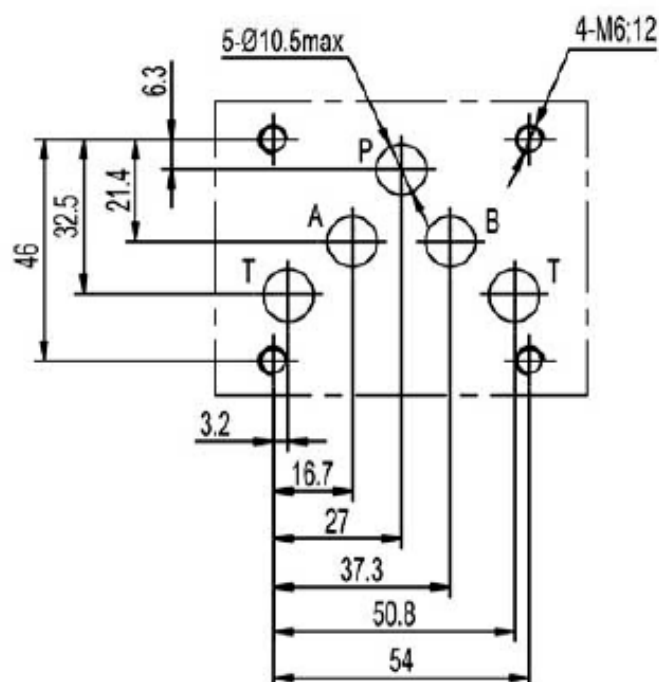
## VALVE DIMENSIONS



## TECHNICAL INFORMATION

Max flow rate (l/min)		120
Max working pressure (Mpa)	A, B, P Port	31.5
	T Port	16
Weight (Kgs)	Single solenoid	4.7
	Double solenoid	6.2
Hydraulic fluid		Mineral oil
Seal material		NBR seals
Temperature range (°C)		-30 to +80
Viscosity range (mm <sup>2</sup> /s)		2.8 to 500
Oil cleanliness class according to ISO4406		Class 20/18/15

## SUBPLATE DIMENSIONS







# CETOP 3 & 5 SOLENOID VALVES

## SPOOL SYMBOLS

SPRING OFFSET 2 POSITION	SYMBOLS (STANDARD)	SPRING CENTERED 3 POSITION	SYMBOLS (STANDARD)	NO SPRING DETENTED 2 POSITION	SYMBOLS (STANDARD)
2A2		3C2		2D2	
2A3		3C3		2D3	
2A14		3C4		2D4	
2A2L		3C40		2D40	
2A3L		3C5		2D7	
2A14L		3C6		2D2A	
2B2		3C60		2D3A	
2B3		3C7		2D4A	
2B8		3C8		2D40A	
2B29		3C9		2D5A	
2B2L		3C10		2D60A	
2B3L		3C11		2D7A	
2B8L		3C12		2D9A	
2B29L		3C25		2D10A	
		3C29		2D11A	
		3C48		2D12A	
		3C94			

# CETOP 3 & 5 SOLENOID VALVES

## SPOOL SYMBOLS

SPRING OFFSET 2 POSITION	SYMBOLS (STANDARD)	SYMBOLS (ALTERNATED)	SPRING OFFSET 2 POSITION	SYMBOLS (STANDARD)	SYMBOLS (ALTERNATED)
2B2A(L)			2B2B(L)		
2B3A(L)			2B3B(L)		
2B4A(L)			2B4B(L)		
2B40A(L)			2B40B(L)		
2B5A(L)			2B5B(L)		
2B6A(L)			2B6B(L)		
2B60A(L)			2B60B(L)		
2B7A(L)			2B7B(L)		
2B8A(L)			2B8B(L)		
2B9A(L)			2B9B(L)		
2B10A(L)			2B10B(L)		
2B11A(L)			2B11B(L)		
2B12A(L)			2B12B		
2B25A(L)			2B25B(L)		
2B29A(L)			2B29B(L)		
2B48A(L)			2B48B(L)		

# CETOP 5 SOLENOID VALVES

## SPOOL SYMBOLS

### HOW TO ORDER

PRODUCT TYPE	SIZE	SPOOL SYMBOL	INPUT VOLTAGE
F5	2 : NG6 3 : NG10	REFER TO ABOVE SPOOL SYMBOLS	D1 : 12V DC D2 : 24V DC D3 : 48V DC A1 : 110V AC A2 : 220V AC

### EXAMPLES

F5-03-3C2-D1



F5-02-2B2-A1

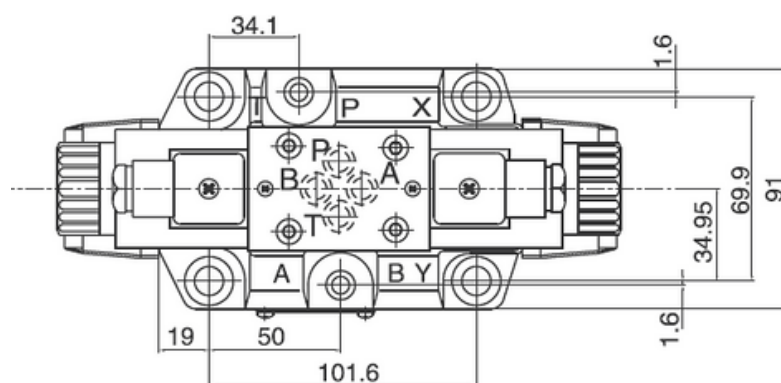
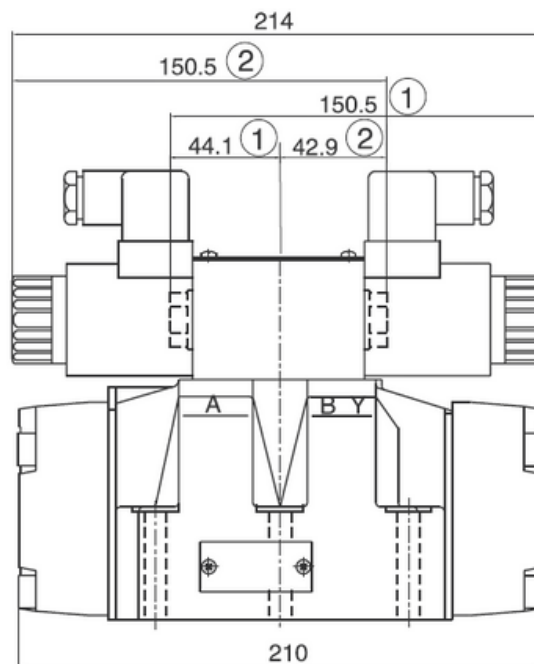
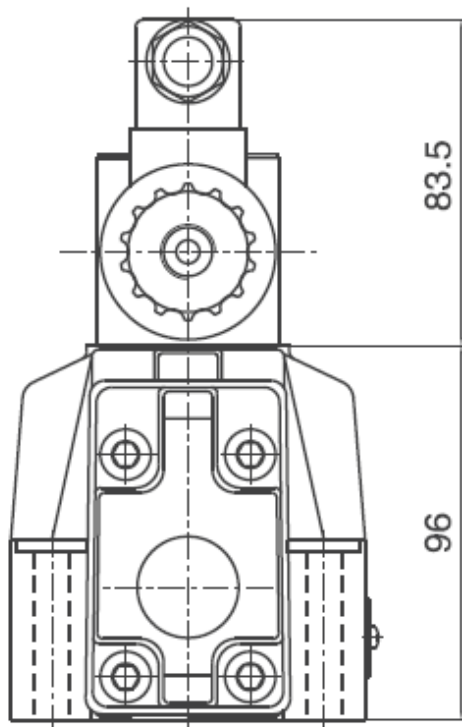




# CETOP 7 SOLENOID VALVES

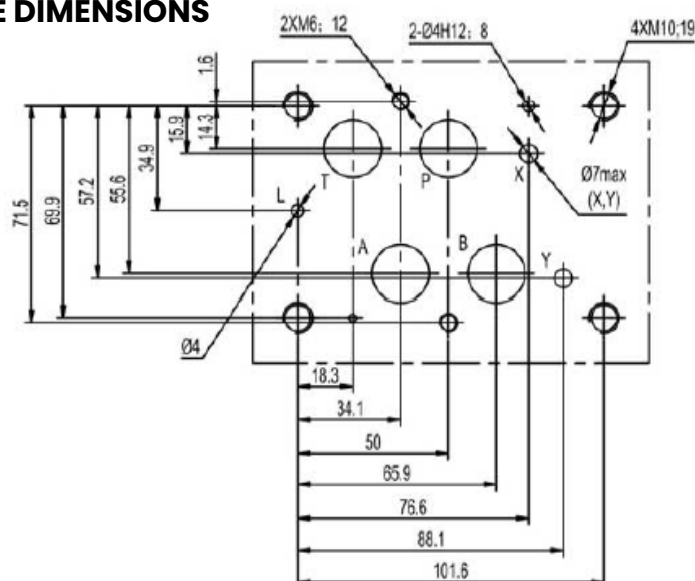
A CETOP 7 solenoid valve is a high-flow, electrically operated hydraulic valve with a standardized ISO 4401-07 mounting pattern, ideal for heavy-duty industrial and mobile applications.

## VALVE DIMENSIONS



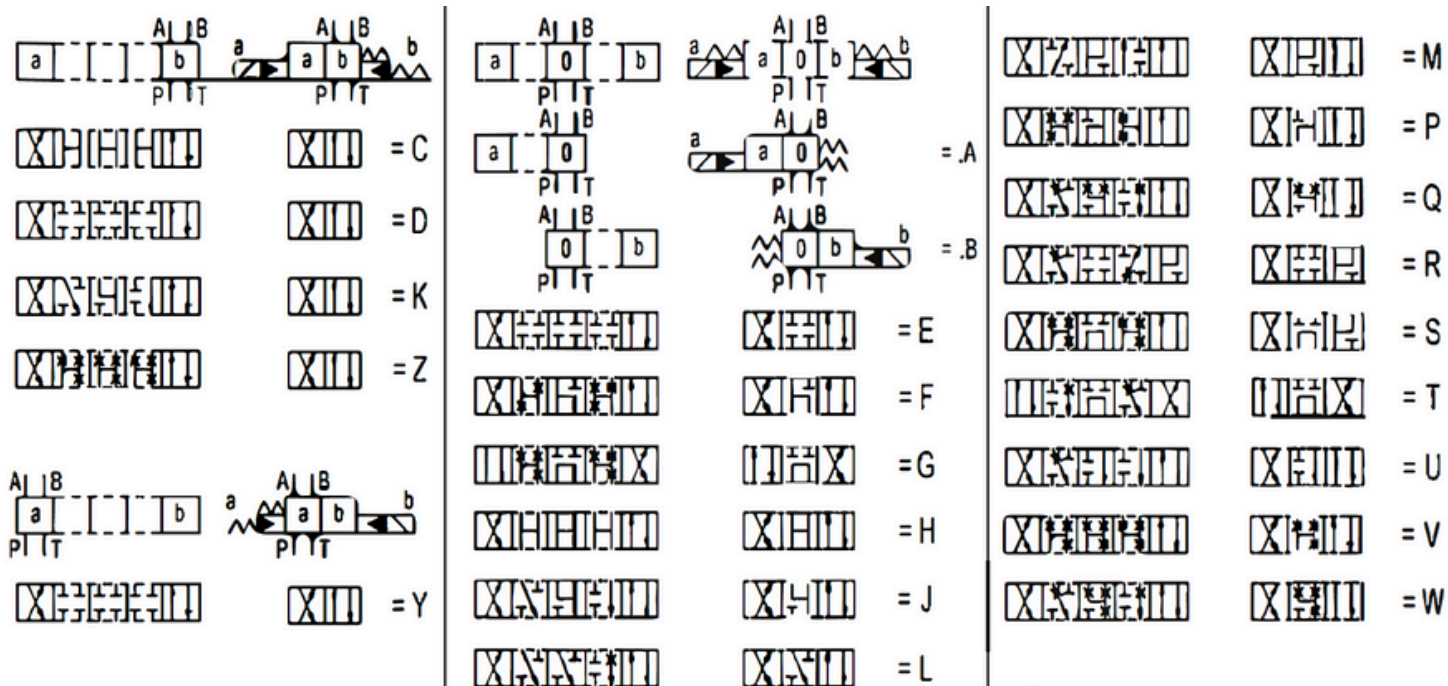
Max flow rate L/min)			300
Max working pressure (MPa)	A.B, P port		31.5
	T port	External drain	25
		Internal drain	16
	Y port	External drain	16
Weight (g)	Pilot valve with single solenoid		1.6
	Pilot valve with double solenoid		2.2
	Valve		6.3
Hydraulic fluid			Mineral oil
Seal material			NBR seals
Temperature range (°C)			-30 to +80
Viscosity range (mm2/s)			2.8 to 500
Oil cleanliness class according to ISO4406			Class 20/18/15

## SUBPLATE DIMENSIONS



# CETOP 7 SOLENOID VALVES

## SPOOL SYMBOLS



### HOW TO ORDER

PRODUCT TYPE	SIZE	SPOOL SYMBOL	SERIES NUMBER	OIL CONTROL TYPE	PRE LOAD VALVE
F5	16	REFER TO ABOVE SPOOL SYMBOLS	6X SERIES	REFER TO BELOW FOR OIL CONTROL LIST	NO CODE WITHOUT, P4.5 WITH PRE LOAD VALVE

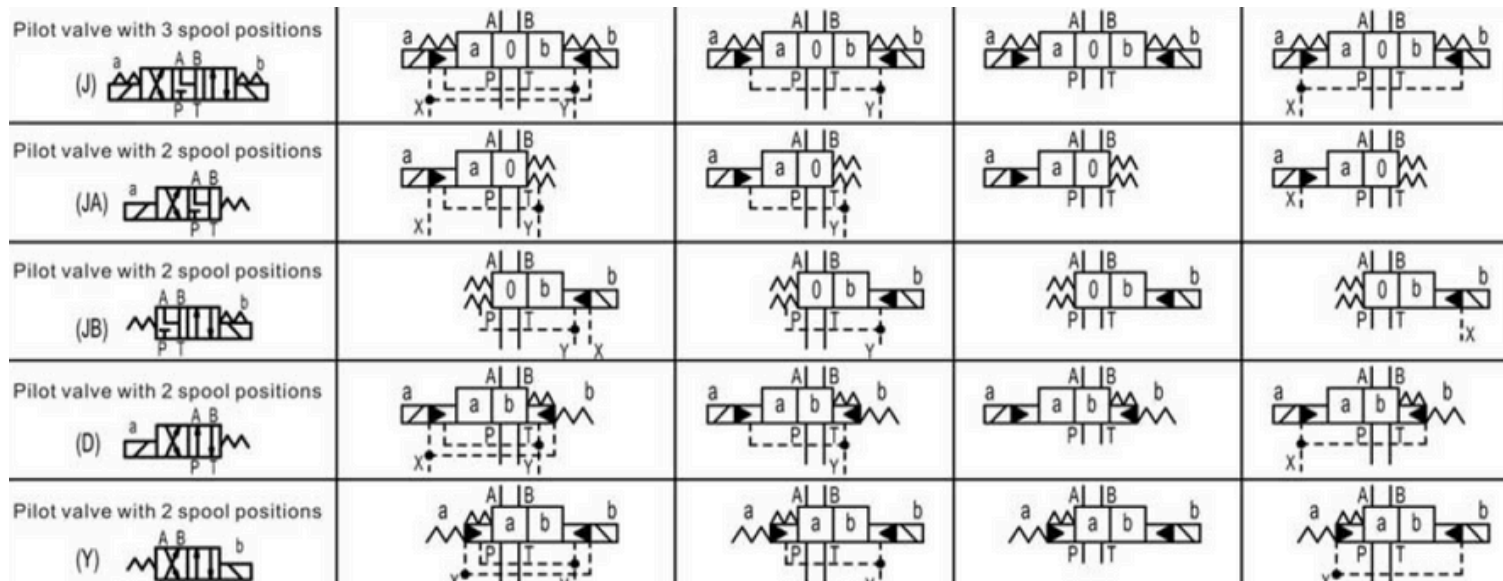
Valve with spring centred zero position

External pilot pressure, external drain (no code)

Internal pilot pressure, external drain (E)

Internal pilot pressure, internal drain (ET)

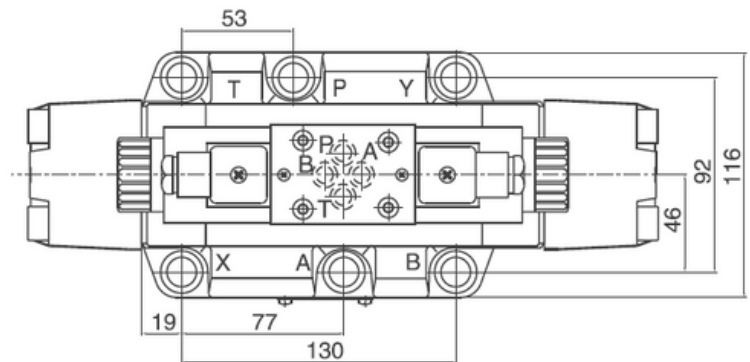
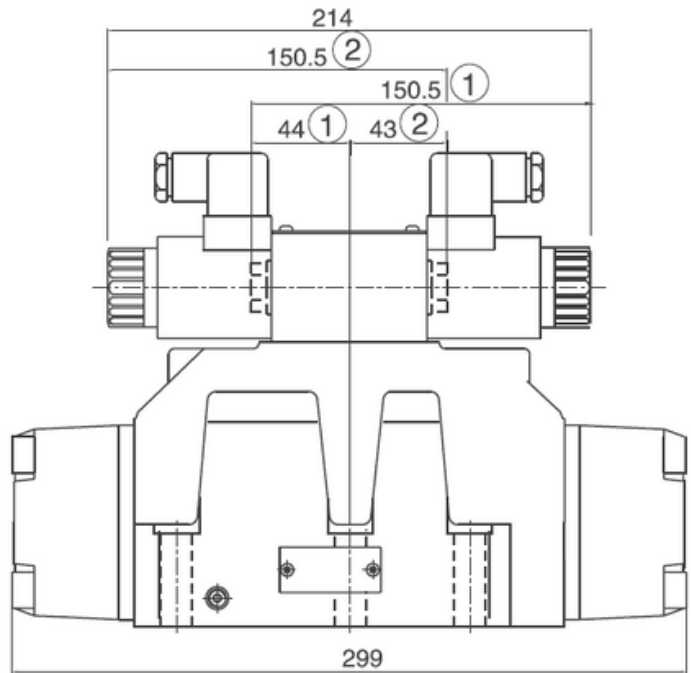
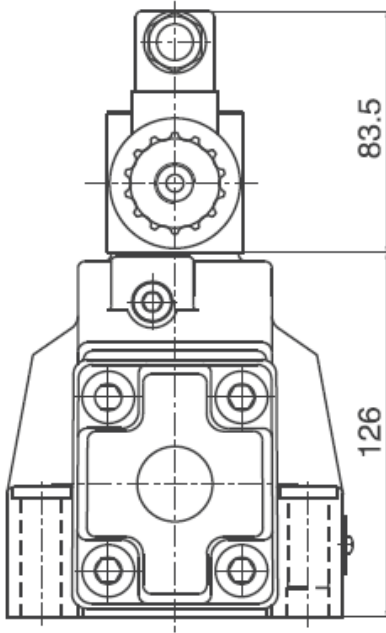
External pilot pressure, internal drain (T)



# CETOP 8 SOLENOID VALVES

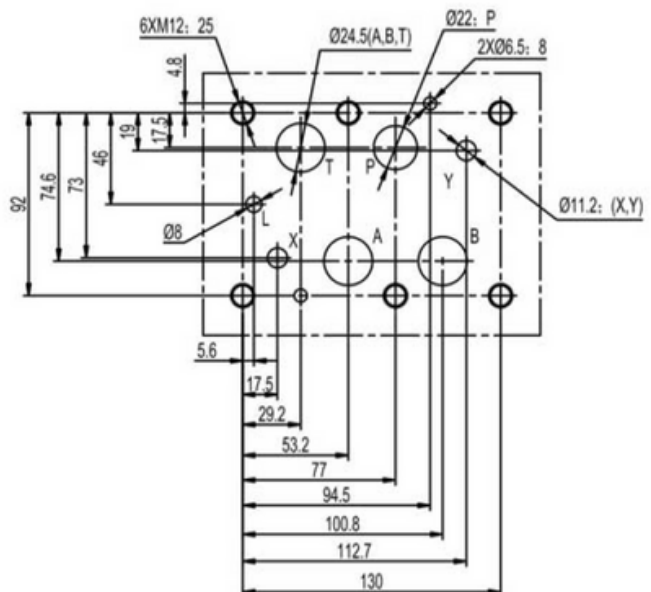
A CETOP 8 solenoid valve is a robust, high-flow directional control valve with ISO 4401-08 mounting, suited for demanding hydraulic applications in industrial and mobile equipment.

## VALVE DIMENSIONS



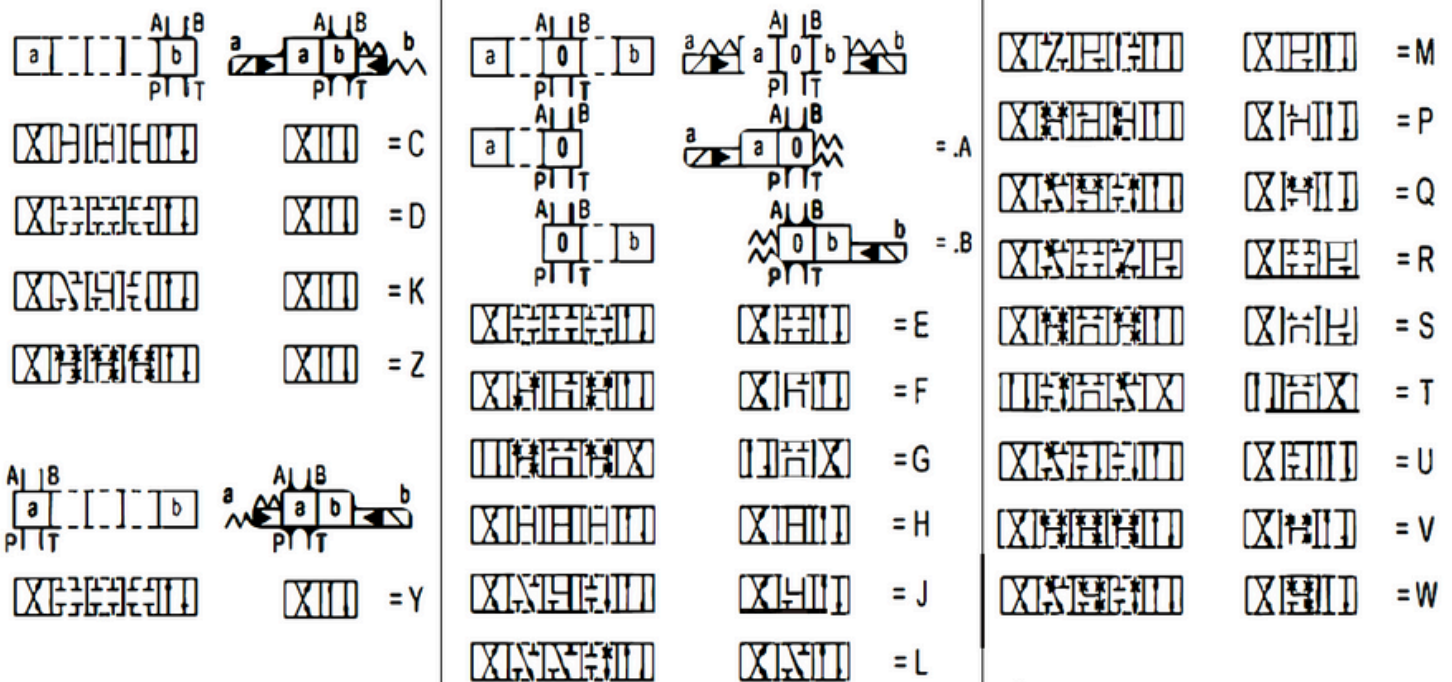
Max flow rate L/min)			500
Max working pressure (MPa)	A.B, P port		31.5
	T port	External drain	25
		Internal drain	16
	Y port	External drain	16
Weight (g)	Pilot valve with single solenoid		1.6
	Pilot valve with double solenoid		2.2
	Valve		16
Hydraulic fluid			Mineral oil
Seal material			NBR seals
Temperature range (°C)			-30 to +80
Viscosity range (mm2/s)			2.8 to 500
Oil cleanliness class according to ISO4406			Class 20/18/15

## SUBPLATE DIMENSIONS



# CETOP 8 SOLENOID VALVES

## SPOOL SYMBOLS



### HOW TO ORDER

PRODUCT TYPE	SIZE	SPOOL SYMBOL	SERIES NUMBER	OIL CONTROL TYPE	PRE LOAD VALVE
F5	25	REFER TO ABOVE SPOOL SYMBOLS	6X SERIES	REFER TO BELOW FOR OIL CONTROL LIST	NO CODE WITHOUT, P4.5 WITH PRE LOAD VALVE

Valve with spring centred zero position

External pilot pressure, external drain (no code)

Internal pilot pressure, external drain (E)

Internal pilot pressure, internal drain (ET)

External pilot pressure, internal drain (T)

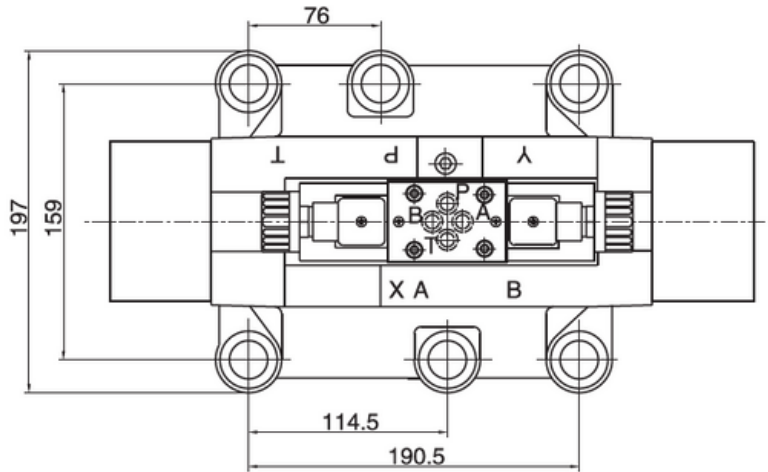
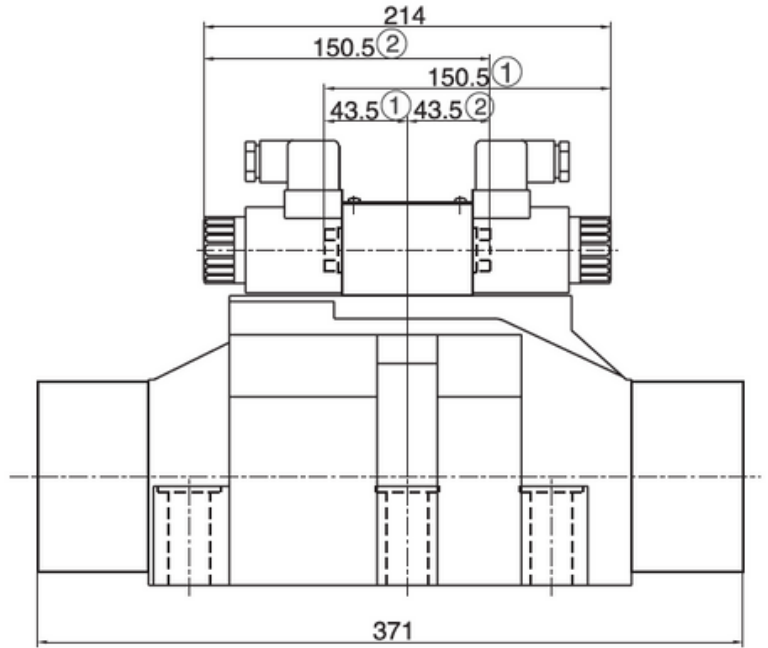
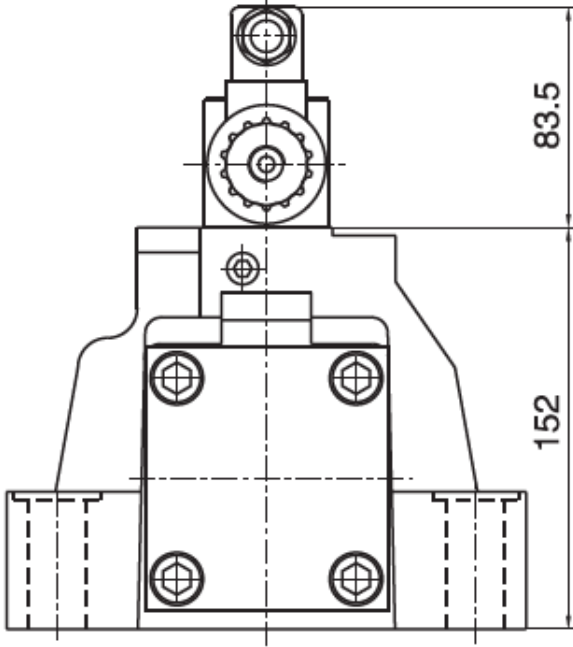
Pilot valve with 3 spool positions (J)					
Pilot valve with 2 spool positions (JA)					
Pilot valve with 2 spool positions (JB)					
Pilot valve with 2 spool positions (D)					
Pilot valve with 2 spool positions (Y)					



# CETOP 10 SOLENOID VALVES

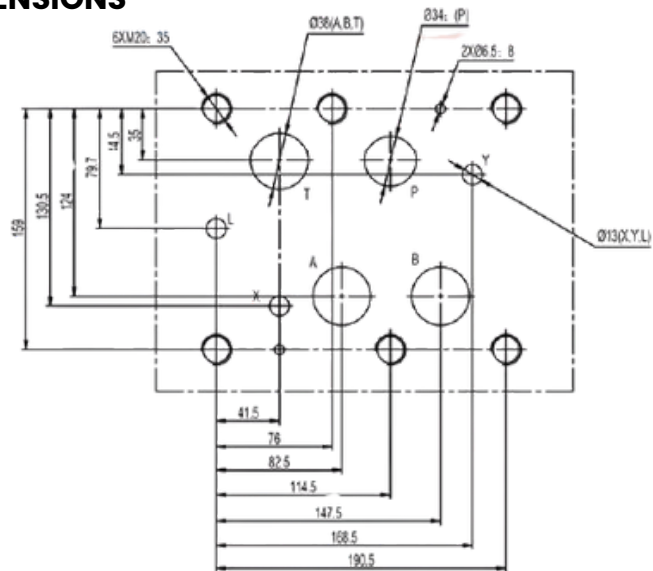
A CETOP 10 solenoid valve is a heavy-duty, high-flow hydraulic valve with ISO 4401-10 mounting, used for controlling fluid direction in large industrial and mobile systems.

## VALVE DIMENSIONS



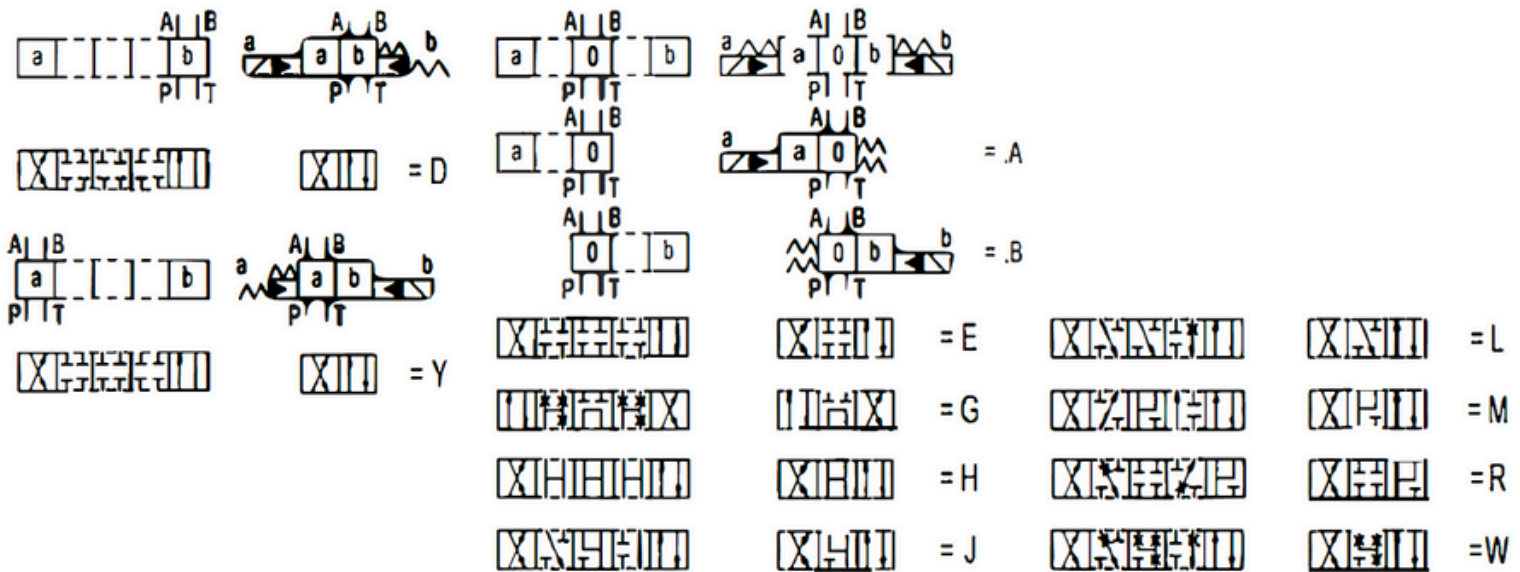
Max flow rate L/min)		1100
Max working pressure (MPa)	A.B, P port	
	T port	External drain
		Internal drain
	Y port	External drain
Weight (g)	Pilot valve with single solenoid	
	Pilot valve with double solenoid	
	Valve	
Hydraulic fluid		Mineral oil
Seal material		NBR seals
Temperature range (°C)		-30 to +80
Viscosity range (mm <sup>2</sup> /s)		2.8 to 500
Oil cleanliness class according to ISO4406		Class 20/18/15

## SUBPLATE DIMENSIONS





# CETOP 10 SOLENOID VALVES SPOOL SYMBOLS



## HOW TO ORDER

PRODUCT TYPE	SIZE	SPOOL SYMBOL	SERIES NUMBER	OIL CONTROL TYPE	PRE LOAD VALVE
F5	32	REFER TO ABOVE SPOOL SYMBOLS	6X SERIES	REFER TO BELOW FOR OIL CONTROL LIST	NO CODE WITHOUT, P4.5 WITH PRE LOAD VALVE

### Valve with spring centred zero position

**External pilot pressure,  
external drain (no code)**

**Internal pilot pressure,  
external drain (E)**

**Internal pilot pressure,  
internal drain (ET)**

**External pilot pressure,  
internal drain (T)**

