Axial piston variable pump
A10VO Series 32


A10VO 45ED/32...

- Optimized medium pressure pump for high power machines
- Sizes 45 to 180
- Nominal pressure 280 bar
- Maximum pressure 350 bar
- Open circuit

Features

- Variable displacement pump with axial piston rotary group of swashplate design for hydrostatic drives in open circuit
- Flow is proportional to the drive speed and displacement.
- Flow can be infinitely varied by controlling the swashplate angle.
- Hydrostatically unloaded cradle bearing
- Port for measurement sensor on high pressure port for all sizes with port plate 22 and 32
- Low noise level
- Increased functional reliability
- High efficiency
- Good power to weight ratio
- Universal through drive for all sizes with port plate 22 and 32
- Optional pulsation damping

Contents

TAIZHOU
ETERNAL HYDRAULIC

Type code

01	02	03	04		05	06		07	08	09	10	11	12
A10V	**O**			**/**	**32**		**–**	**V**					

Axial piston unit

01	Swashplate design, variable, nominal pressure 280 bar, maximum pressure 350 bar	**A10V**

Operating mode

02	Pump, open circuit	**O**

Sizes (NG)

03	Geometric displacement, see technical data on page 7	**45**	**71**	**100**	**140**	**180**

Control devices

04	Pressure controller	hydraulic				●	●	●	●	●	**DR**
	with flow controller	hydraulic	X-T open			●	●	●	●	●	**DRF**
			X-T plugged	with flushing function		●	●	●	●	●	**DRS**
			X-T plugged	without flushing function		●	●	●	●	●	**DRSC**
	Pressure cut-off	hydraulic	remotely controlled			●	●	●	●	●	**DRG**
		electric	negative control		*U* = 12 V	●	●	●	●	●	**ED71**
					U = 24 V	●	●	●	●	●	**ED72**
		electric	positive control		*U* = 12 V	●	●	●	●	●	**ER71[1)]**
					U = 24 V	●	●	●	●	●	**ER72[1)]**
	Differential pressure control	electric	negative control	see data sheet 92709		●	●	●	●	○	**EF.**
	Power controller with										
	Pressure cut-off	hydraulic	Beginning of control	to	50 bar	●	●	●	●	●	**LA5D**
				from	51 to 90 bar	●	●	●	●	●	**LA6D**
					91 to 160 bar	●	●	●	●	●	**LA7D**
					161 to 240 bar	●	●	●	●	●	**LA8D**
				above	240 bar	●	●	●	●	●	**LA9D**
	Pressure cut-off and flow control	hydraulic	Beginning of control	see LA.D		●	●	●	●	●	**LA.DS**
	pressure cut-off Remotely controlled	hydraulic	Beginning of control	see LA.D		●	●	●	●	●	**LA.DG**
	separate flow control	hydraulic	Beginning of control	see LA.D		●	●	●	●	●	**LA.S**

Series

05	Series 3, index 2	**32**

Directions of rotation

06	Viewed on drive shaft	clockwise	**R**
		counter-clockwise	**L**

Seal

07	FKM (fluoroelastomer)	**V**

Drive shaft

08	Splined shaft	Standard shaft	●	●	●	●	●	**S**
	ANSI B92.1a	same as shaft "S", but for higher torque	●	●	–	–	–	**R**
		reduced diameter, limited suitability for through drive (see the table of values, page 8)	●	●	●	●	–	**U**
		same as shaft "U", but for higher torque, limited suitability for through drive (see table of values, page 8)	○	●	●	●	●	**W**

1) Note the project planning notes on page 17

01	02	03	04		05	06		07	08	09	10	11	12
A10V	**O**			**/**	**32**		**-**	**V**					

Mounting flange

			45	71	100	140	180	
09	ISO 3019-1 (SAE)	SAE B; 2-hole	●	–	–	–	–	**C**
		SAE C; 2-hole	–	●	●	●	–	
		SAE C; 4-hole	●	●	–	–	–	**D**
		SAE D; 4-hole	–	–	●	●	●	
			–	●	–	–	–	**U**

Working port

			45	71	100	140	180	
10	SAE flange ports (Port plates and through drive assignment, see position 11)	rear, metric fastening thread (only without through drive "N00")	●	●	●	●	●	**11**
		at top, at bottom, on opposite side, metric fastening thread	●	●	●	●	●	**12**
		at top, at bottom, on opposite side, metric fastening thread, with universal through drive U..; **without** pulsation damping	●	●	●	●	●	**22**[1]
		at top, at bottom, on opposite side, metric fastening thread, with universal through drive U..; **with** pulsation damping	○	●	○	○	●	**32**[1]

Through drive (for mounting options, see page 61)

					45	71	100	140	180	
11	Flange ISO 3019-1		Hub for splined shaft[2]							
	Diameter	Attachment[4]	Diameter							
	without through drive	(**Only for port plate 12**)			●	●	●	●	●	**N00**
	82-2 (A)		5/8 in	9T 16/32DP	●	●	●	●	–	**K01**
			3/4 in	11T 16/32DP	●	●	●	●	–	**K52**
	101-2 (B)		7/8 in	13T 16/32DP	●	●	●	●	–	**K68**
			1 in	15T 16/32DP	●	●	●	●	–	**K04**
	127-2 (C)		1 1/4 in	14T 12/24DP	–	●	●	●	–	**K07**
			1 1/2 in	17T12/24DP	–	–	●	●	–	**K24**
	127-4 (C)		1 1/4 in	14T 12/24DP	–	○	●	●	–	**K15**
	152-4 (D)		1 3/4 in	13T 8/16DP	–	–	–	●	–	**K17**
	without through drive[3]	(**Only for port plates 22 and 32**)			●	●	●	●	●	**U00**
	82-2 (A)		5/8 in	9T 16/32DP	○	●	●	●	●	**U01**
			3/4 in	11T 16/32DP	●	●	●	●	●	**U52**
	101-2 (B)		7/8 in	13T 16/32DP	●	●	●	●	●	**U68**
			1 in	15T 16/32DP	○	●	●	●	●	**U04**
	127-2 (C)		1 1/4 in	14T 12/24DP	–	●	●	●	●	**U07**
			1 1/2 in	17T 12/24DP	–	–	●	●	●	**U24**
	127-4 (C)		1 in	15T 16/32DP	○	○	●	●	○	**UE2**
			1 1/4 in	14T 12/24DP	–	–	●	●	●	**U15**
	152-4 (D)		1 3/4 in	13T 8/16DP	–	–	–	●	●	**U17**

Connectors for solenoids[5]

12	Without connector (without solenoid, only for hydraulic controls, without signs)	
	DEUTSCH molded connector, 2-pin – without suppressor diode	**P**

● = Available ○ = On request – = Not available

Notes

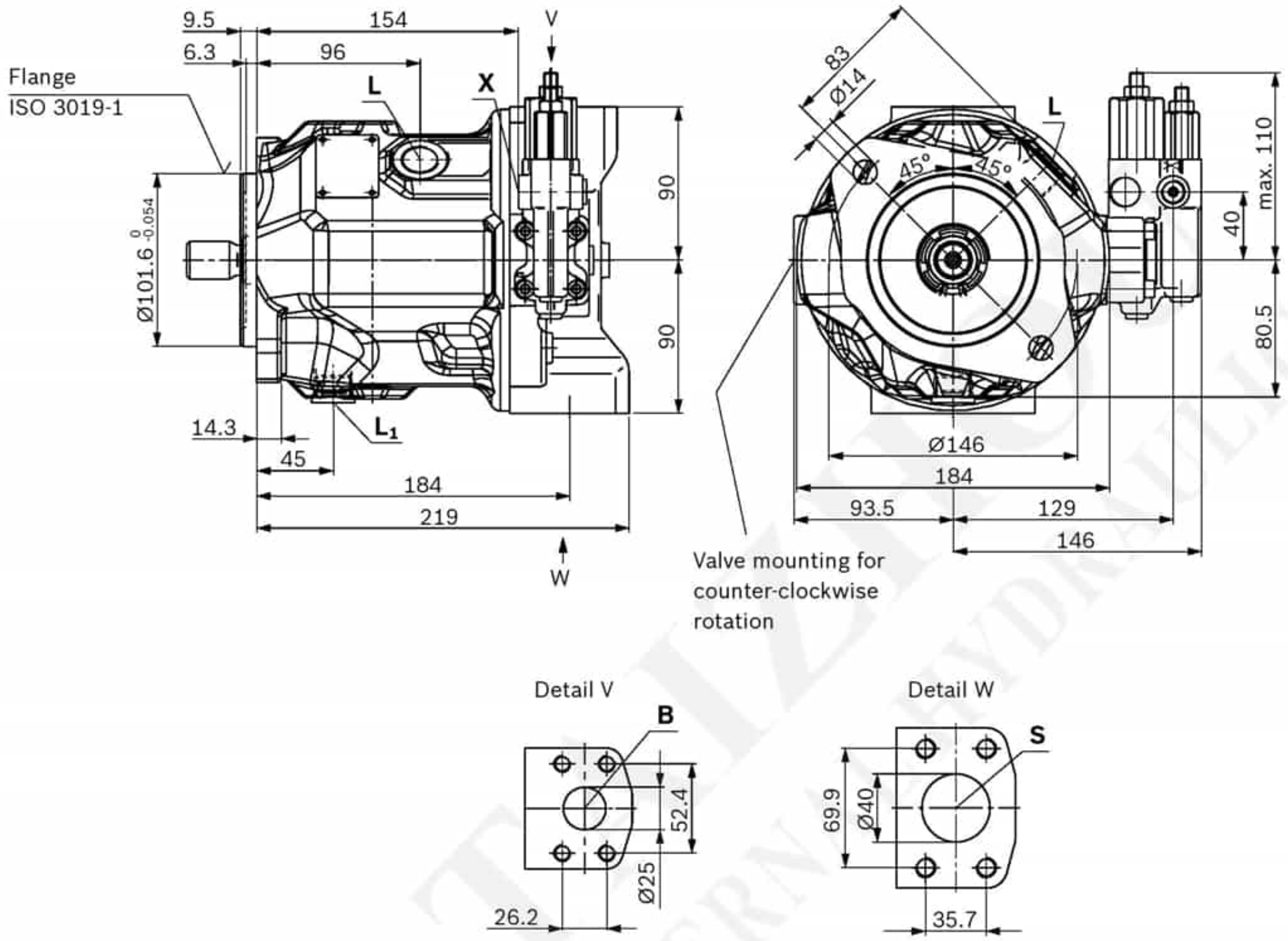
- Note the project planning notes on page 67.
- In addition to the type code, please specify the relevant technical data when placing your order.

1) Only with mounting flange (type code position 09) D or U
2) According to ANSI B92.1a (splined shafts according to SAE J744)
3) With through-drive shaft, without hub, without intermediate flange, closed on a functionally reliable basis with cover. For mounting kits, see data sheet 95581.
4) Mounting holes pattern viewed from through drive with control at top.
5) Connectors for other electric components may deviate.

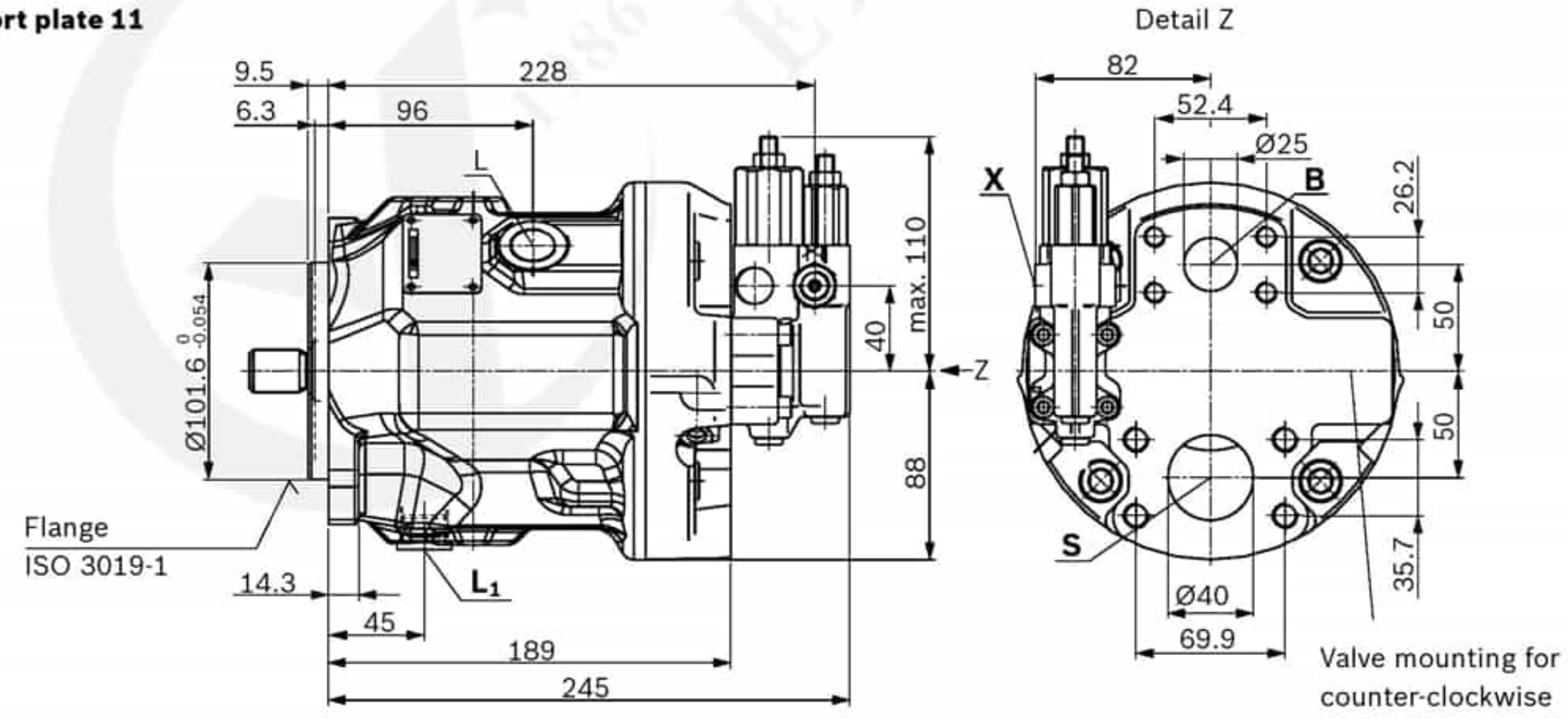
Dimensions, size 45

DRF, DRS, DRSC – Pressure flow controller, port plate 11 and 12; mounting flange C (SAE-B; 101-2)

▼ **Port plate 12**

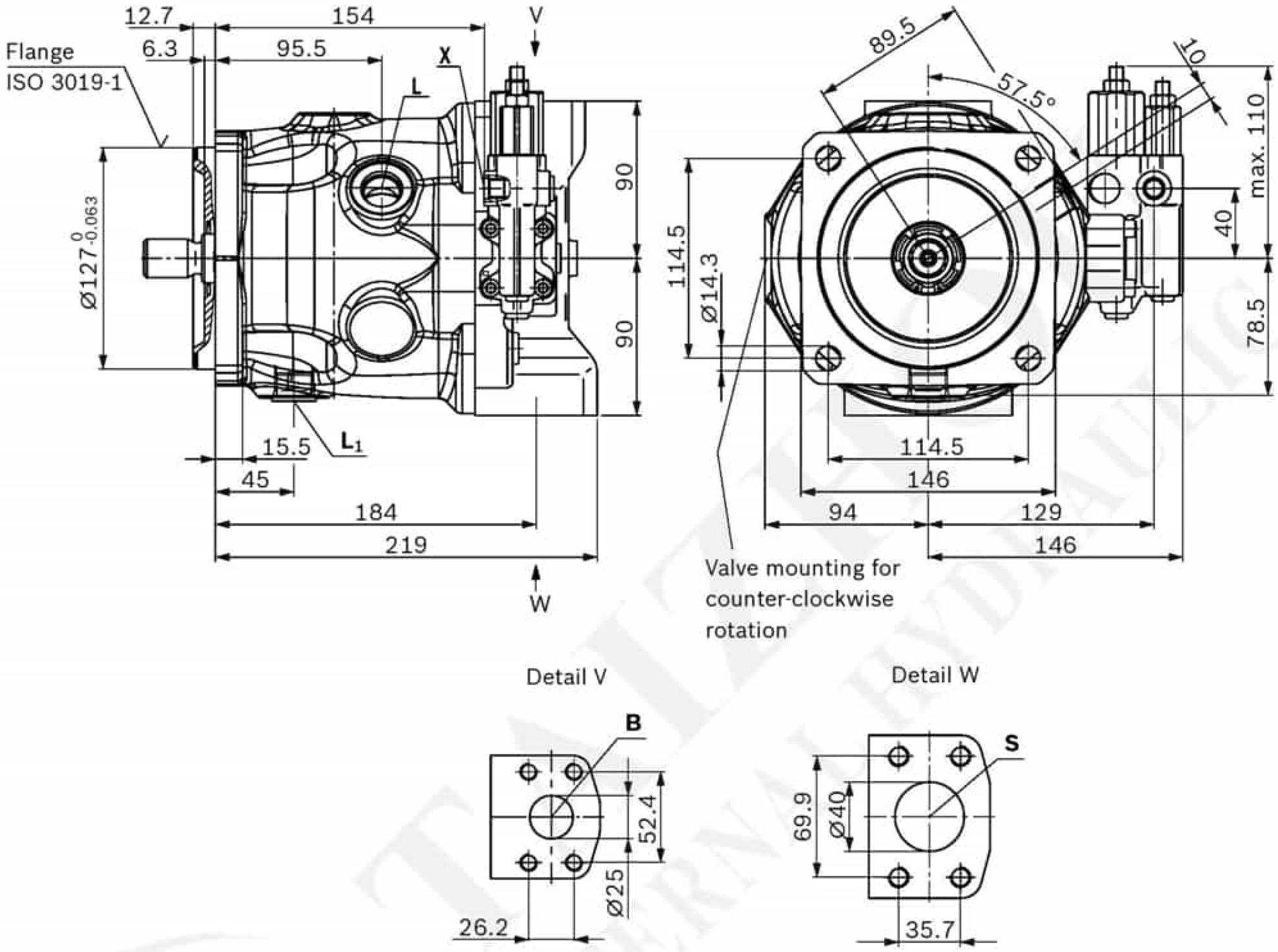


▼ **Port plate 11**

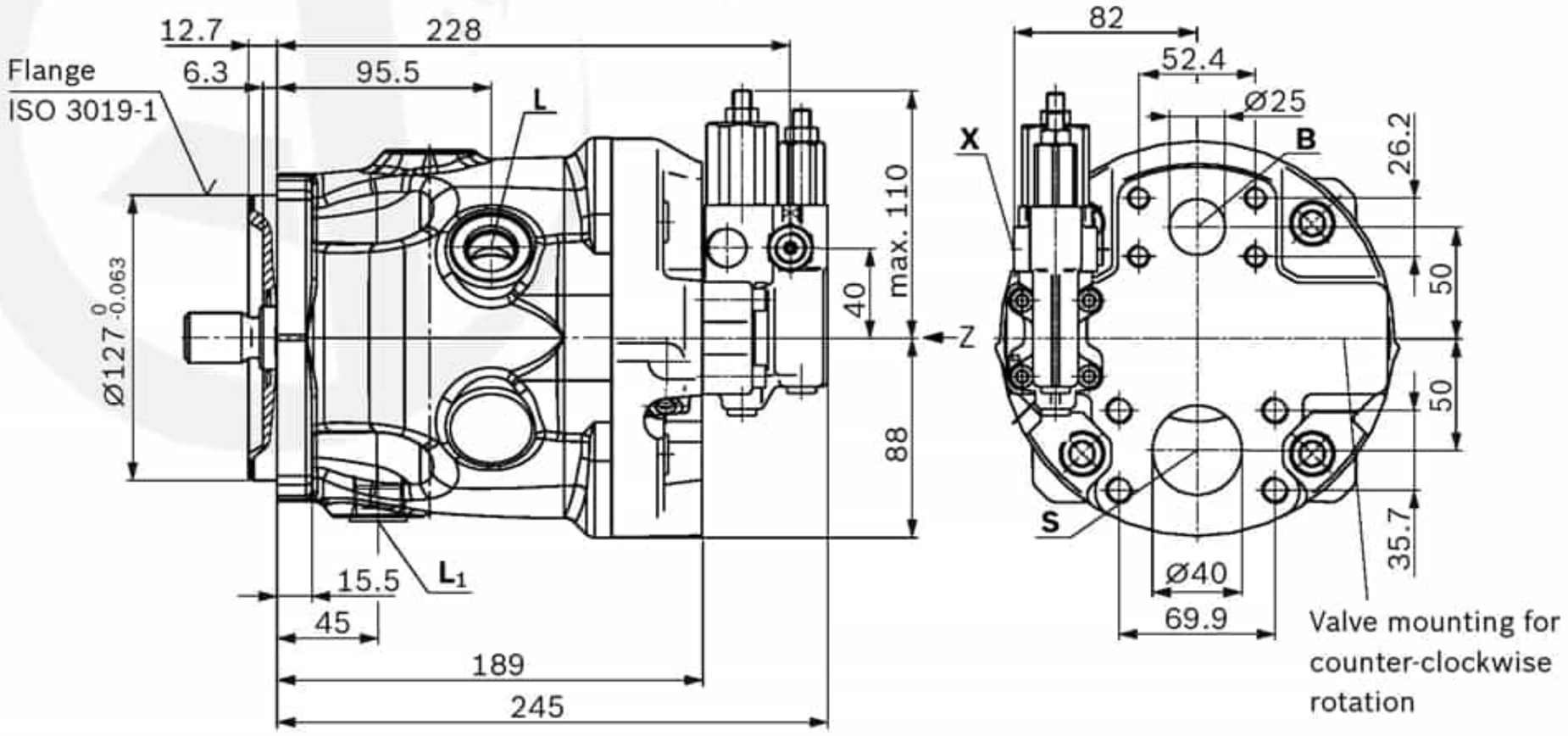


DRF, DRS, DRSC – Pressure flow controller, port plate 11 and 12; mounting flange D (SAE-C; 127-4)

▼ **Port plate 12**

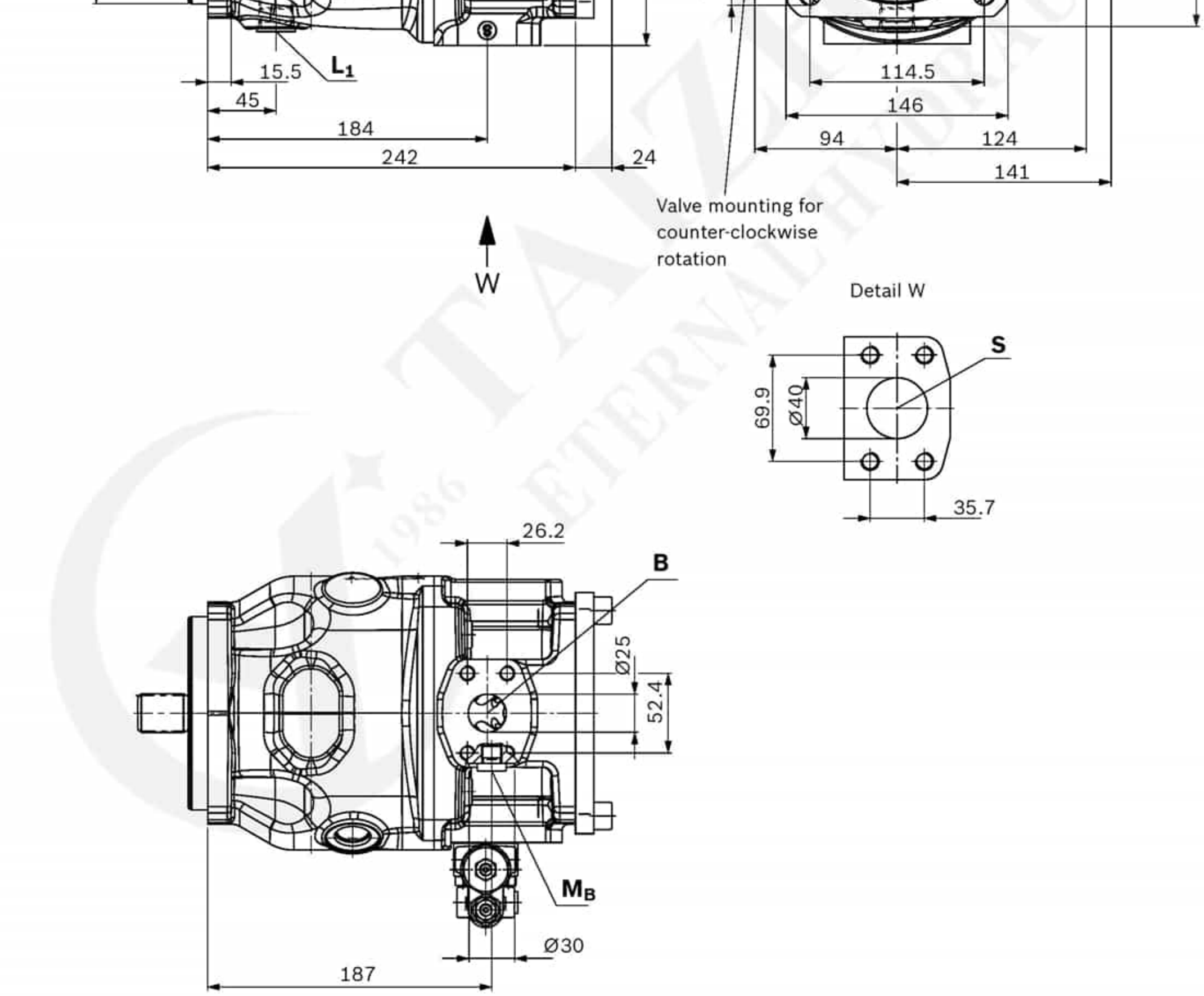


▼ **Port plate 11**



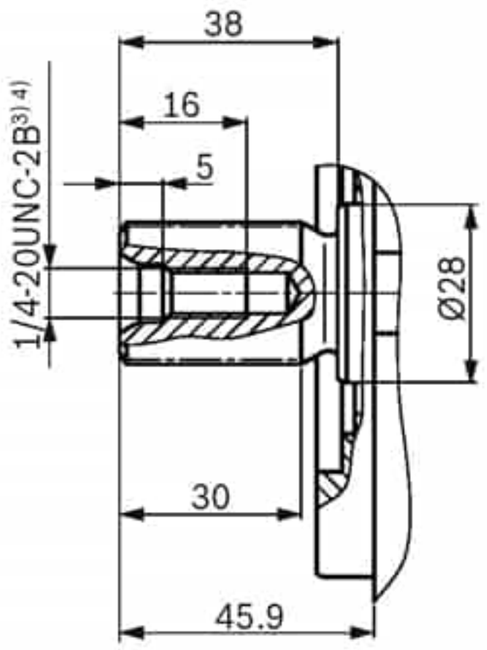
DRF, DRS, DRSC – Pressure flow controller, port plate 22; mounting flange D (SAE-C; 127-4)

▼ **Port plate 22**



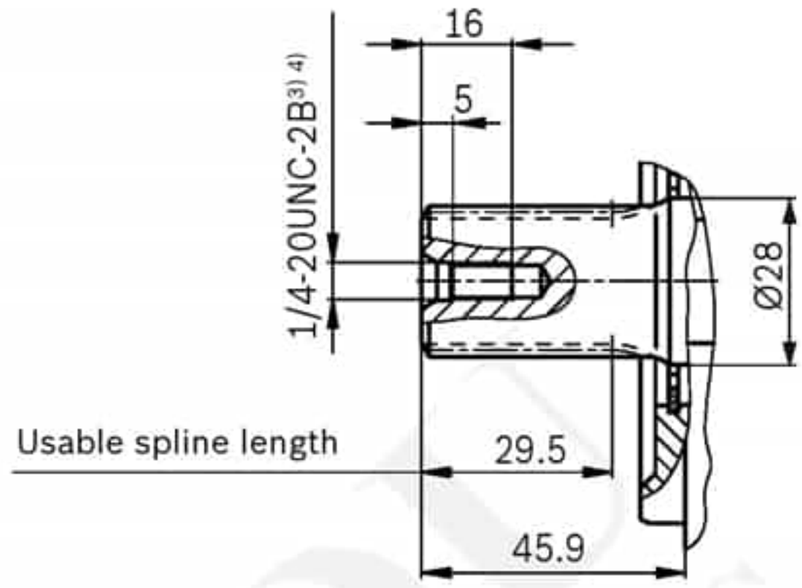
▼ **Splined shaft 1 in (SAE J744)**

S – 15T 16/32DP[1)]



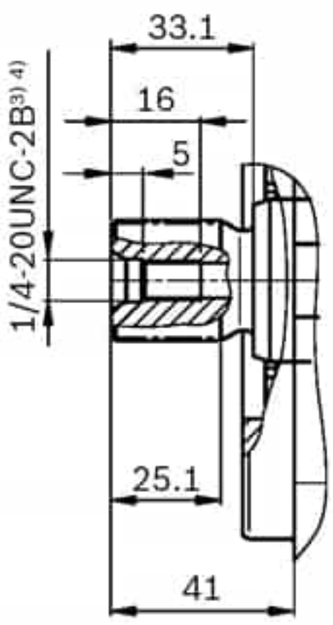
▼ **Splined shaft 1 in (SAE J744)**

R – 15T 16/32DP[1)2)]



▼ **Splined shaft 7/8 in (SAE J744)**

U – 13T 16/32DP[1)]

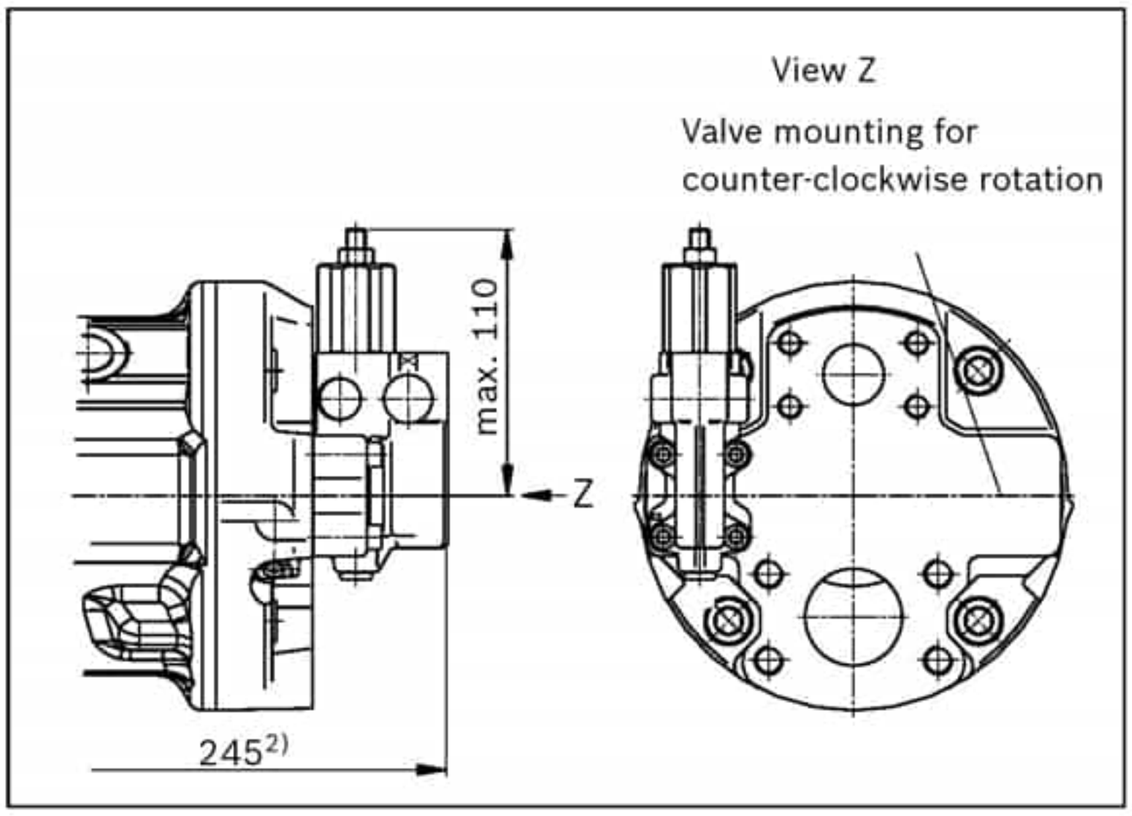


Ports		Standard	Size	p_{max} [bar][4)]	State[8)]
B	Working port (standard pressure series) Fastening thread	SAE J518[5)] DIN 13	1 in M10 x 1.5; 17 deep	350	O
S	Suction port (standard pressure series) Fastening thread	SAE J518[5)] DIN 13	1 1/2 in M12 x 1.75; 20 deep	10	O
L	Drain port	ISO 11926[6)]	7/8-14UNF-2B; 17 deep	2	O[7)]
L_1	Drain port	ISO 11926[6)]	7/8-14UNF-2B; 17 deep	2	X[7)]
X	Pilot pressure	ISO 11926	7/16-20 UNF-2A; 12 deep	350	O
M_B	Measuring pressure **B** (only with port plates 22 and 32)	DIN 3852-2[6)]	G 1/4 in; 12 deep	350	X

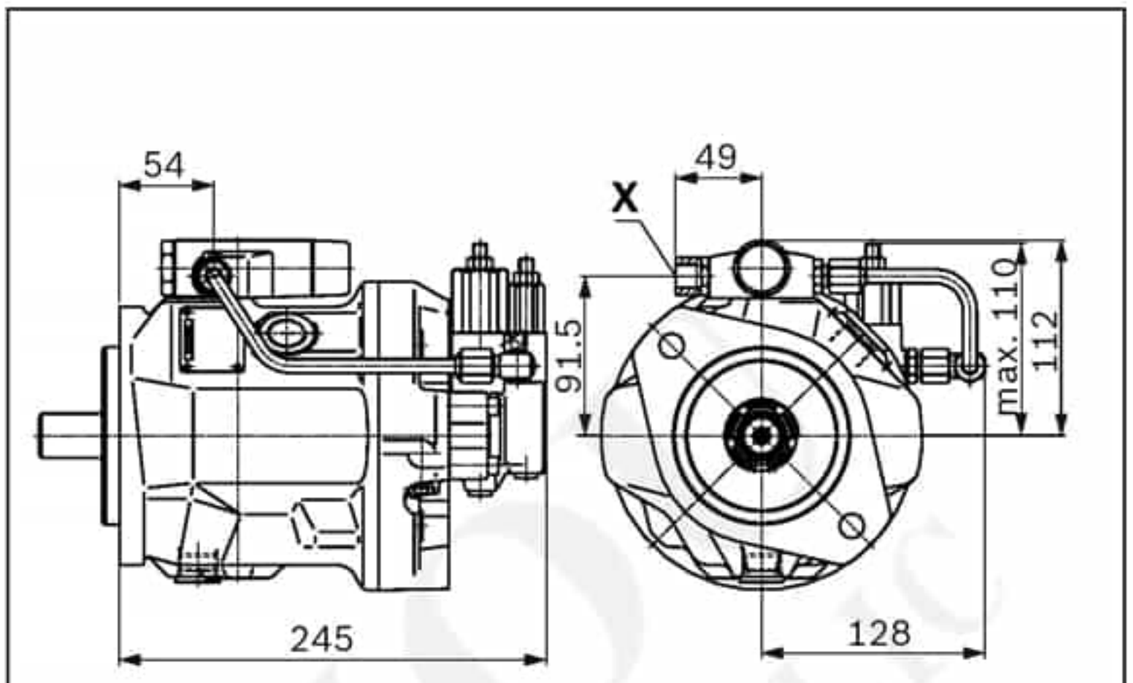
1) Involute spline according to ANSI B92.1a, 30° pressure angle, flat root, side fit, tolerance class 5
2) Splines according to ANSI B92.1a, spline runout is a deviation from standard SAE J744.
3) Thread according to ASME B1.1
4) Depending on the application, momentary pressure peaks can occur.
   Keep this in mind when selecting measuring devices and fittings.
5) Metric fastening thread is a deviation from standard.
6) The countersink may be deeper than specified in the standard.
7) Depending on the installation position, L or L_1 must be connected (also see installation instructions starting on page 64).
8) O = Must be connected (comes plugged)
   X = Plugged (in normal operation)

Port plate 11

▼ DR – Pressure controller; mounting flange C

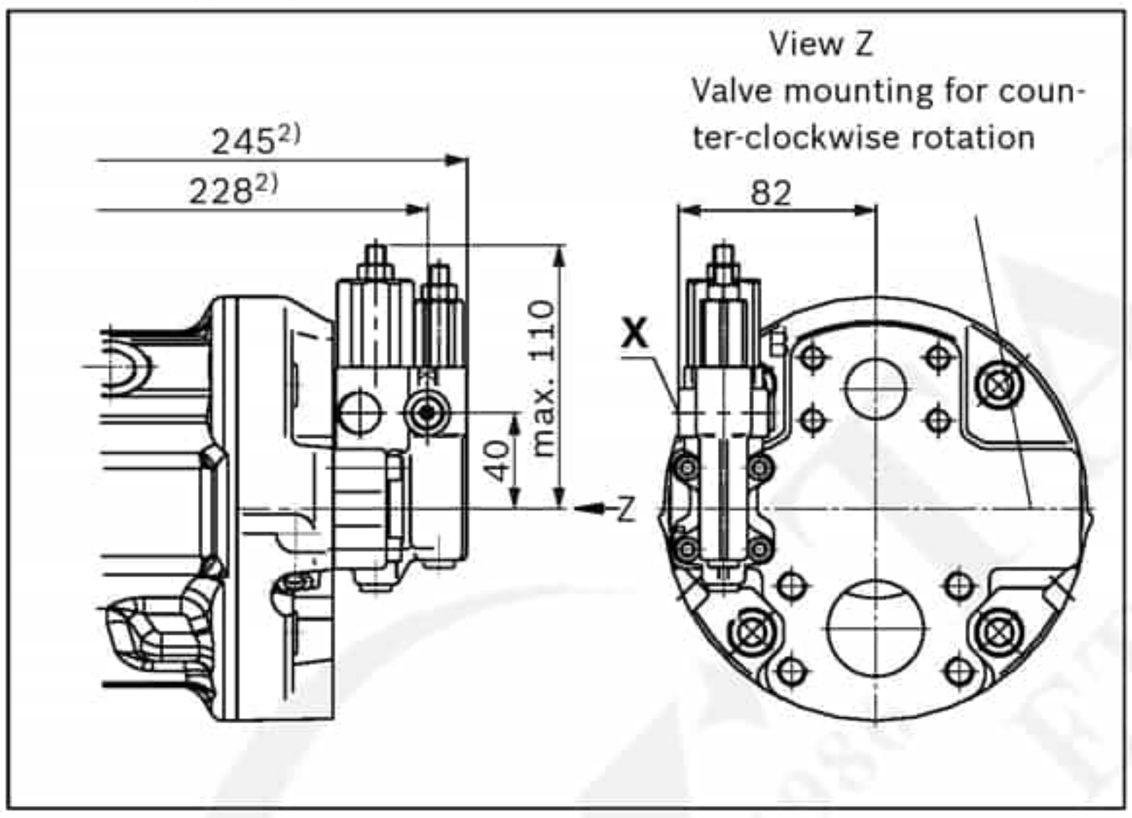


▼ LA.DS – Pressure, flow and power controller; mounting flange C

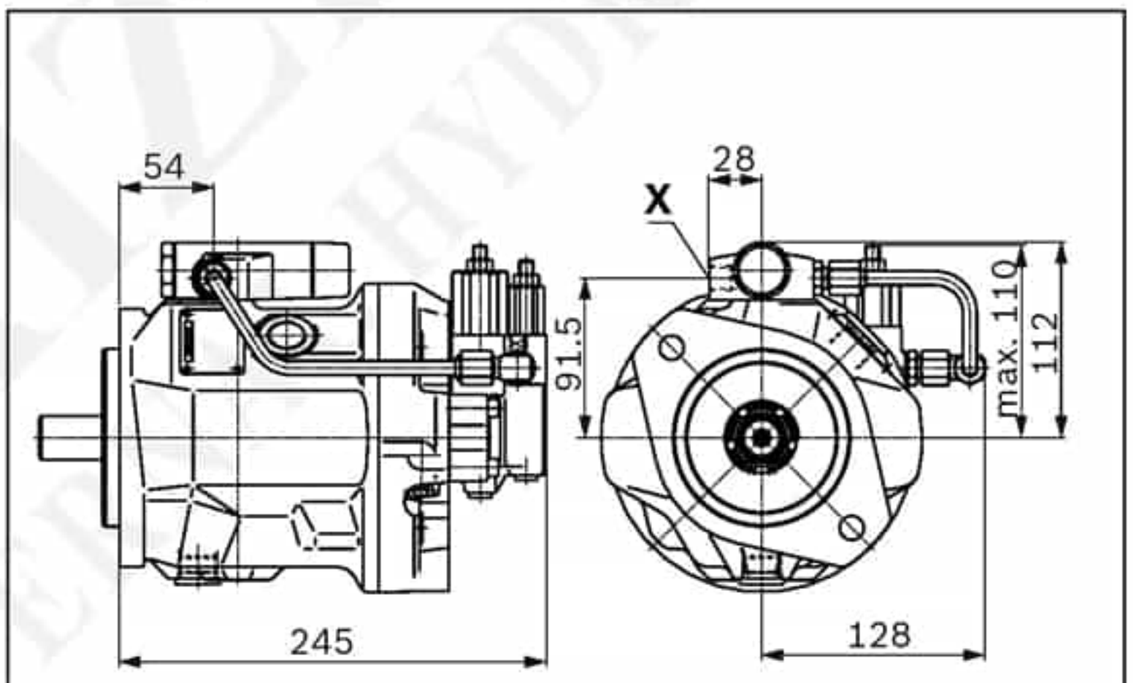


Valve mounting for counter-clockwise rotation see page 18 and 19

▼ DRG – Pressure controller, remotely controlled; mounting flange C

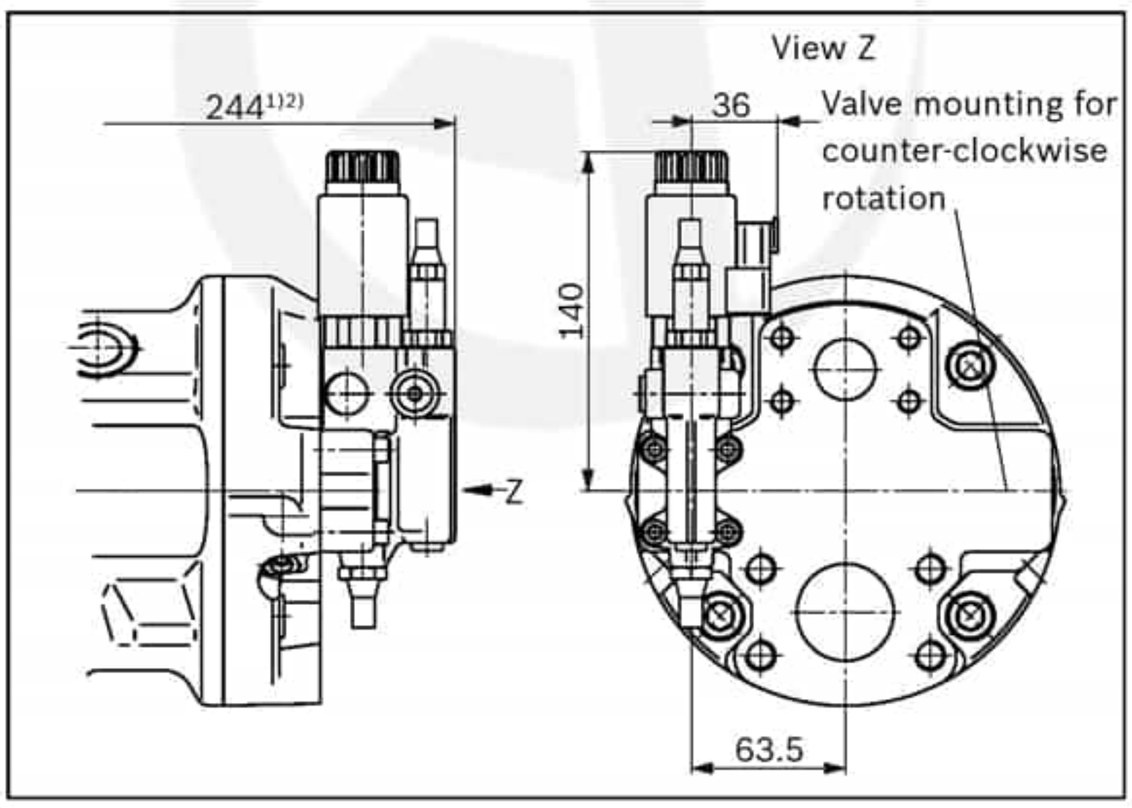


▼ LA.DG – Power controller; with pressure cut-off remotely controlled; mounting flange C



Valve mounting for counter-clockwise rotation see page 18 and 19

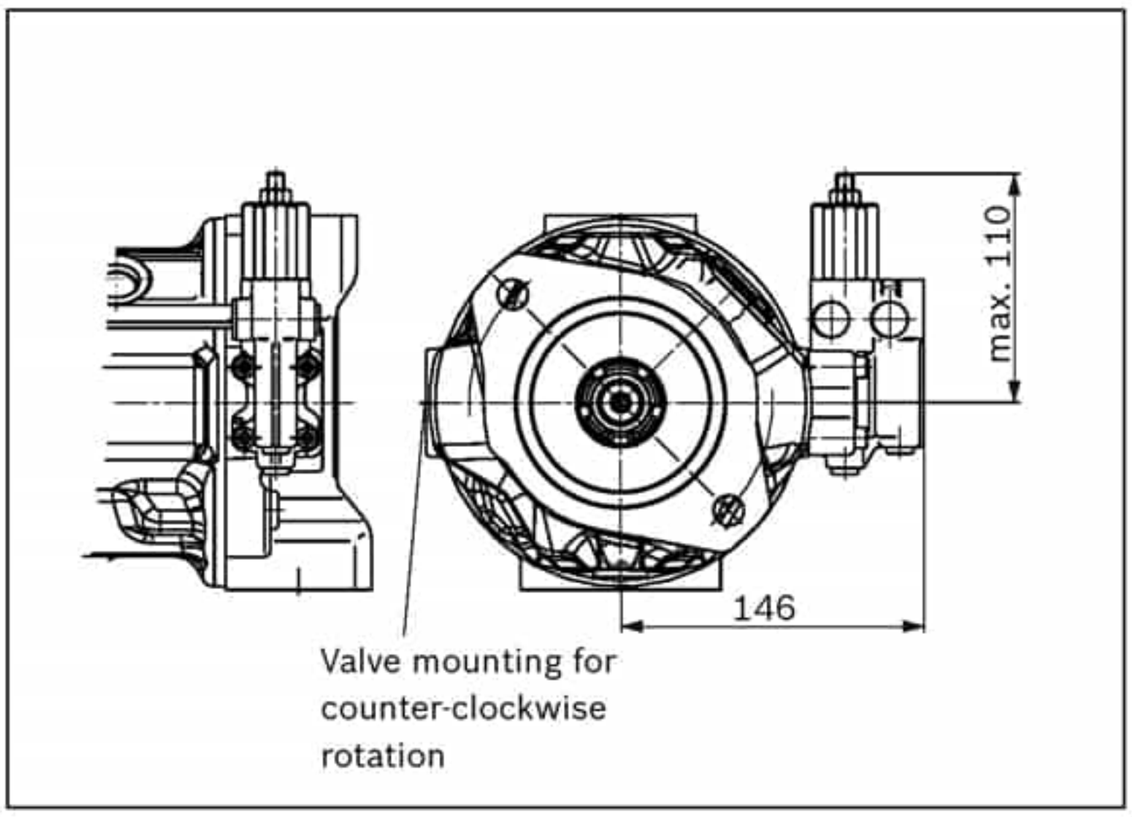
▼ ED7./ER7. – Pressure controller, electric; mounting flange C



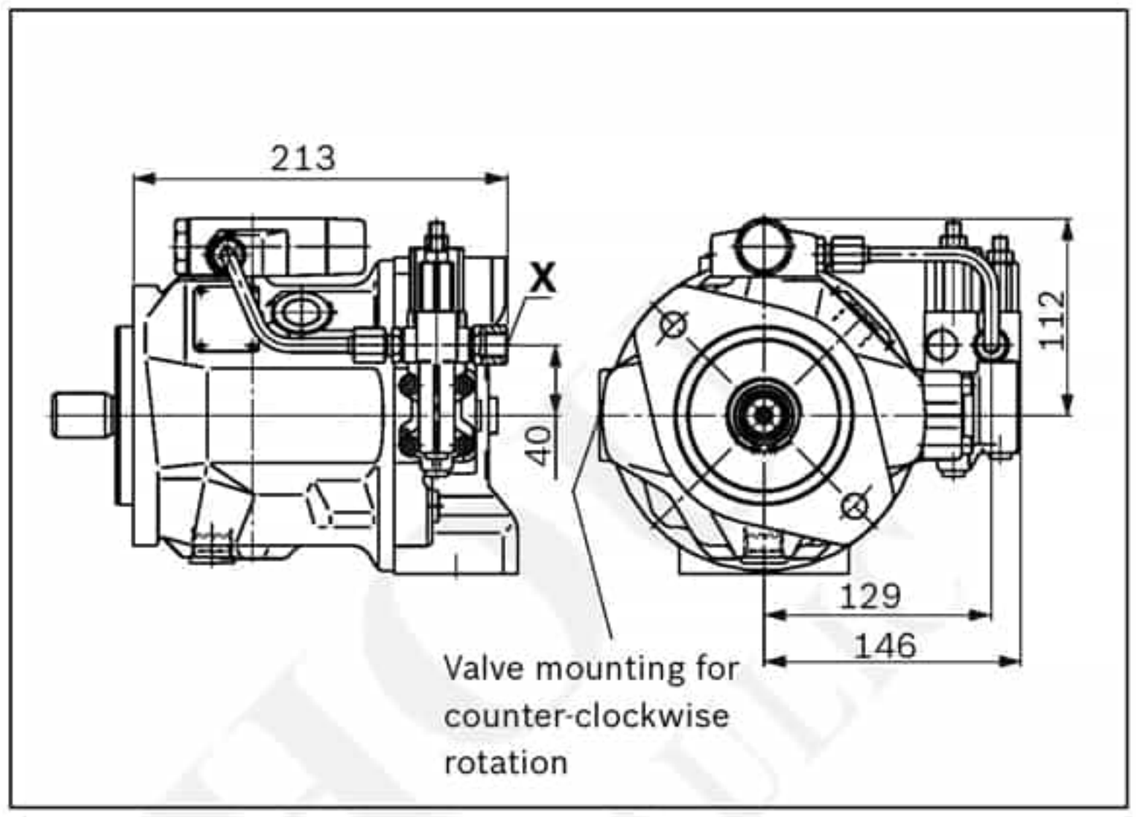
1) ER7. 279 mm if using an intermediate plate pressure controller
2) To mounting flange

Port plate 12

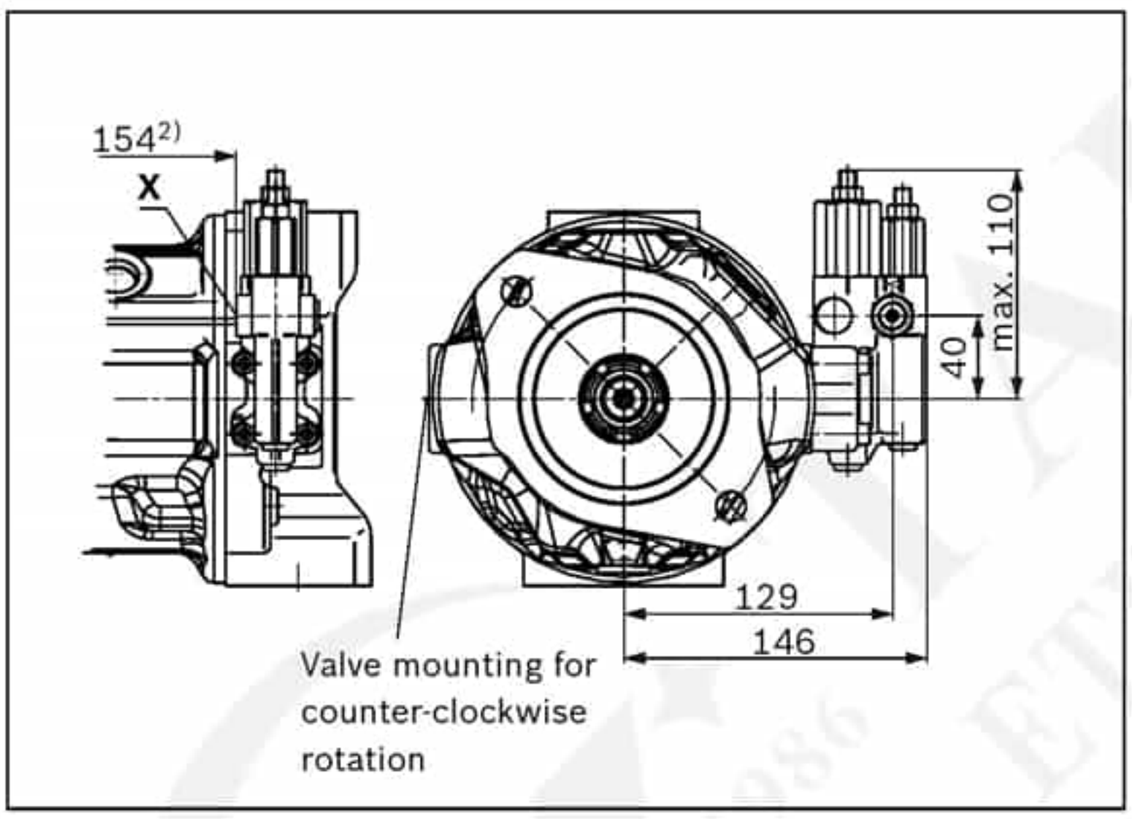
▼ **DR – Pressure controller; mounting flange C**



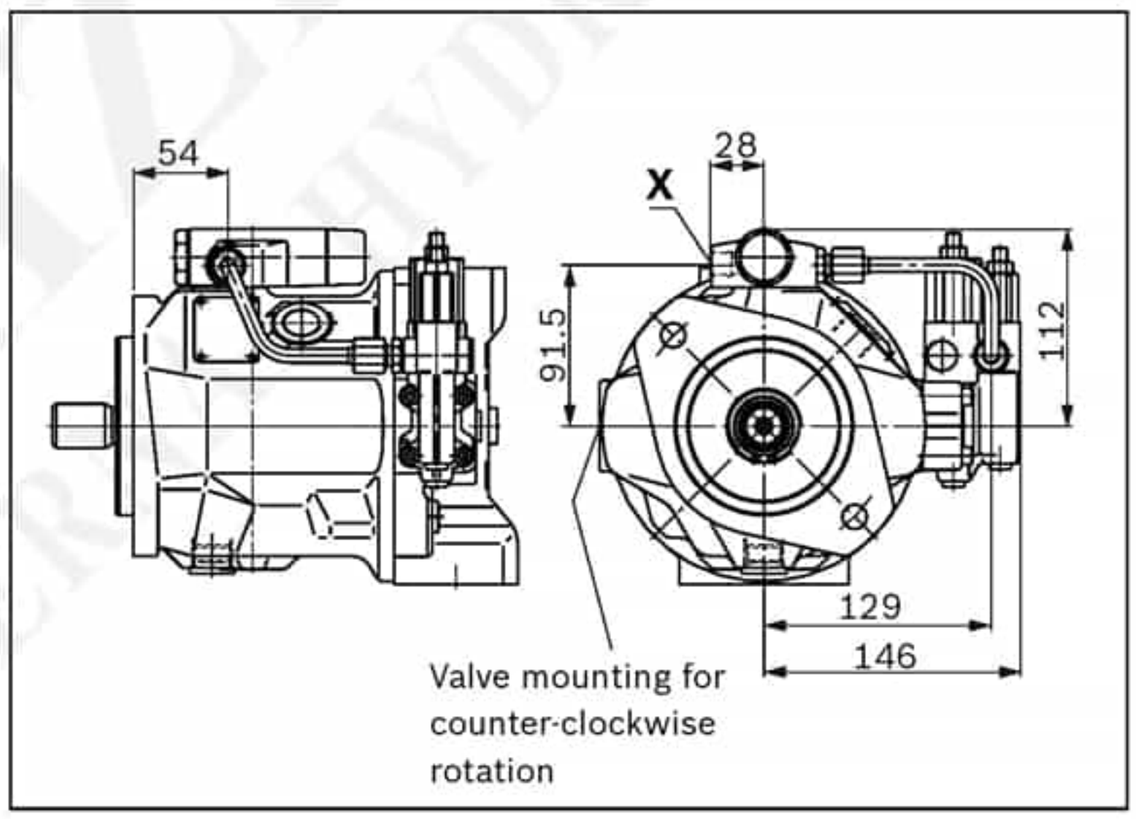
▼ **LA.DS – Pressure, flow and power controller; mounting flange C**



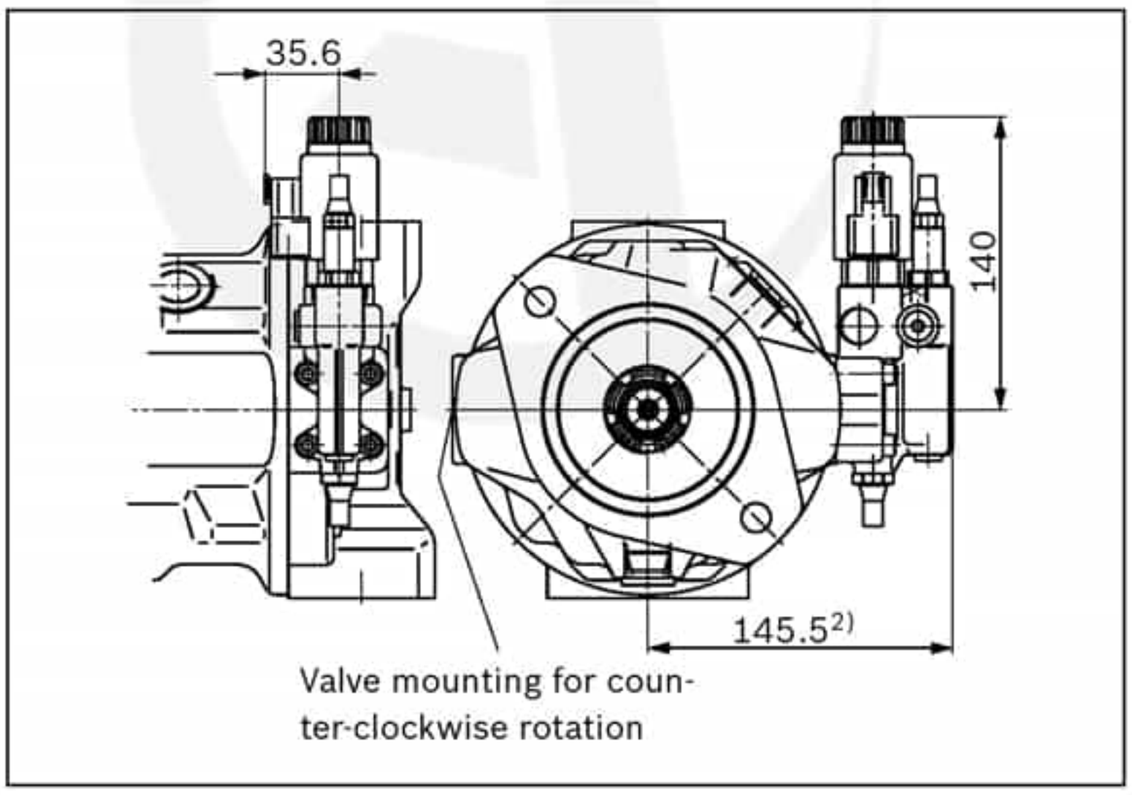
▼ **DRG – Pressure controller, remotely controlled; mounting flange C**



▼ **LA.DG – Power controller; with pressure cut-off remotely controlled; mounting flange C**



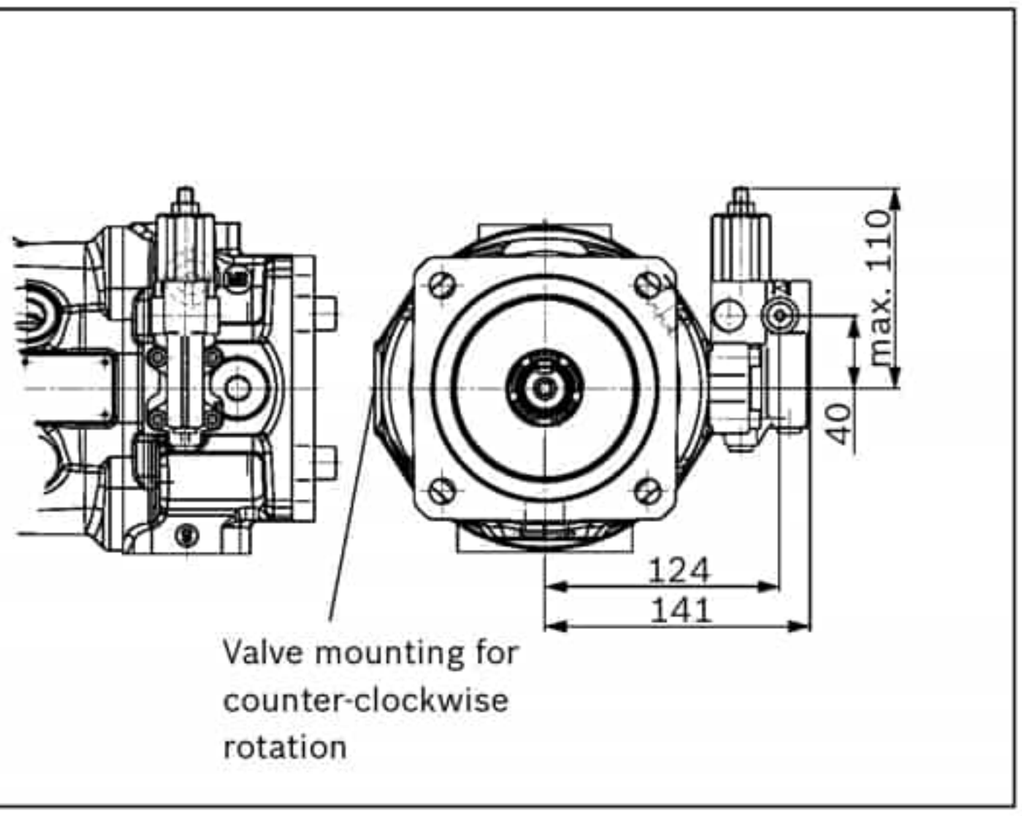
▼ **ED7./ER7. – Pressure controller, electric; mounting flange C**



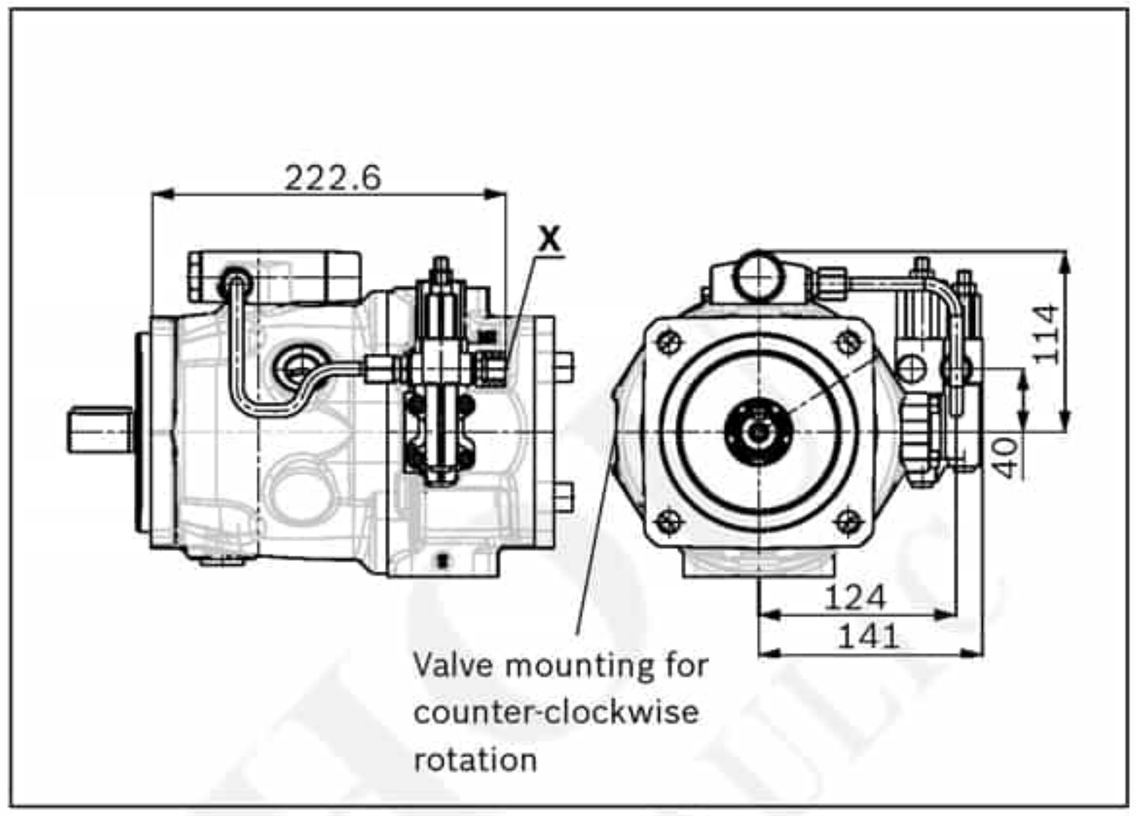
1) ER7. 180.5 mm if using an intermediate plate pressure controller
2) To mounting flange

Port plate 22

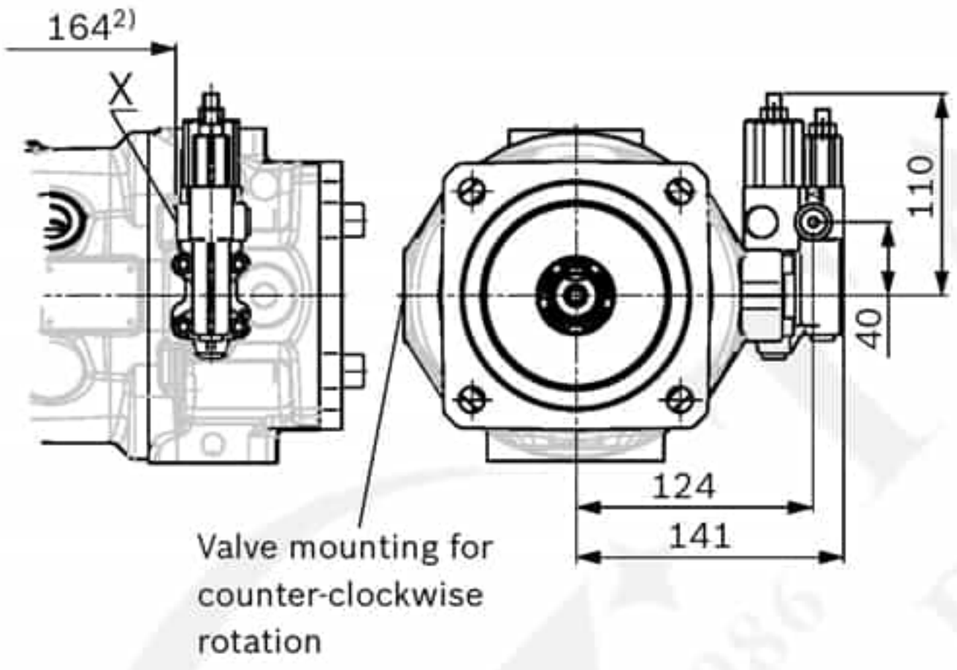
▼ **DR – Pressure controller; mounting flange D**



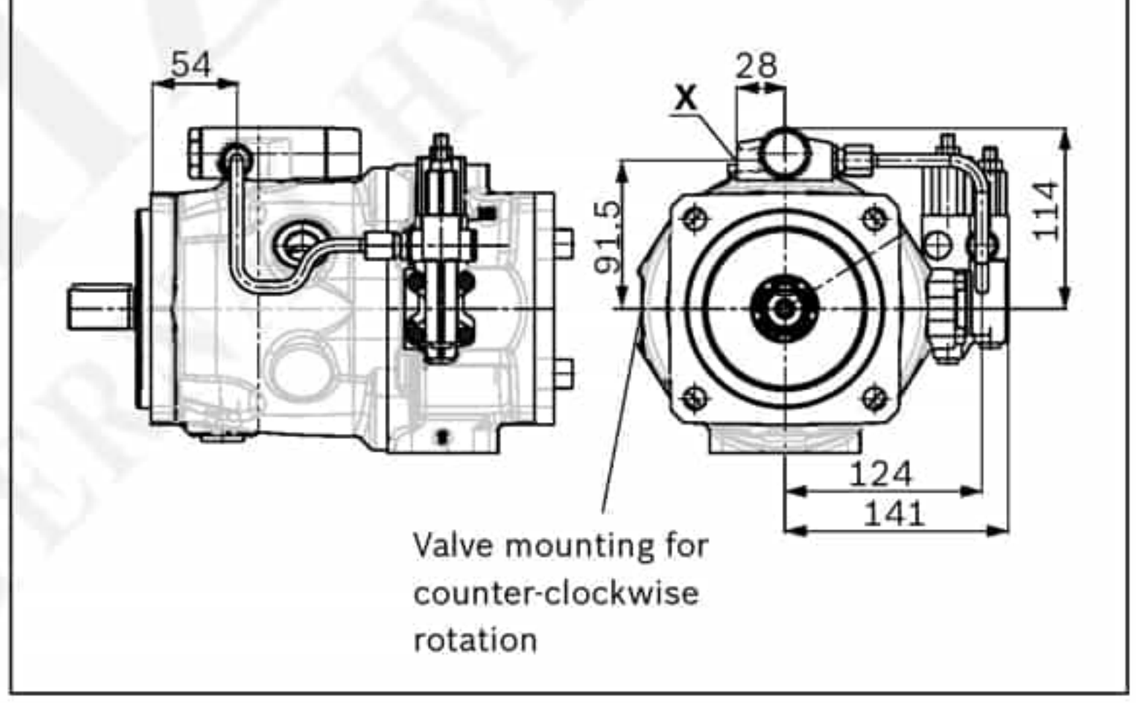
▼ **LA.DS – Pressure, flow and power controller; mounting flange D**



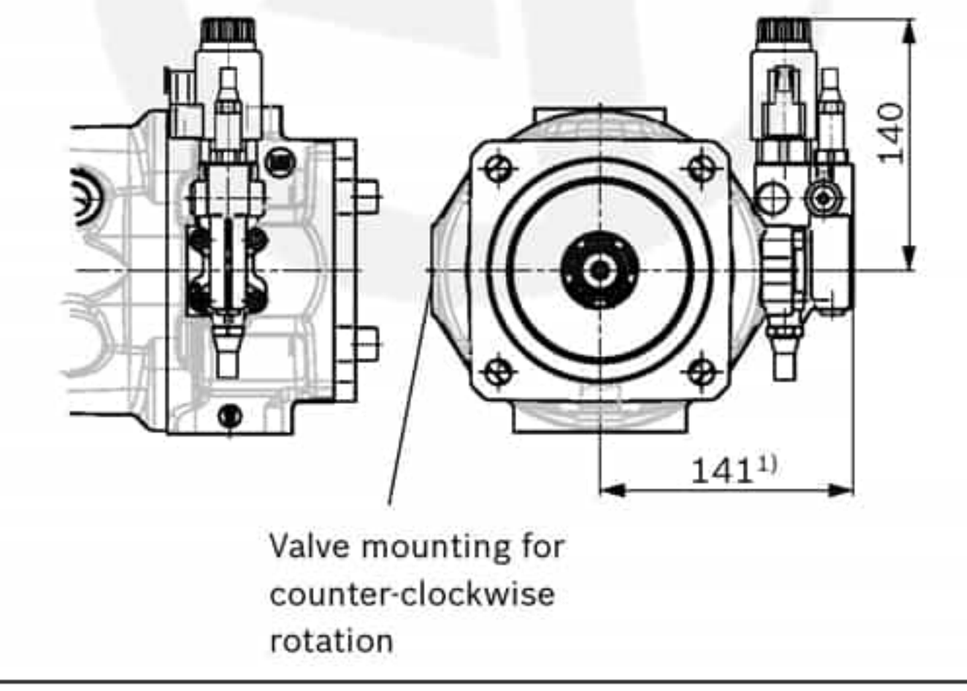
▼ **DRG – Pressure controller, remotely controlled; mounting flange D**



▼ **LA.DG – Power controller; with pressure cut-off remotely controlled; mounting flange D**



▼ **ED7./ER7. – Pressure controller, electric; mounting flange D**

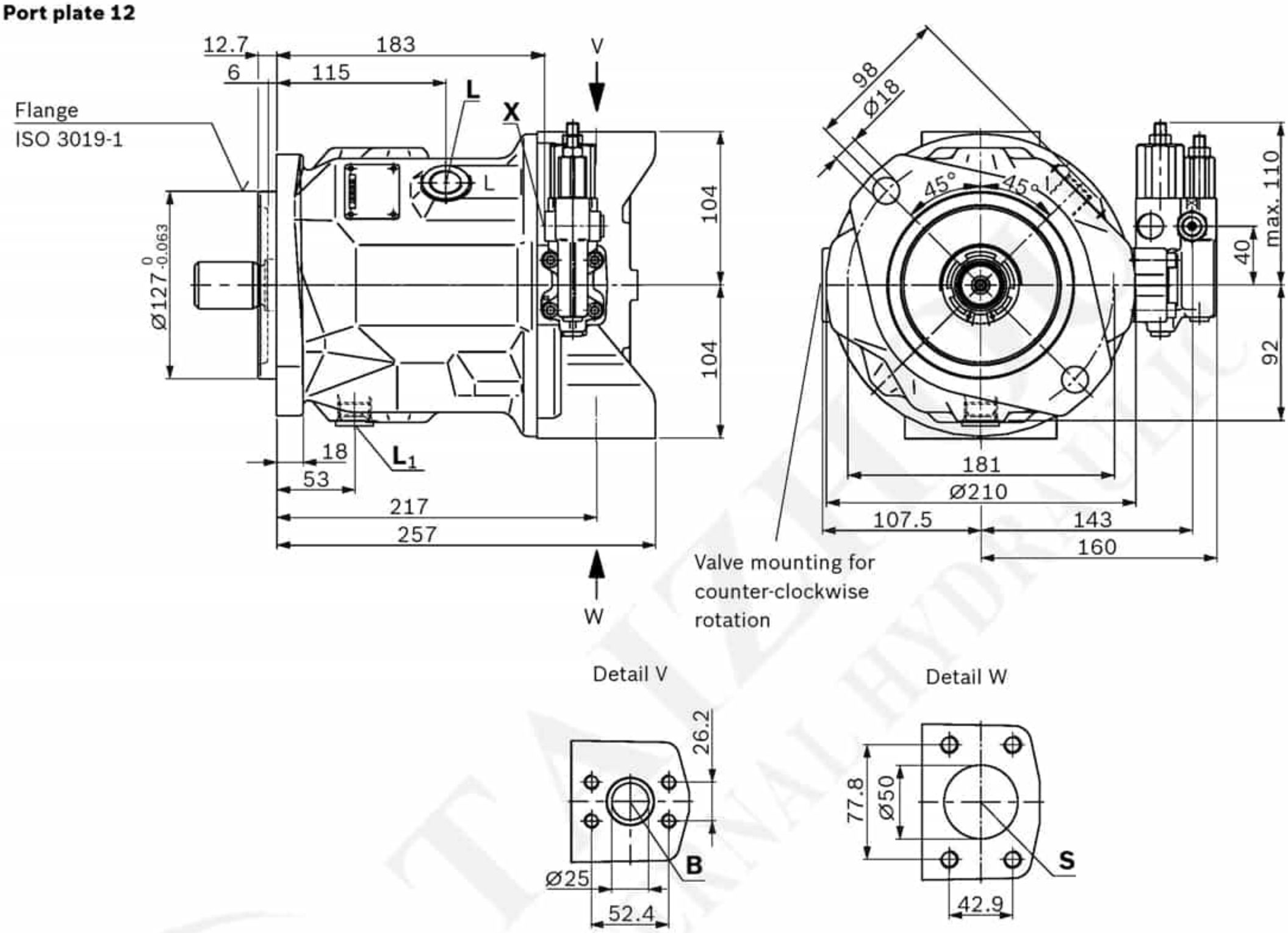


1) ER7. 176 mm if using an intermediate plate pressure controller
2) To mounting flange

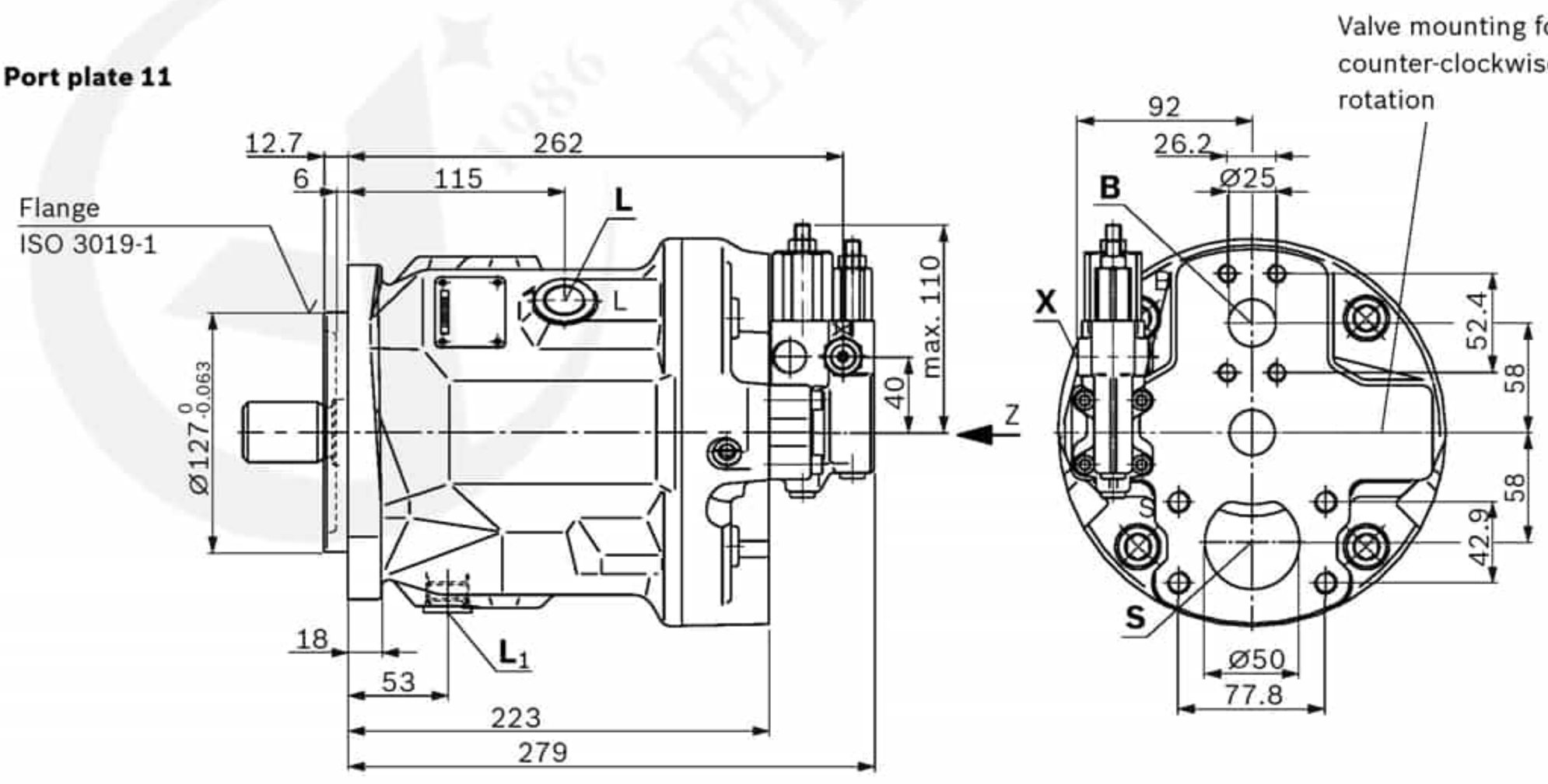
Dimensions, size 71

DRF, DRS, DRSC – Pressure flow controller, port plate 11 and 12; mounting flange C (SAE-C; 127-2)

▼ **Port plate 12**

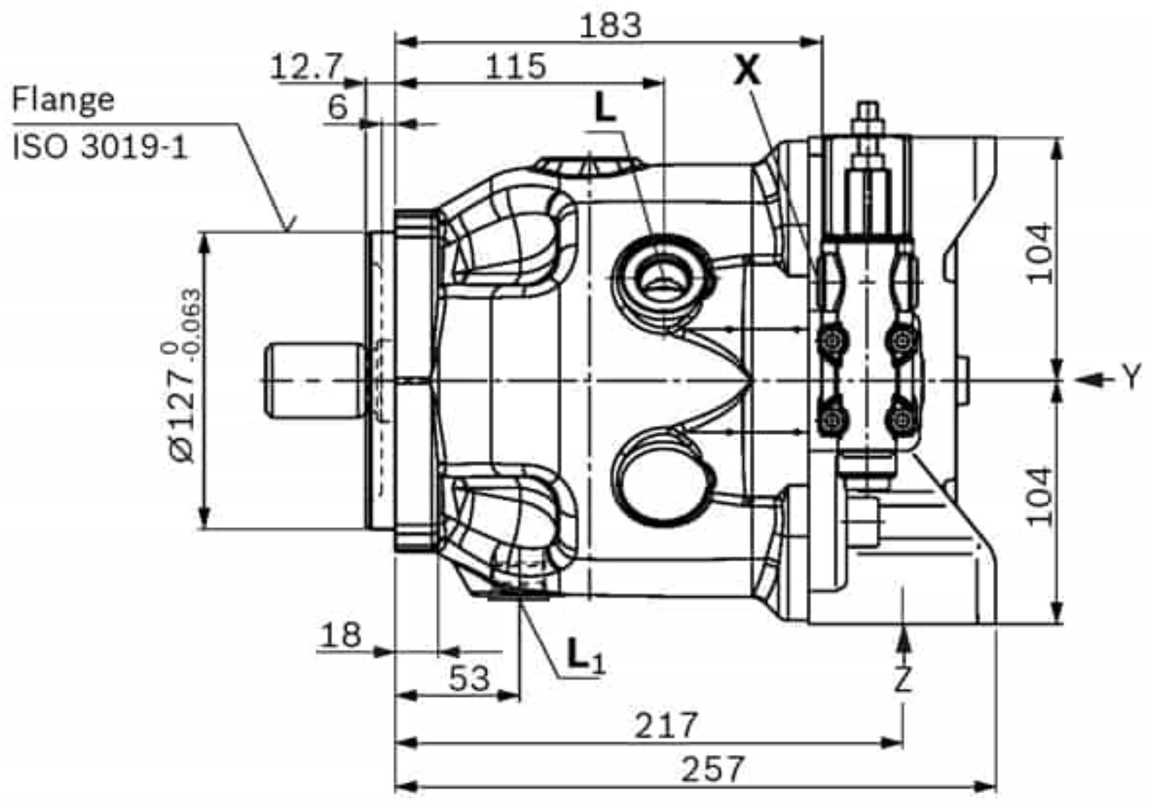


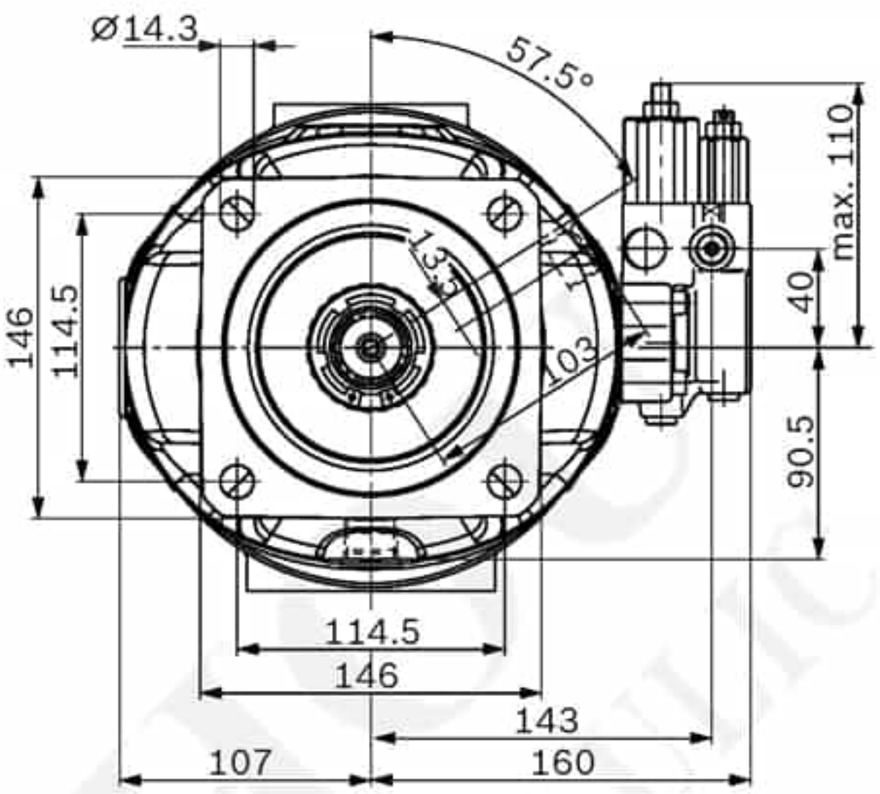
▼ **Port plate 11**

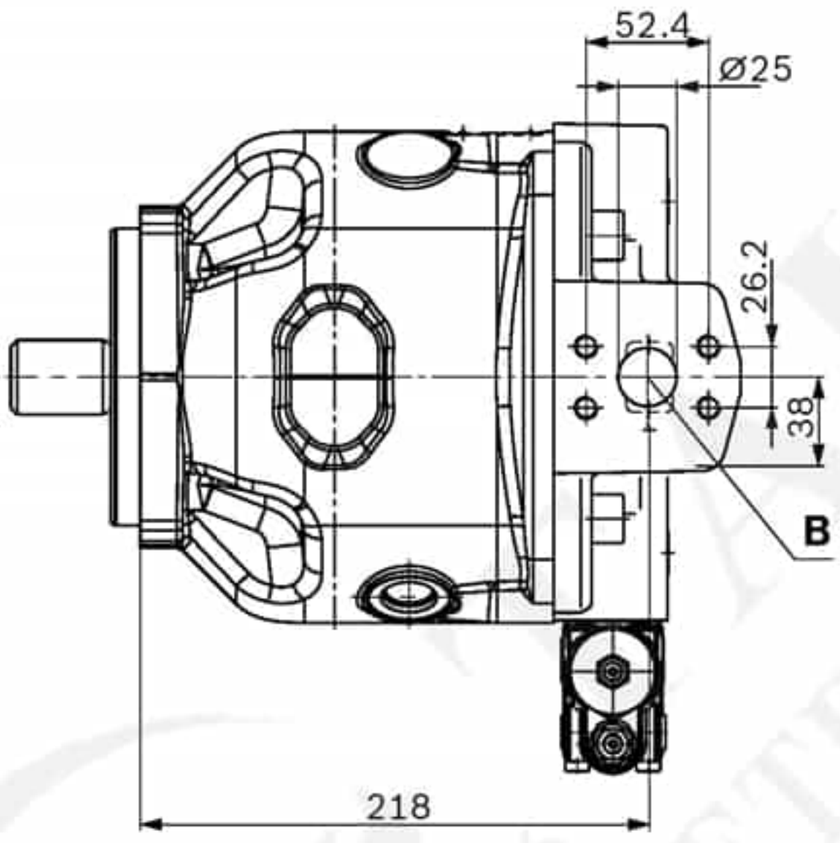


DRF, DRS, DRSC – Pressure flow controller, port plate 12; mounting flange D (SAE-C; 127-4) and U (SAE-D; 152-4)

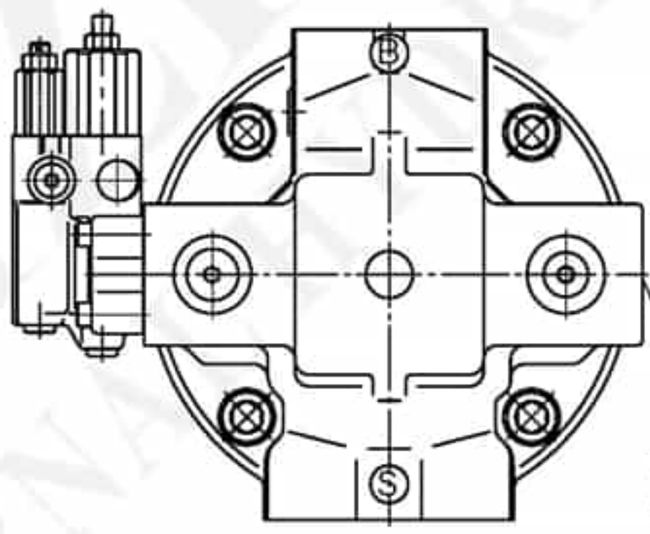
▼ Port plate 12; mounting flange D





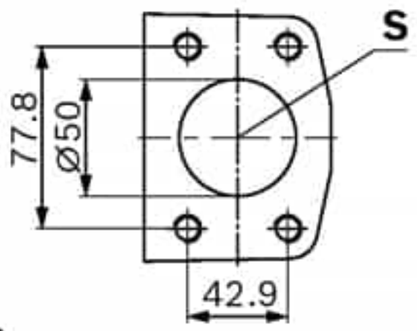


View Y

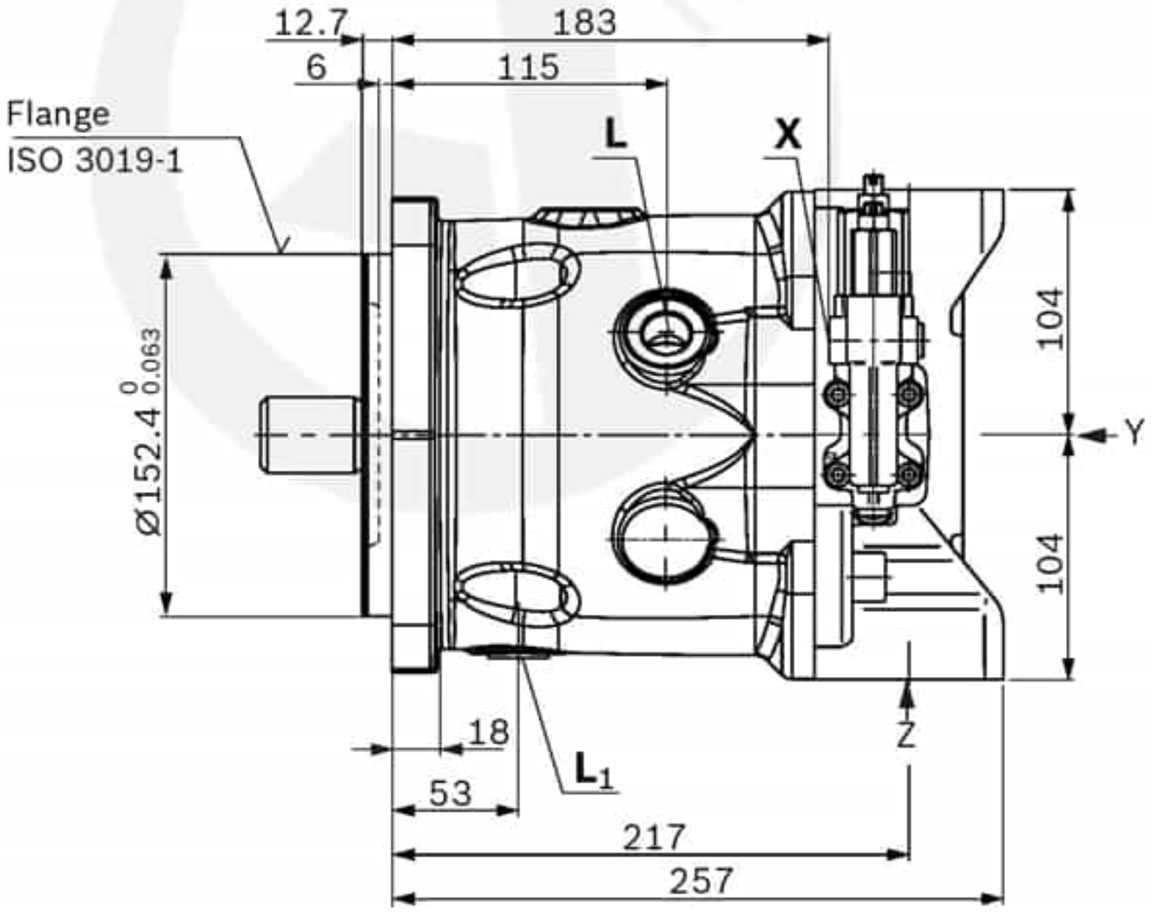


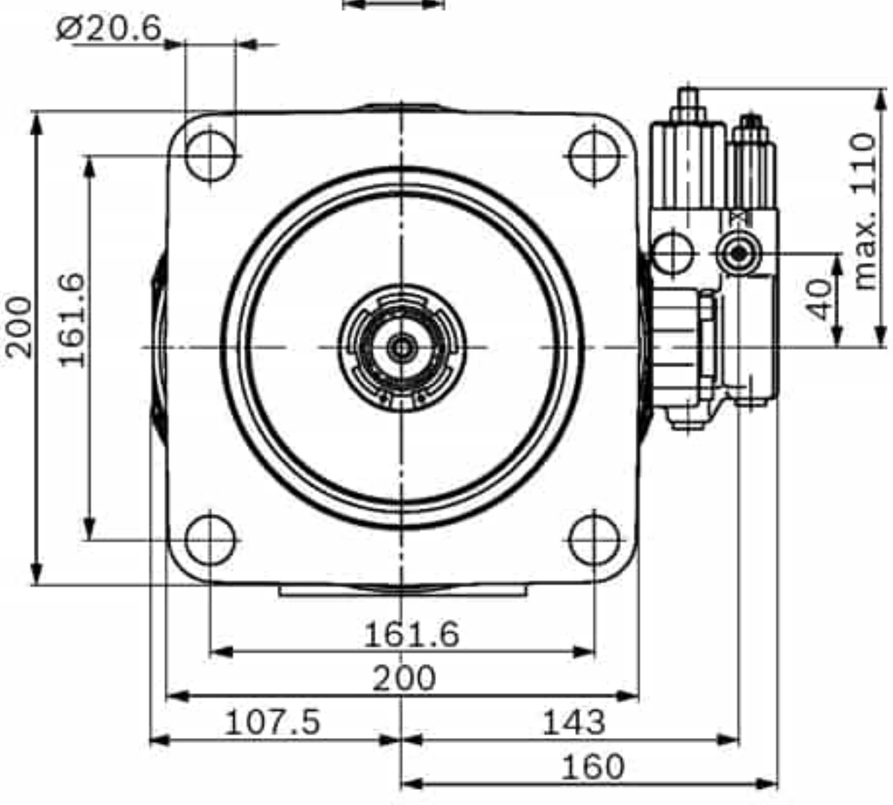
Valve mounting for counter-clockwise rotation

Detail Z



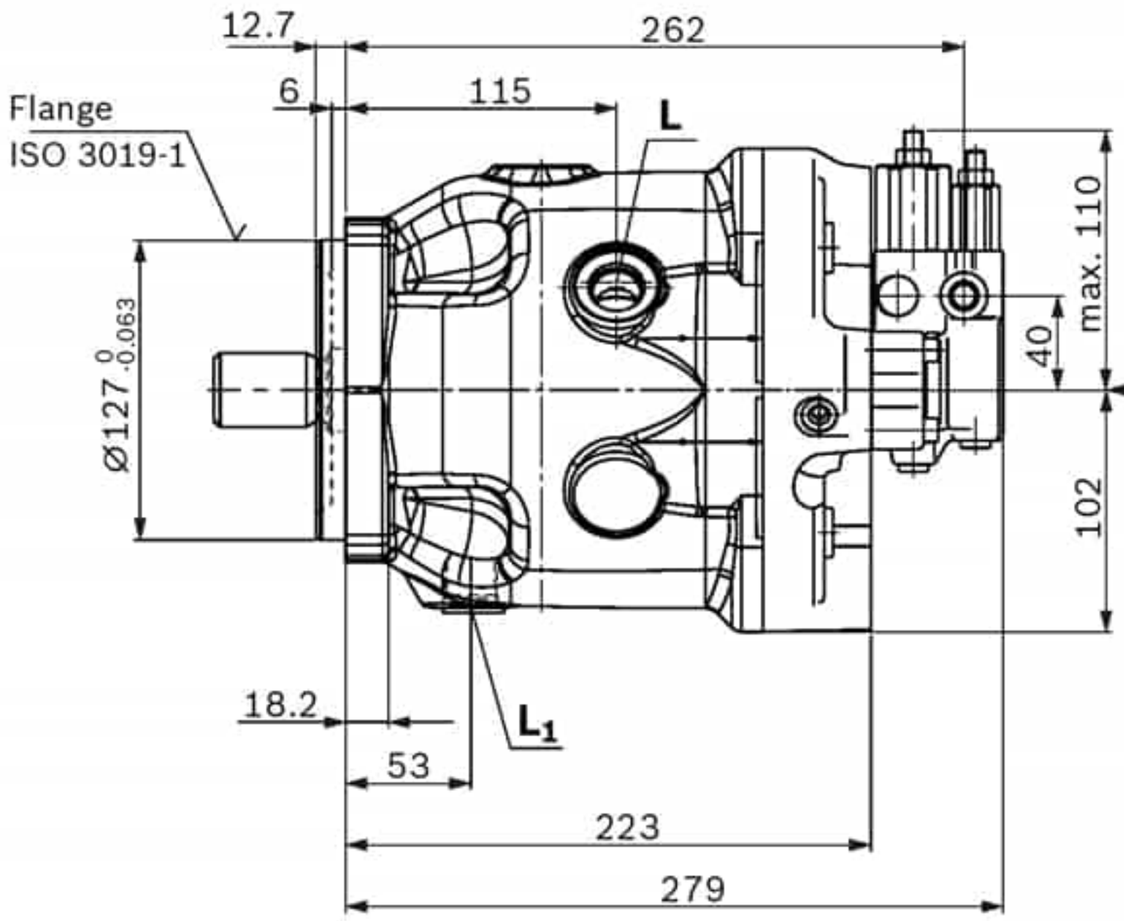
▼ Port plate 12; mounting flange U

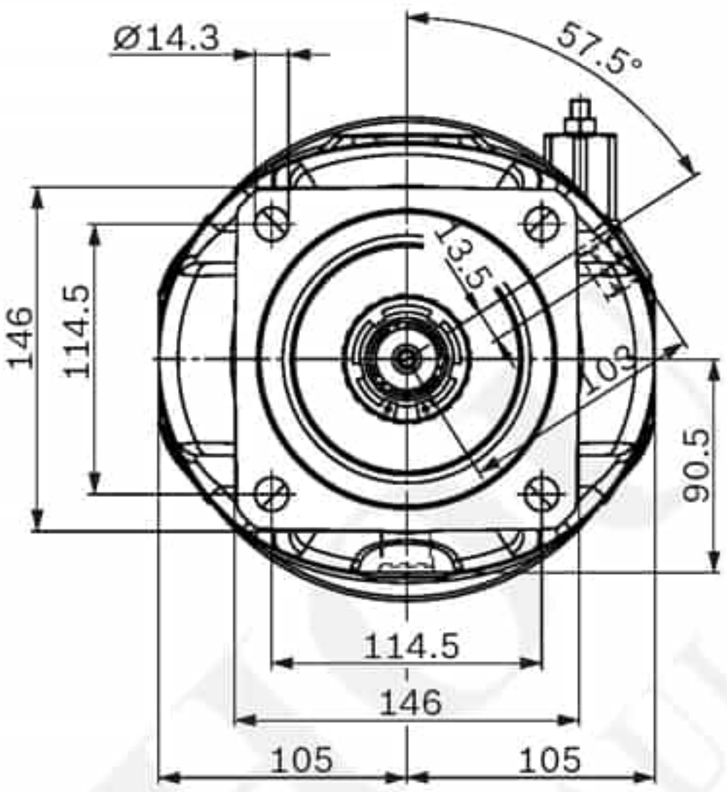




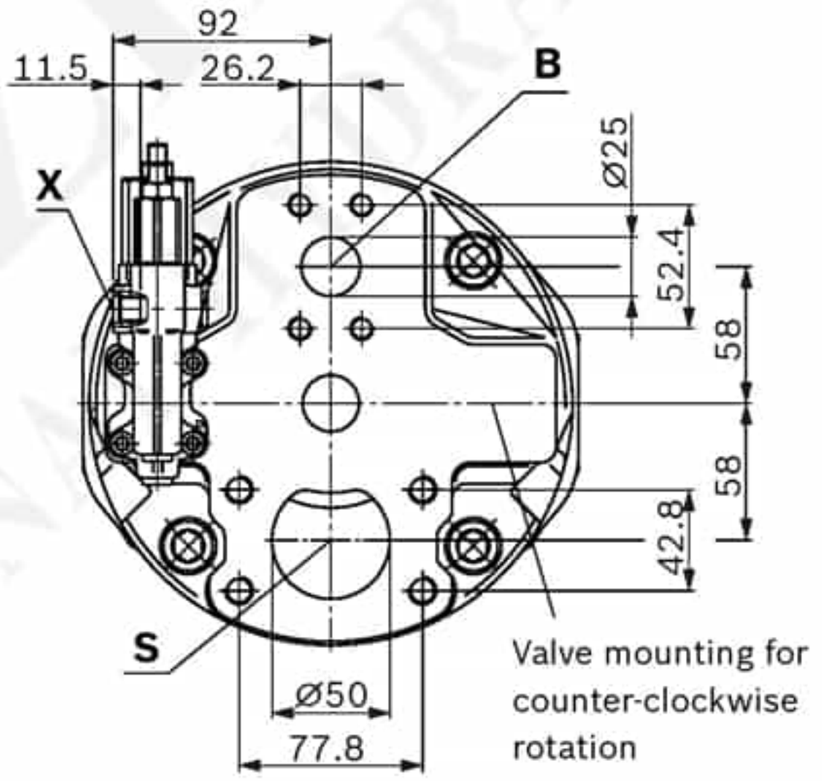
DRF, DRS, DRSC – Pressure flow controller, port plate 11; mounting flange D (SAE-C; 127-4) and U (SAE-D; 152-4)

▼ Port plate 11; mounting flange D

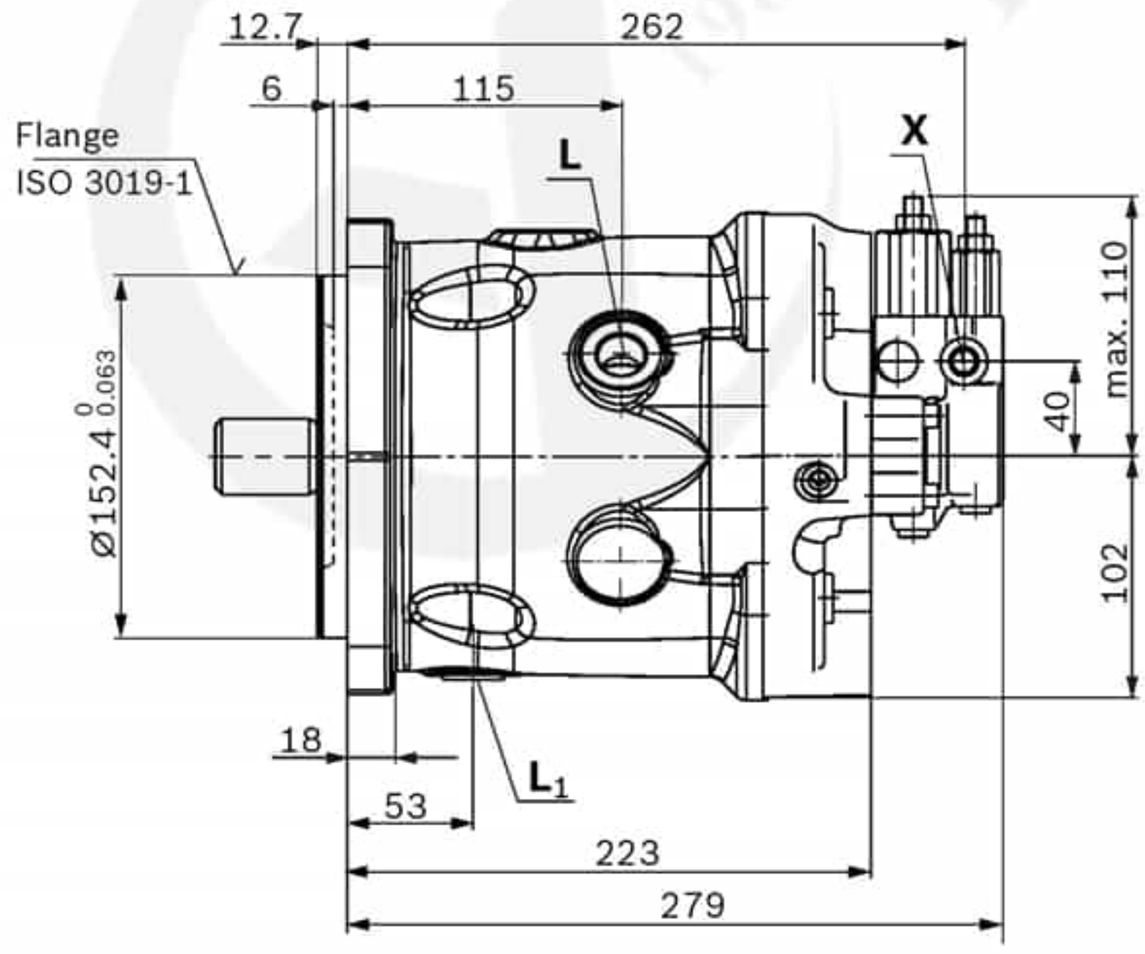


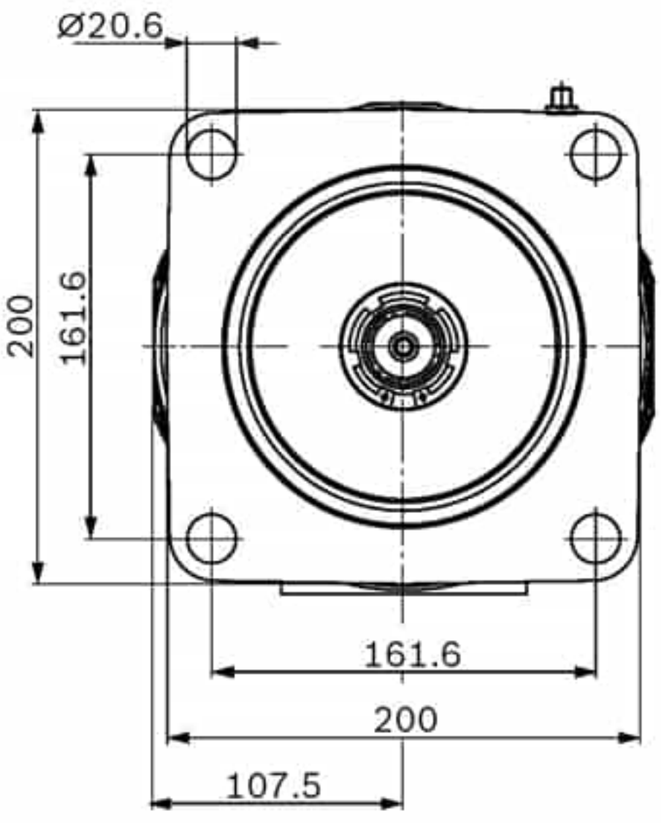


View Y



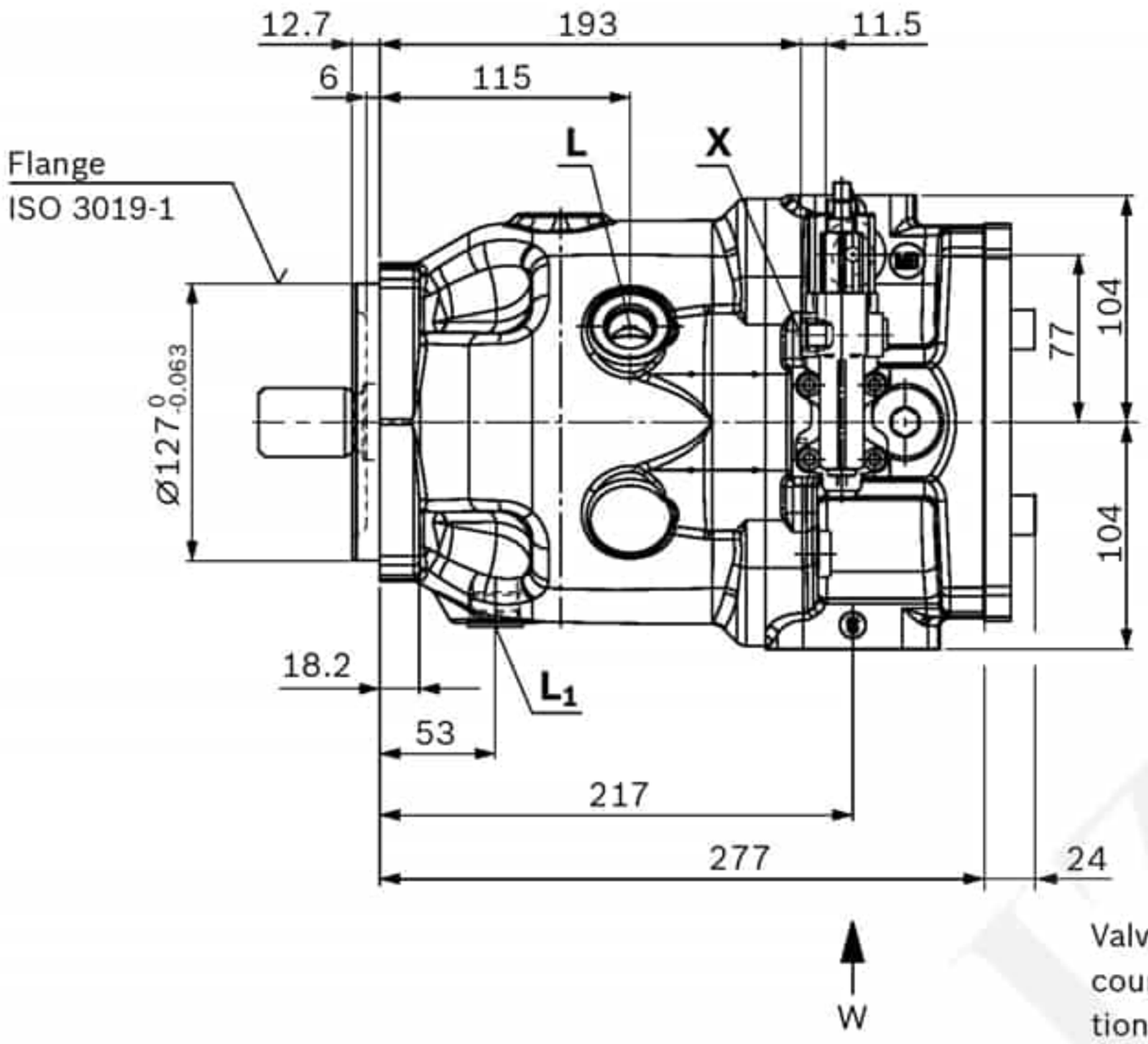
▼ Port plate 11; mounting flange U

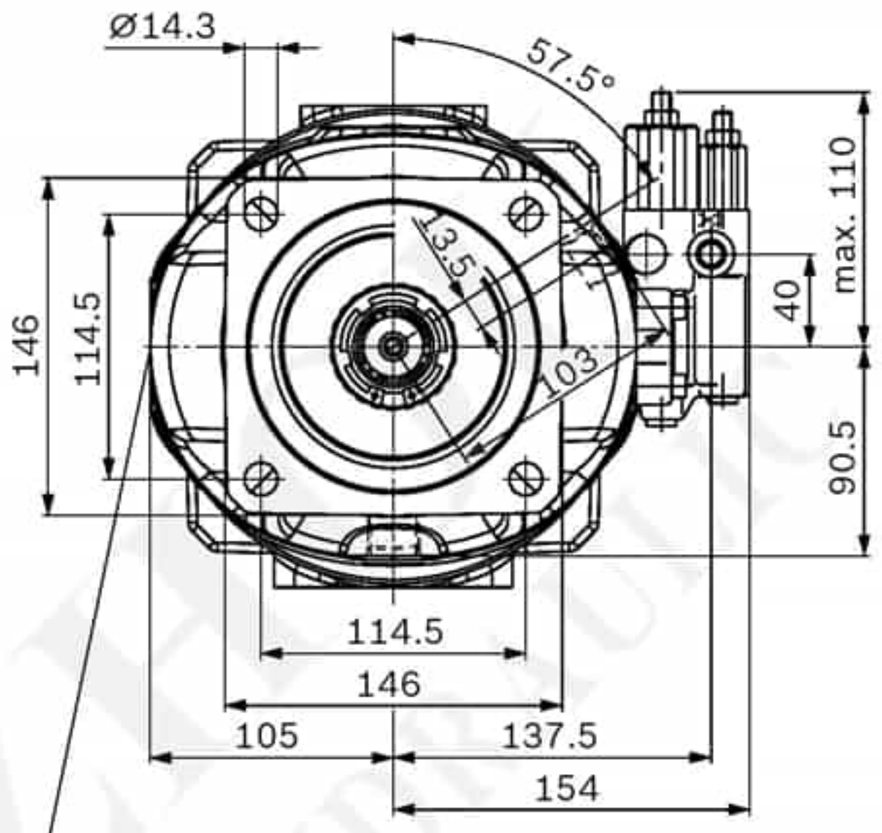




DRF, DRS, DRSC – Pressure flow controller, port plate 22 and 32; mounting flange D (SAE-C; 127-4)

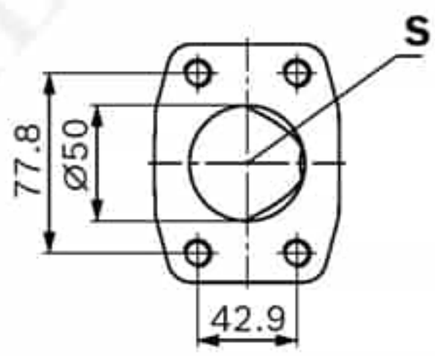
▼ **Port plate 22 and 32**

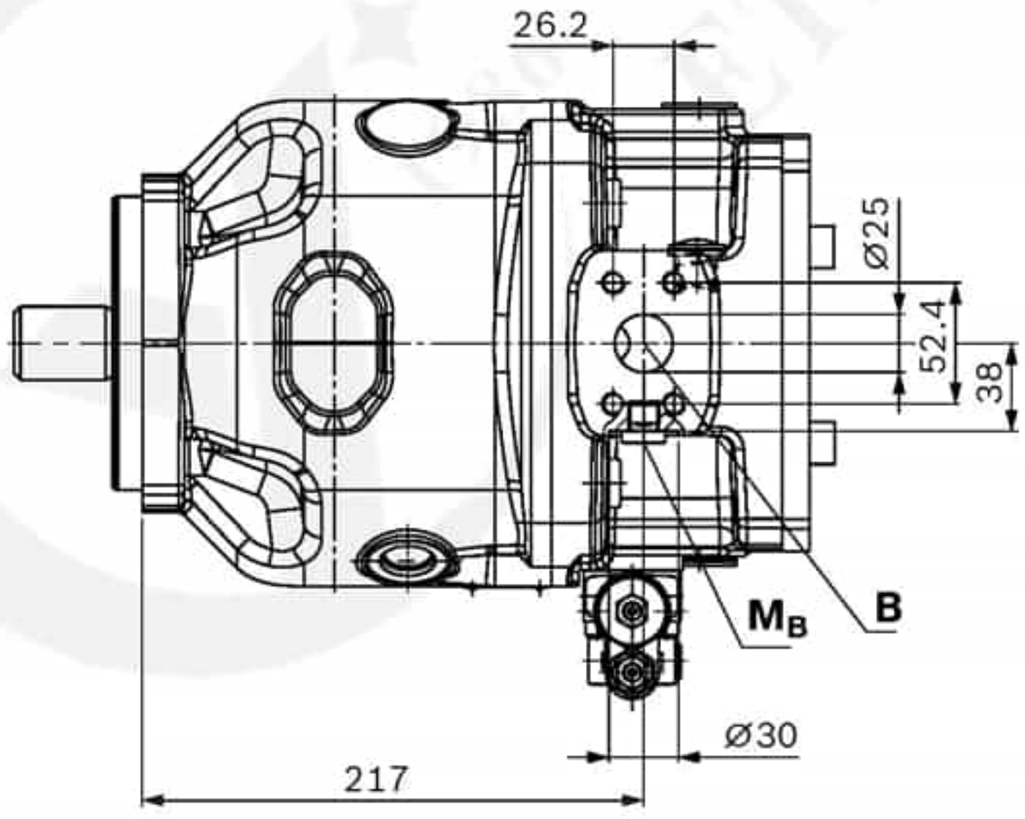




Valve mounting for counter-clockwise rotation

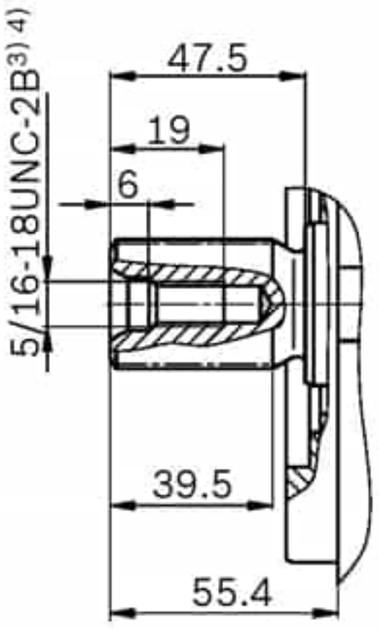
Detail W





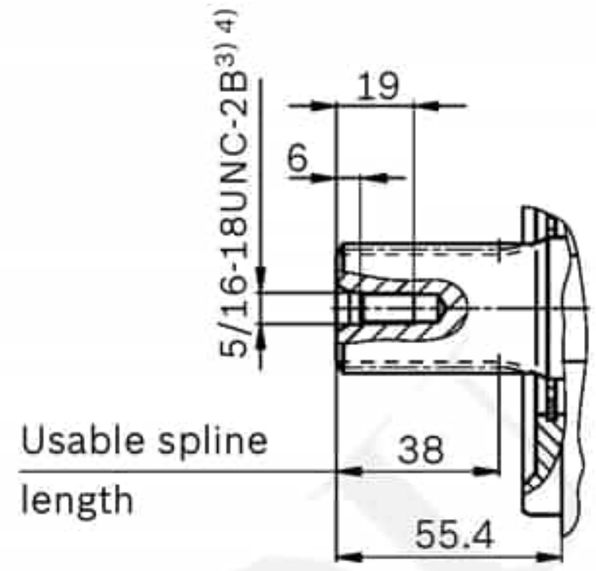
▼ **Splined shaft 1 1/4 in (SAE J744)**

S – 14T 12/24DP[1)]



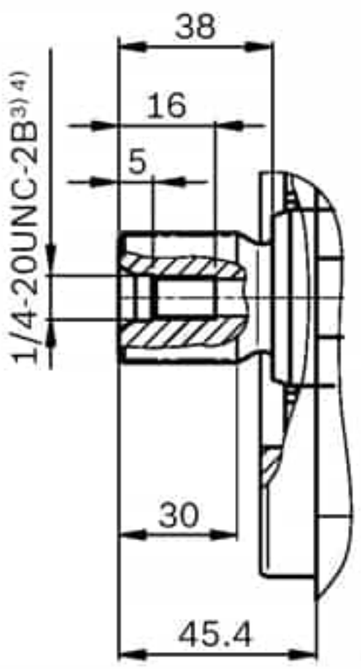
▼ **Splined shaft 1 1/4 in (SAE J744)**

R – 14T 12/24DP[1)2)]



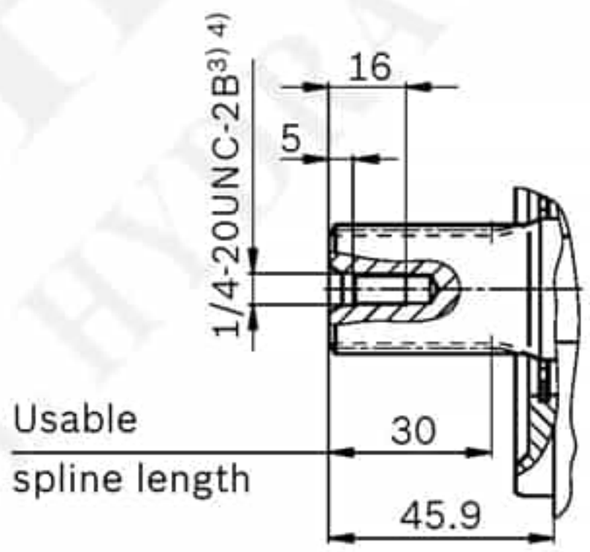
▼ **Splined shaft 1 in (SAE J744)**

U – 15T 16/32DP[1)]



▼ **Splined shaft 1 in (SAE J744)**

W – 15T 16/32DP[1)]

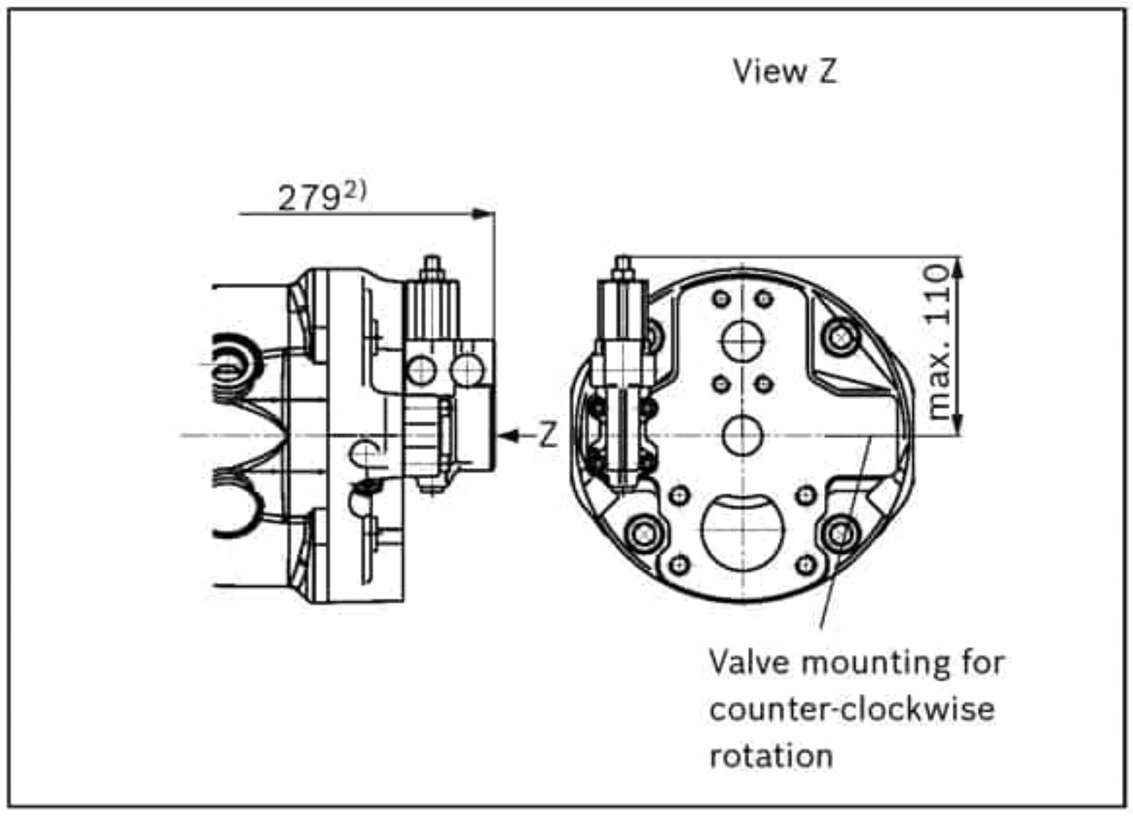


Ports		Standard	Size	$p_{max\ abs}$ [bar][4)]	State[8)]
B	Working port (standard pressure series) Fastening thread	SAE J518[5)] DIN 13	1 in M10 x 1.5; 17 deep	350	O
S	Suction port (standard pressure series) Fastening thread	SAE J518[5)] DIN 13	2 in M12 x 1.75; 20 deep	10	O
L	Drain port	ISO 11926[6)]	7/8-14 UNF-2B; 17 deep	2	O[7)]
L_1	Drain port	ISO 11926[6)]	7/8-14 UNF-2B; 17 deep	2	X[7)]
X	Pilot pressure	ISO 11926	7/16-20 UNF-2B; 12 deep	350	O
M_B	Measuring pressure **B** (only with port plates 22 and 32)	DIN 3852-2[6)]	G 1/4 in; 12 deep	350	X

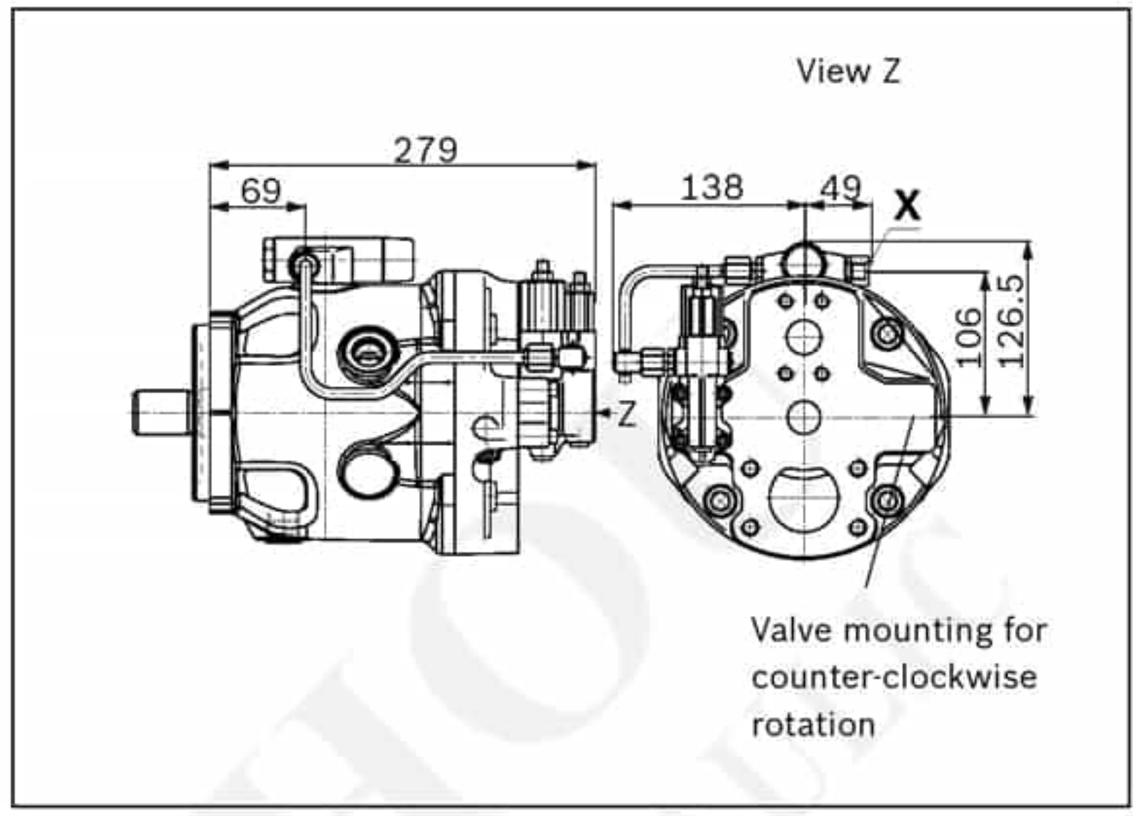
1) Involute spline according to ANSI B92.1a, 30° pressure angle, flat root, side fit, tolerance class 5
2) Splines according to ANSI B92.1a, spline runout is a deviation from standard SAE J744.
3) Thread according to ASME B1.1
4) Depending on the application, momentary pressure peaks can occur.
   Keep this in mind when selecting measuring devices and fittings.
5) Metric fastening thread is a deviation from standard.
6) The countersink may be deeper than specified in the standard.
7) Depending on the installation position, L or L_1 must be connected (also see installation instructions starting on page64).
8) O = Must be connected (comes plugged)
   X = Plugged (in normal operation)

Port plate 11

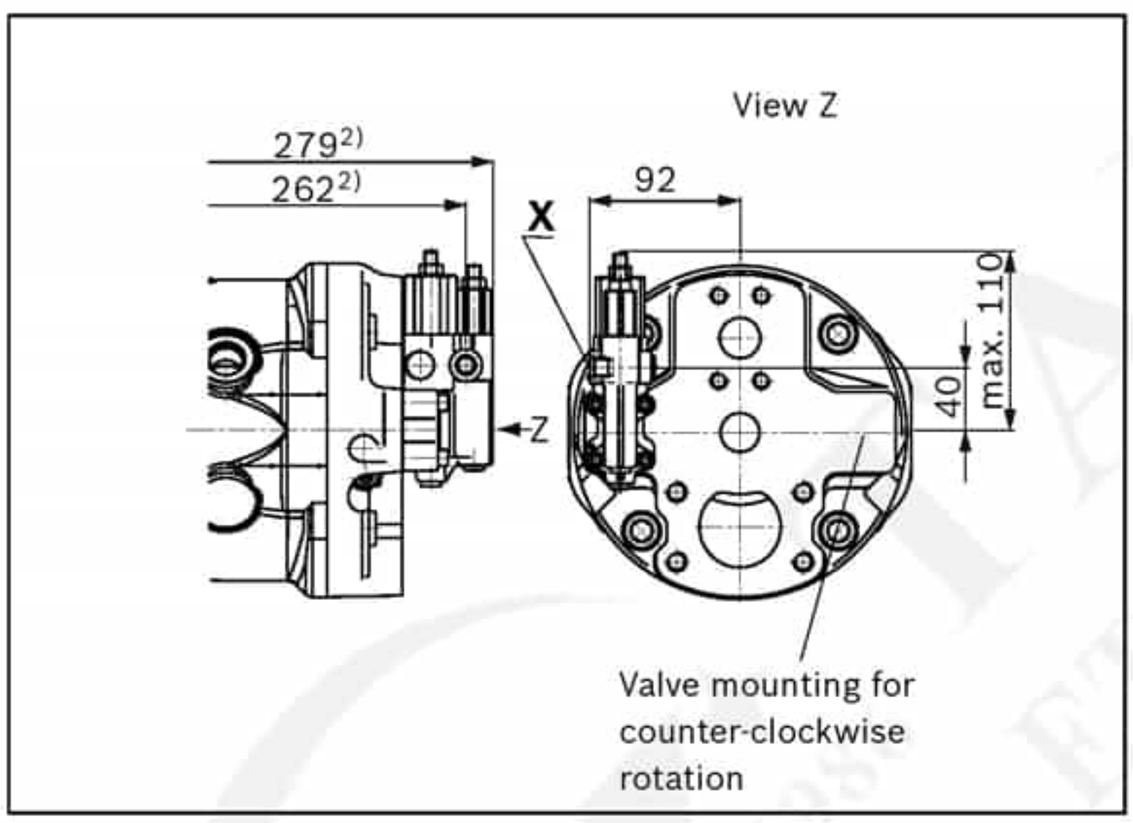
▼ **DR – Pressure controller; mounting flange D**



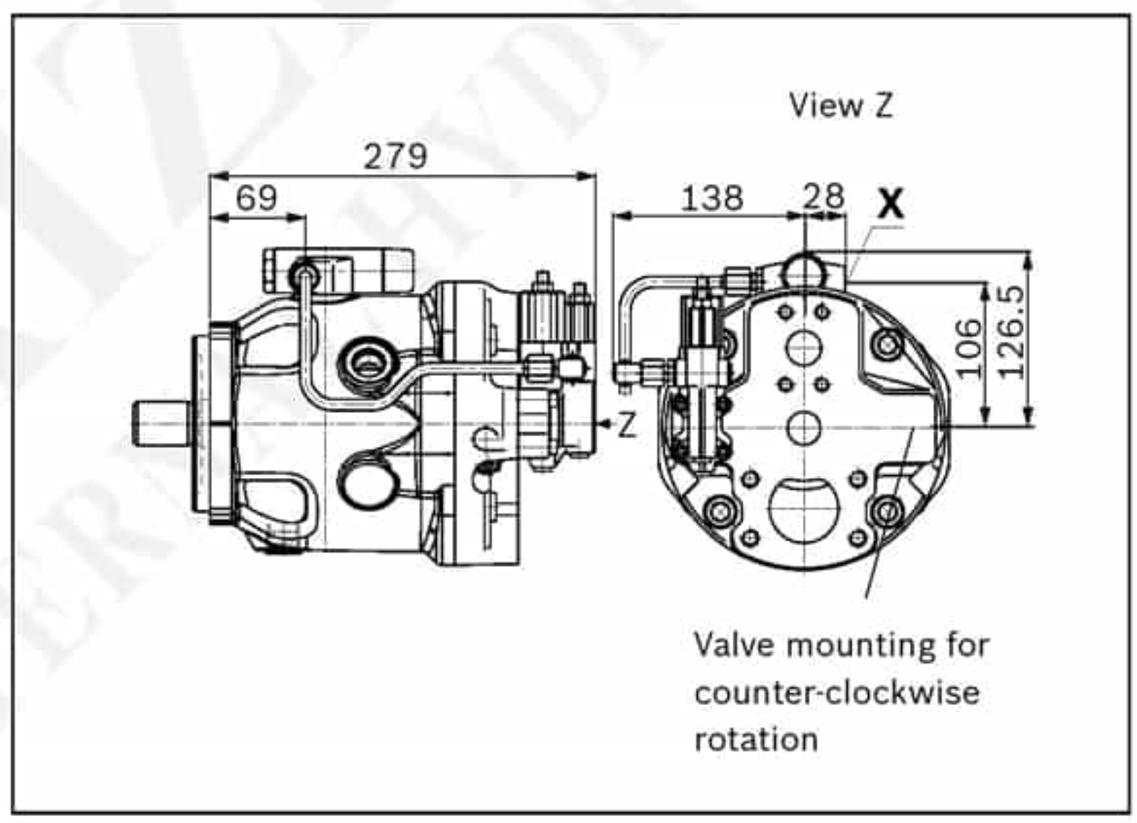
▼ **LA.DS – Pressure, flow and power controller; mounting flange D**



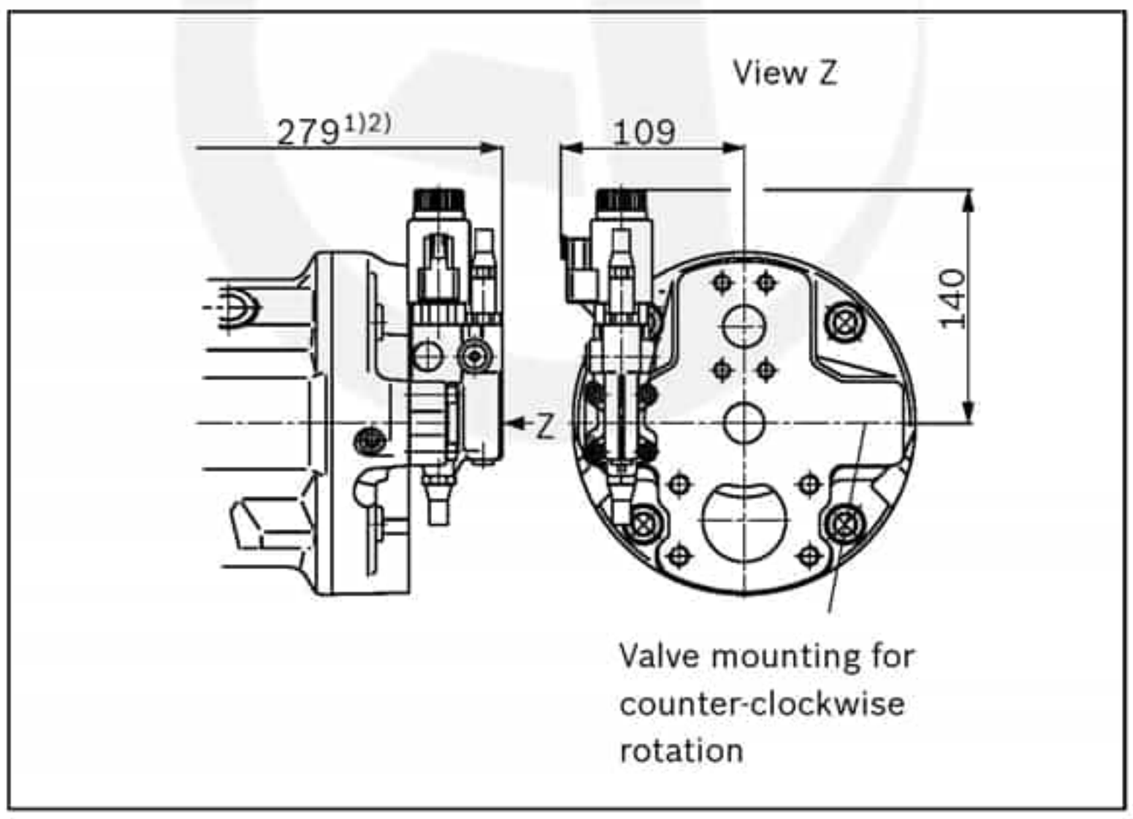
▼ **DRG – Pressure controller, remotely controlled; mounting flange D**



▼ **LA.DG – Power controller; with pressure cut-off remotely controlled; mounting flange D**



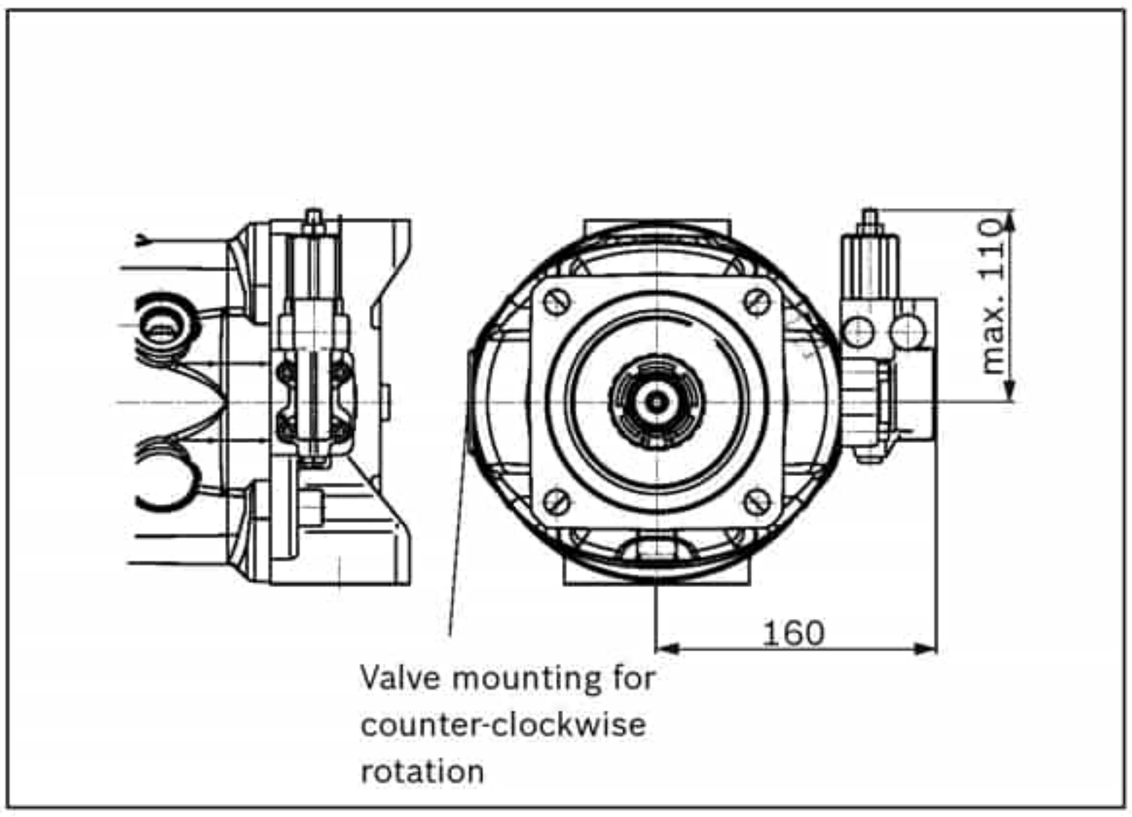
▼ **ED7./ER7. – Pressure controller, electric; mounting flange D**



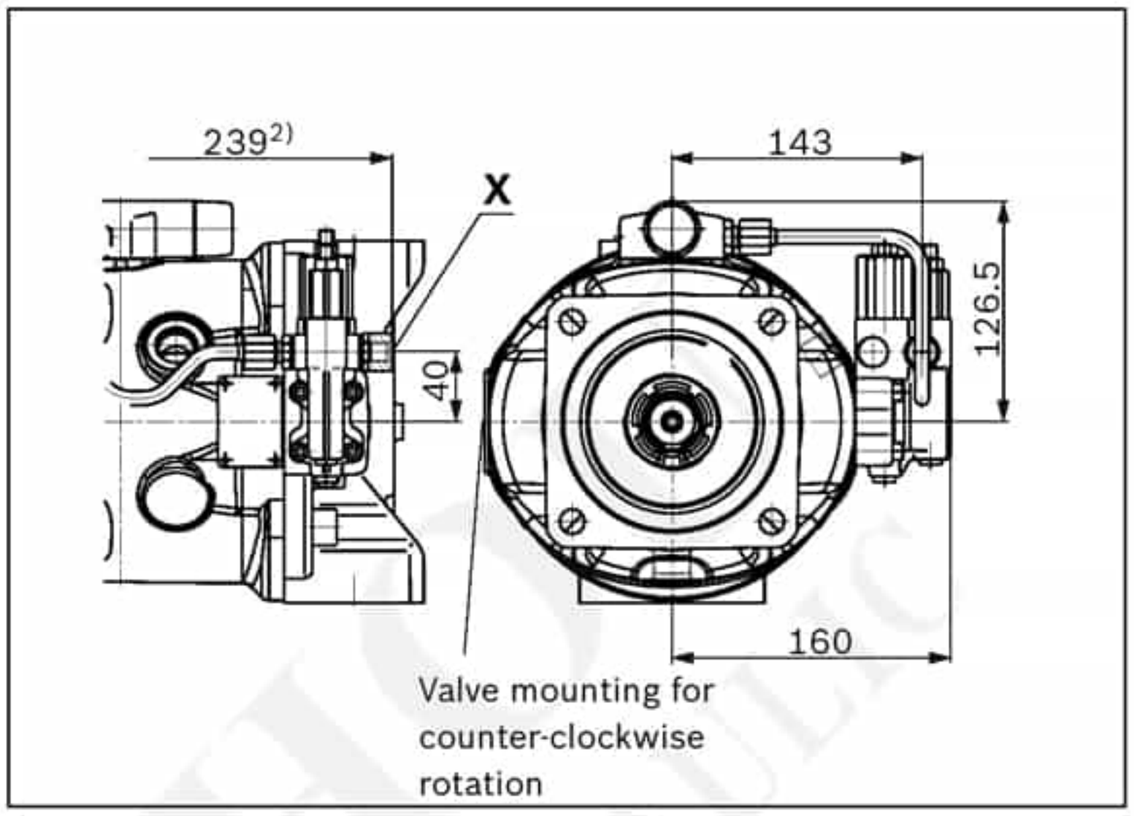
1) ER7. 314 mm if using an intermediate plate pressure controller
2) To mounting flange

Port plate 12

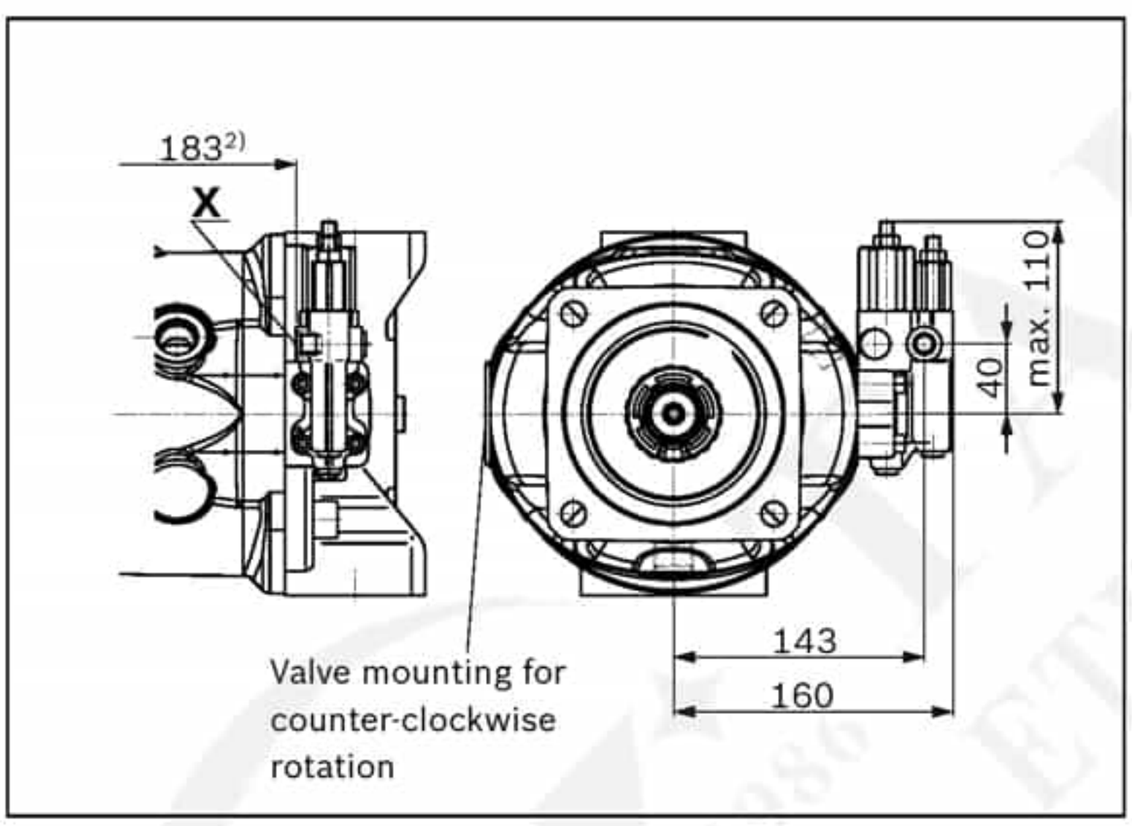
▼ **DR – Pressure controller; mounting flange D**



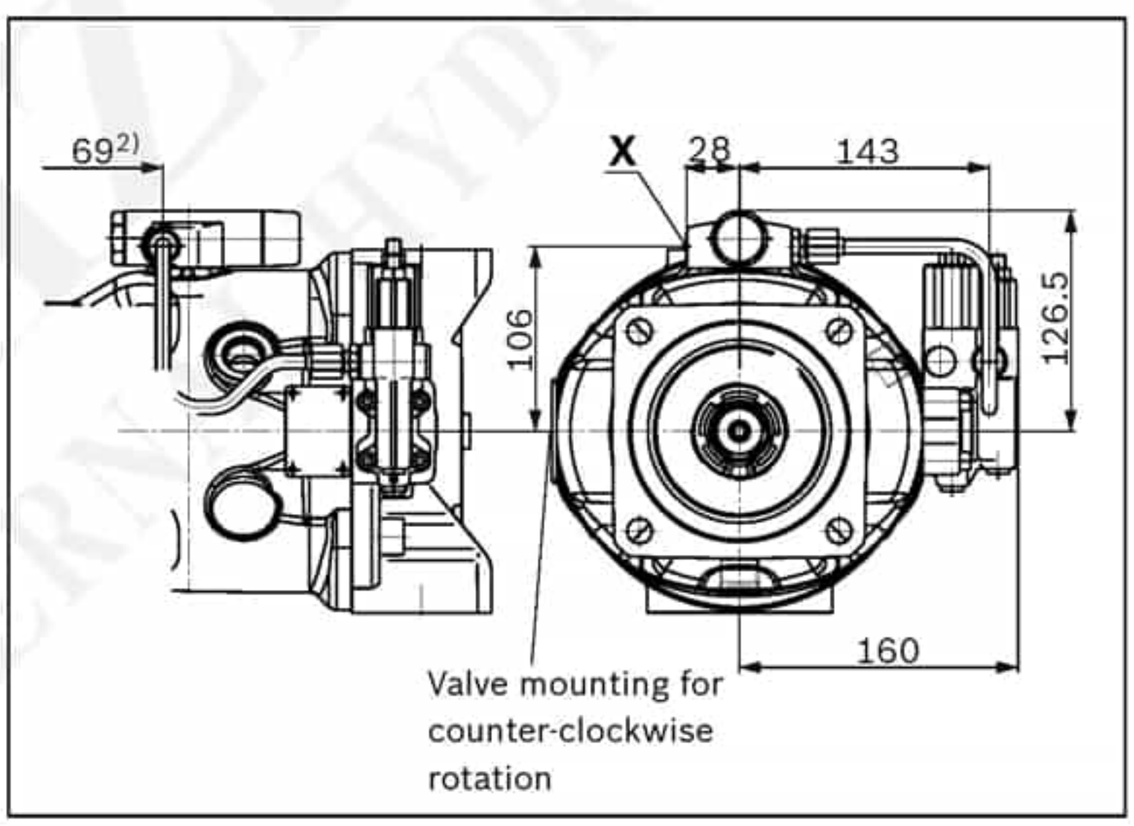
▼ **LA.DS – Pressure, flow and power controller; mounting flange D**



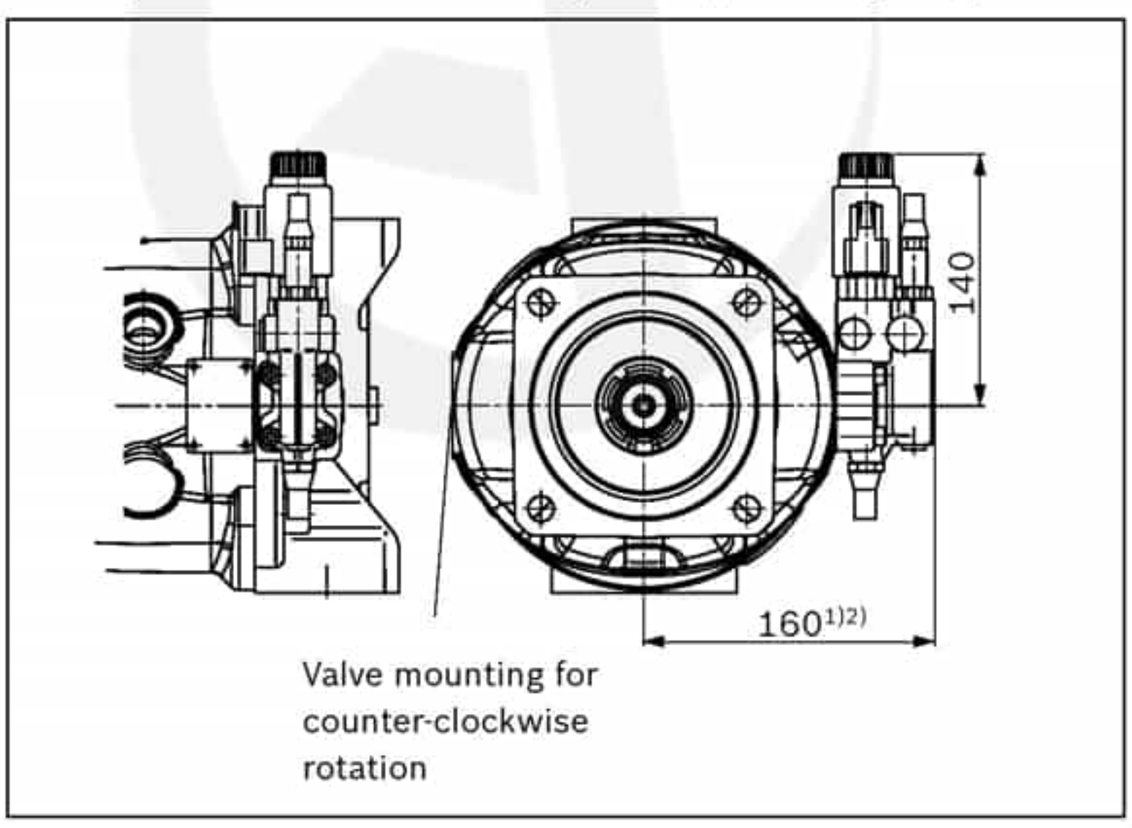
▼ **DRG – Pressure controller, remotely controlled; mounting flange D**



▼ **LA.DG – Power controller; with pressure cut-off remotely controlled; mounting flange D**



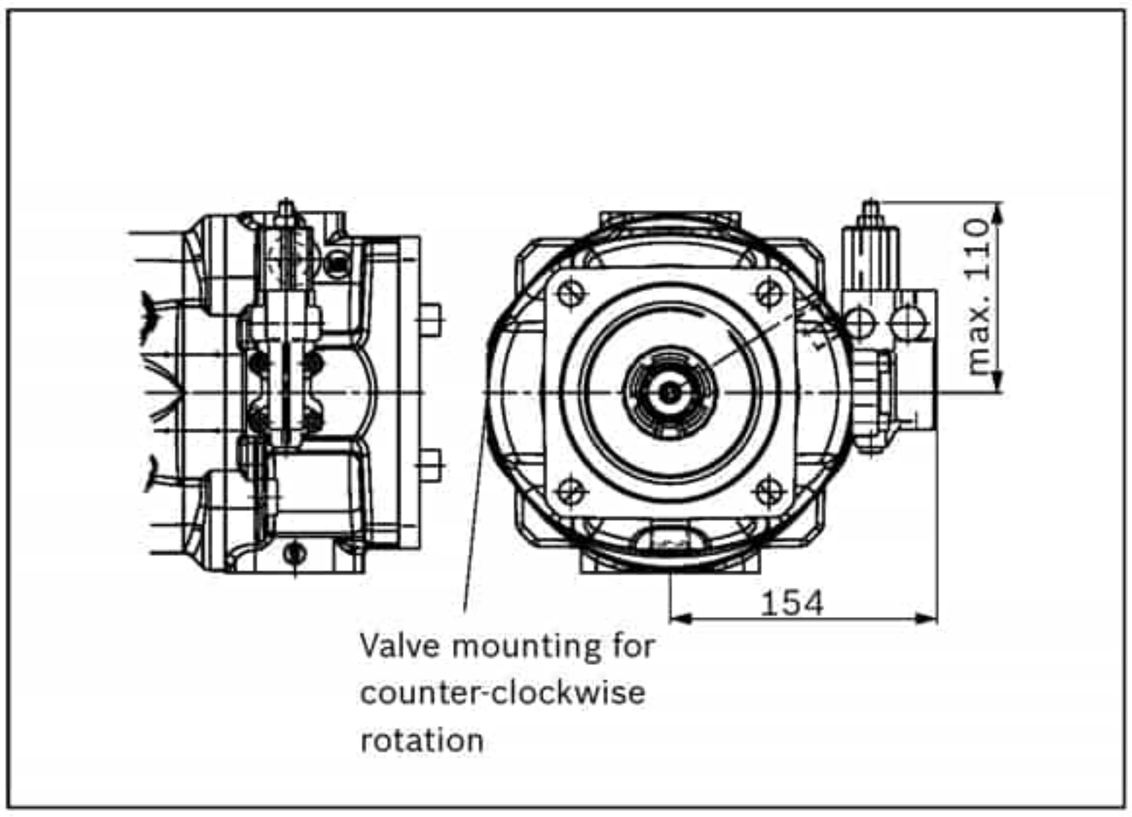
▼ **ED7./ER7. – Pressure controller, electric; mounting flange D**



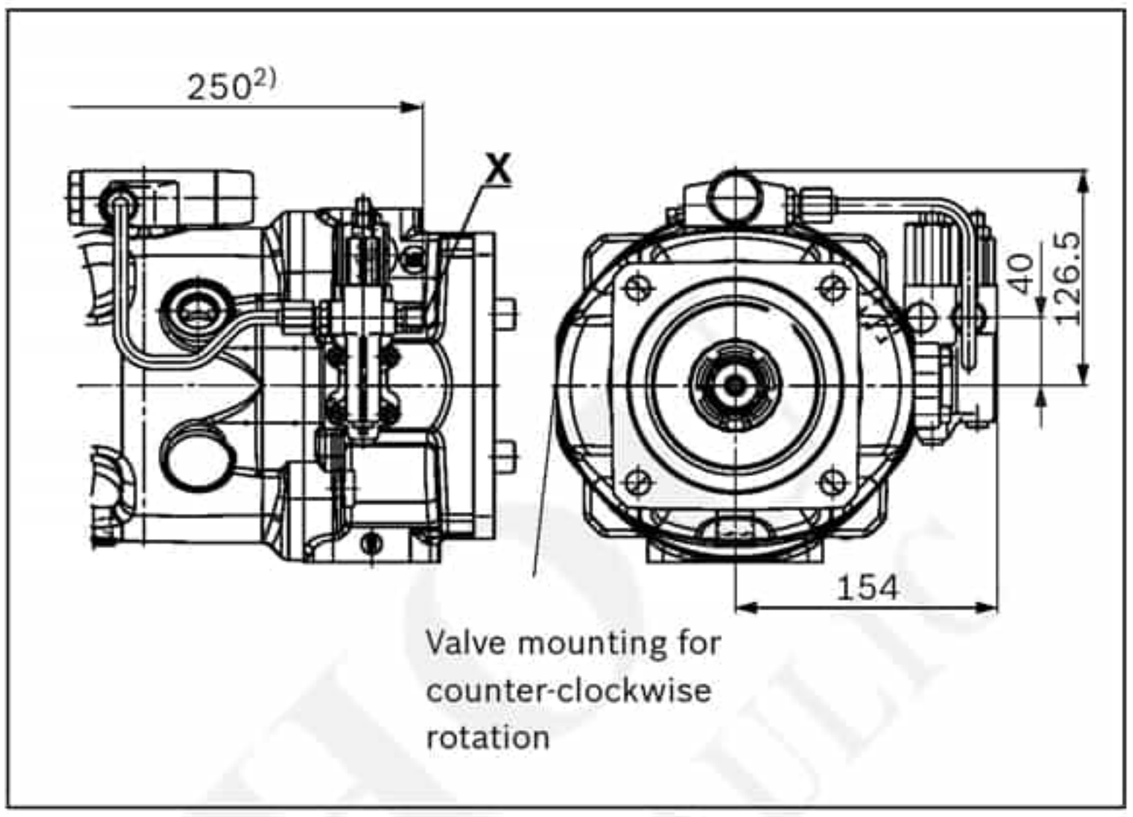
1) ER7. 195 mm if using an intermediate plate pressure controller
2) To mounting flange

Port plate 22 and 32

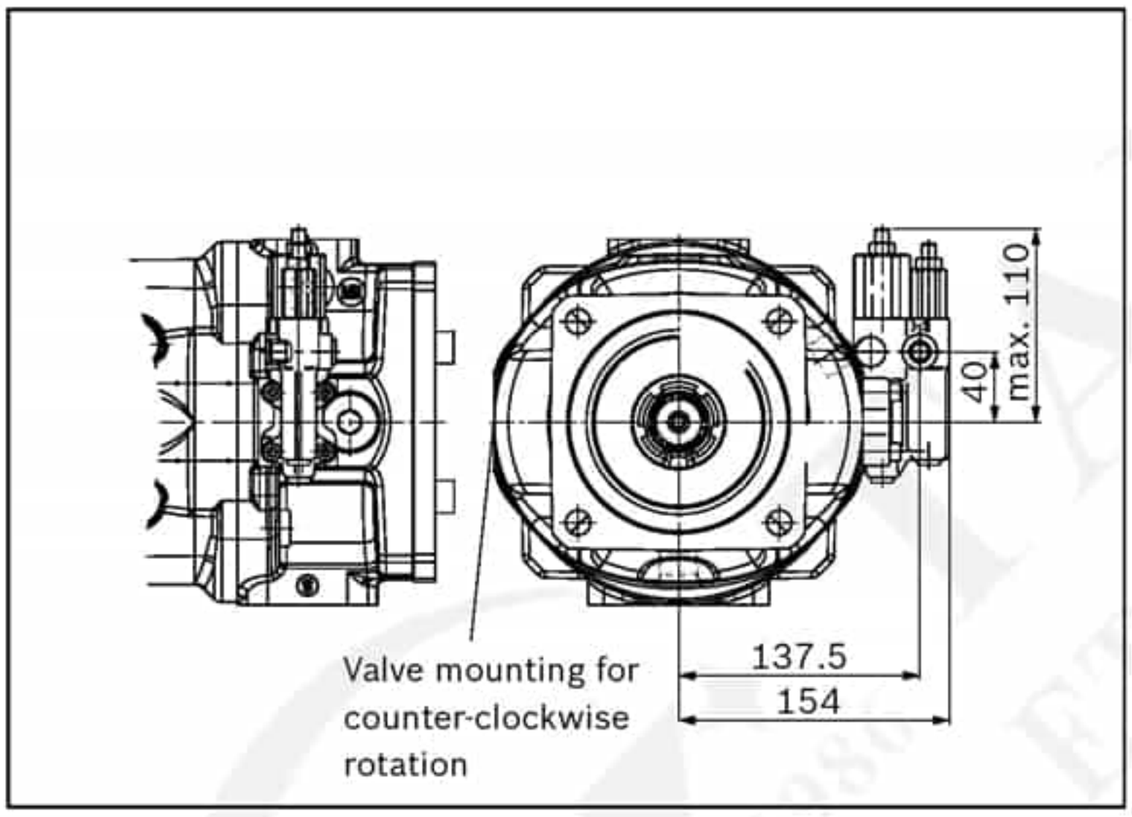
▼ **DR – Pressure controller; mounting flange D**



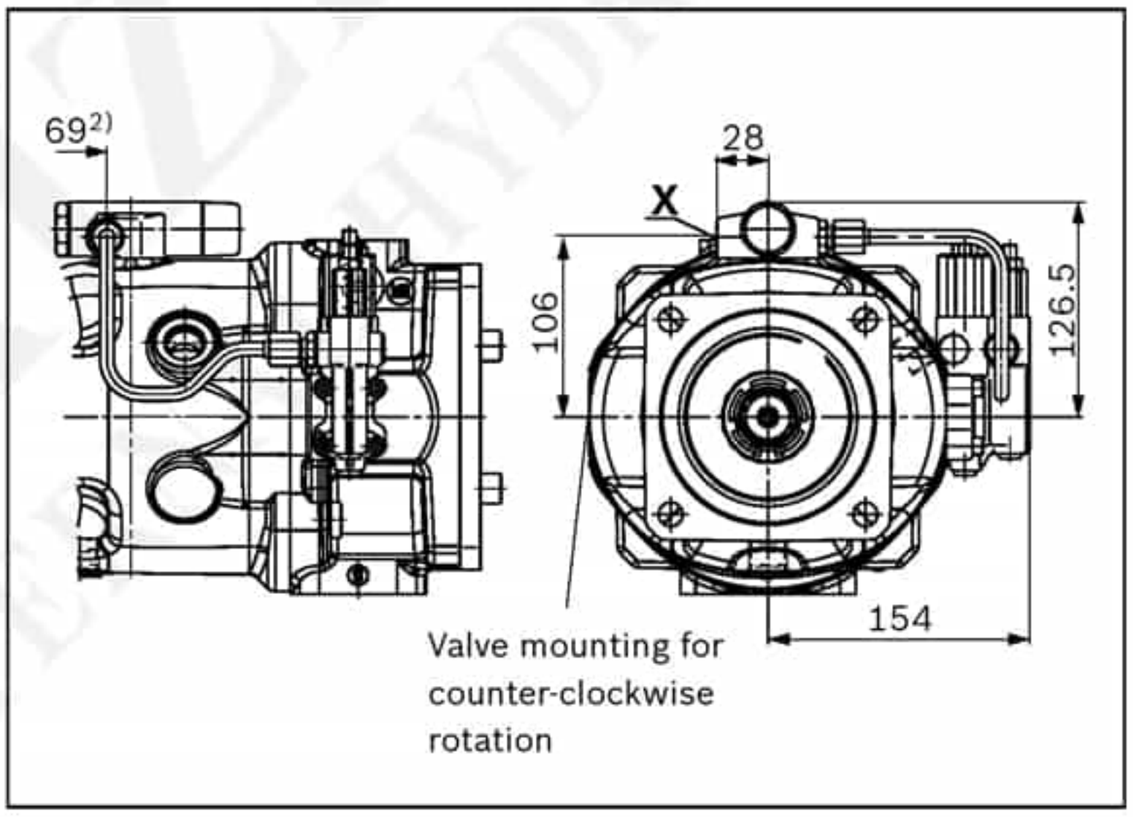
▼ **LA.DS – Pressure, flow and power controller; mounting flange D**



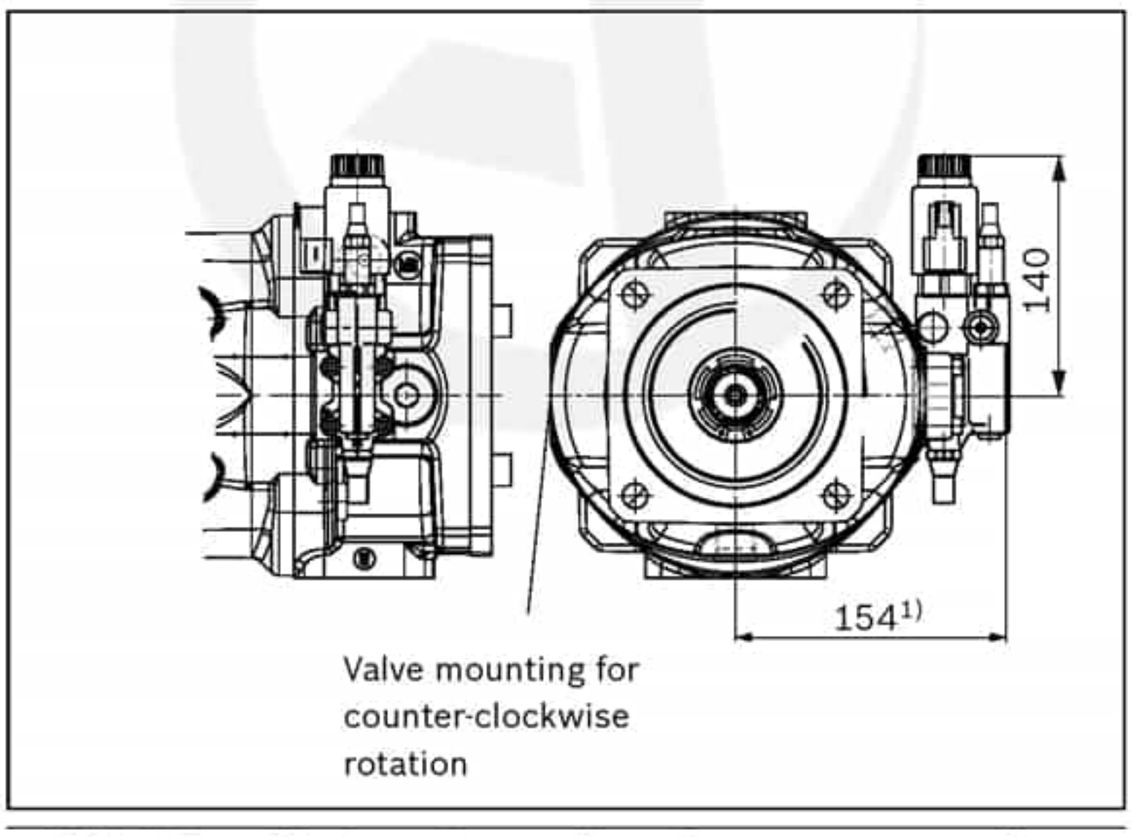
▼ **DRG – Pressure controller, remotely controlled; mounting flange D**



▼ **LA.DG – Power controller; with pressure cut-off remotely controlled; mounting flange D**



▼ **ED7./ER7. – Pressure controller, electric; mounting flange D**

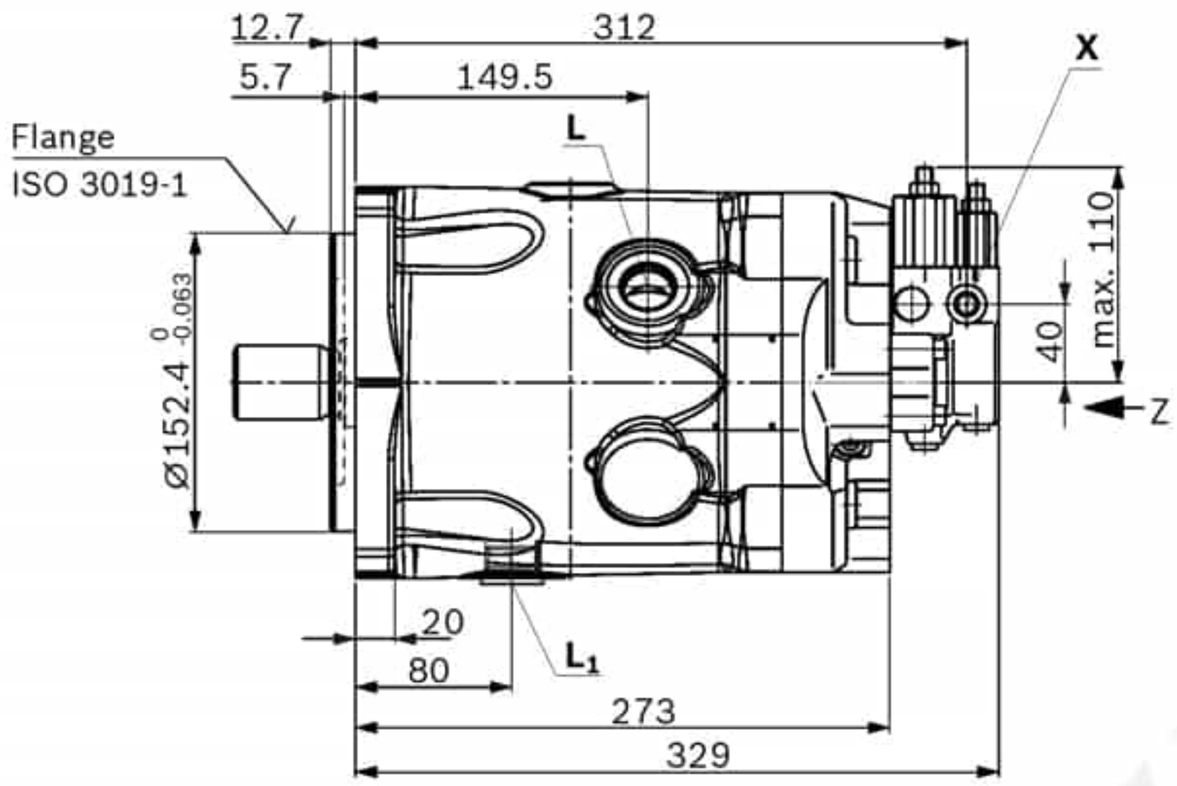


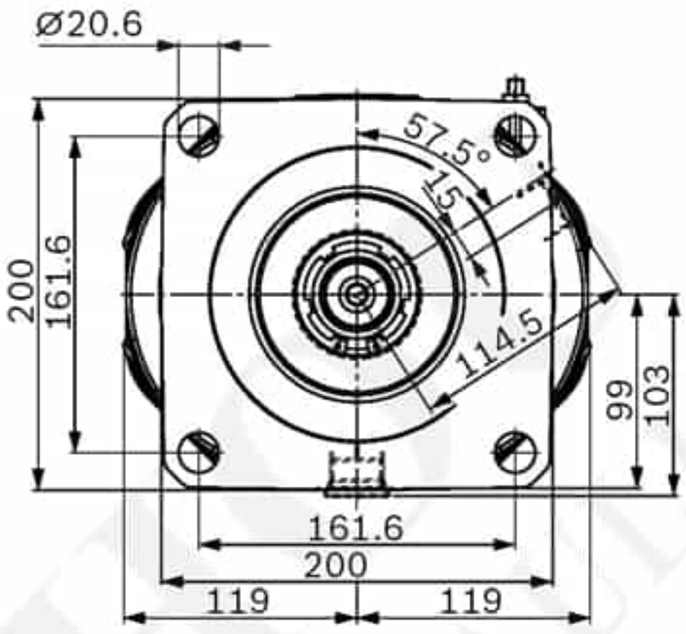
1) ER7. 189 mm if using an intermediate plate pressure controller
2) To mounting flange

Dimensions, size 100

DRF, DRS, DRSC – Pressure flow controller, port plate 11, 12; mounting flange D (SAE-D; 152-4)

▼ **Port plate 11; mounting flange D**

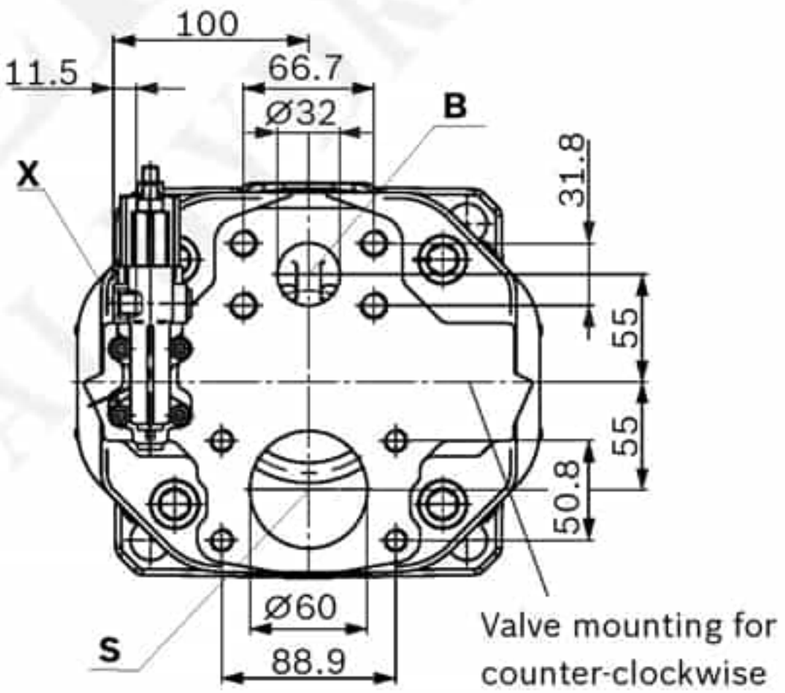




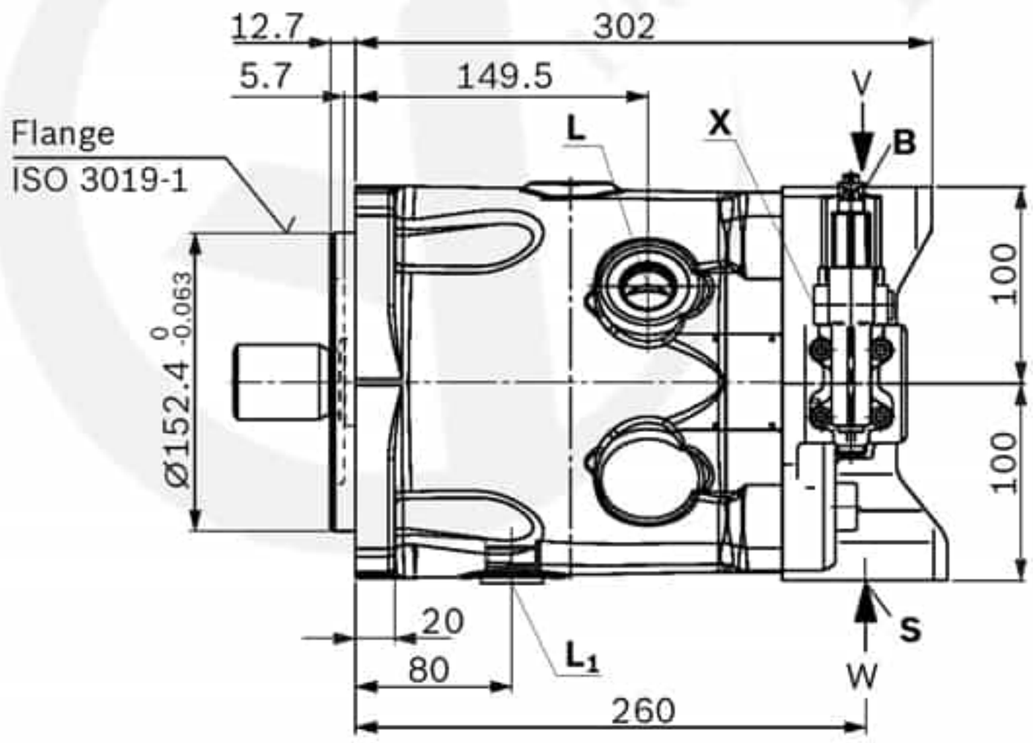
View Z

Detail W

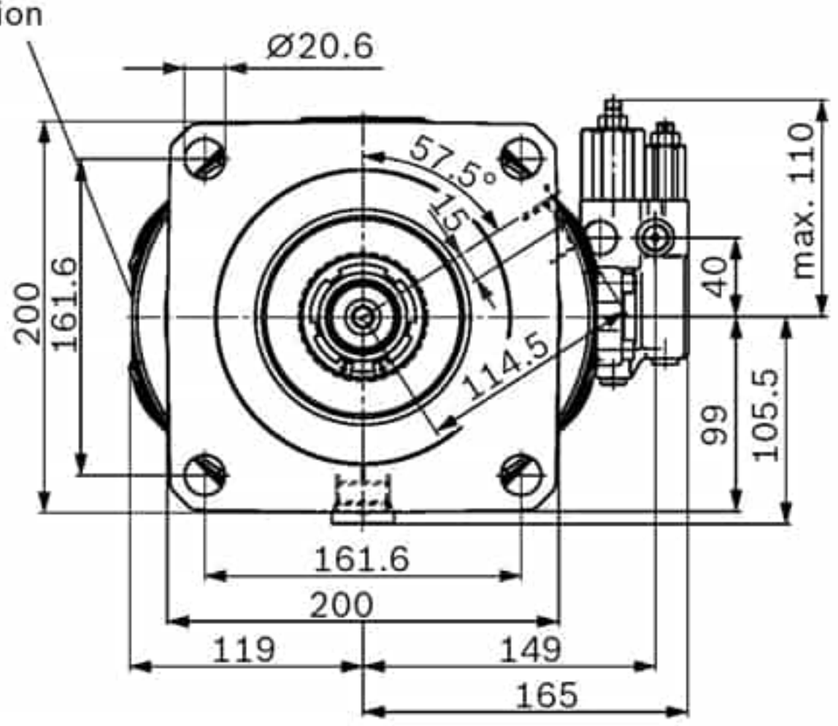
Detail V



▼ **Port plate 12; mounting flange D**



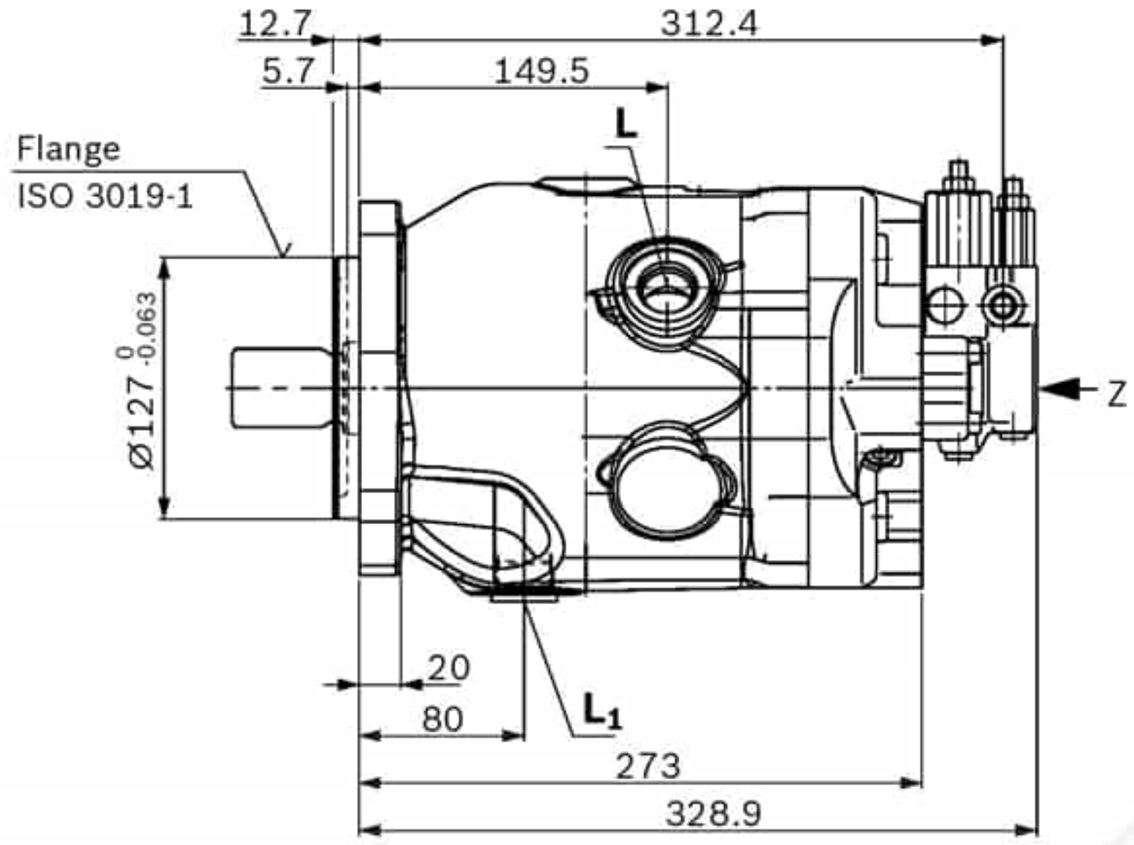
Valve mounting for
counter-clockwise
rotation

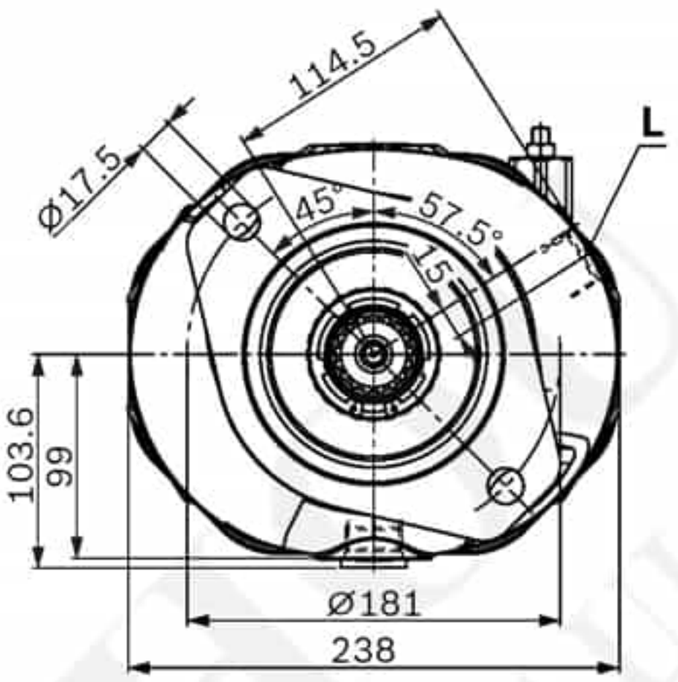


Dimensions, size 100

DRF, DRS, DRSC – Pressure flow controller, port plate 11, 12; mounting flange C (SAE-C; 127-2)

▼ **Port plate 11; mounting flange C**

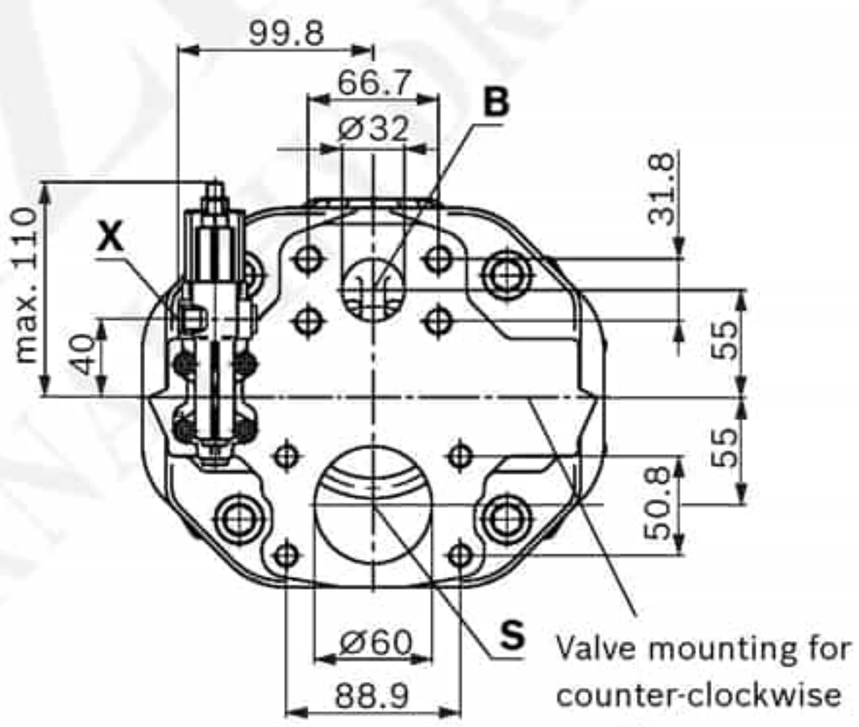




View Z

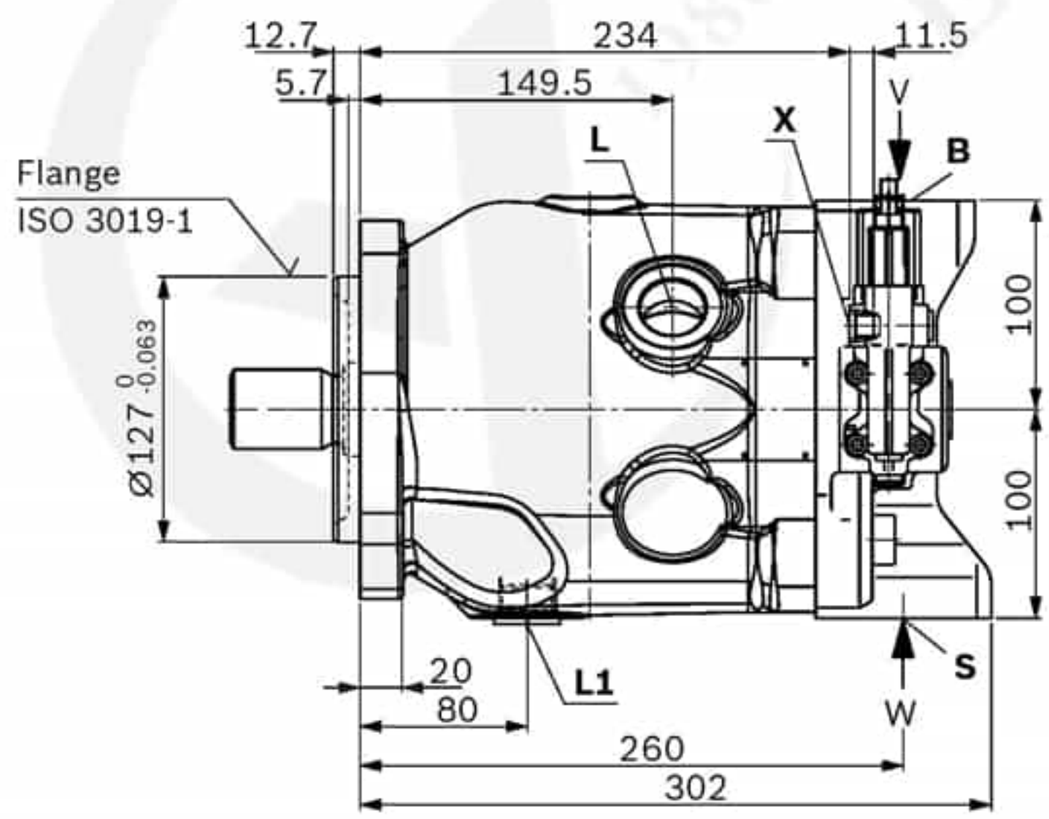
Detail W

Detail V

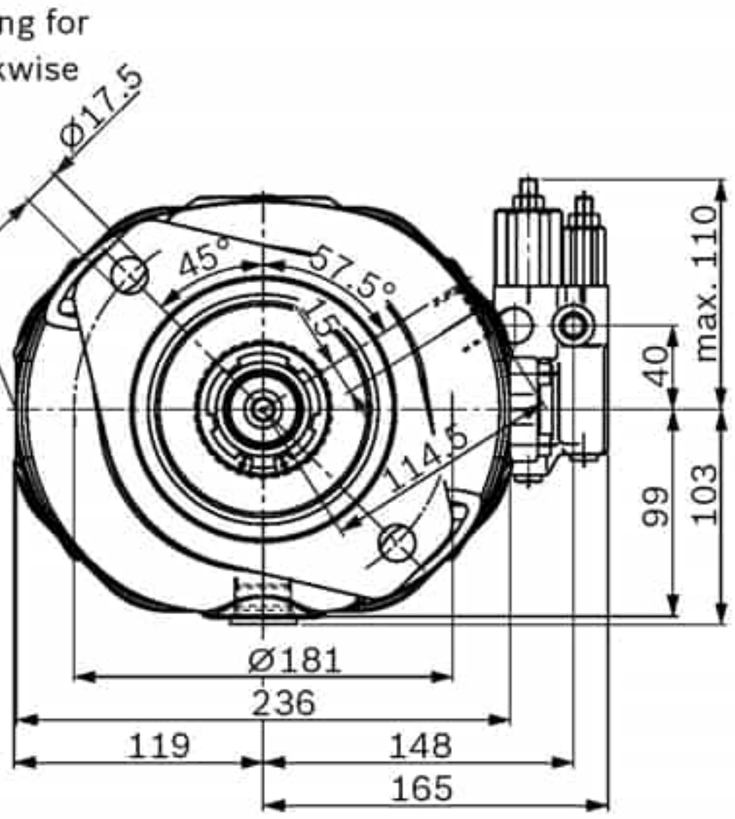


Valve mounting for counter-clockwise rotation

▼ **Port plate 12; mounting flange C**

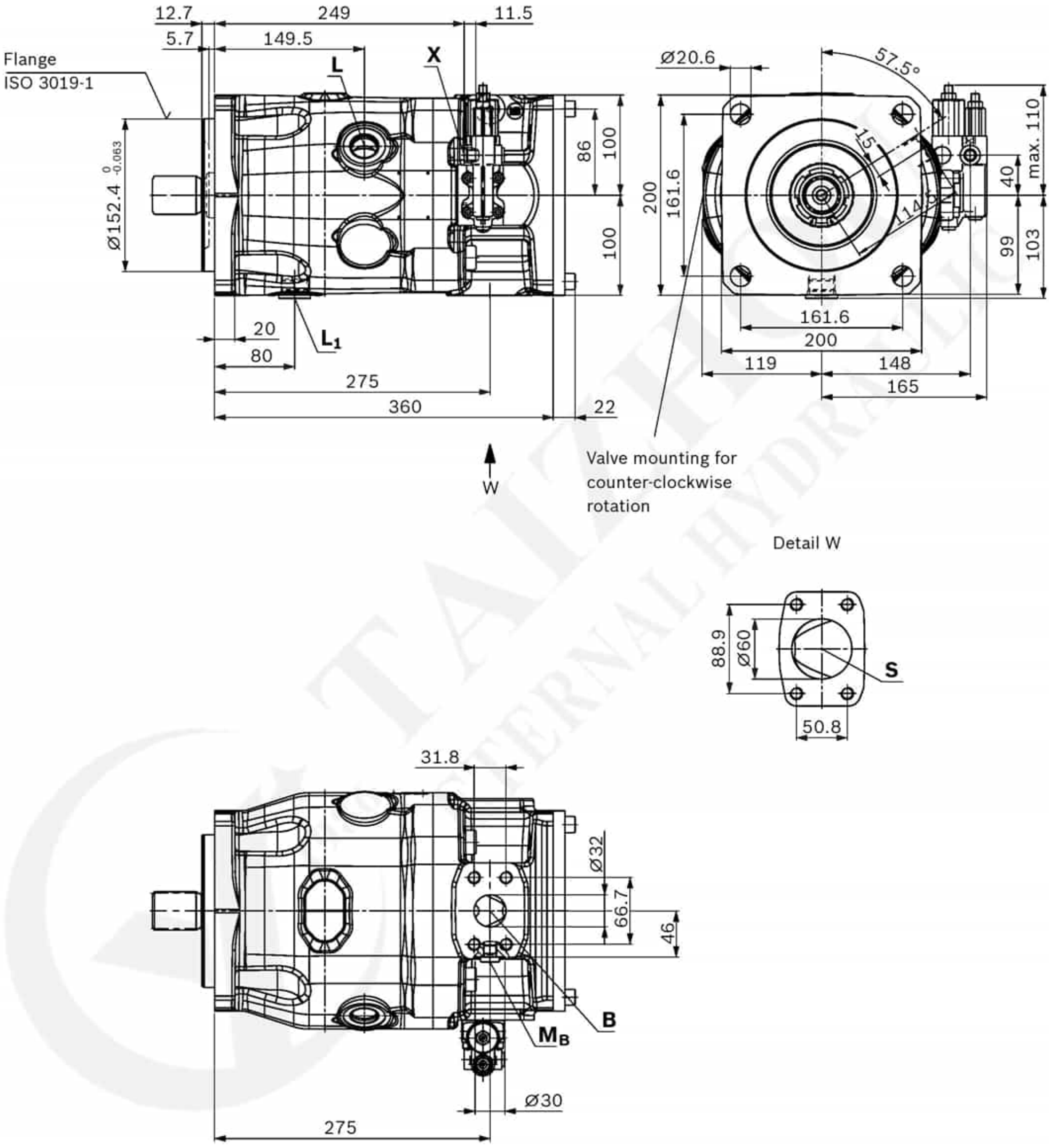


Valve mounting for counter-clockwise rotation



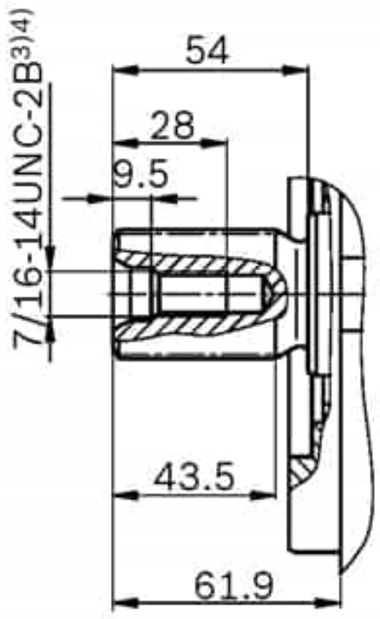
DRF, DRS, DRSC – Pressure flow controller, port plate 22; mounting flange D (SAE-D; 152-4)

▼ **Port plate 22**



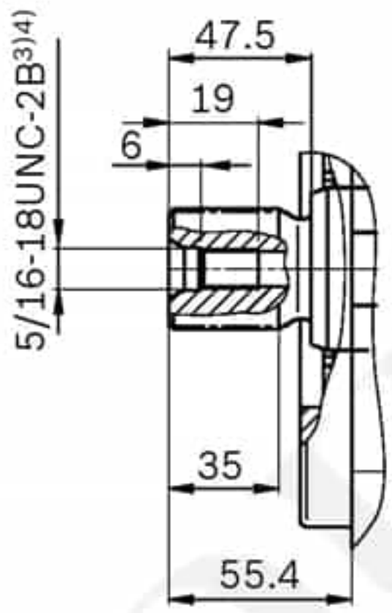
▼ **Splined shaft 1 1/2 in (SAE J744)**

S – 17T 12/24DP[1)]



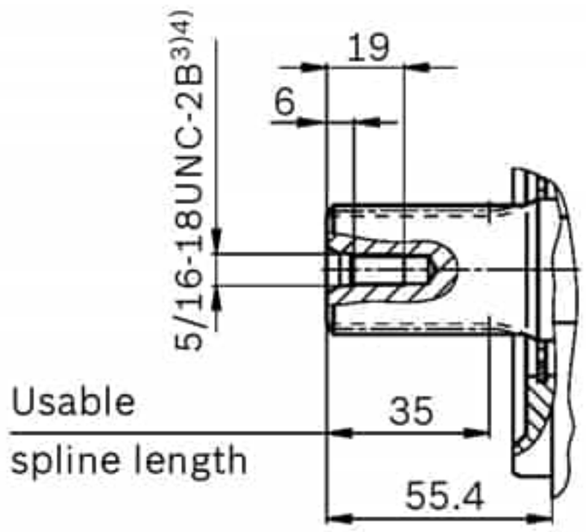
▼ **Splined shaft 1 1/4 in (SAE J744)**

U – 14T 12/24DP[1)]



▼ **Splined shaft 1 1/4 in (SAE J744)**

W – 14T 12/24DP[1)2)]

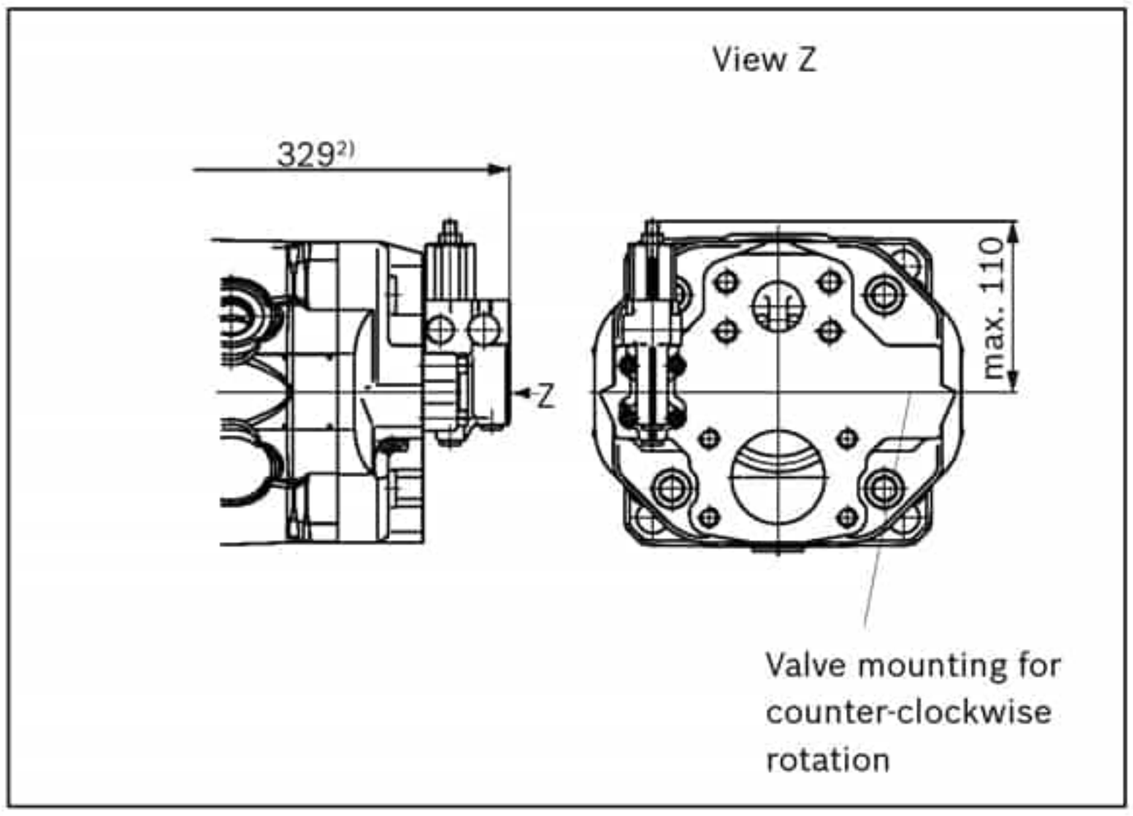


Ports		Standard	Size	$p_{max\ abs}$ [bar][4)]	State[8)]
B	Working port (high-pressure series) Fastening thread	SAE J518[5)] DIN 13	1 1/4 in M14 x 2; 19 deep	350	O
S	Suction port (standard pressure series) Fastening thread	SAE J518[5)] DIN 13	2 1/2 in M12 x 1.75; 17 deep	10	O
L	Drain port	ISO 11926[6)]	1 1/16-12 UNF-2B; 20 deep	2	O[7)]
L_1	Drain port	ISO 11926[6)]	1 1/16-12 UNF-2B; 20 deep	2	X[7)]
X	Pilot pressure	ISO 11926	7/16-20 UNF; 12 deep	350	O
M_B	Measuring pressure **B** (only with port plates 22 and 32)	DIN 3852-2[6)]	G 1/4 in; 12 deep	350	X

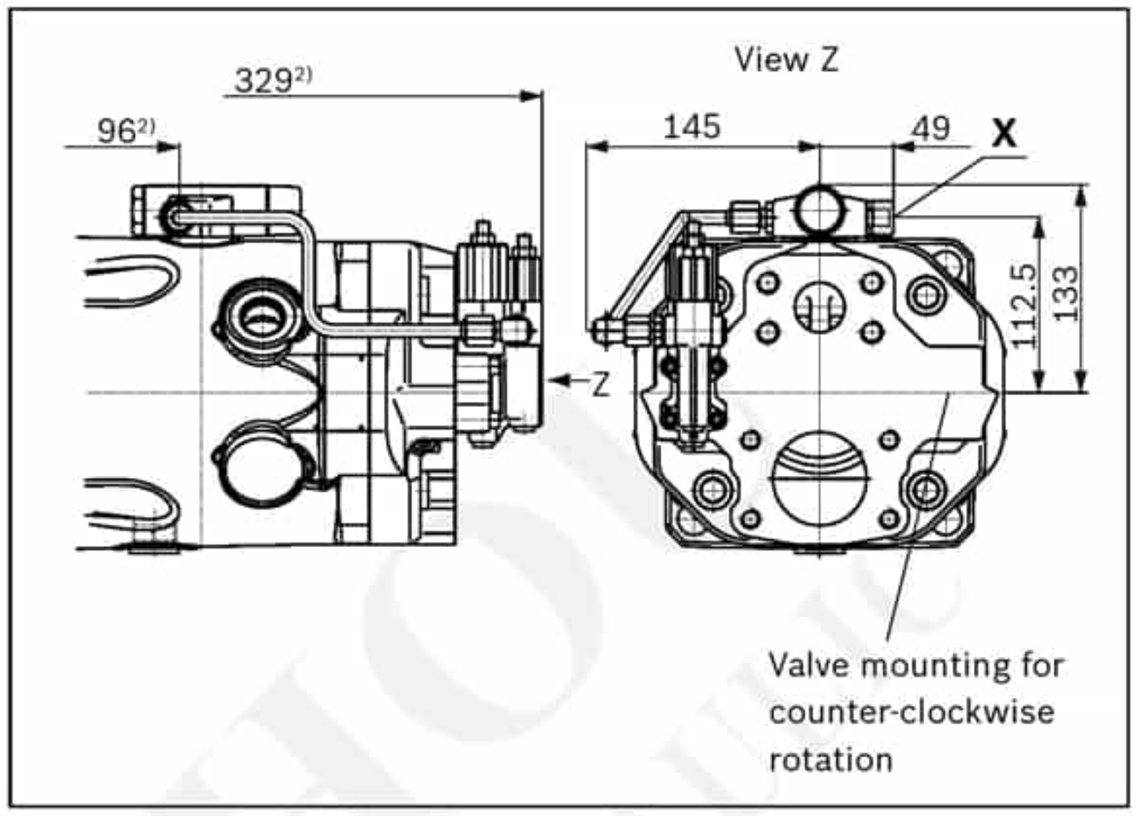
1) Involute spline according to ANSI B92.1a, 30° pressure angle, flat root, side fit, tolerance class 5
2) Splines according to ANSI B92.1a, spline runout is a deviation from standard SAE J744.
3) Thread according to ASME B1.1
4) Depending on the application, momentary pressure peaks can occur.
   Keep this in mind when selecting measuring devices and fittings.
5) Metric fastening thread is a deviation from standard.
6) The countersink may be deeper than specified in the standard.
7) Depending on the installation position, L or L_1 must be connected (also see installation instructions starting on page 64).
8) O = Must be connected (comes plugged)
   X = Plugged (in normal operation)

Port plate 11

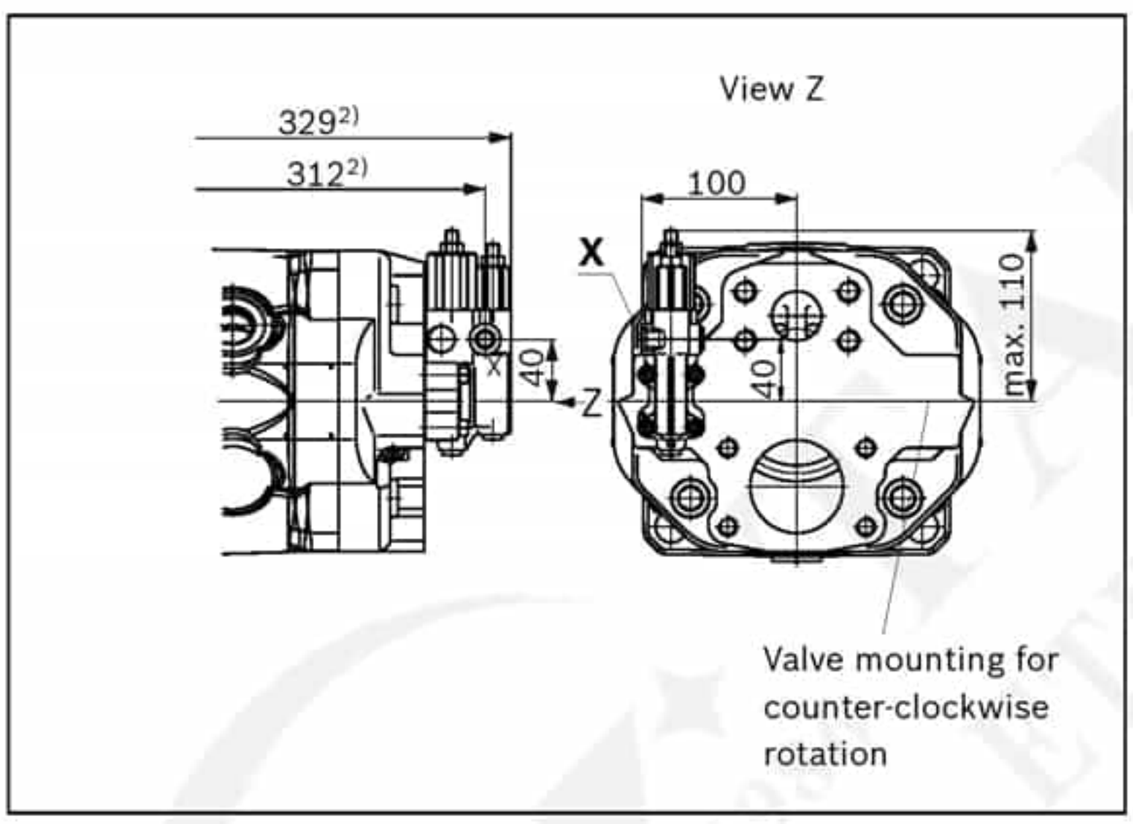
▼ **DR – Pressure controller; mounting flange D**



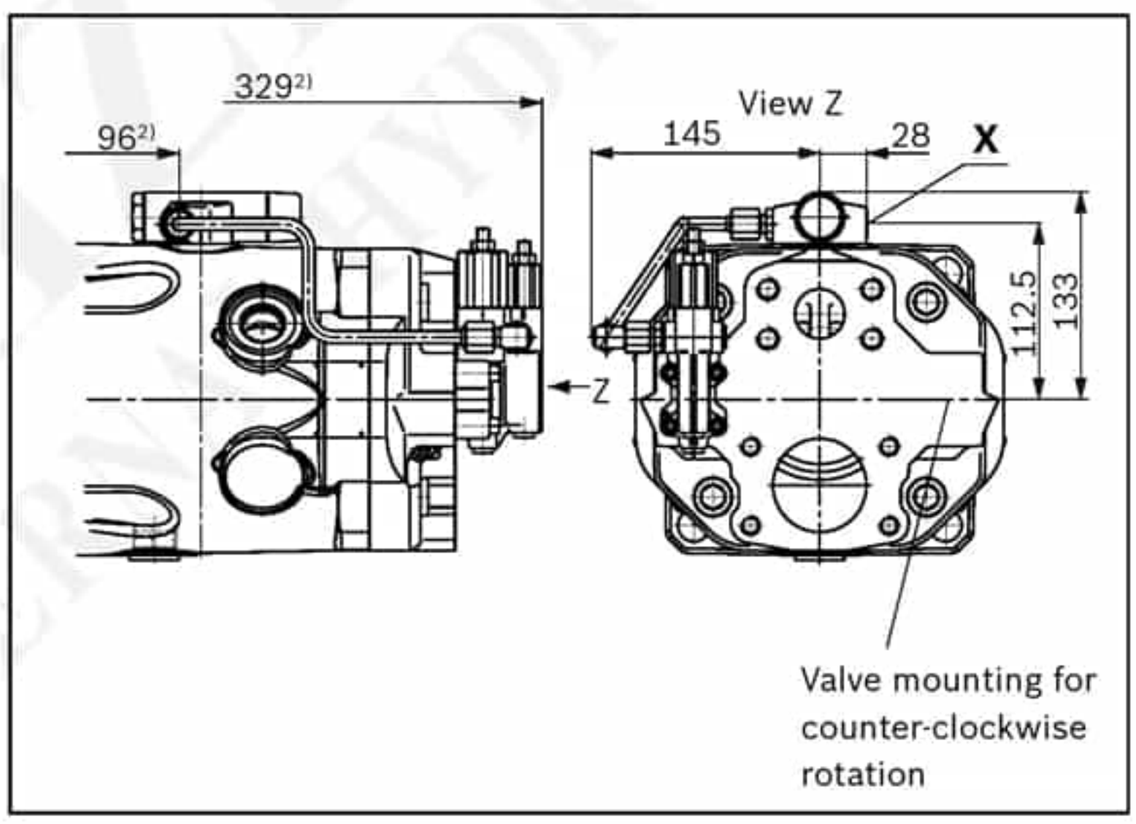
▼ **LA.DS – Pressure, flow and power controller; mounting flange D**



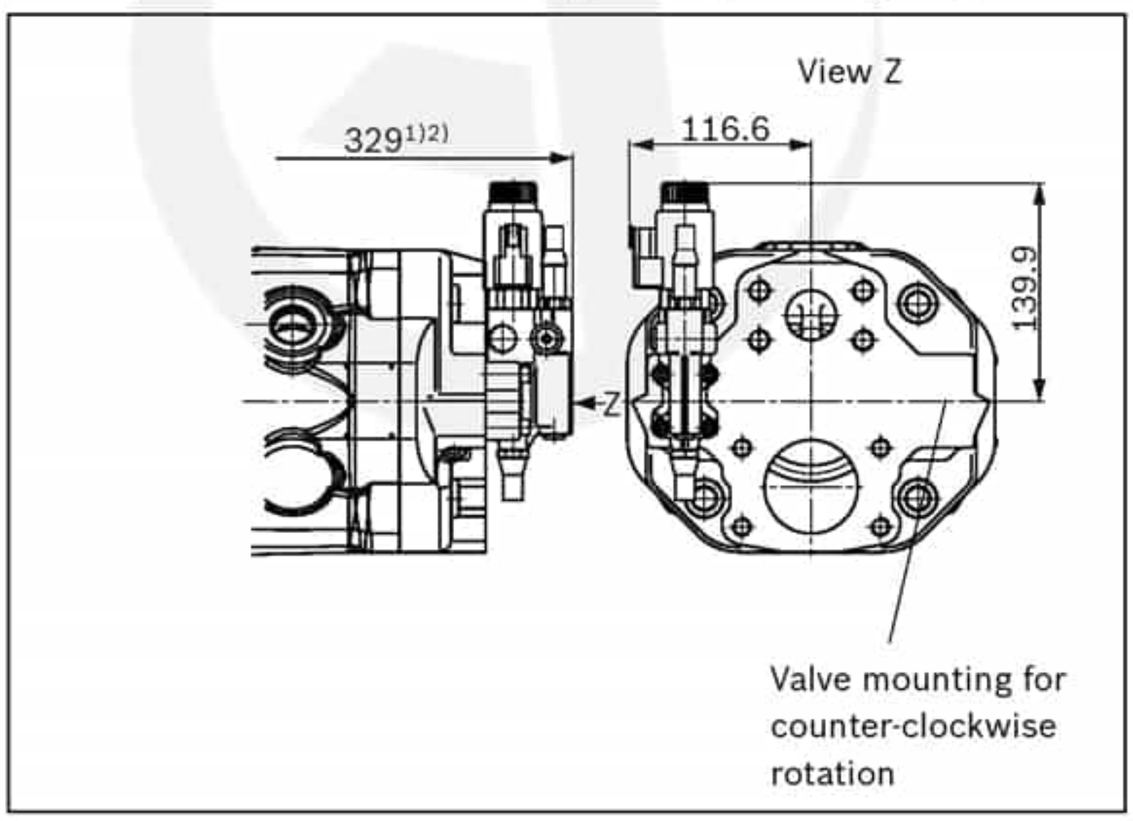
▼ **DRG – Pressure controller, remotely controlled; mounting flange D**



▼ **LA.DG – Power controller; with pressure cut-off remotely controlled; mounting flange D**



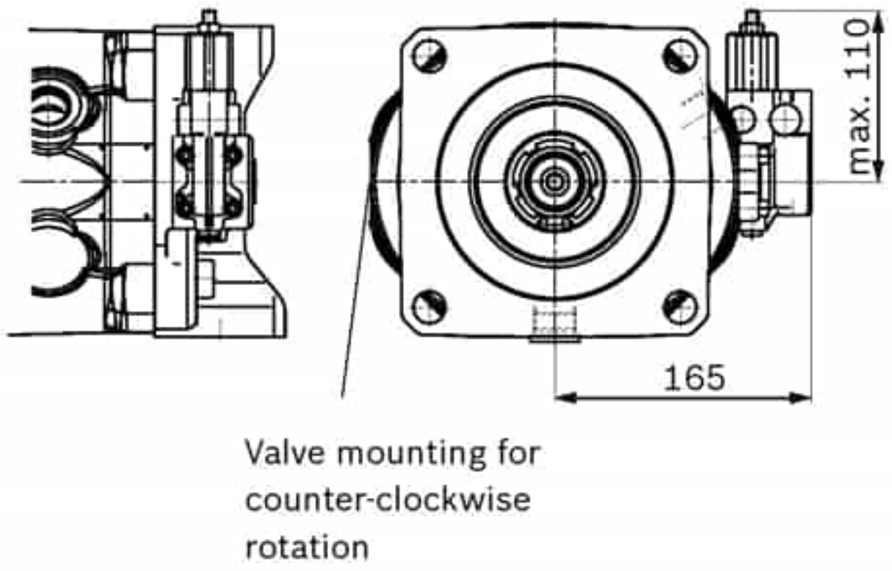
▼ **ED7./ER7. – Pressure controller, electric; mounting flange D**



1) ER7. 364 mm if using an intermediate plate pressure controller
2) To mounting flange

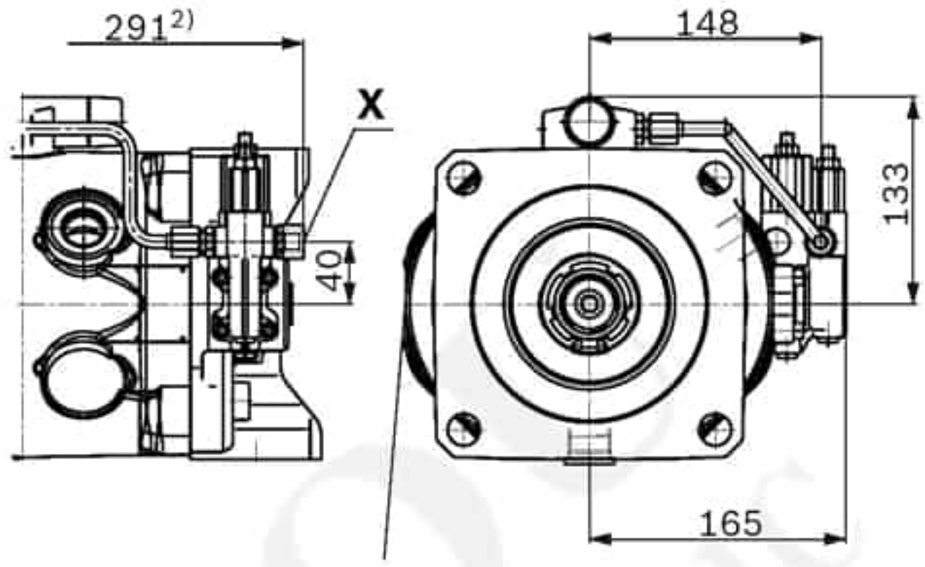
Port plate 12

▼ **DR – Pressure controller; mounting flange D**



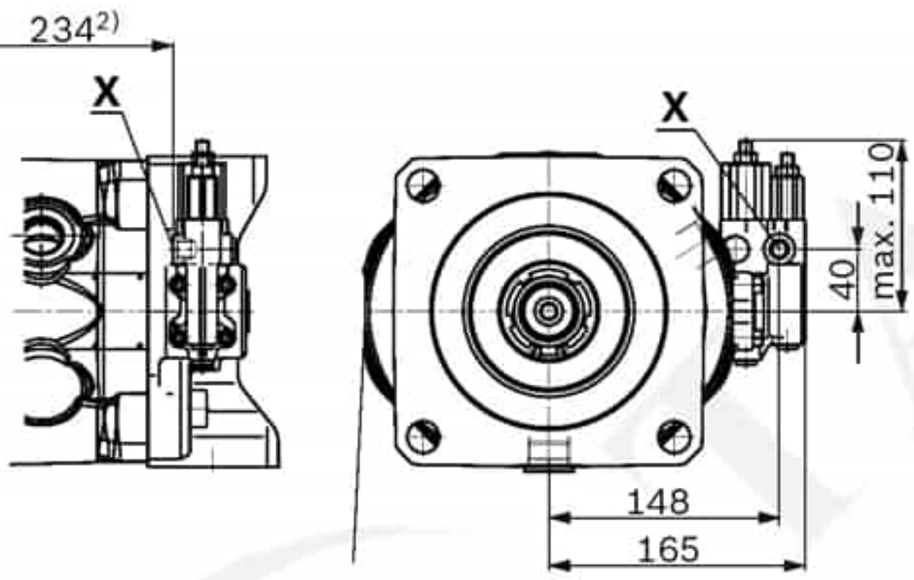
Valve mounting for
counter-clockwise
rotation

▼ **LA.DS – Pressure, flow and power controller; mounting flange D**



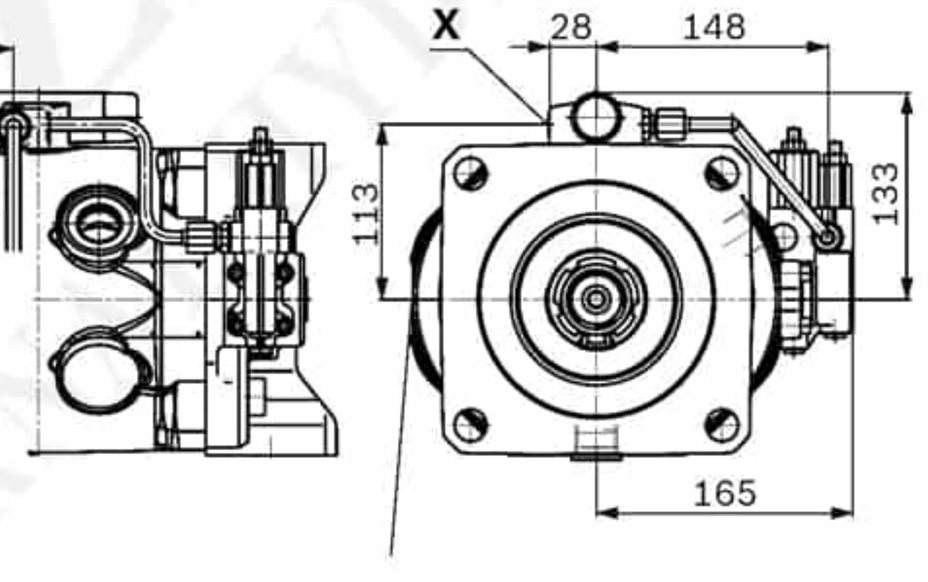
Valve mounting for
counter-clockwise
rotation

▼ **DRG – Pressure controller, remotely controlled; mounting flange D**



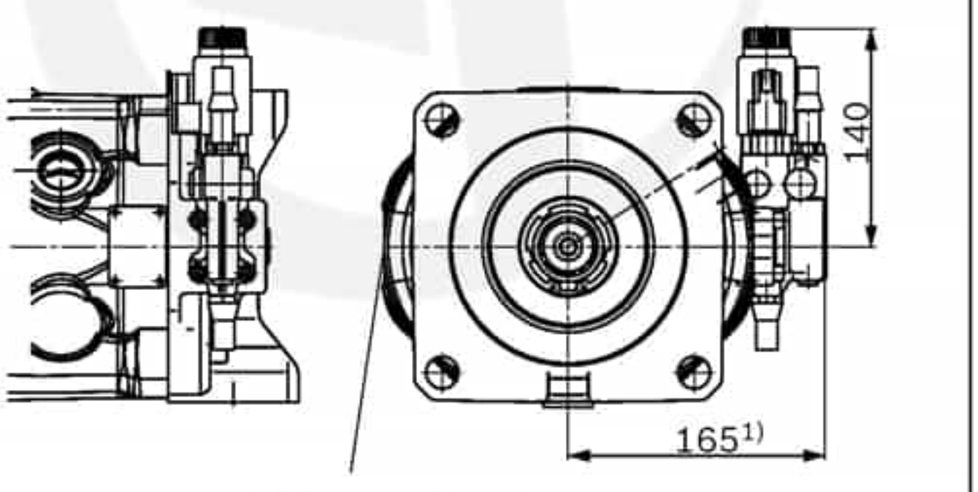
Valve mounting for
counter-clockwise
rotation

▼ **LA.DG – Power controller; with pressure cut-off remotely controlled; mounting flange D**



Valve mounting for
counter-clockwise
rotation

▼ **ED7./ER7. – Pressure controller, electric; mounting flange D**

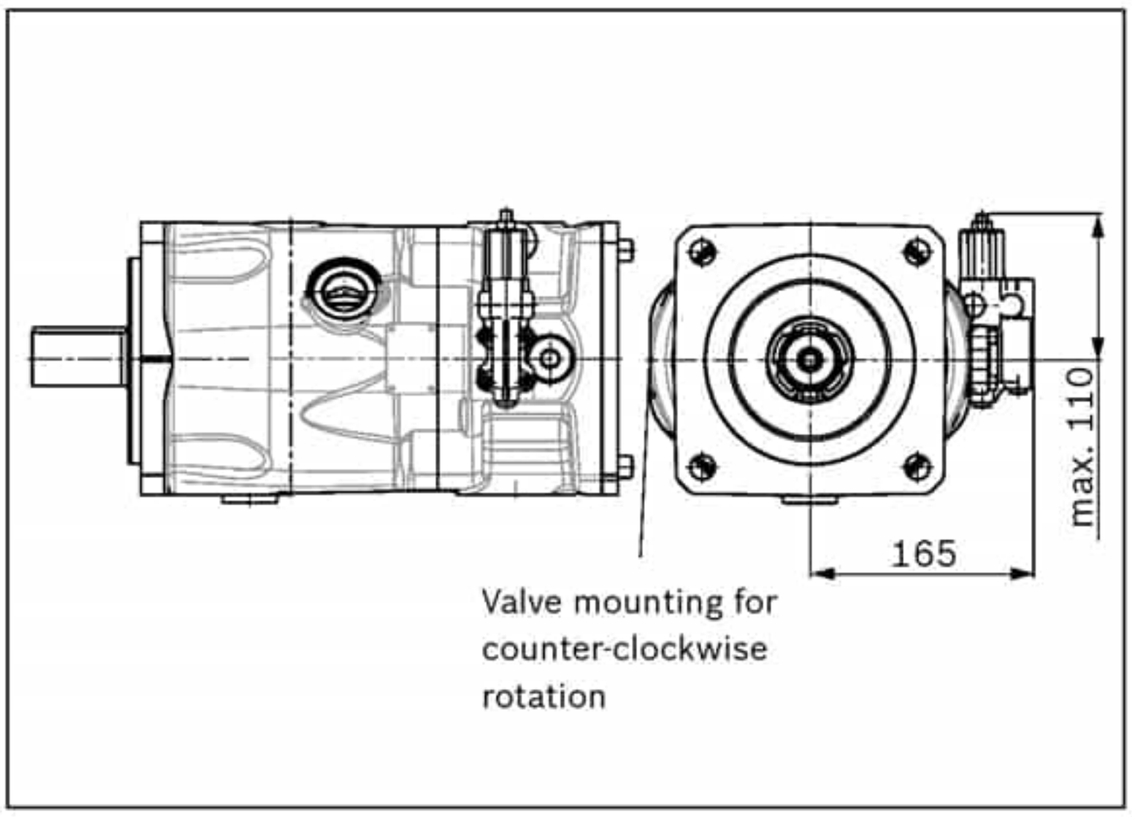


Valve mounting for
counter-clockwise
rotation

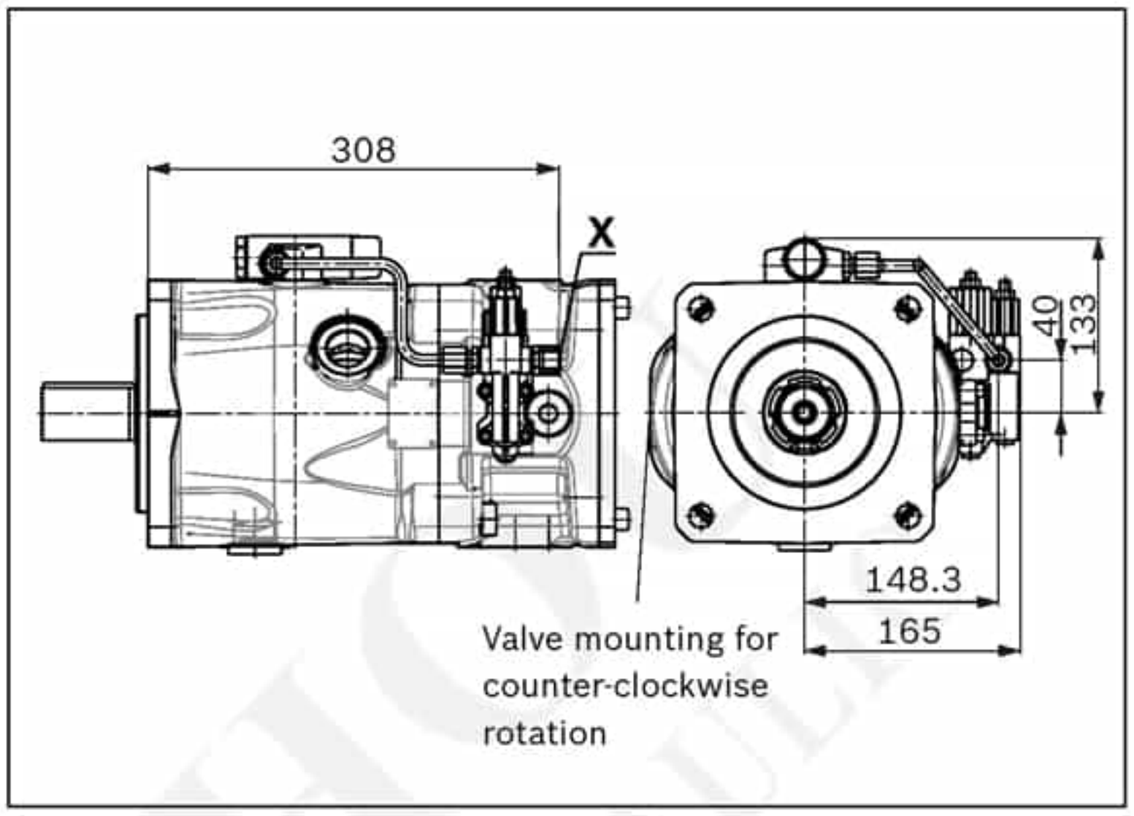
1) ER7. 200 mm if using an intermediate plate pressure controller
2) To mounting flange

Port plate 22

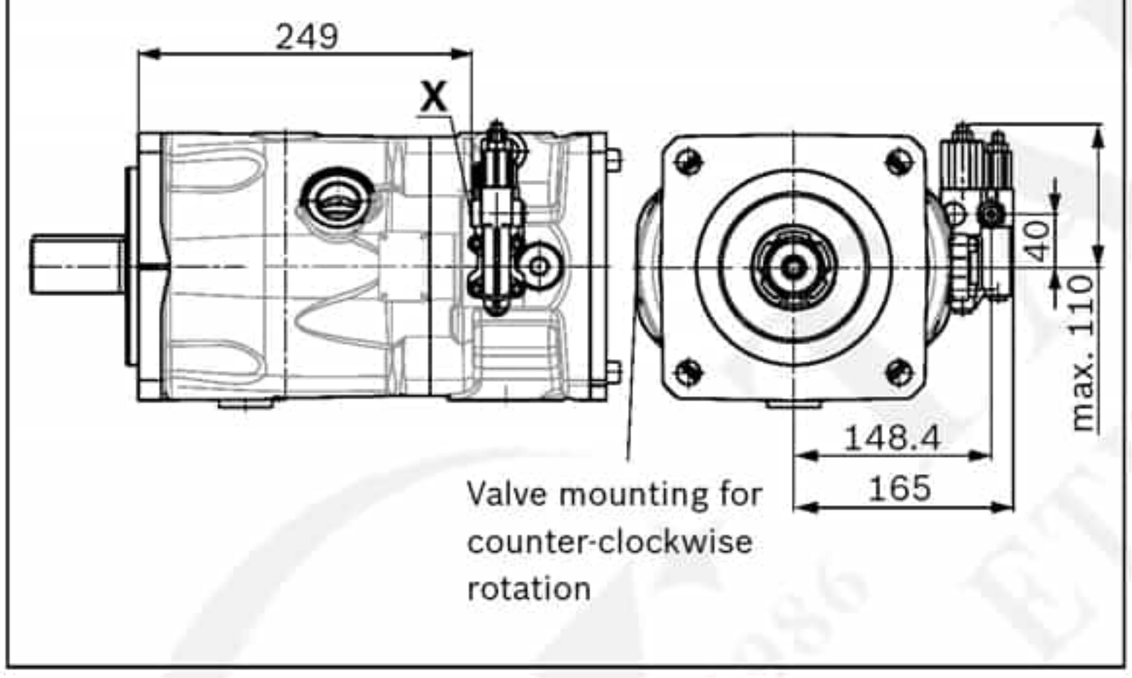
▼ **DR – Pressure controller; mounting flange D**



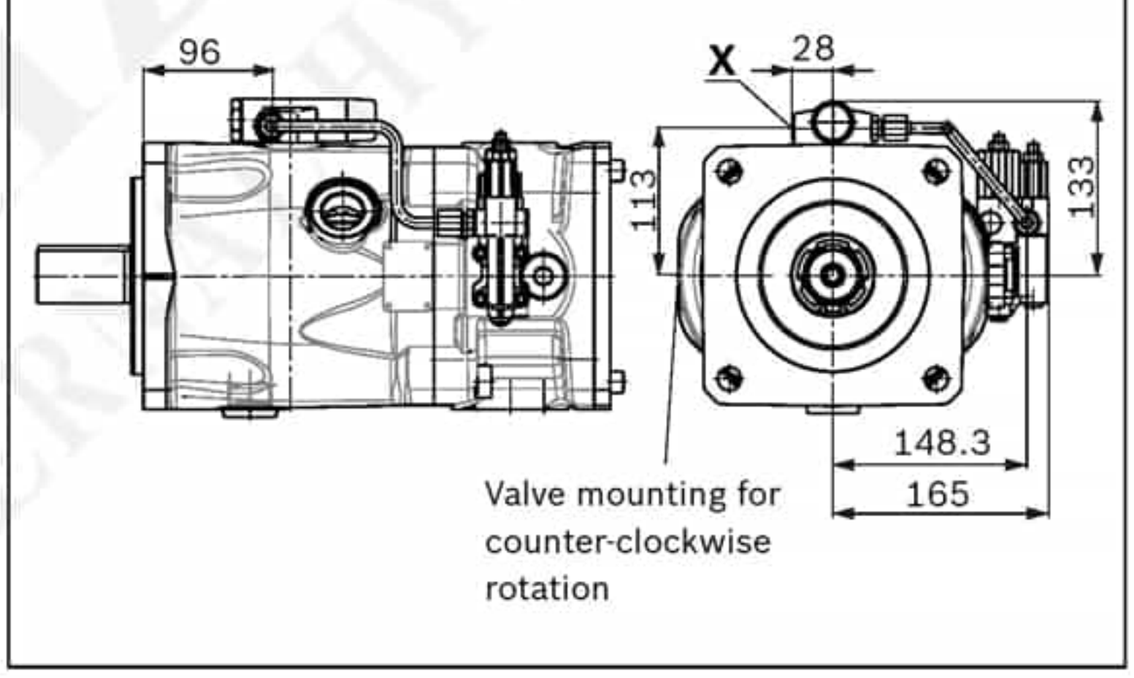
▼ **LA.DS – Pressure, flow and power controller; mounting flange D**



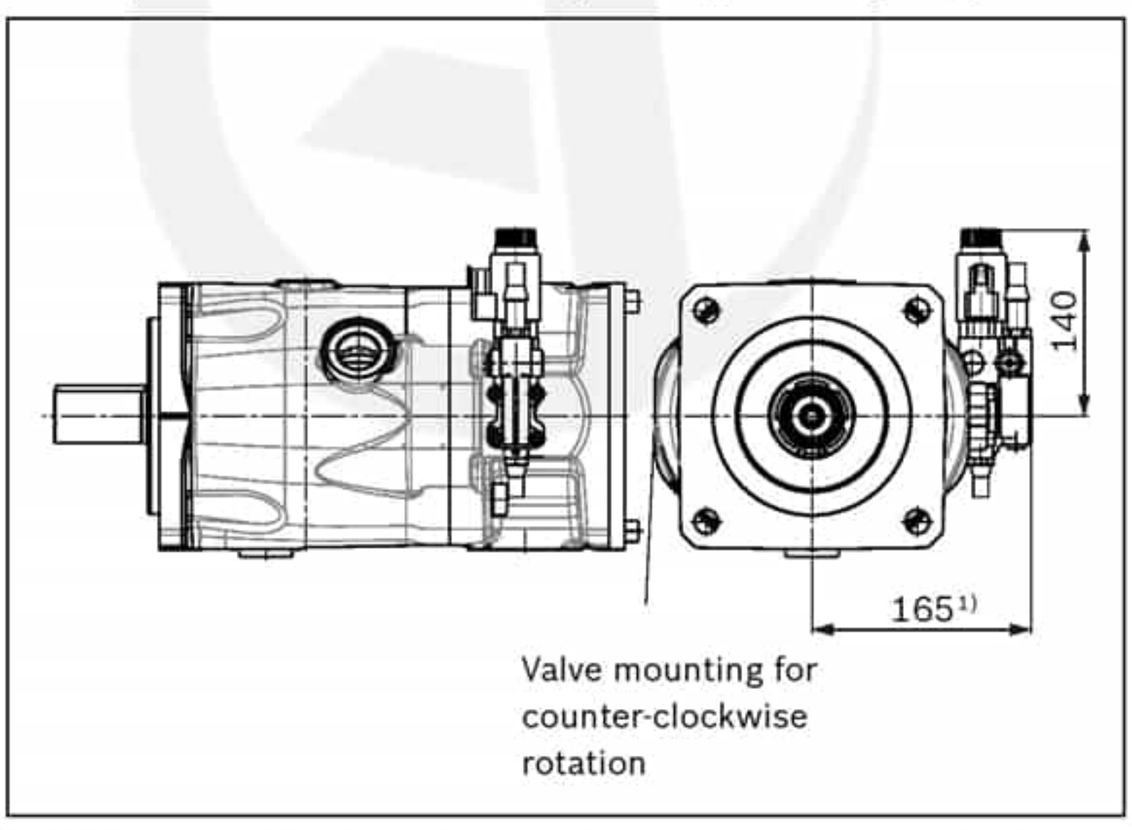
▼ **DRG – Pressure controller, remotely controlled; mounting flange D**



▼ **LA.DG – Power controller; with pressure cut-off remotely controlled; mounting flange D**



▼ **ED7./ER7. – Pressure controller, electric; mounting flange D**

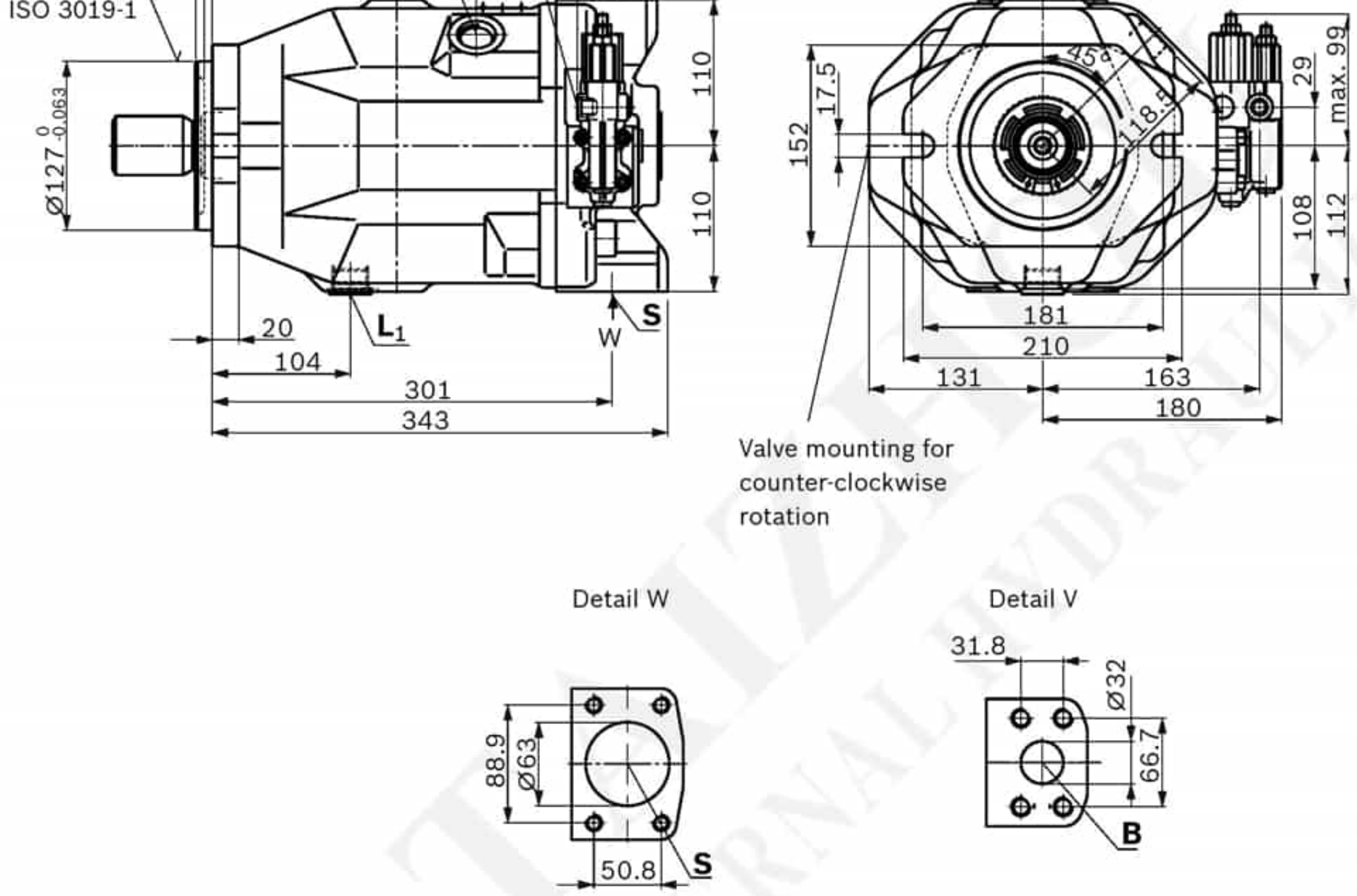


1) ER7. 200 mm if using an intermediate plate pressure controller
2) To mounting flange

Dimensions, size 140

DRF, DRS, DRSC – Pressure flow controller, port plate 11 and 12; mounting flange C (SAE-C; 127-2)

▼ **Port plate 12; mounting flange C**

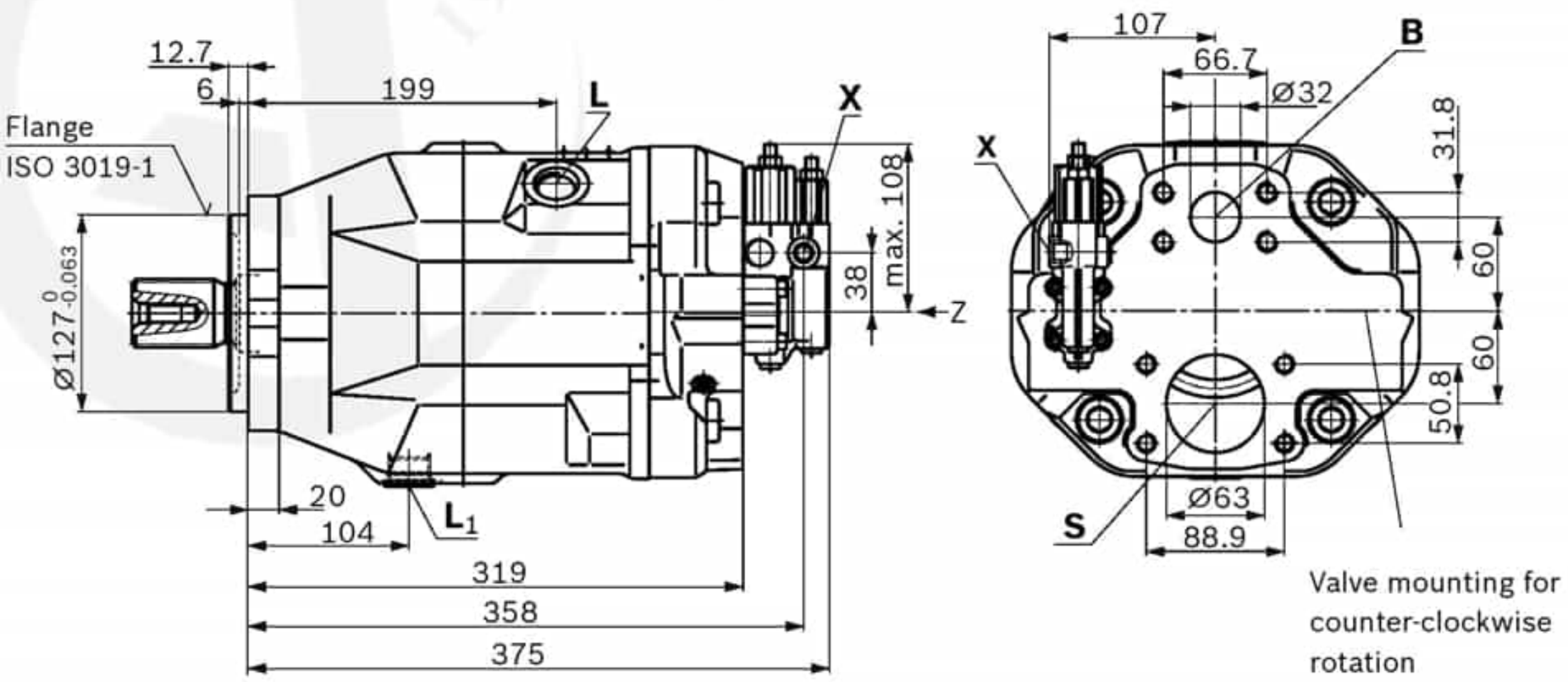


Detail W

Detail V

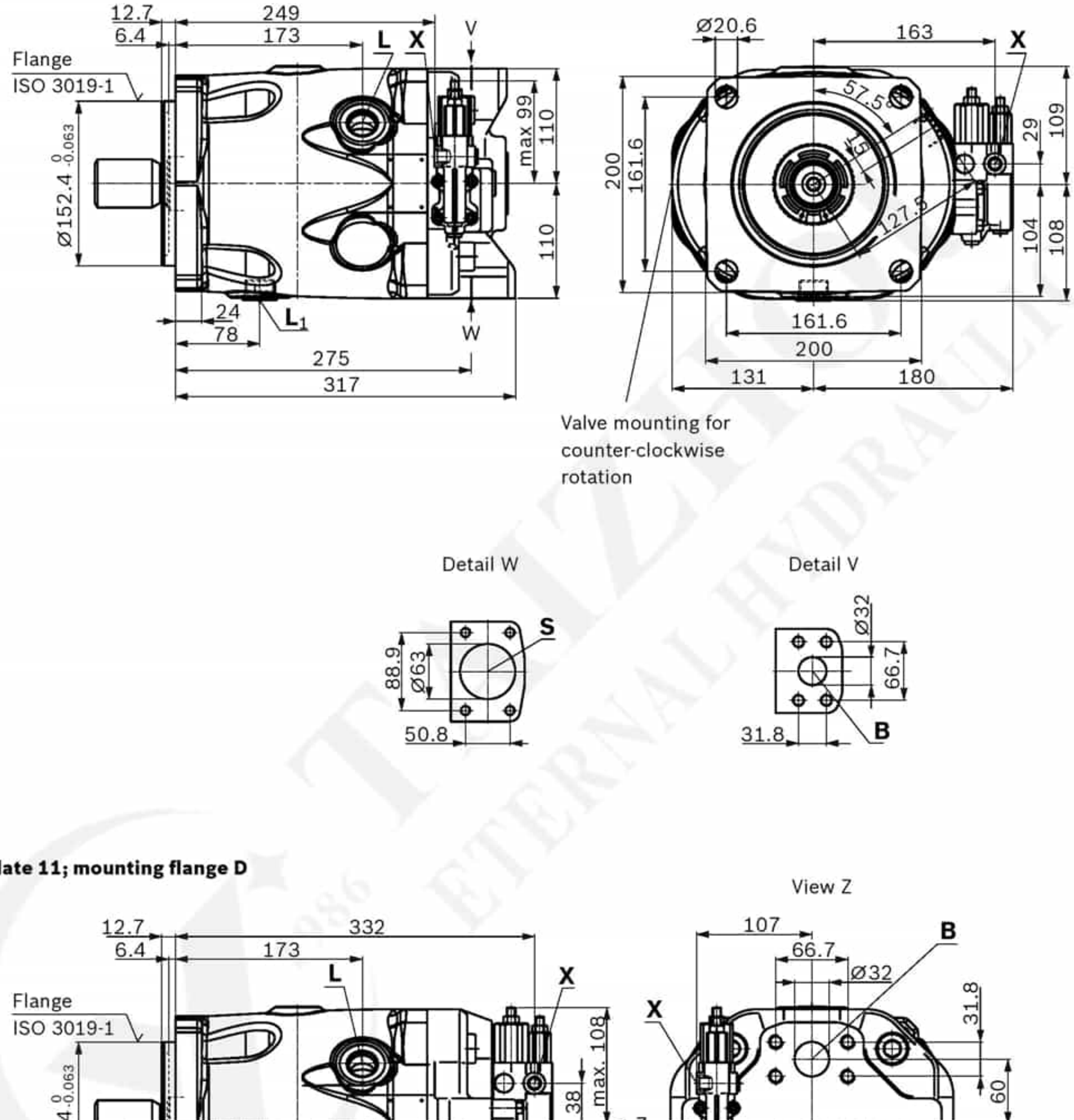
▼ **Port plate 11; mounting flange C**

View Z

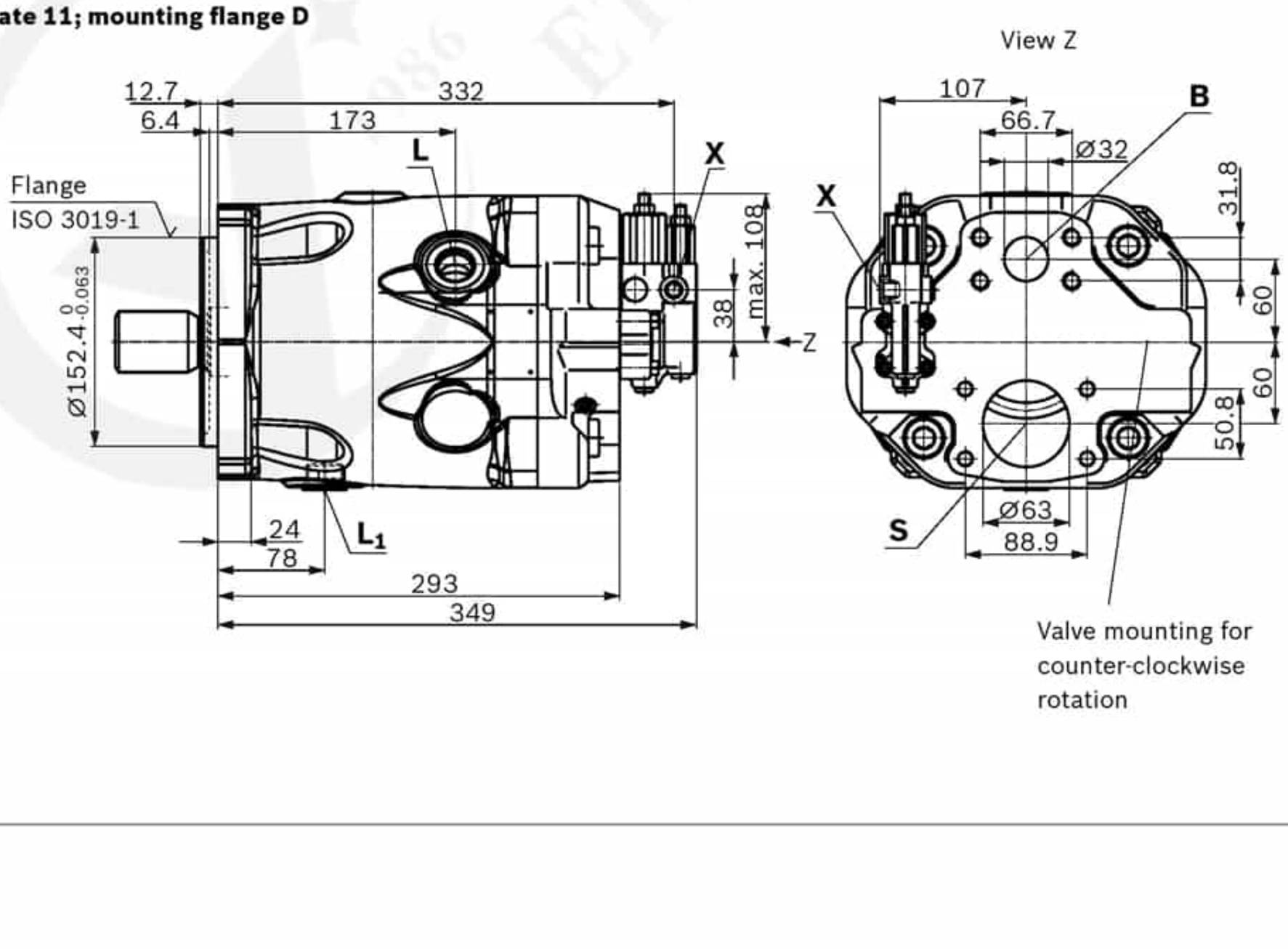


DRF, DRS, DRSC – Pressure flow controller, port plate 11 and 12; mounting flange D (SAE-D; 152-4)

▼ **Port plate 12; mounting flange D**

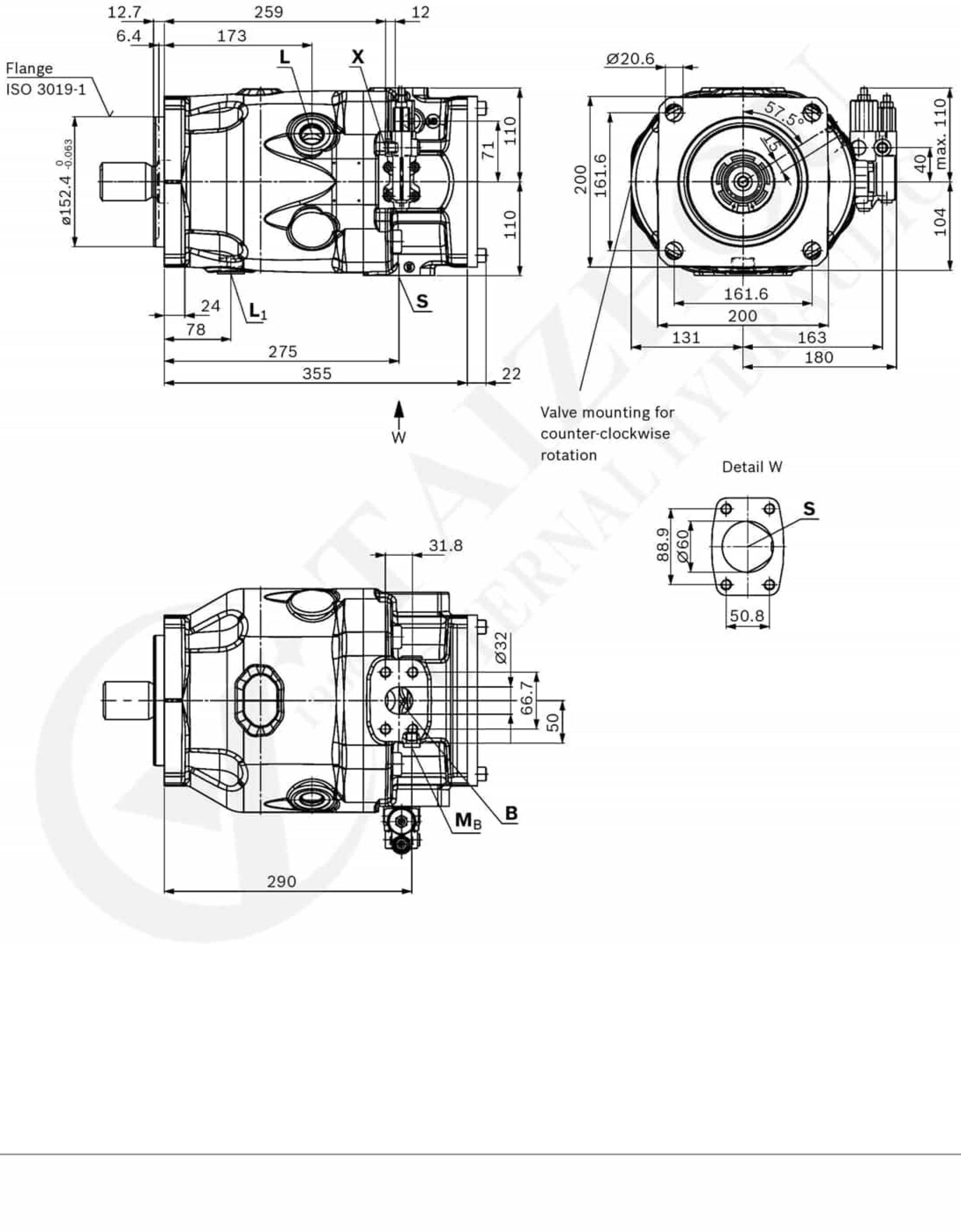


▼ **Port plate 11; mounting flange D**



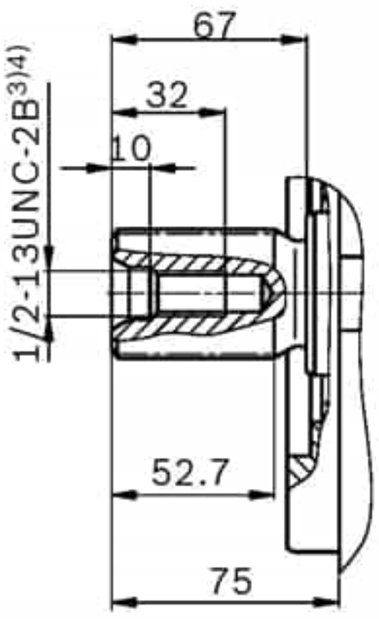
DRF, DRS, DRSC – Pressure flow controller, port plate 22; mounting flange D (SAE-D; 152-4)

▼ **Port plate 22; mounting flange D**



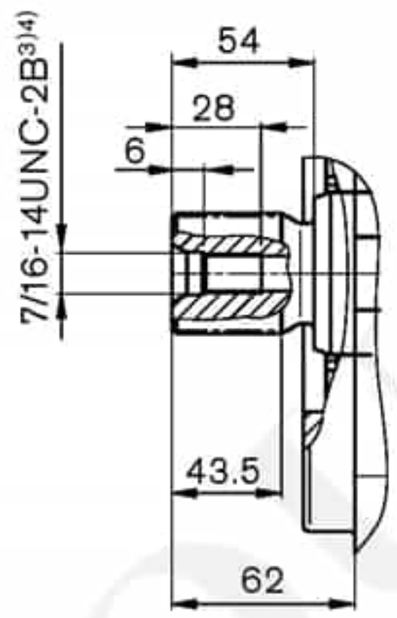
▼ **Splined shaft 1 3/4 in SAE J744**

S – 13T 8/16DP[1)]



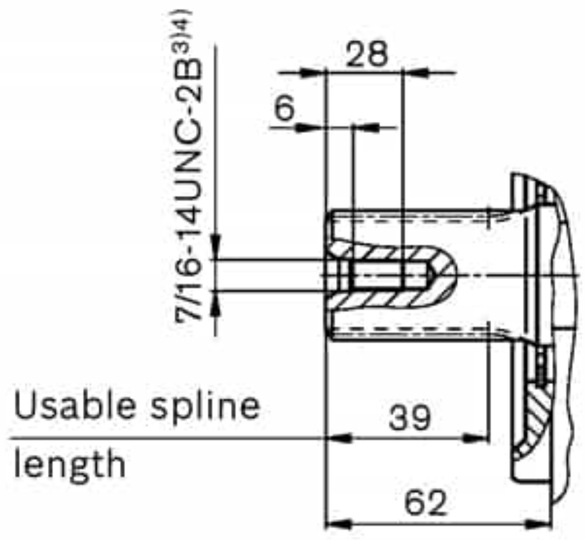
▼ **Splined shaft 1 1/2 in SAE J744**

U – 17T 12/24DP[1)]



▼ **Splined shaft 1 1/2 in SAE J744**

W – 17T 12/24DP[1)2)]

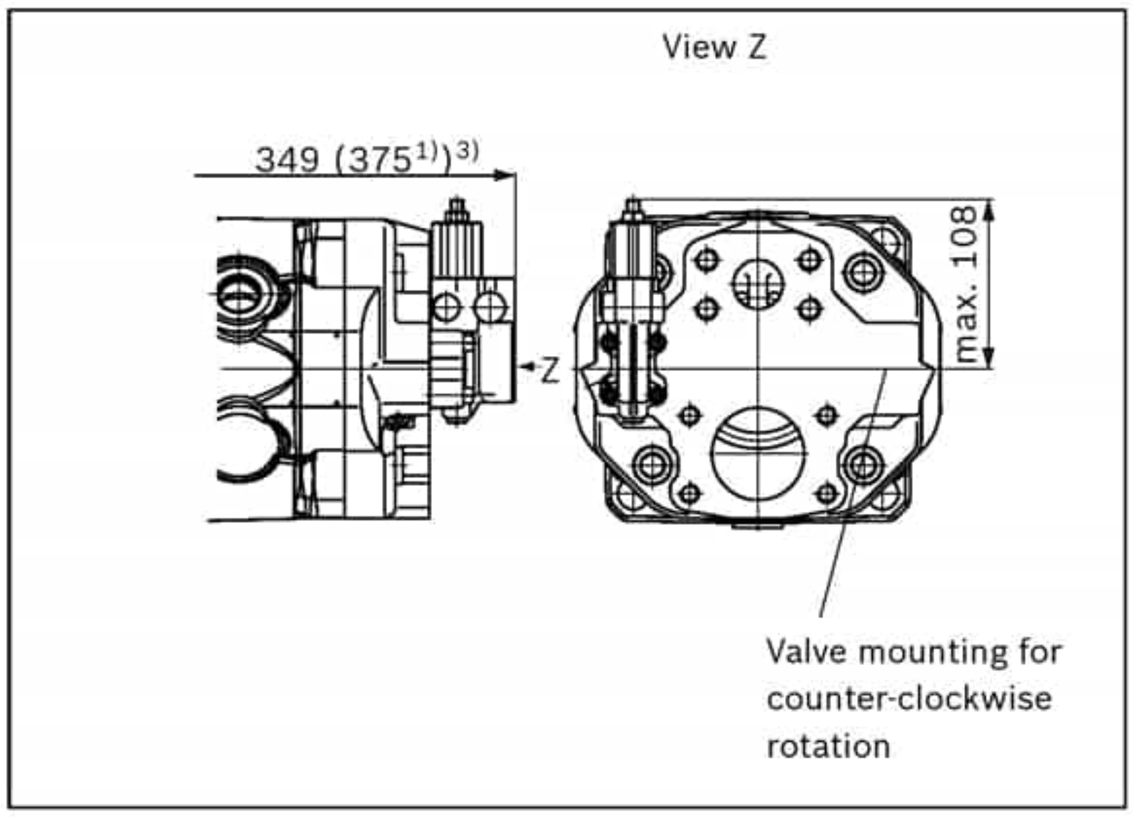


Ports		Standard	Size	$p_{max\ abs}$ [bar][4)]	State[8)]
B	Working port (high-pressure series) Fastening thread	SAE J518[5)] DIN 13	1 1/4 in M14 x 2; 19 deep	350	O
S	Suction port (standard pressure series) Fastening thread	SAE J518[5)] DIN 13	2 1/2 in M12 x 1.75; 17 deep	10	O
L	Drain port	ISO 11926[6)]	1 1/16-12 UNF-2B; 20 deep	2	O[7)]
L_1	Drain port	ISO 11926[6)]	1 1/16-12 UNF-2B; 20 deep	2	X[7)]
X	Pilot pressure	ISO 11926	7/16-20 UNF-2B; 12 deep	350	O
M_B	Measuring pressure **B** (only with port plates 22 and 32)	DIN 3852-2[6)]	G 1/4 in; 12 deep	350	X

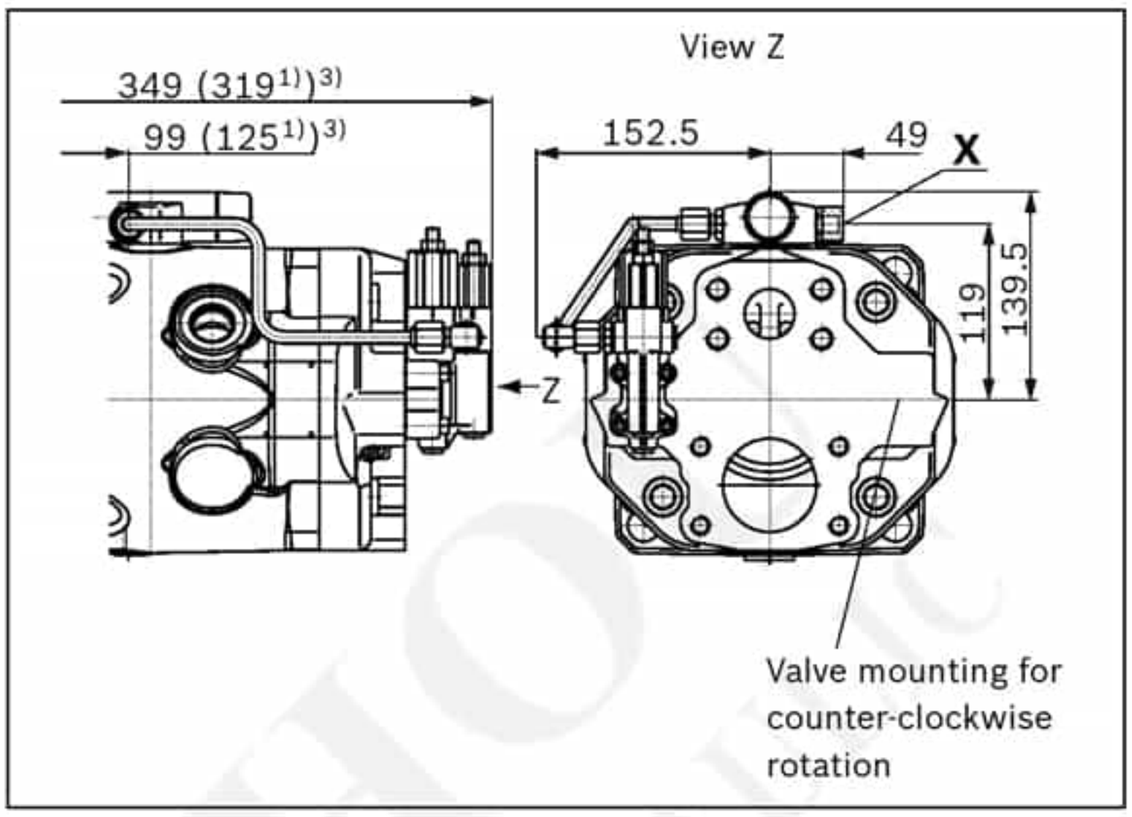
1) Involute spline according to ANSI B92.1a, 30° pressure angle, flat root, side fit, tolerance class 5
2) Splines according to ANSI B92.1a, spline runout is a deviation from standard SAE J744.
3) Thread according to ASME B1.1
4) Depending on the application, momentary pressure peaks can occur.
   Keep this in mind when selecting measuring devices and fittings.
5) Metric fastening thread is a deviation from standard.
6) The countersink may be deeper than specified in the standard.
7) Depending on the installation position, L or L_1 must be connected (also see installation instructions starting on page64).
8) O = Must be connected (comes plugged)
   X = Plugged (in normal operation)

Port plate 11

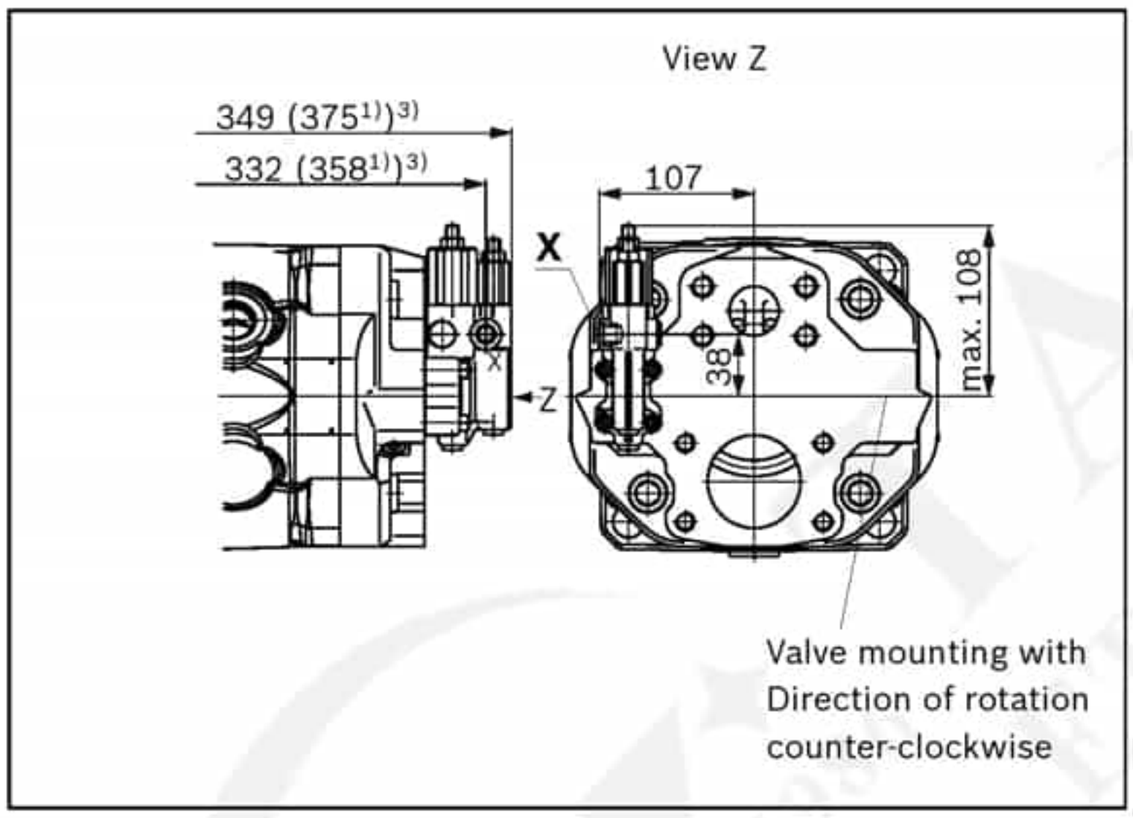
▼ DR – Pressure controller; mounting flange D



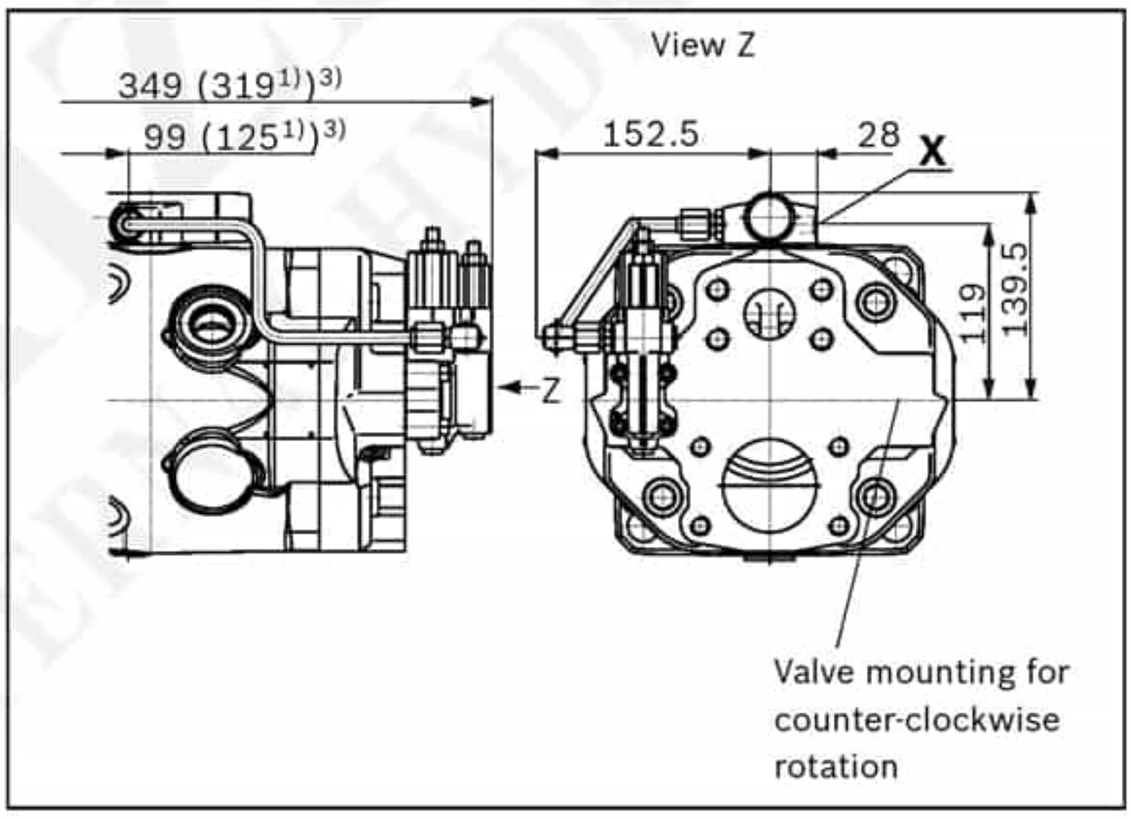
▼ LA.DS – Pressure, flow and power controller; mounting flange D



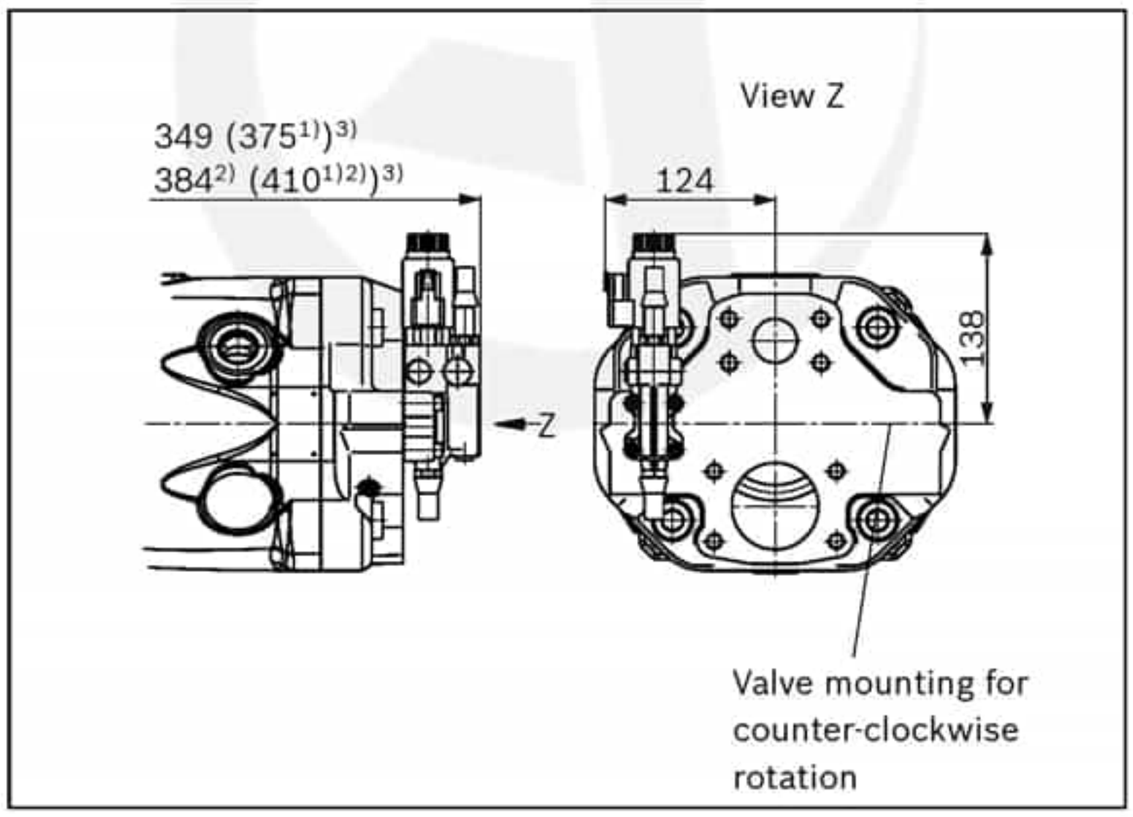
▼ DRG – Pressure controller, remotely controlled; mounting flange D



▼ LA.DG – Power controller; with pressure cut-off remotely controlled; mounting flange D



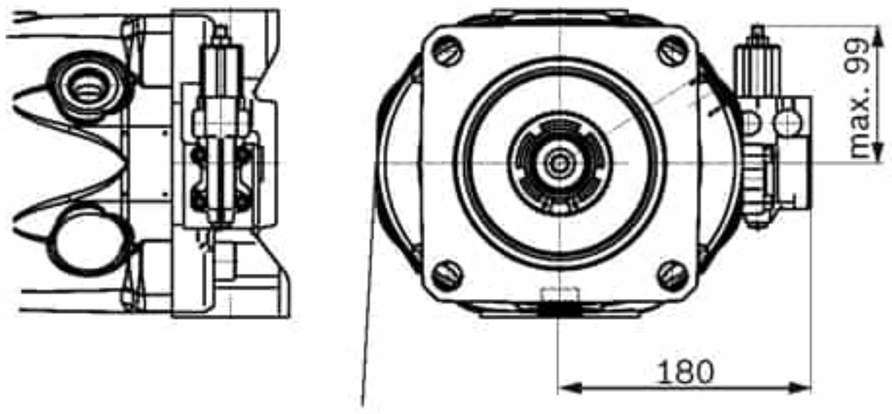
▼ ED7./ER7. – Pressure controller, electric; mounting flange D



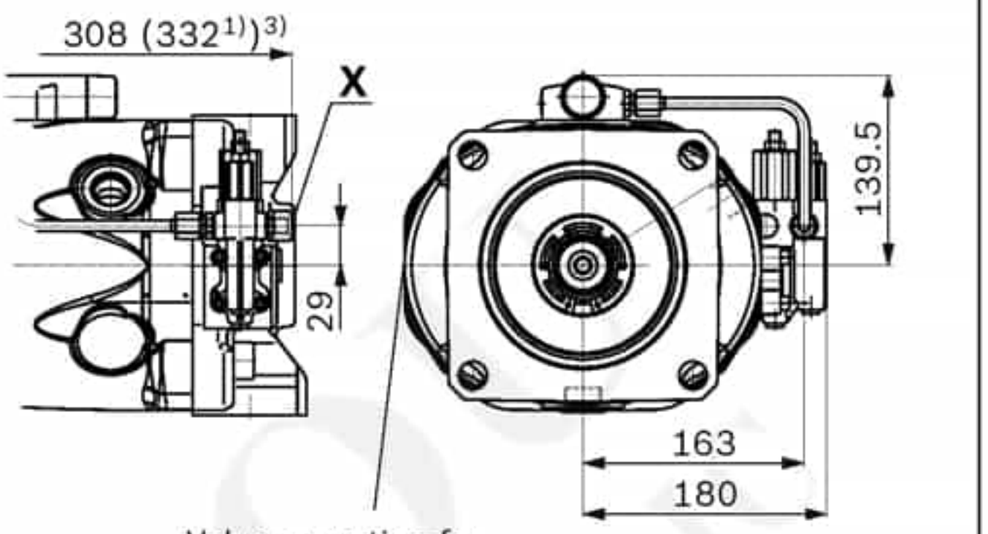
1) Dimension of mounting flange C
2) ER7. If using an intermediate plate pressure controller
3) To mounting flange

Port plate 12

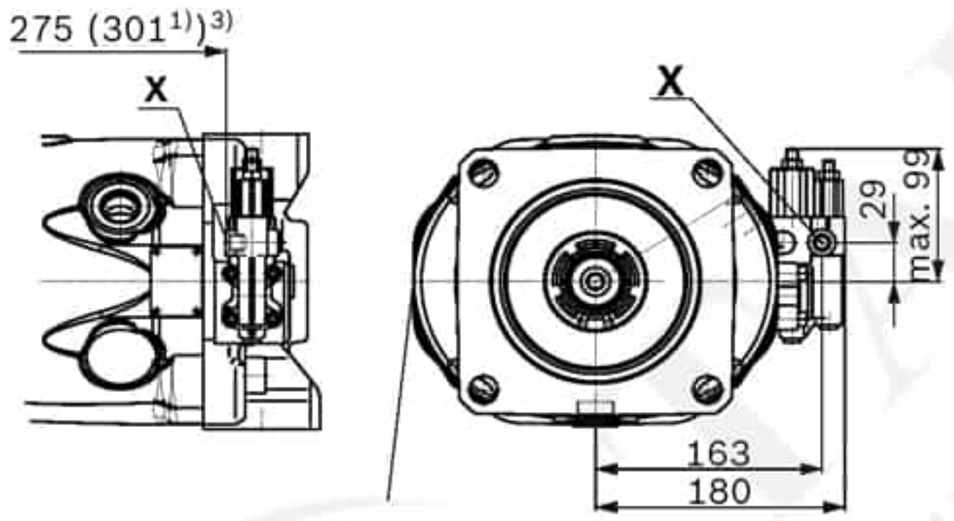
▼ **DR – Pressure controller; mounting flange D**



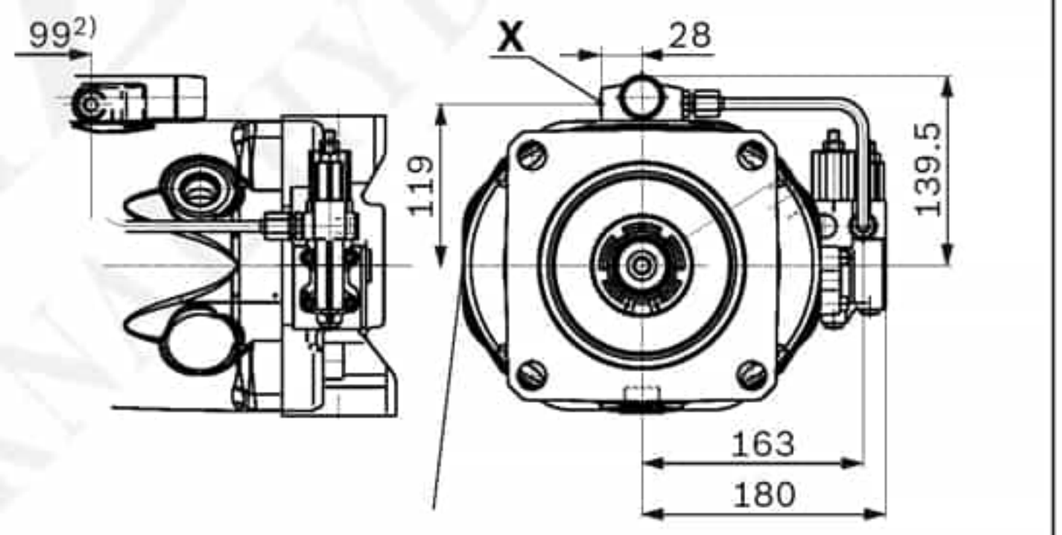
▼ **LA.DS – Pressure, flow and power controller; mounting flange D**



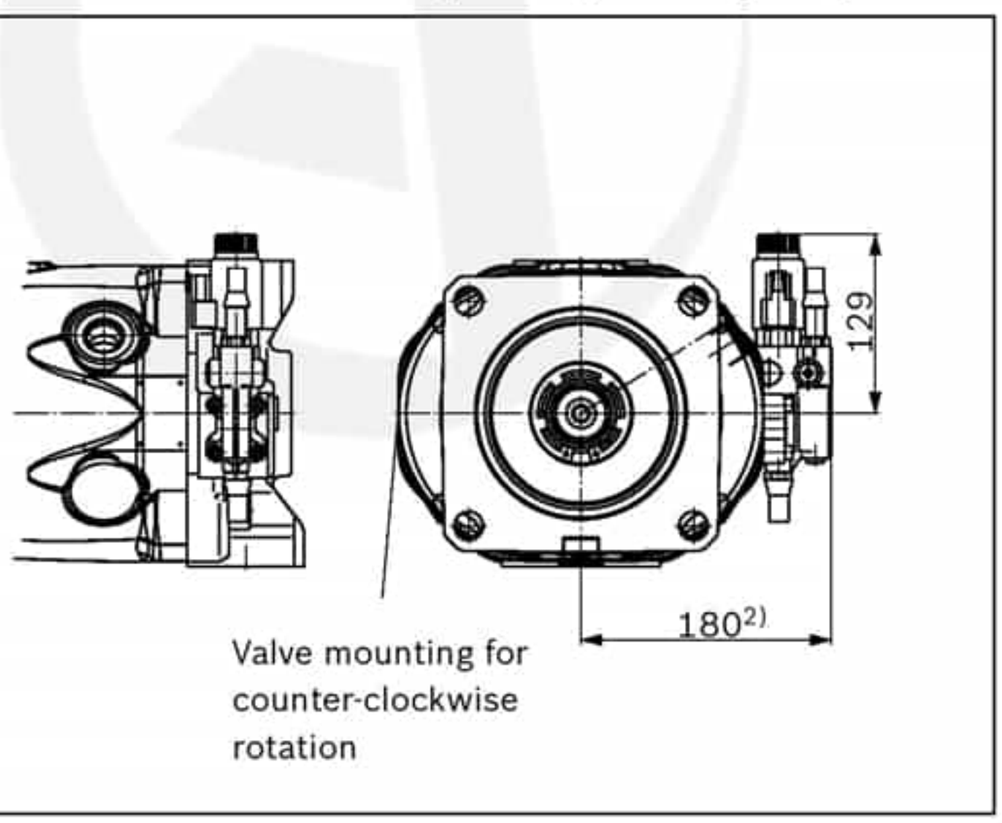
▼ **DRG – Pressure controller, remotely controlled; mounting flange D**



▼ **LA.DG – Power controller; with pressure cut-off remotely controlled; mounting flange D**



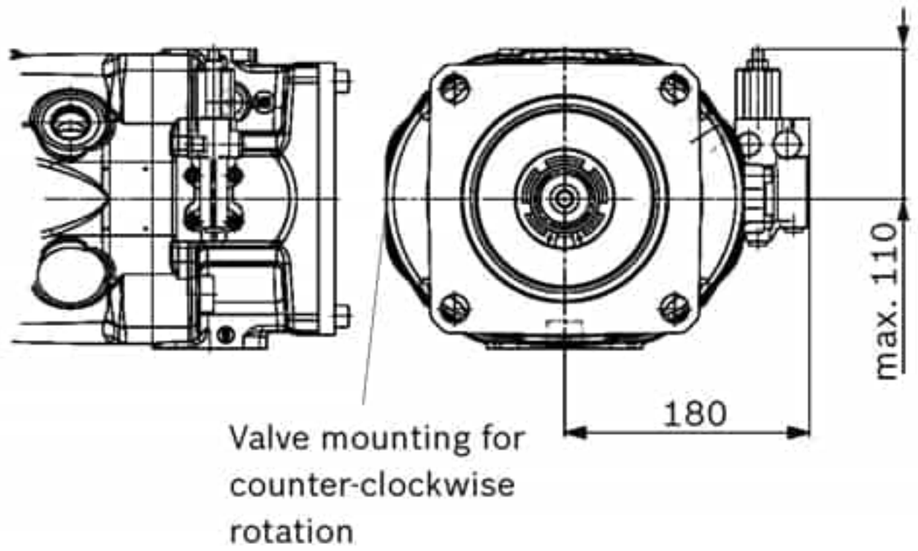
▼ **ED7./ER7. – Pressure controller, electric; mounting flange D**



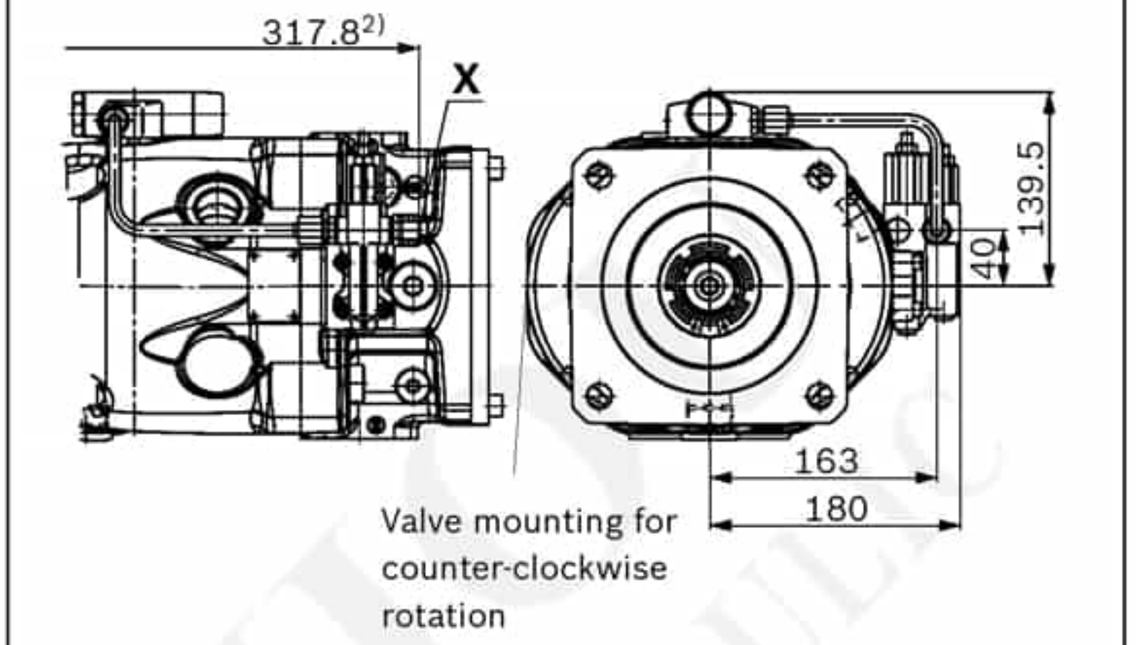
1) Dimension of mounting flange C
2) ER7. 215 mm if using an intermediate plate pressure controller
3) To mounting flange

Port plate 22

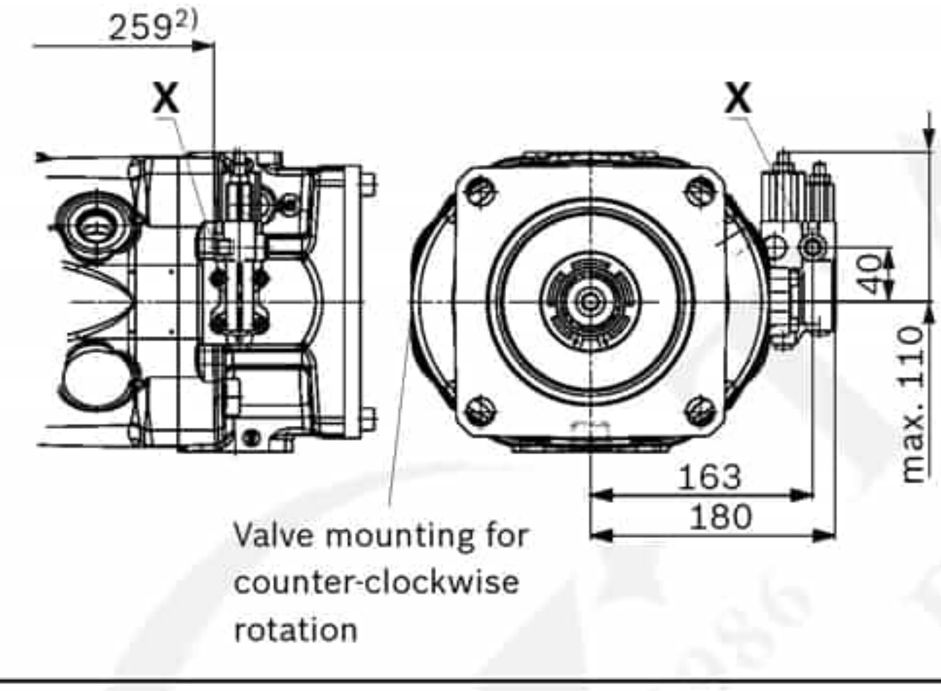
▼ **DR – Pressure controller; mounting flange D**



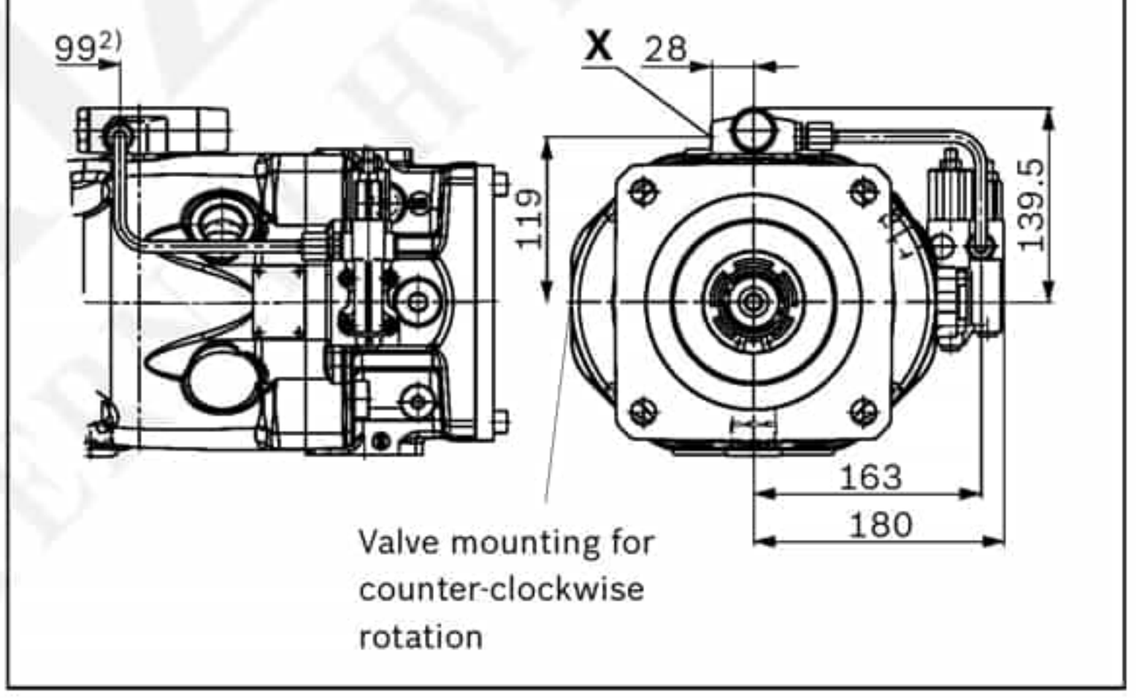
▼ **LA.DS – Pressure, flow and power controller; mounting flange D**



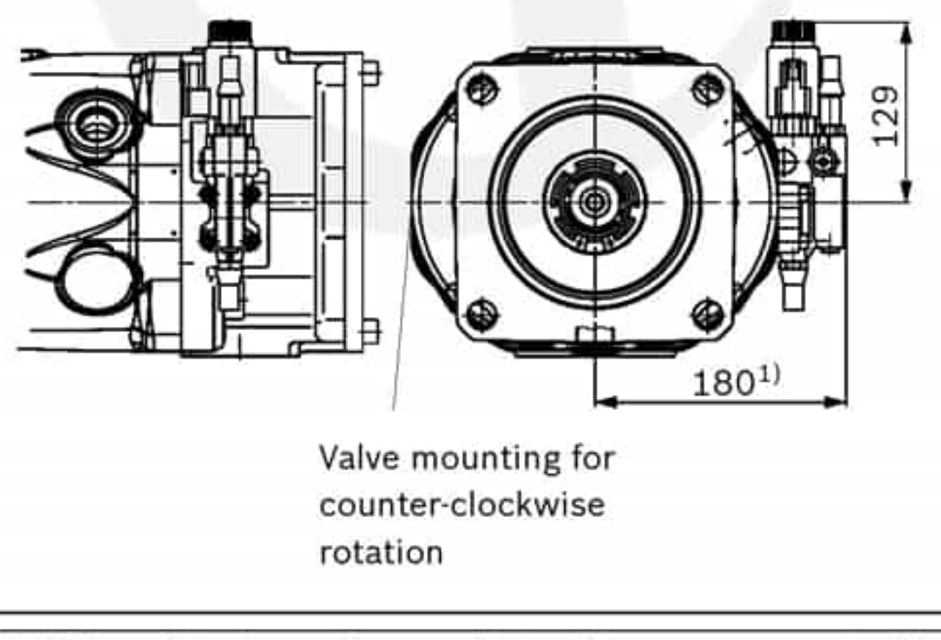
▼ **DRG – Pressure controller, remotely controlled; mounting flange D**



▼ **LA.DG – Power controller; with pressure cut-off remotely controlled; mounting flange D**



▼ **ED7./ER7. – Pressure controller, electric; mounting flange D**

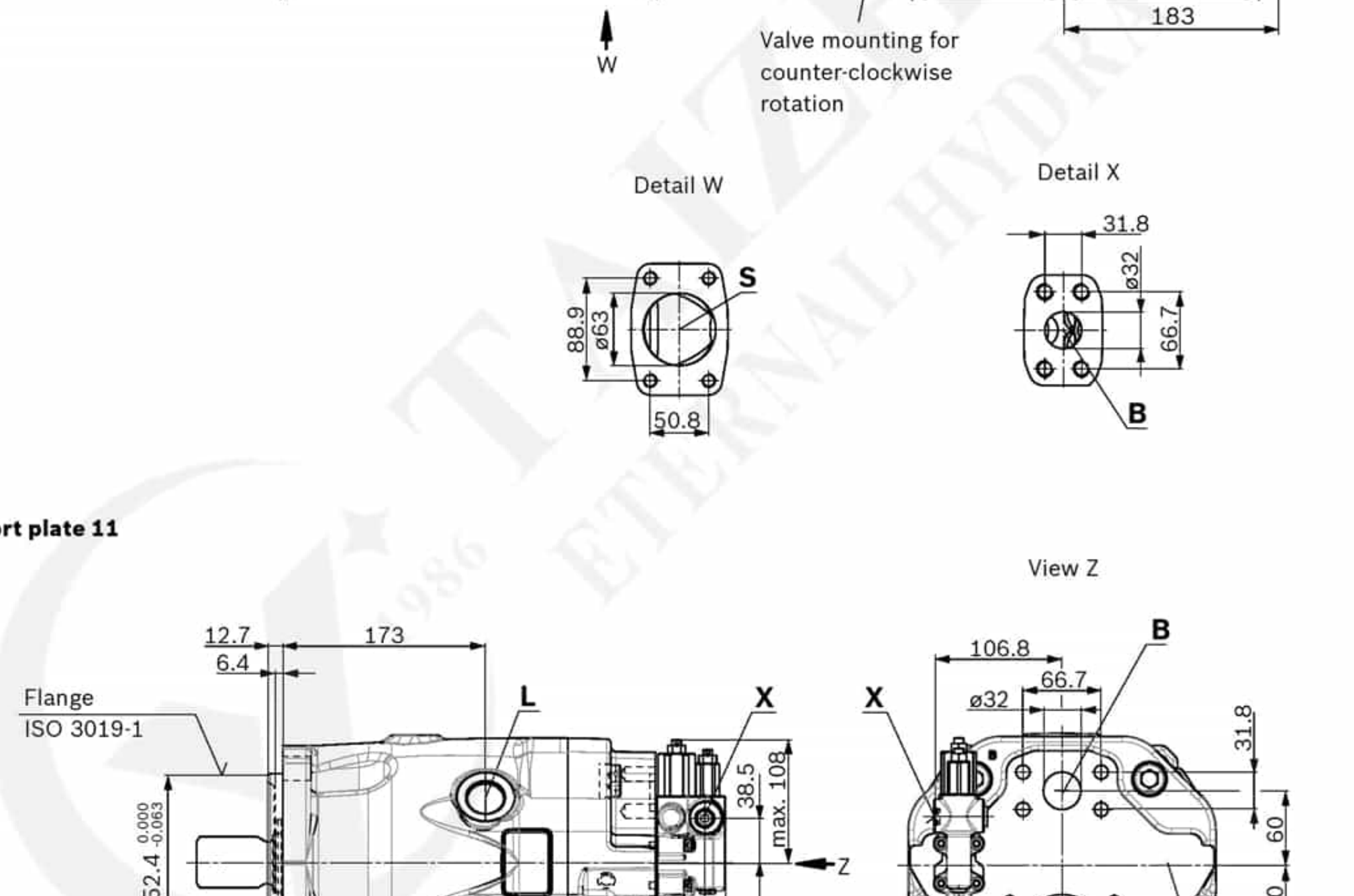


1) ER7. 215 mm if using an intermediate plate pressure controller
2) To mounting flange

Dimensions, size 180

DRF, DRS, DRSC – Pressure flow controller, port plate 11, 12; mounting flange D (SAE-D; 152-4)

▼ **Port plate 12**

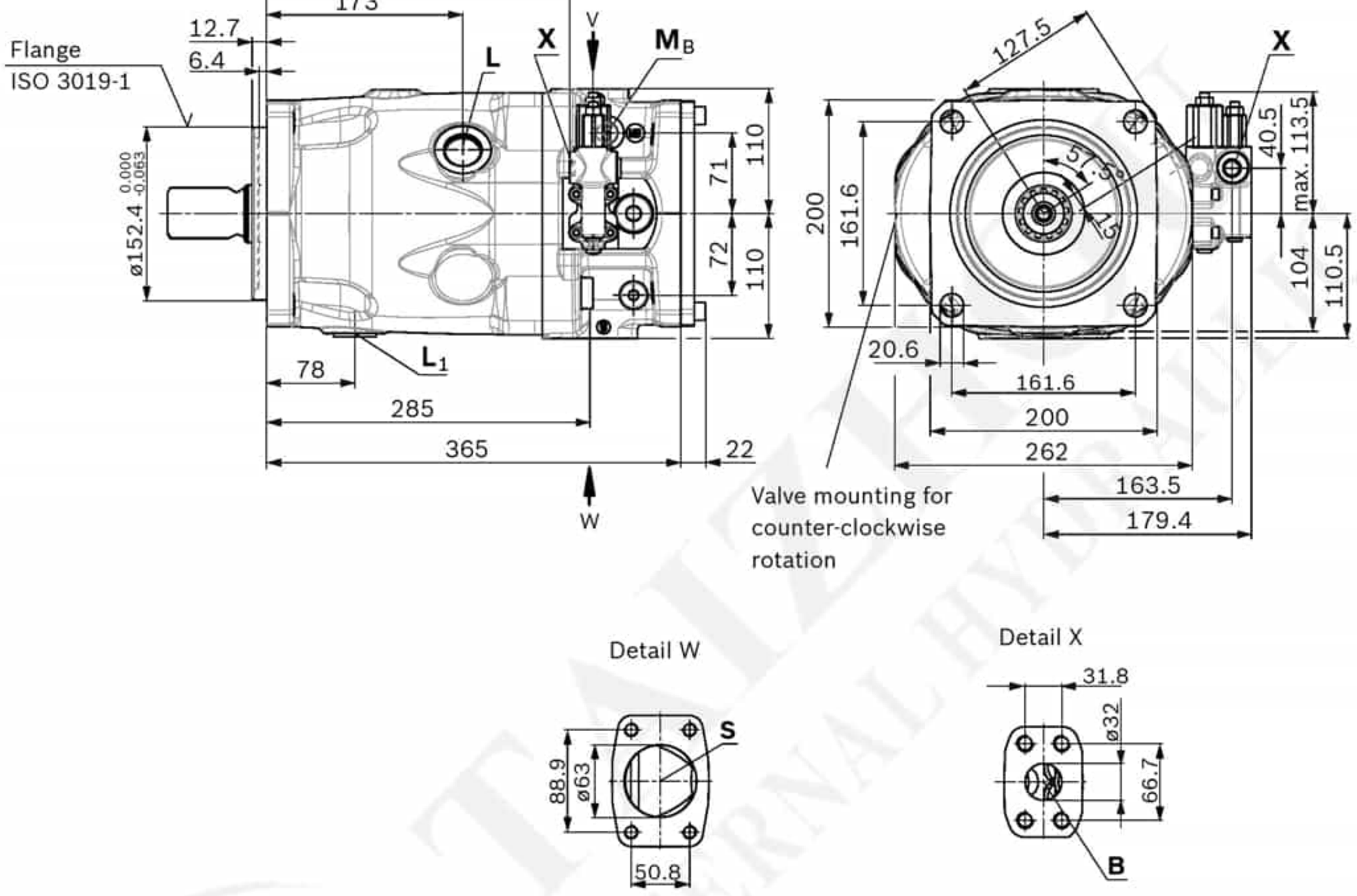


▼ **Port plate 11**

Dimensions, size 180

DRF, DRS, DRSC – Pressure flow controller, port plate 22 and 32; mounting flange D (SAE-D; 152-4)

▼ **Port plate 22 and 32**

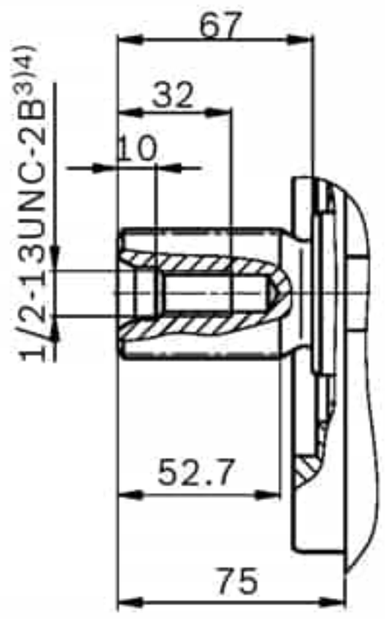


Detail W

Detail X

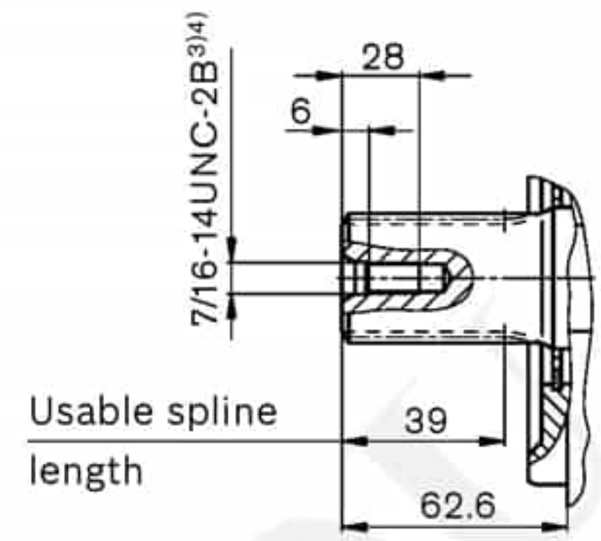
▼ **Splined shaft 1 3/4 in SAE J744**

S – 13T 8/16DP[1)]



▼ **Splined shaft 1 1/2 in SAE J744**

W – 17T 12/24DP[1)2)]

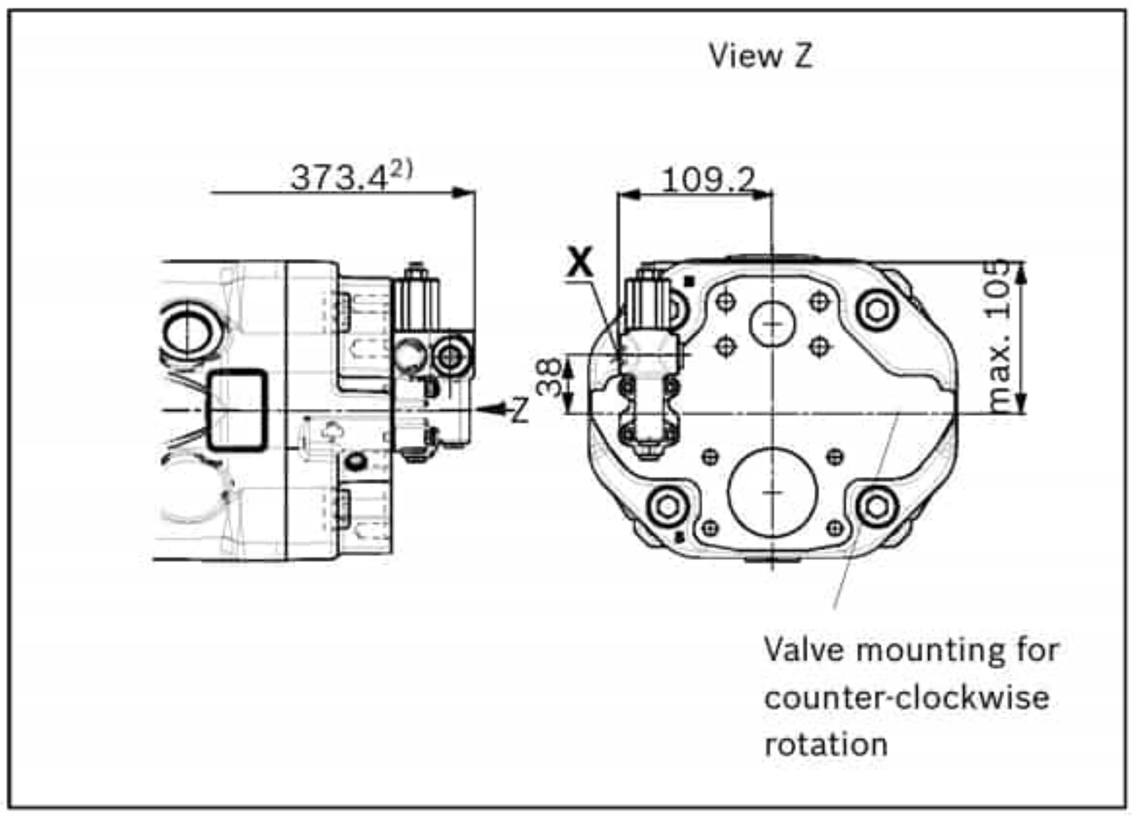


Ports		Standard	Size[4)]	$p_{max\ abs}$ [bar][5)]	State[9)]
B	Working port (high-pressure series) Fastening thread	SAE J518[6)] DIN 13	1 1/4 in M14 x 2; 19 deep	350	O
S	Suction port (standard pressure series) Fastening thread	SAE J518[6)] DIN 13	2 1/2 in M12 x 1.75; 17 deep	10	O
L	Drain port	ISO 11926[7)]	1 5/16-12 UN-2B; 20 deep	2	O[8)]
L_1	Drain port	ISO 11926[7)]	1 5/16-12 UN-2B; 20 deep	2	X[8)]
X	Pilot pressure	ISO 11926	7/16-20 UNF-2B; 12 deep	350	O
M_B	Measuring pressure **B** (only with port plates 22 and 32)	DIN 3852-2[7)]	G 1/4 in; 12 deep	350	X

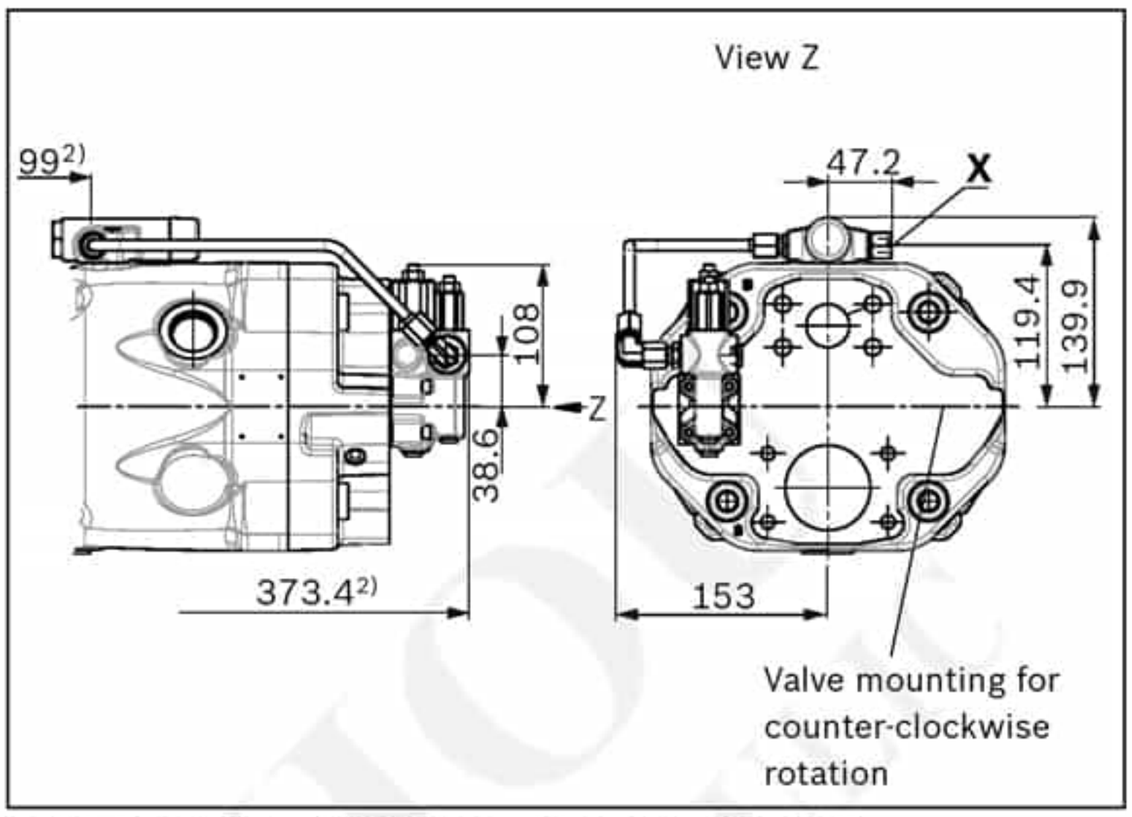
1) Involute spline according to ANSI B92.1a, 30° pressure angle, flat root, side fit, tolerance class 5
2) Splines according to ANSI B92.1a, spline runout is a deviation from standard SAE J744.
3) Thread according to ASME B1.1
4) For notes on tightening torques, see the instruction manual.
5) Depending on the application, momentary pressure peaks can occur.
   Keep this in mind when selecting measuring devices and fittings.
6) Metric fastening thread is a deviation from standard.
7) The countersink may be deeper than specified in the standard.
8) Depending on the installation position, L or L_1 must be connected (also see installation instructions starting on page 64).
9) O = Must be connected (comes plugged)
   X = Plugged (in normal operation)

Port plate 11

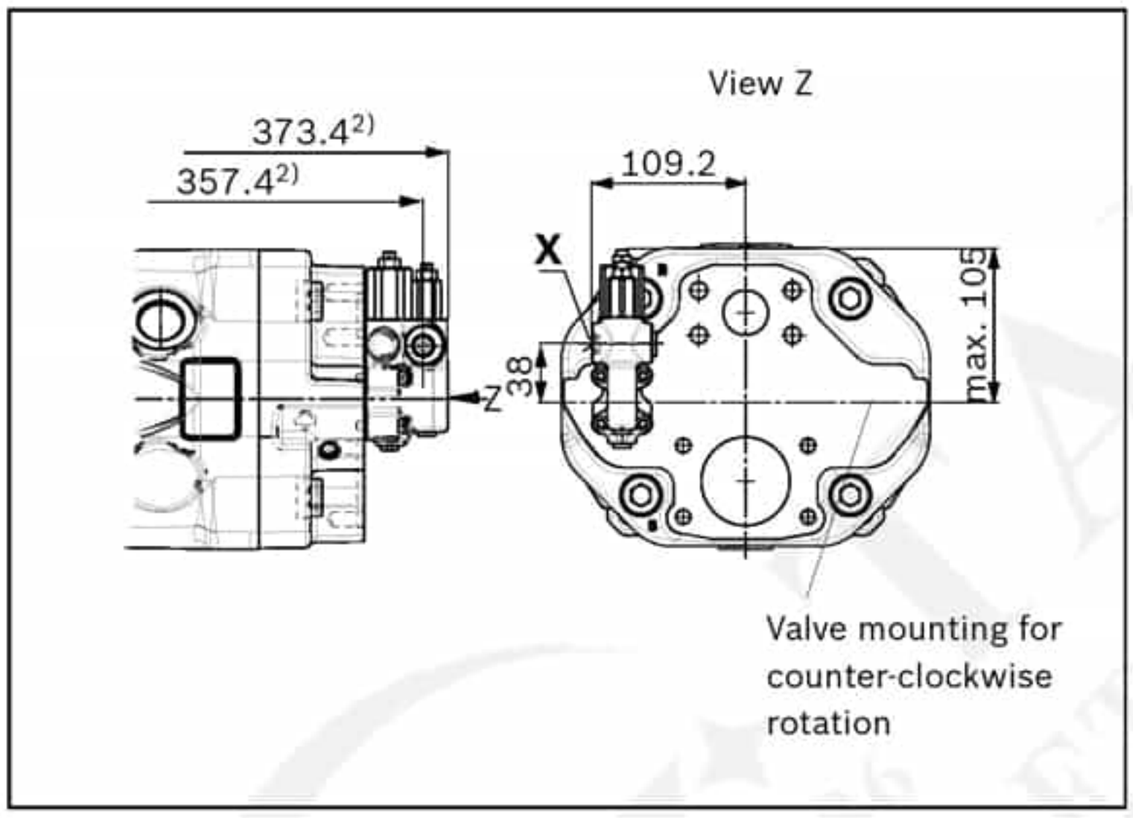
▼ DR – Pressure controller



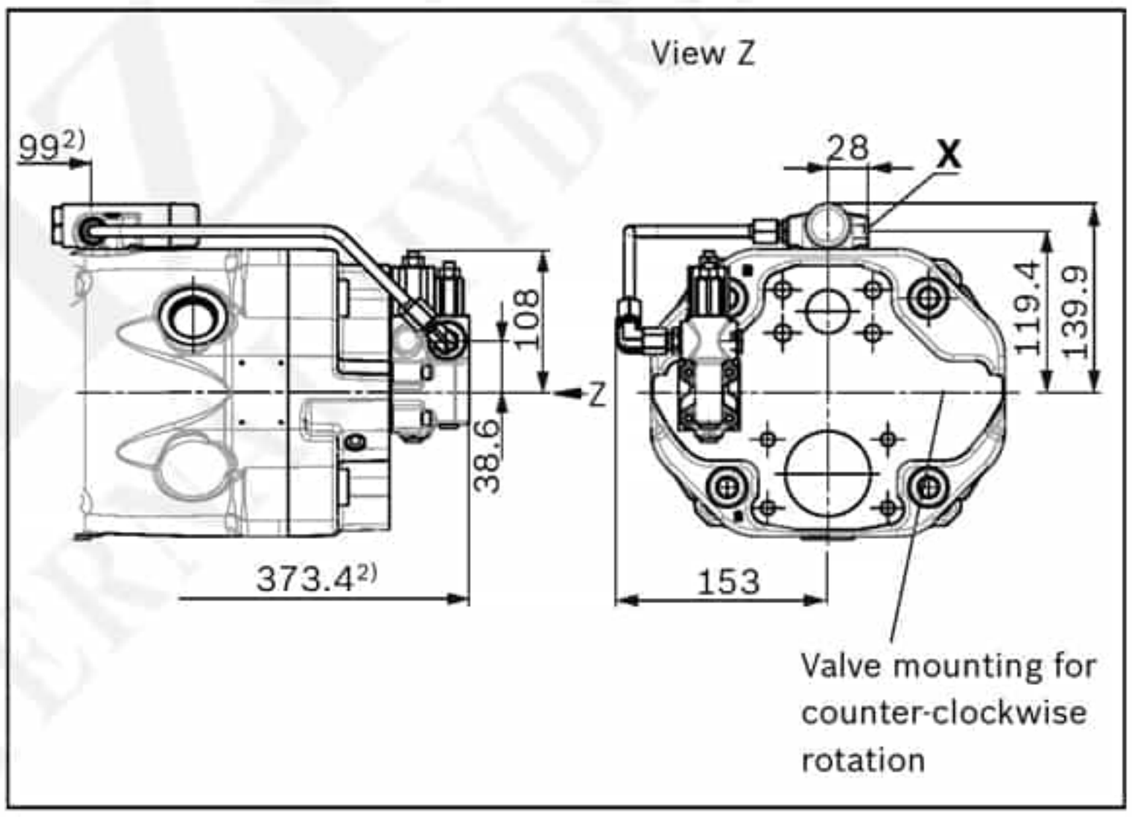
▼ LA.DS – Pressure, flow and power controller



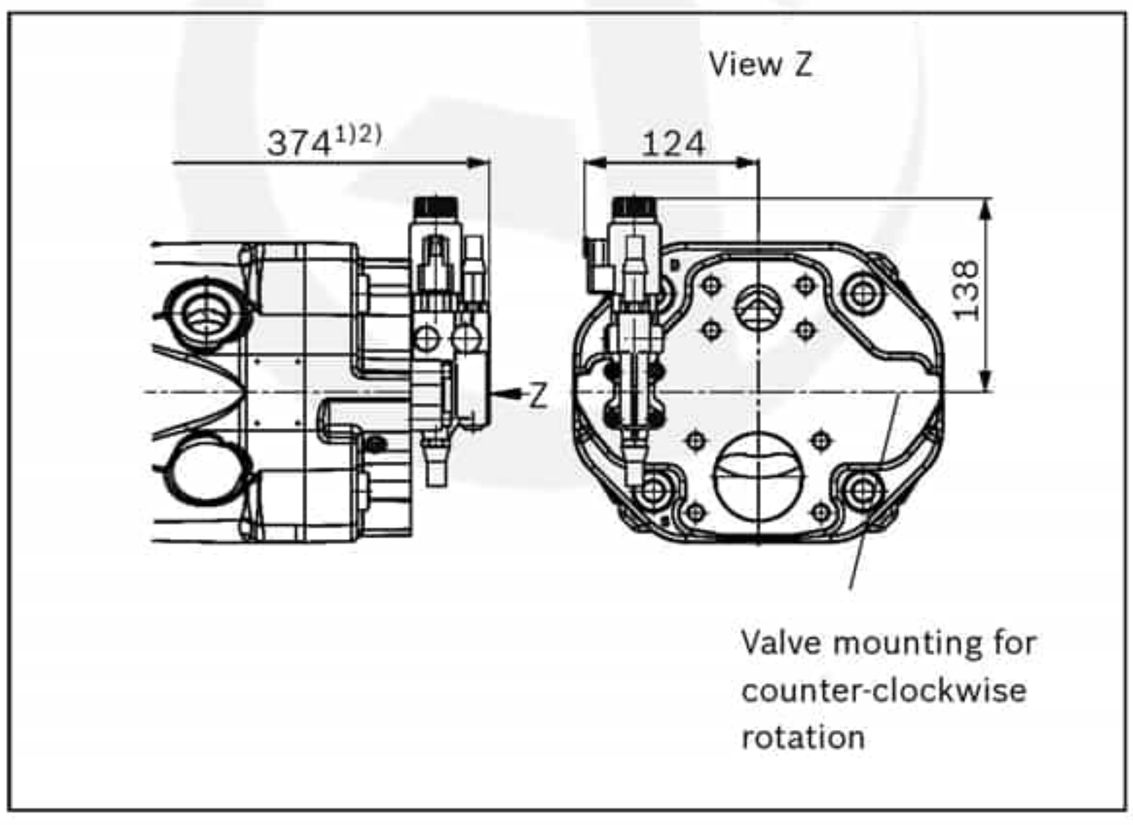
▼ DRG – Pressure controller, remotely controlled



▼ LA.DG – Power controller; with pressure cut-off remotely controlled



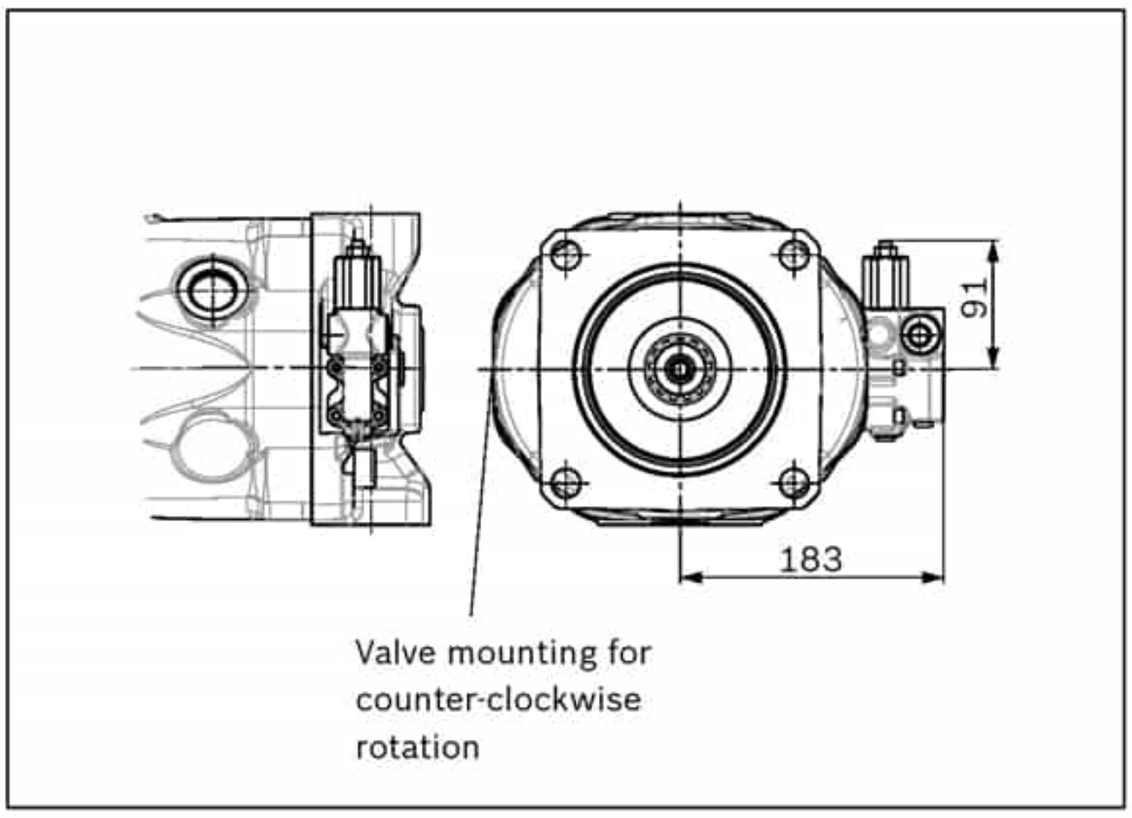
▼ ED7./ER7. – Pressure controller, electric



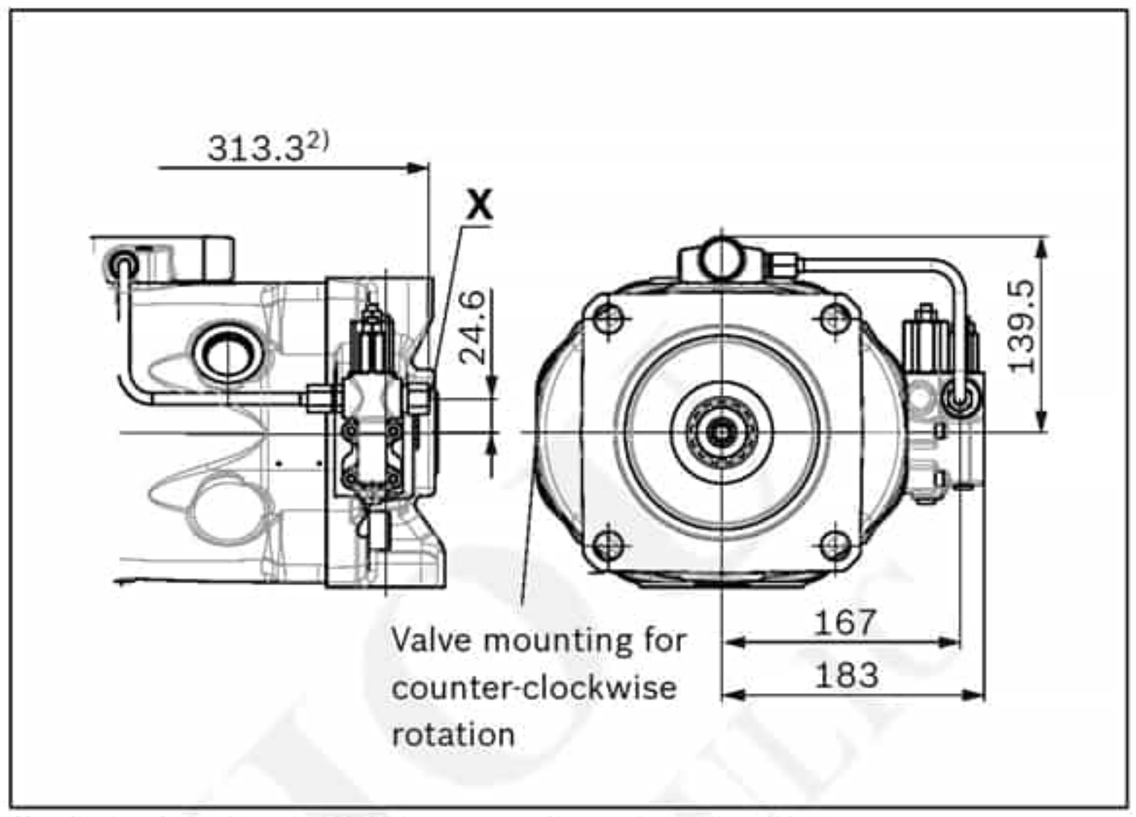
1) ER7. 409 mm if using an intermediate plate pressure controller
2) To mounting flange

Port plate 12

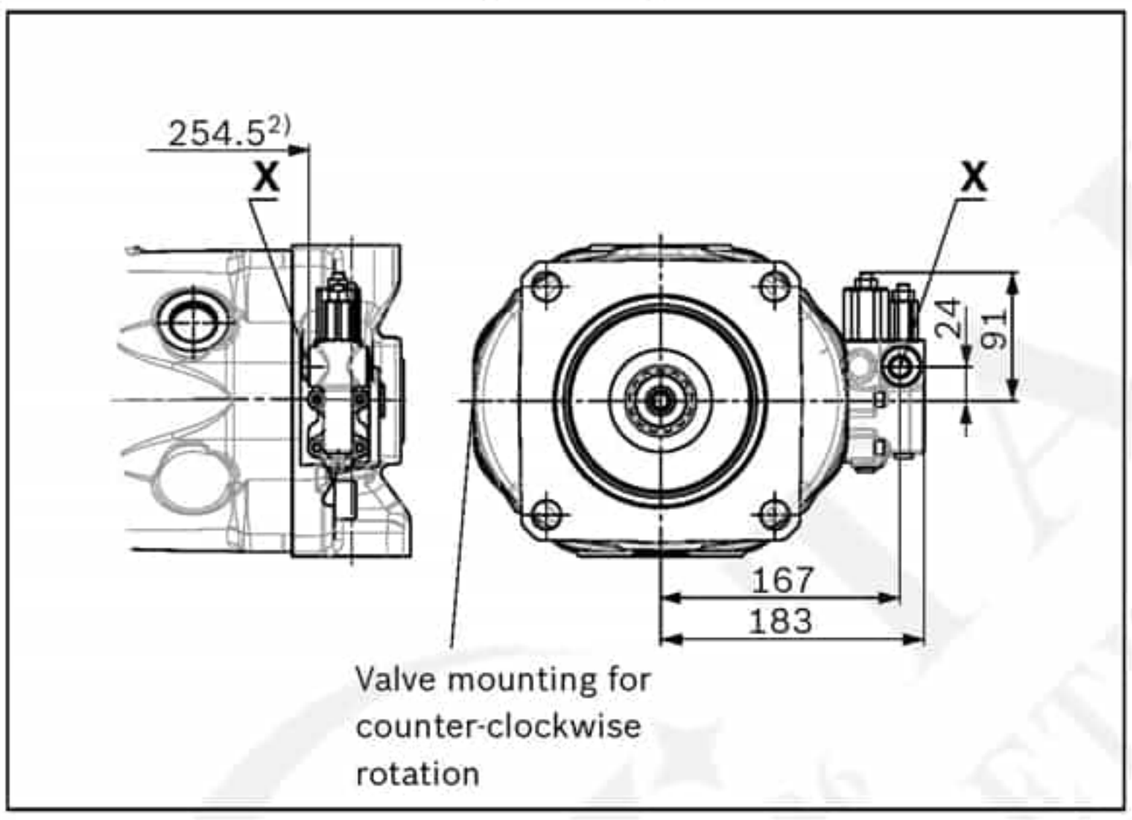
▼ **DR – Pressure controller**



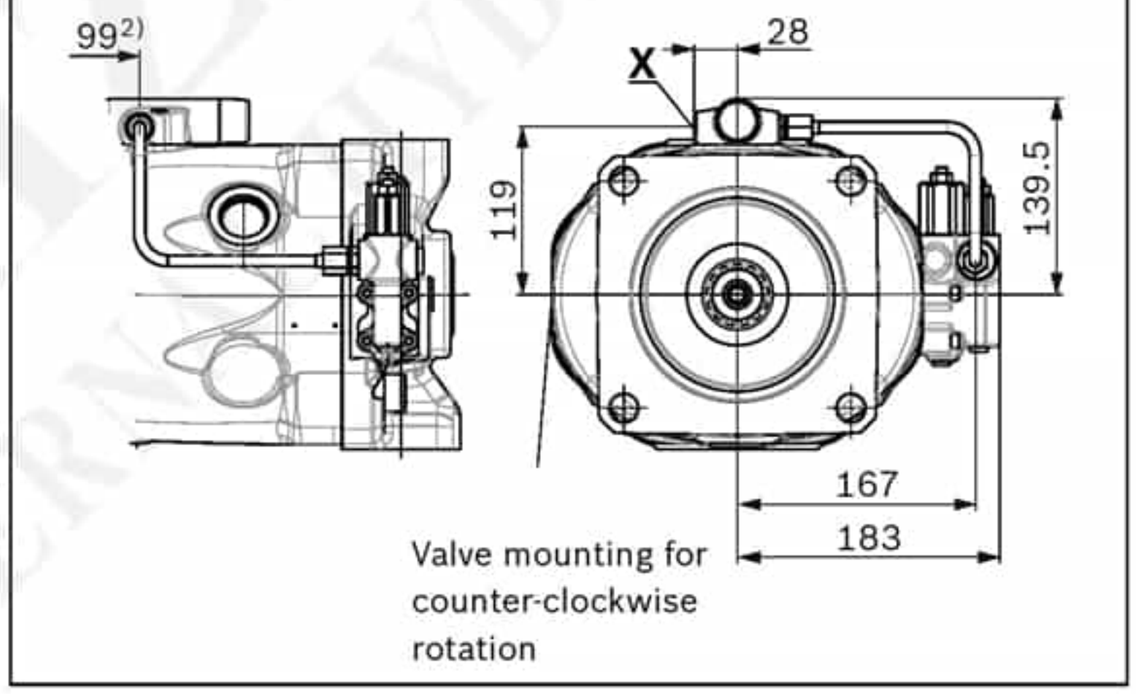
▼ **LA.DS – Pressure, flow and power controller**



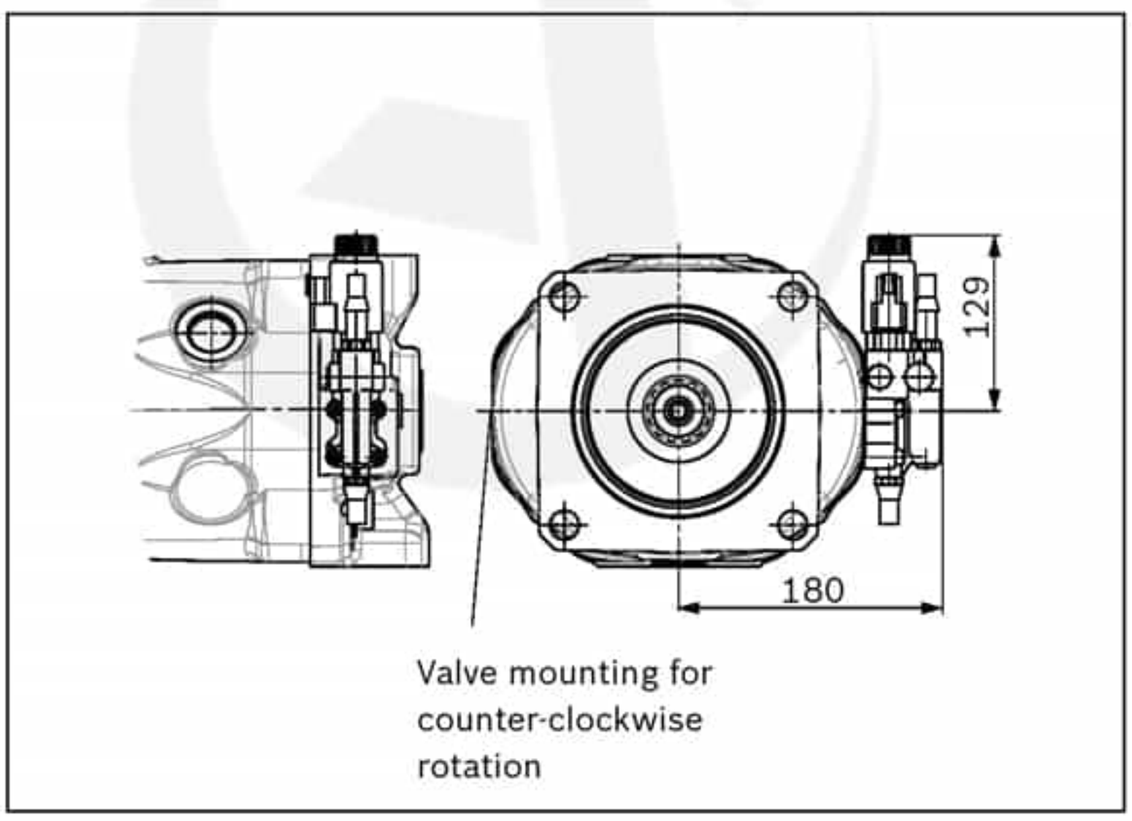
▼ **DRG – Pressure controller, remotely controlled**



▼ **LA.DG – Power controller; with pressure cut-off remotely controlled**



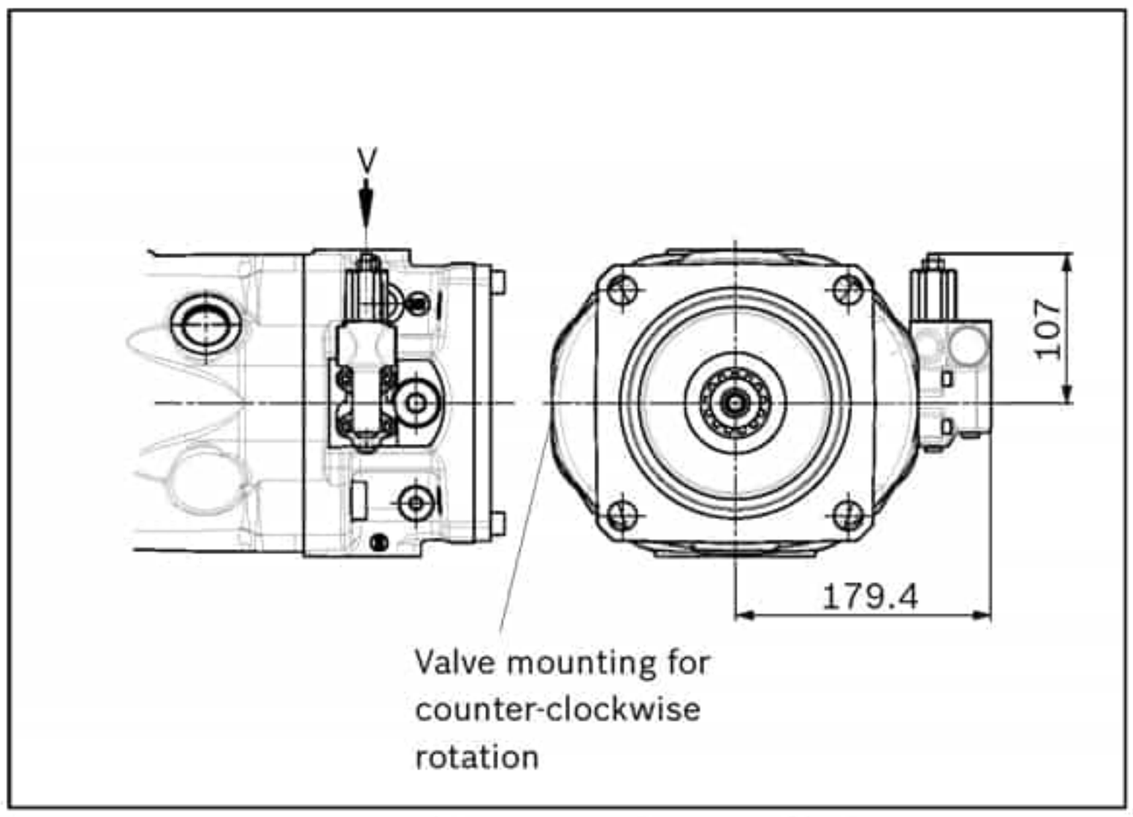
▼ **ED7./ER7. – Pressure controller, electric**



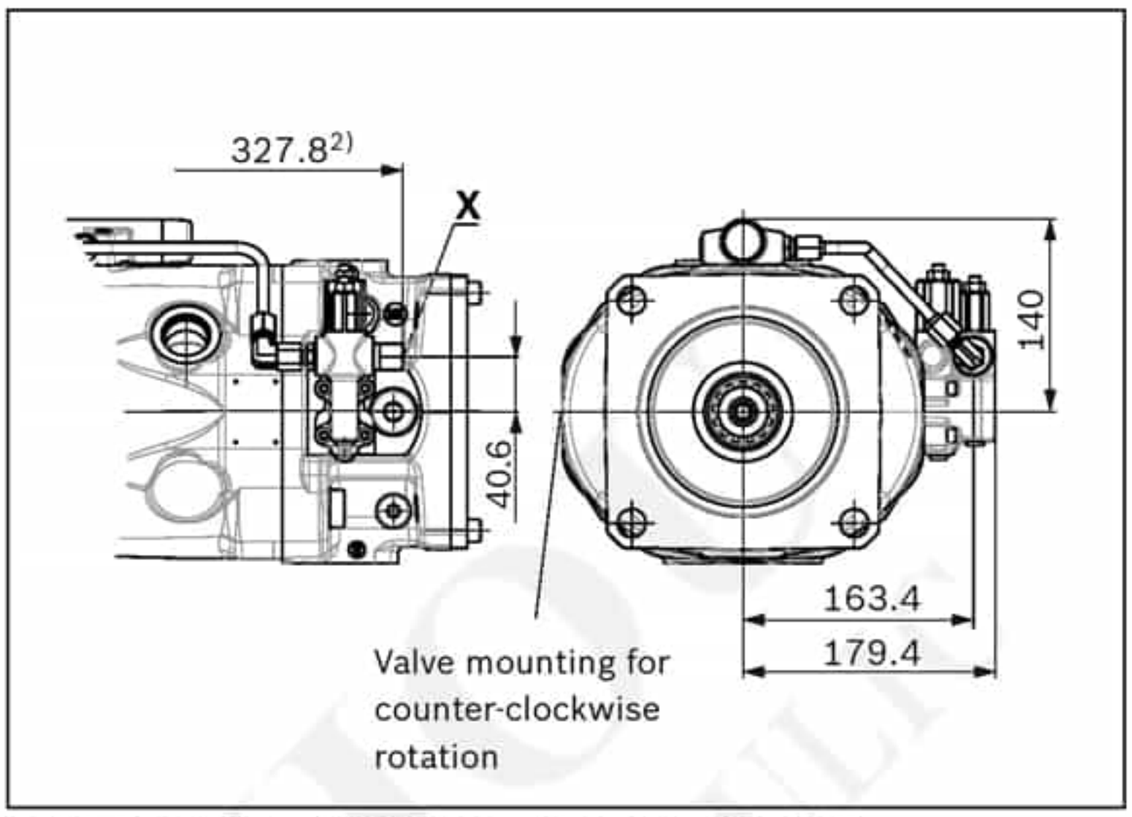
1) ER7. 215 mm if using an intermediate plate pressure controller
2) To mounting flange

Port plate 22 and 32

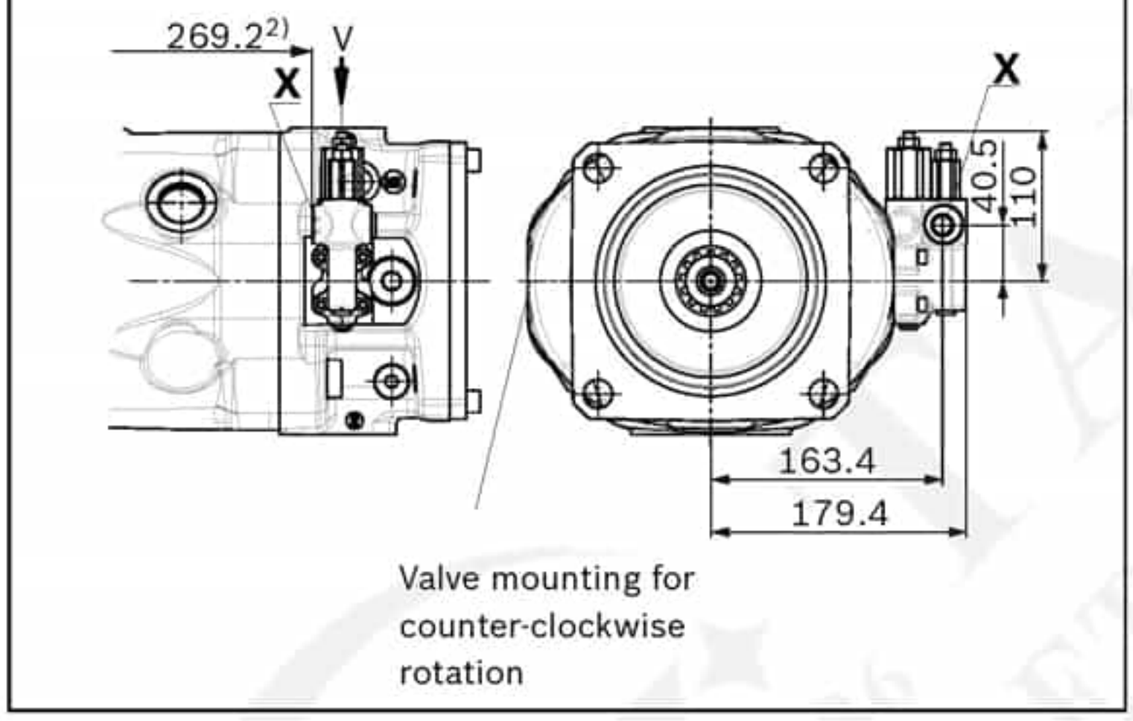
▼ **DR – Pressure controller**



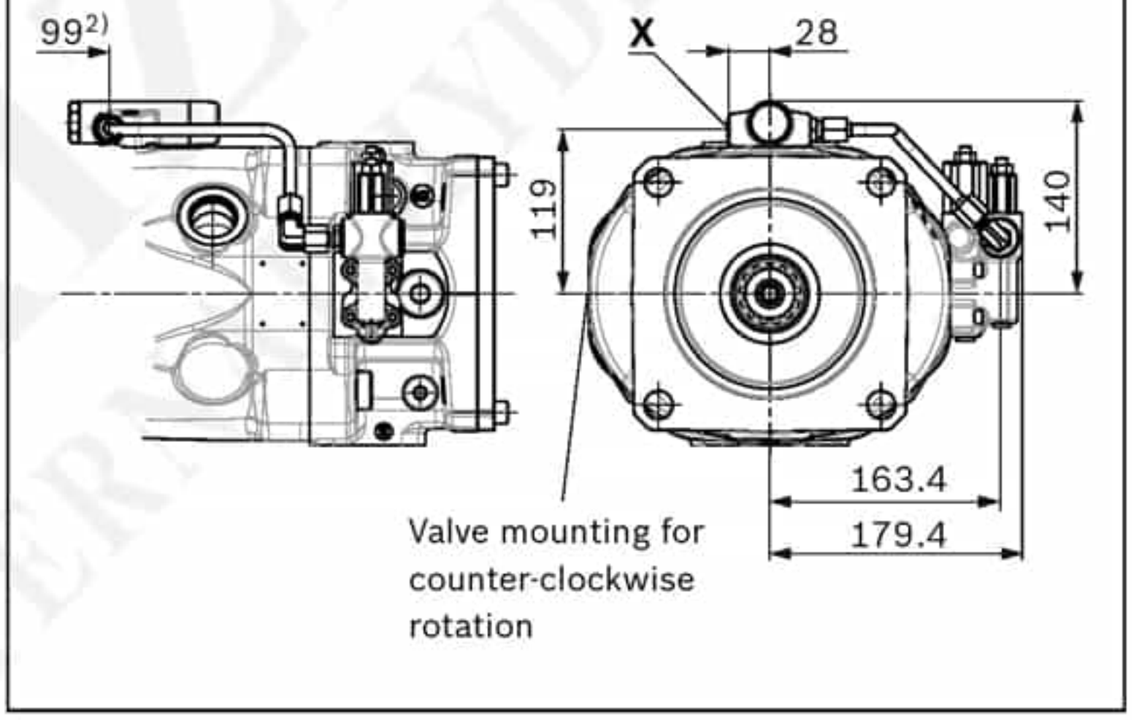
▼ **LA.DS – Pressure, flow and power controller**



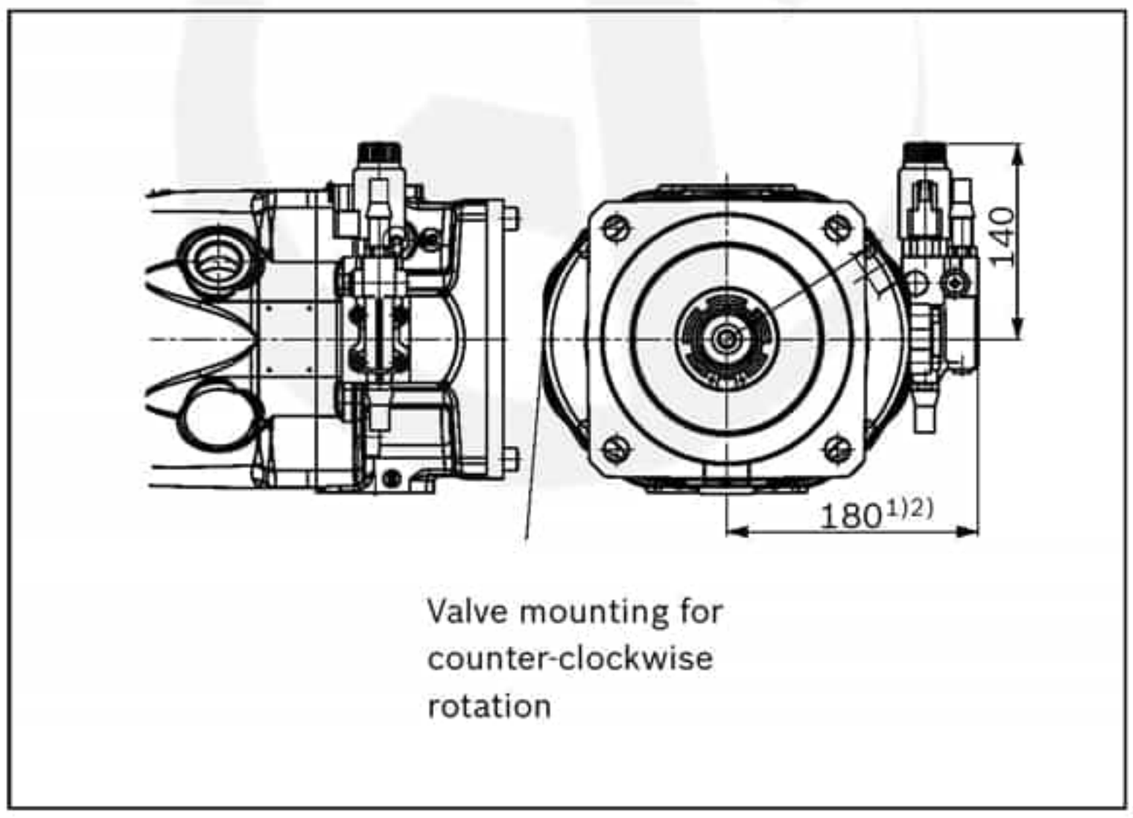
▼ **DRG – Pressure controller, remotely controlled**



▼ **LA.DG – Power controller; with pressure cut-off remotely controlled**



▼ **ED7./ER7. – Pressure controller, electric**



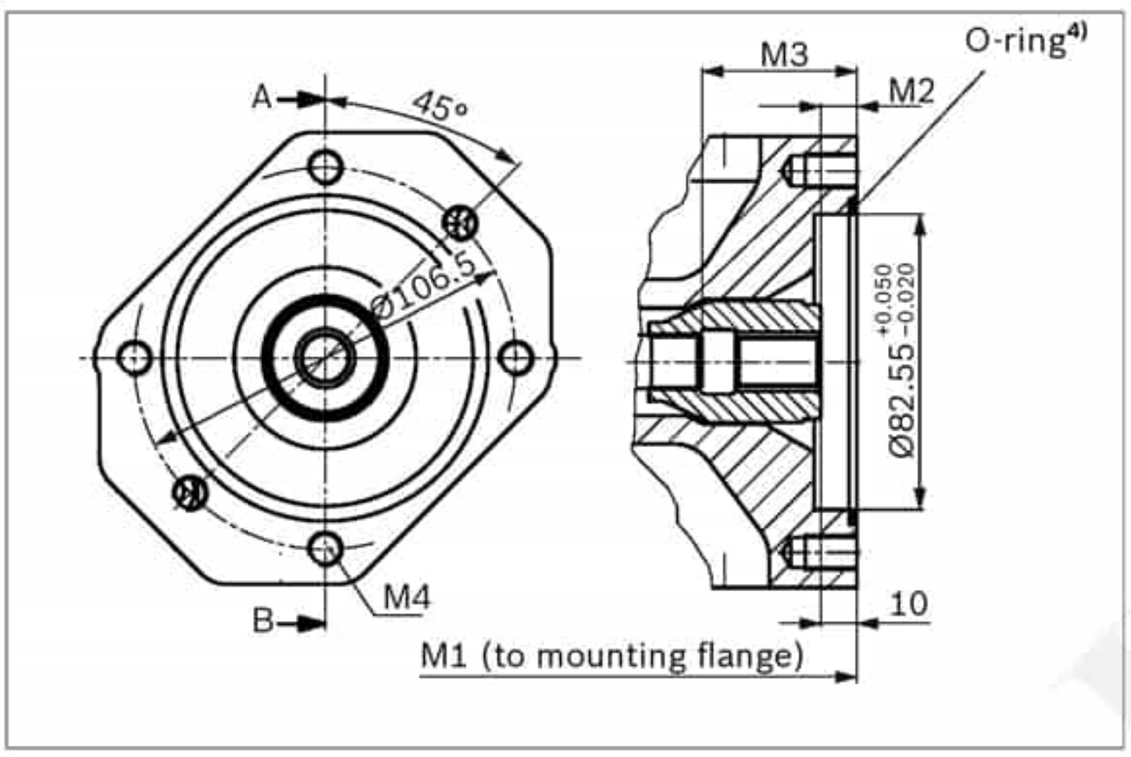
1) ER7. 215 mm if using an intermediate plate pressure controller
2) To mounting flange

Dimensions for through drives

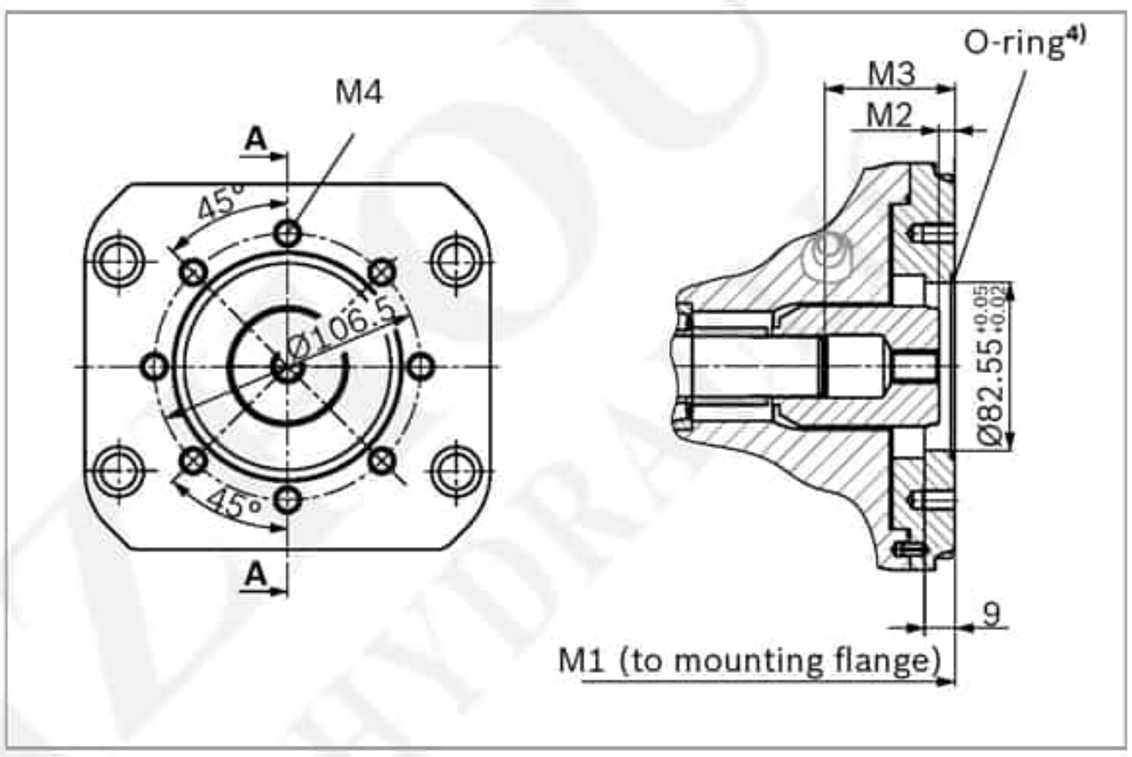
Flange ISO 3019-1 (SAE J744)		Hub for splined shaft[1]		Availability across sizes					Code
Diameter	Attachment[2]	Diameter		45	71	100	140	180	
82-2 (A)	⚷, ☍, ∞	5/8 in	9T 16/32DP	●	●	●	●	–	K01
	⚷, ☍, ∞	5/8 in	9T 16/32DP	○	●	●	●	●	U01

● = Available ○ = On request – = Not available

▼ **82-2 (A)**



▼ **82-2 (A)**



K01 (SAE J744 16-4 (A))	NG	M1	M2	M3	M4[3]
	45	229	10.7	53.4	M10; 16 deep
	71	267	11.2	61.3	M10; 20 deep
	100	338	9.9	65	M10; 16 deep
	140[5]	350	10.8	77.3	M10; 16 deep
	140[6]	376			

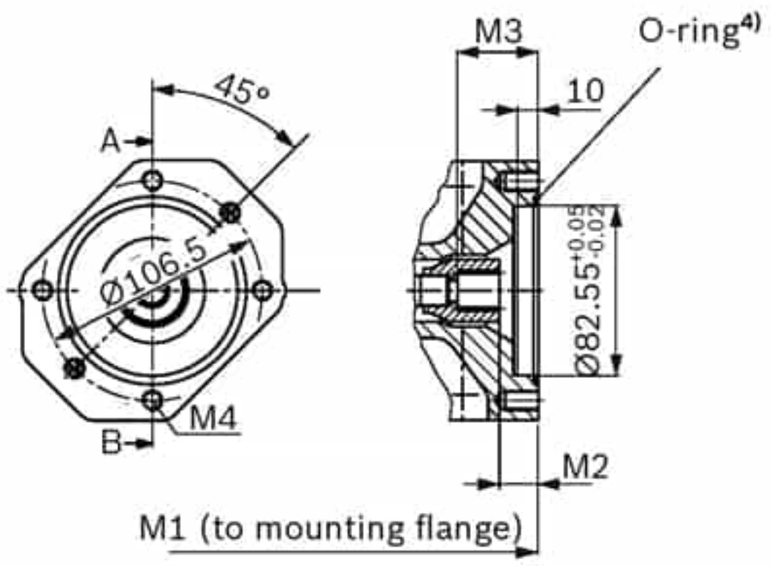
U01 (SAE J744 16-4 (A))	NG	M1	M2	M3	M4[3]
	71	299	9.3	61.3	M10; 16 deep
	100	360	9.9	65	M10; 16 deep
	140	377	On request		
	180	387	11.2	78.1	M10; 16 deep

1) According to ANSI B92.1a, 30° pressure angle, flat root, side fit, tolerance class 5
2) Mounting holes pattern viewed on through drive with control at top.
3) Thread according to DIN 13
4) O-ring included in the scope of delivery
5) With D-flange
6) With C-flange

Flange ISO 3019-1 (SAE J744)		Hub for splined shaft[1]		Availability across sizes					Code
Diameter	Attachment[2]	Diameter		45	71	100	140	180	
82-2 (A)	⚷, ☍, ⚯	3/4 in	11T 16/32DP	●	●	●	●	–	K52
	⚷, ☍, ⚯	3/4 in	11T 16/32DP	●	●	●	●	●	U52

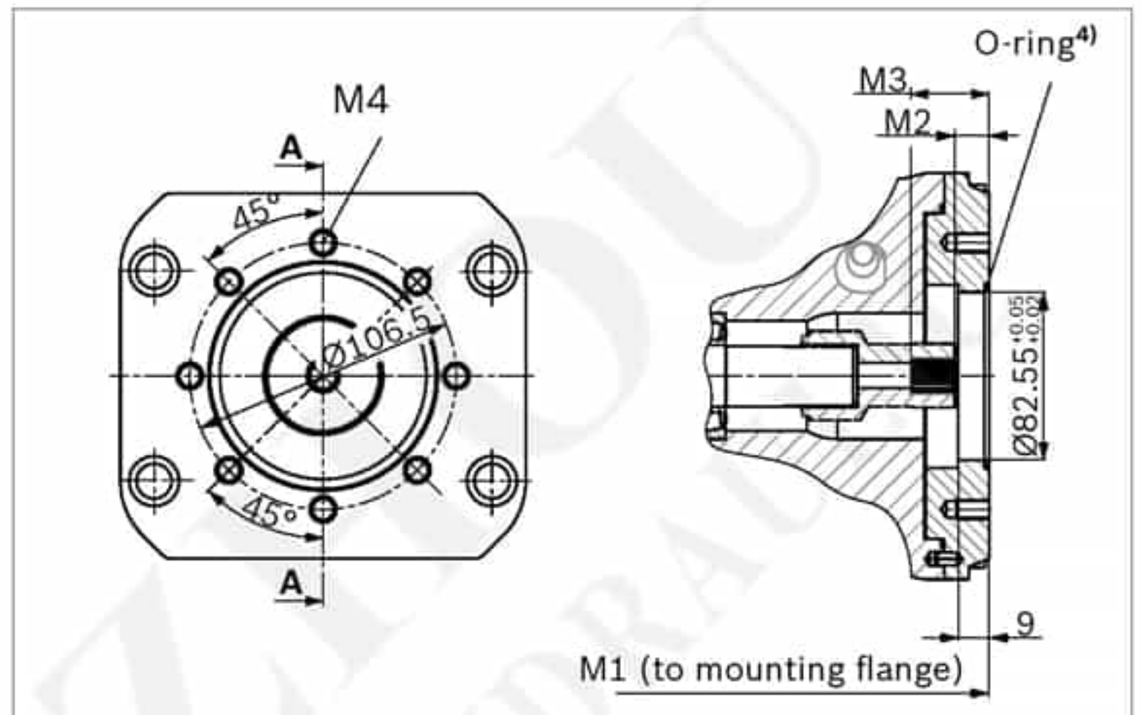
● = Available ○ = On request – = Not available

▼ **82-2 (A)**



K52 (SAE J744 19-4 (A-B))	NG	M1	M2	M3	M4[3]
	45	229	18.9	38.7	M10; 16 deep
	71	267	20.7	41.4	M10; 20 deep
	100	338	19	38.9	M10; 16 deep
	140[5]	350	18.9	38.6	M10; 16 deep
	140[6]	376			

▼ **82-2 (A)**



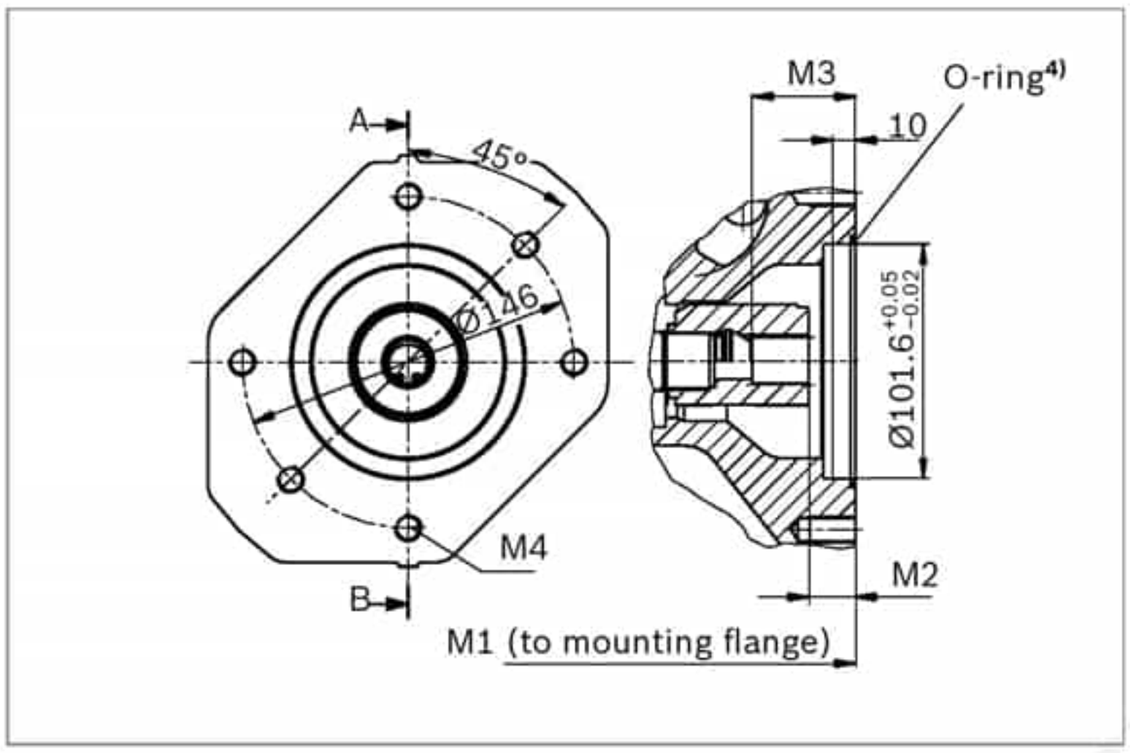
U52 (SAE J744 19-4 (A-B))	NG	M1	M2	M3	M4[3]
	45	264	19.6	38.7	M10; 16 deep
	71	299	20.7	41.4	M10; 20 deep
	100	360	17	38	M10; 16 deep
	140	377	19	38.6	M10; 20 deep
	180	387	On request		M10; 16 deep

1) Hub for splined shaft according to ANSI B92.1a, 30° pressure angle, flat root, side fit, tolerance class 5
2) Mounting holes pattern viewed on through drive with control at top.
3) Thread according to DIN 13; observe the max. tightening torques in the instruction manual.
4) O-ring included in the scope of delivery
5) With D-flange
6) With C-flange

Flange ISO 3019-2 (metric)		Hub for splined shaft[1]		Availability across sizes					Code
Diameter	Attachment[2]	Diameter		45	71	100	140	180	
101-2 (B)	⚷, ☍, ⚯	7/8 in	13T 16/32DP	●	●	●	●	–	K68
	⚷, ☍, ⚯	7/8 in	13T 16/32DP	●	●	●	●	●	U68

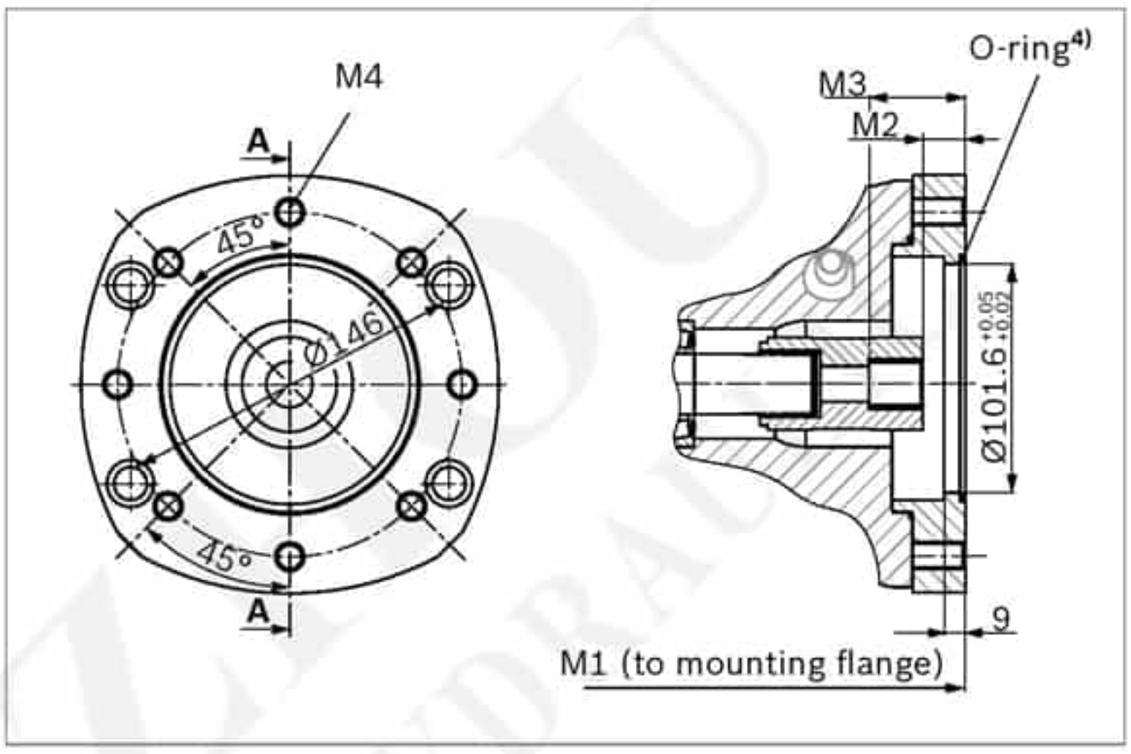
● = Available ○ = On request – = Not available

▼ **101-2 (B)**



K68 (SAE J744 22-4) (B))	NG	M1	M2	M3	M4[3]
	45	229	17.9	41.7	M12; 18 deep
	71	267	20.3	44.1	M12; 20 deep
	100	338	18	41.9	M12; 20 deep
	140[5]	350	17.8	41.6	M12; 20 deep
	140[6]	376			

▼ **101-2 (B)**



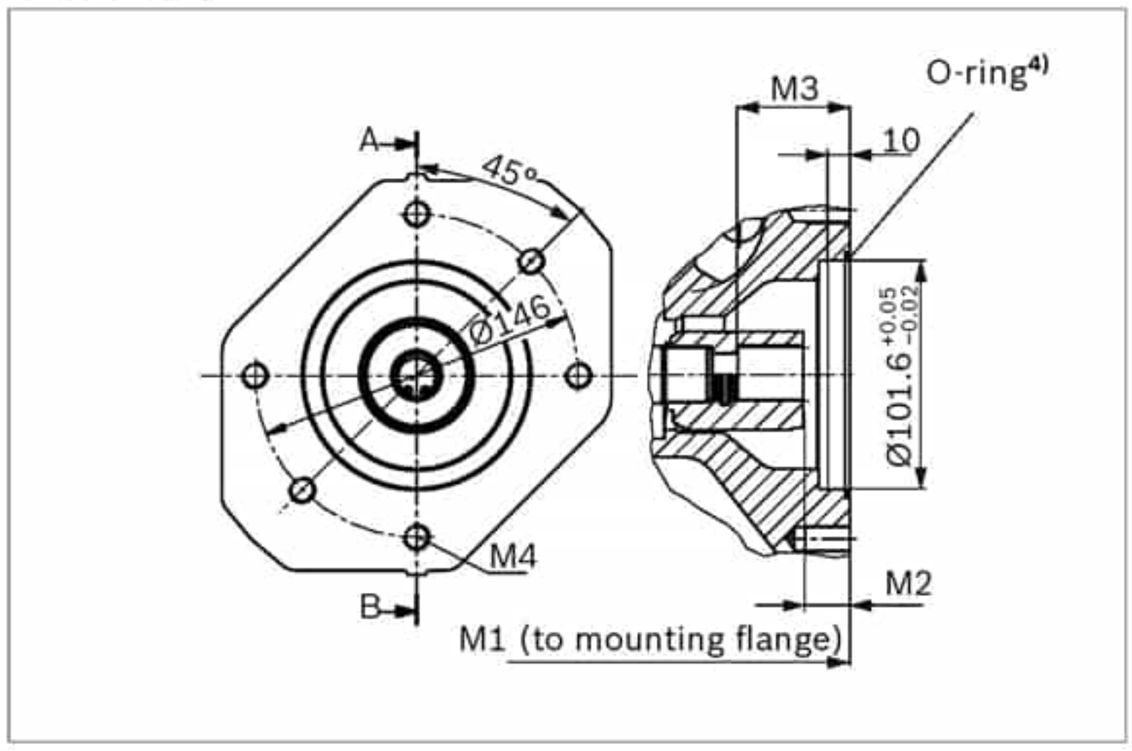
U68 (SAE J744 22-4) (B))	NG	M1	M2	M3	M4[3]
	45	264	17.4	41.6	M12; 22 deep
	71	299	17.4	41.6	M12; 22 deep
	100	360	17.4	41.3	M12; 22 deep
	140	377	17.4	41.6	M12; 22 deep
	180	387	17.4	42.5	M12; 22 deep

1) Hub for splined shaft according to ANSI B92.1a, 30° pressure angle, flat root, side fit, tolerance class 5
2) Mounting holes pattern viewed on through drive with control at top.
3) Thread according to DIN 13; observe the max. tightening torques in the instruction manual.
4) O-ring included in the scope of delivery
5) With D-flange
6) With C-flange

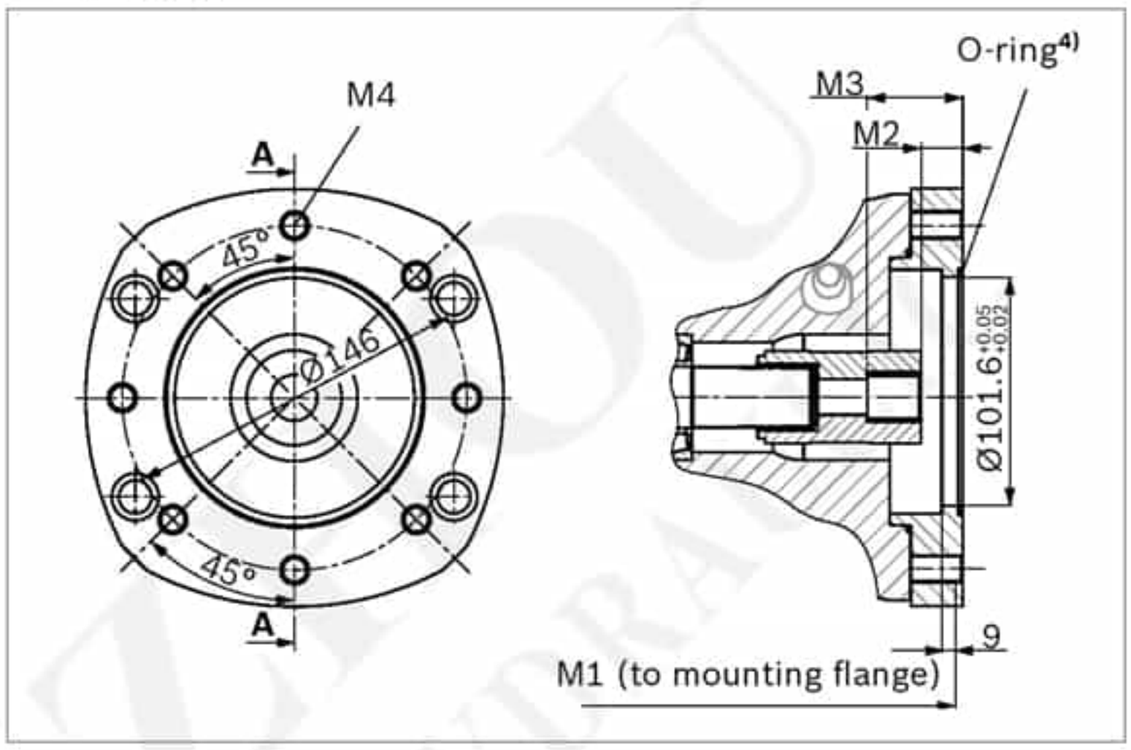
Flange ISO 3019-1 (SAE J744)		Splined shaft[1]		Availability across sizes					Code
Diameter	Attachment[2]	Diameter		45	71	100	140	180	
101-2 (B)	⚷, ☍, ⚯	1 in	15T 16/32DP	●	●	●	●	–	K04
	⚷, ☍, ⚯	1 in	15T 16/32DP	○	●	●	●	●	U04

● = Available ○ = On request – = Not available

▼ **101-2 (B)**



▼ **101-2 (B)**



K04	NG	M1	M2	M3	M4[3]
(SAE J744 25-4 (B-B))					
	45	229	18.4	46.7	M12; 18 deep
	71	267	20.8	49.1	M12; 20 deep
	100	338	18.2	46.6	M12; 20 deep
	140[5]	350	18.3	45.9	M12; 20 deep
	140[6]	376			

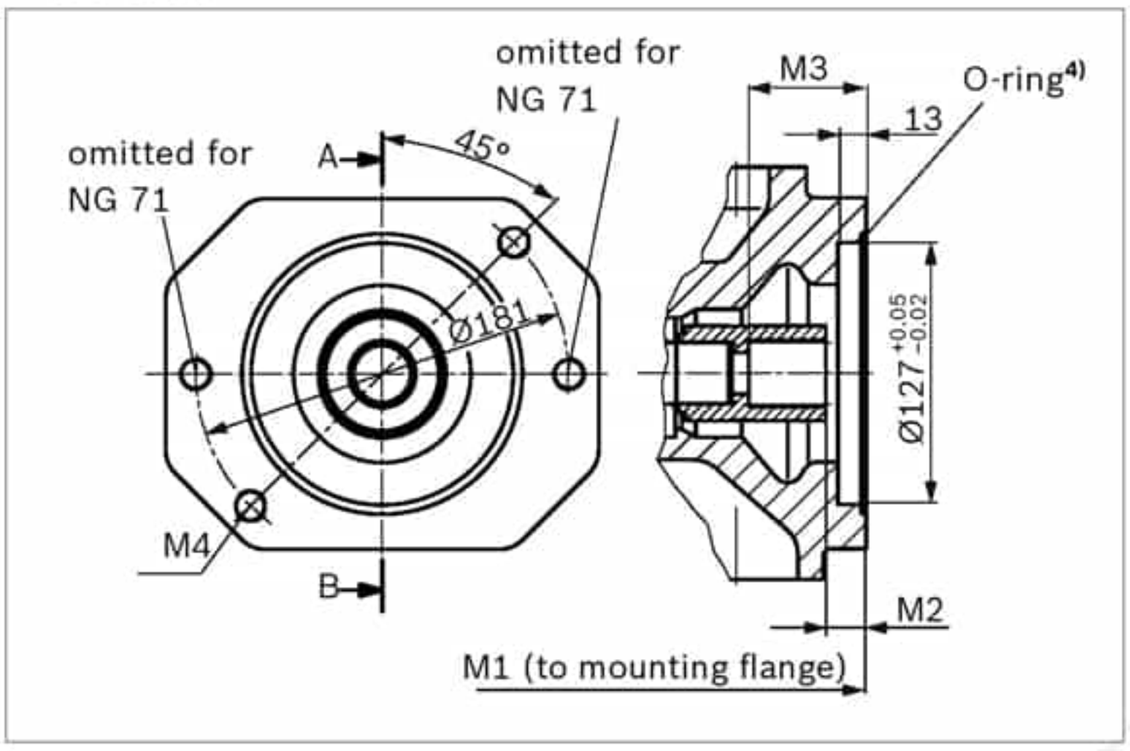
U04	NG	M1	M2	M3	M4[3]
(SAE J744 25-4 (B-B))					
	71	299	20.2	49.1	M12; 22 deep
	100	360	17.6	46.6	M12; 22 deep
	140	377	17.9	46.3	M12; 22 deep
	180	387	17.3	46.3	M12; 22 deep

1) Hub for splined shaft according to ANSI B92.1a, 30° pressure angle, flat root, side fit, tolerance class 5
2) Mounting holes pattern viewed on through drive with control at top.
3) Thread according to DIN 13; observe the max. tightening torques in the instruction manual.
4) O-ring included in the scope of delivery
5) With D-flange
6) With C-flange

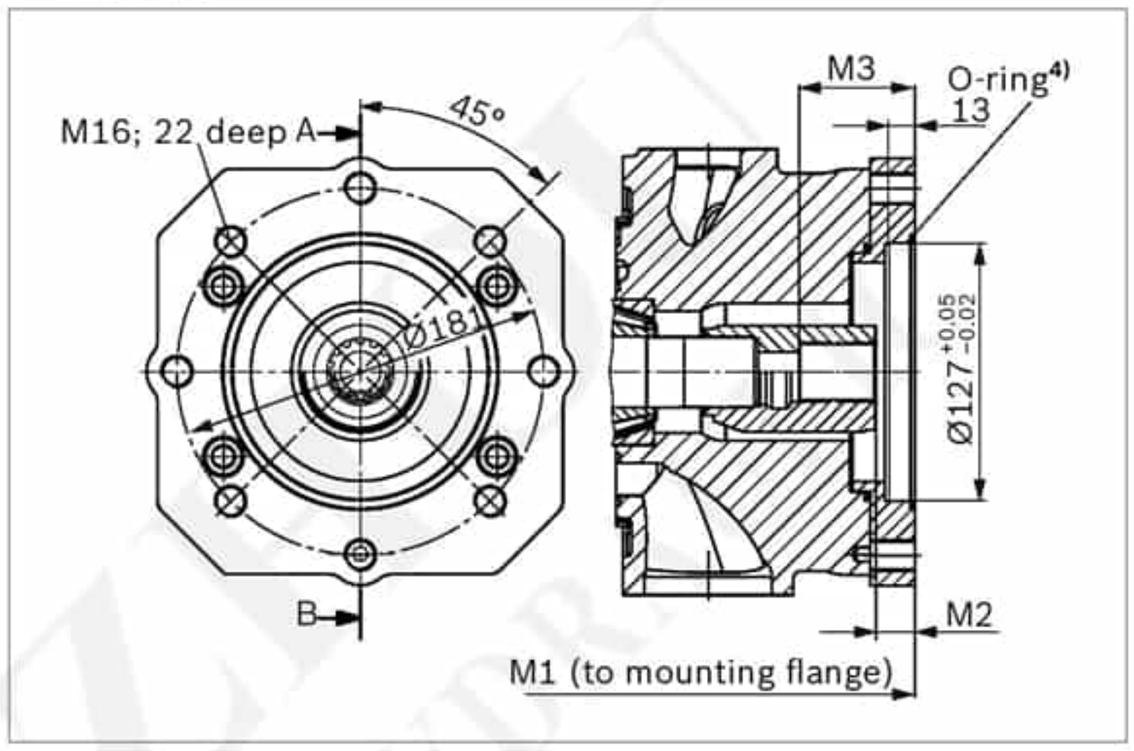
Flange ISO 3019-1 (SAE J744)		Splined shaft[1]	Availability across sizes					Code
Diameter	Attachment[2]	Diameter	45	71	100	140	180	
127-2 (C)	☍, ⚯	1 1/4 in 14T 12/24DP	–	●	●	●	–	K07
	⚷, ☍, ⚯	1 1/4 in 14T 12/24DP	–	●	●	●	●	U07

● = Available ○ = On request – = Not available

▼ **127-2 (C)**



▼ **127-2 (C)**



K07 (SAE J744 32-4 (C))	NG	M1	M2	M3	M4[3]
	71	267	21.8	58.6	M16; continuous
	100	338	19.5	56.4	M16; continuous
	140[5]	350	19.3	56.1	M16; 24 deep
	140[6]	376			

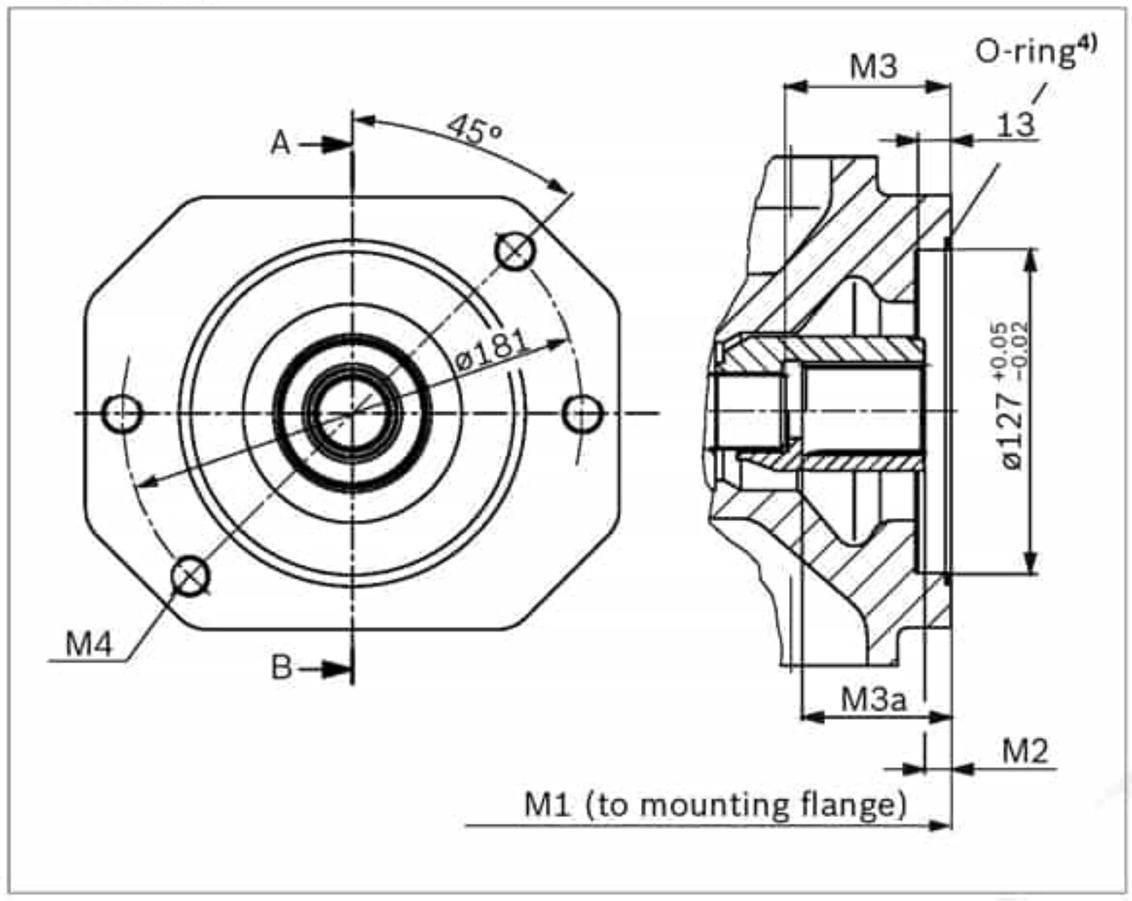
U07 (SAE J744 32-4 (C))	NG	M1	M2	M3	M4[3]
	71	299	21.2	58.1	M16; 22 deep
	100	360	19.5	56.3	M16; 22 deep
	140	377	18.9	56.1	M16; 22 deep
	180	387	18.9	56.1	M16; 22 deep

1) Hub for splined shaft according to ANSI B92.1a, 30° pressure angle, flat root, side fit, tolerance class 5
2) Mounting holes pattern viewed on through drive with control at top.
3) Thread according to DIN 13; observe the max. tightening torques in the instruction manual.
4) O-ring included in the scope of delivery
5) With D-flange
6) With C-flange

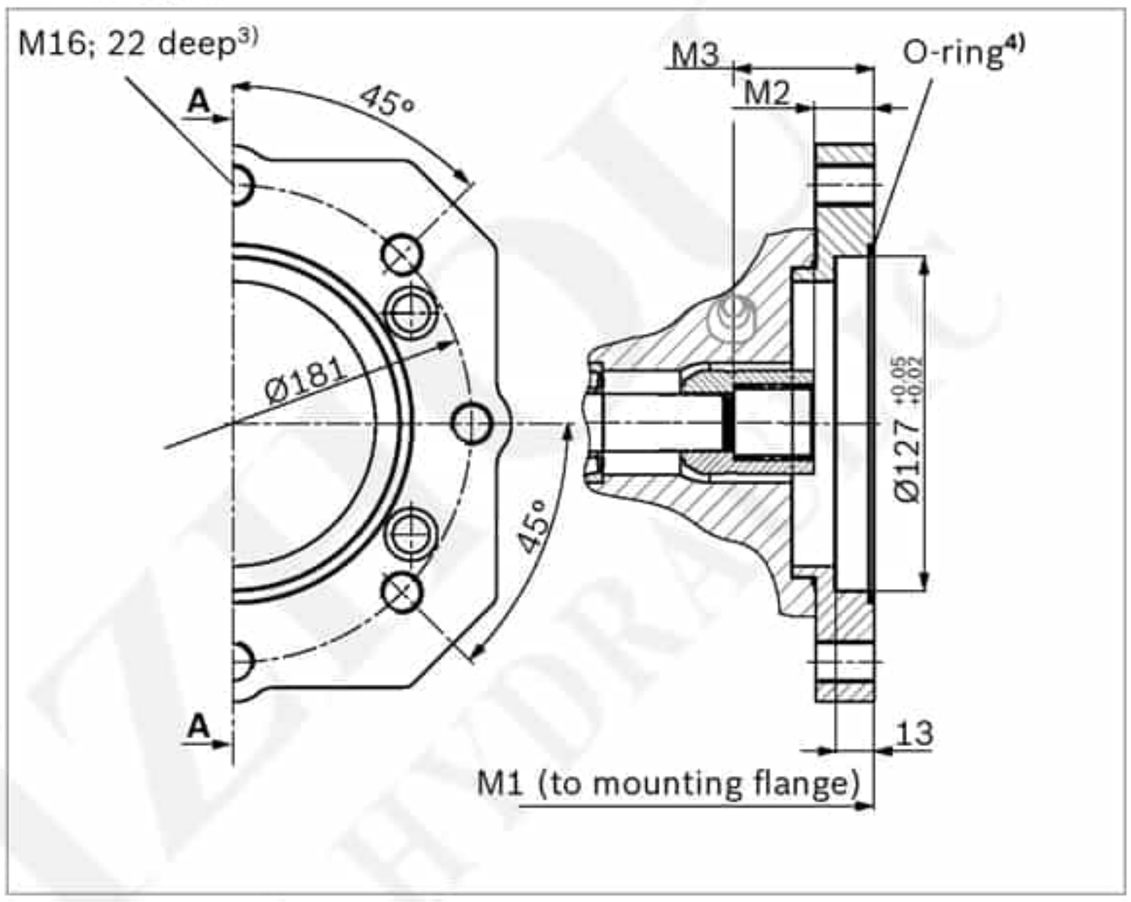
Flange ISO 3019-1 (SAE J744)		Splined shaft[1]	Availability across sizes					Code
Diameter	Attachment[2]	Diameter	45	71	100	140	180	
127-2 (C)	☍, ⚯	1 1/2 in 17T 12/24DP	–	–	●	●	–	K24
	⚷, ☍, ⚯	1 1/2 in 17T 12/24DP	–	–	●	●	●	U24

● = Available ○ = On request – = Not available

▼ **127-2 (C)**



▼ **127-2 (C)**



K24 (SAE J744 38-4 (C-C))	NG	M1	M2	M3	M3a	M4[3]
	100	323	9.9	65	–	M16; continuous
	140[5]	350	9.7	–	69.1	M16; 24 deep
	140[6]	376				

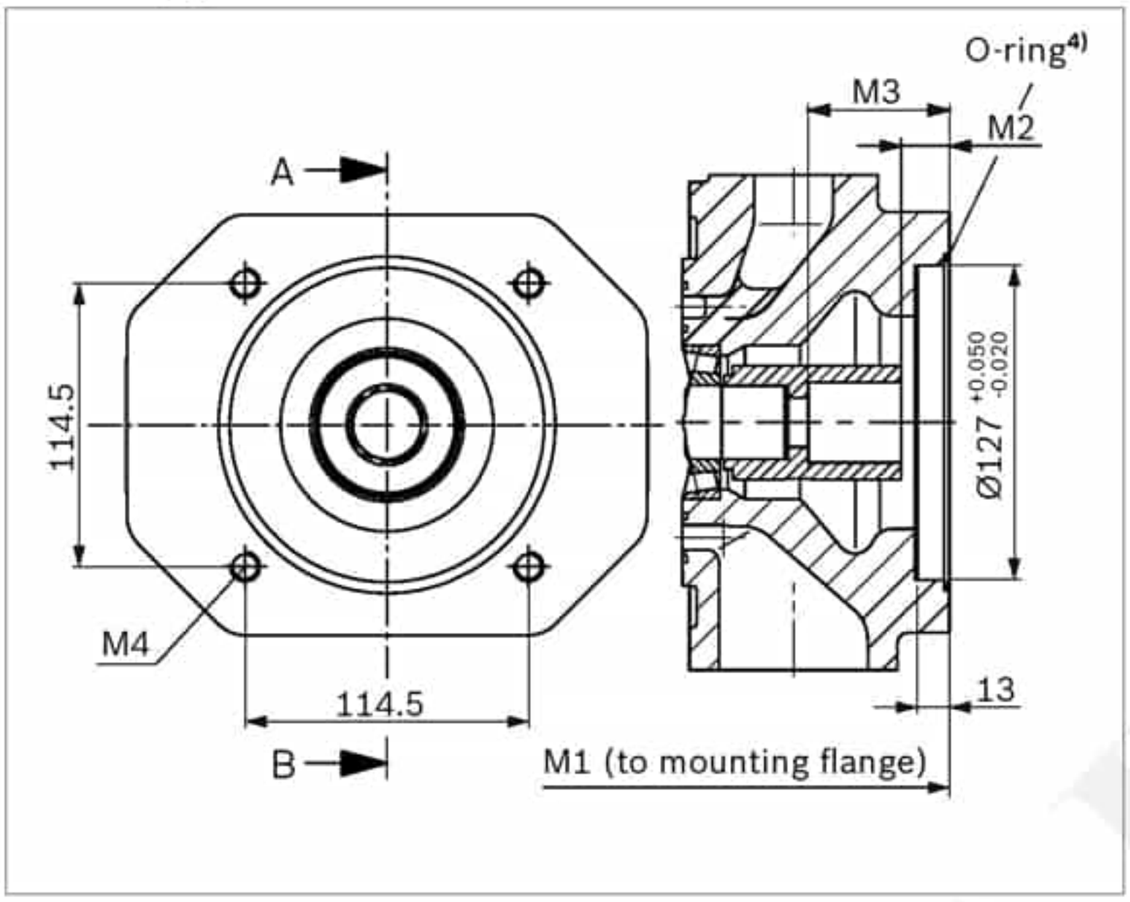
U24 (SAE J744 38-4 (C-C))	NG	M1	M2	M3	M4[3]
	100	360	21.5	62.3	M16; 22 deep
	140	377	21.5	62.3	M16; 22 deep
	180	387	9.9	62.3	M16; 22 deep

1) Hub for splined shaft according to ANSI B92.1a, 30° pressure angle, flat root, side fit, tolerance class 5
2) Mounting holes pattern viewed on through drive with control at top.
3) Thread according to DIN 13; observe the max. tightening torques in the instruction manual.
4) O-ring included in the scope of delivery
5) With D-flange
6) With C-flange

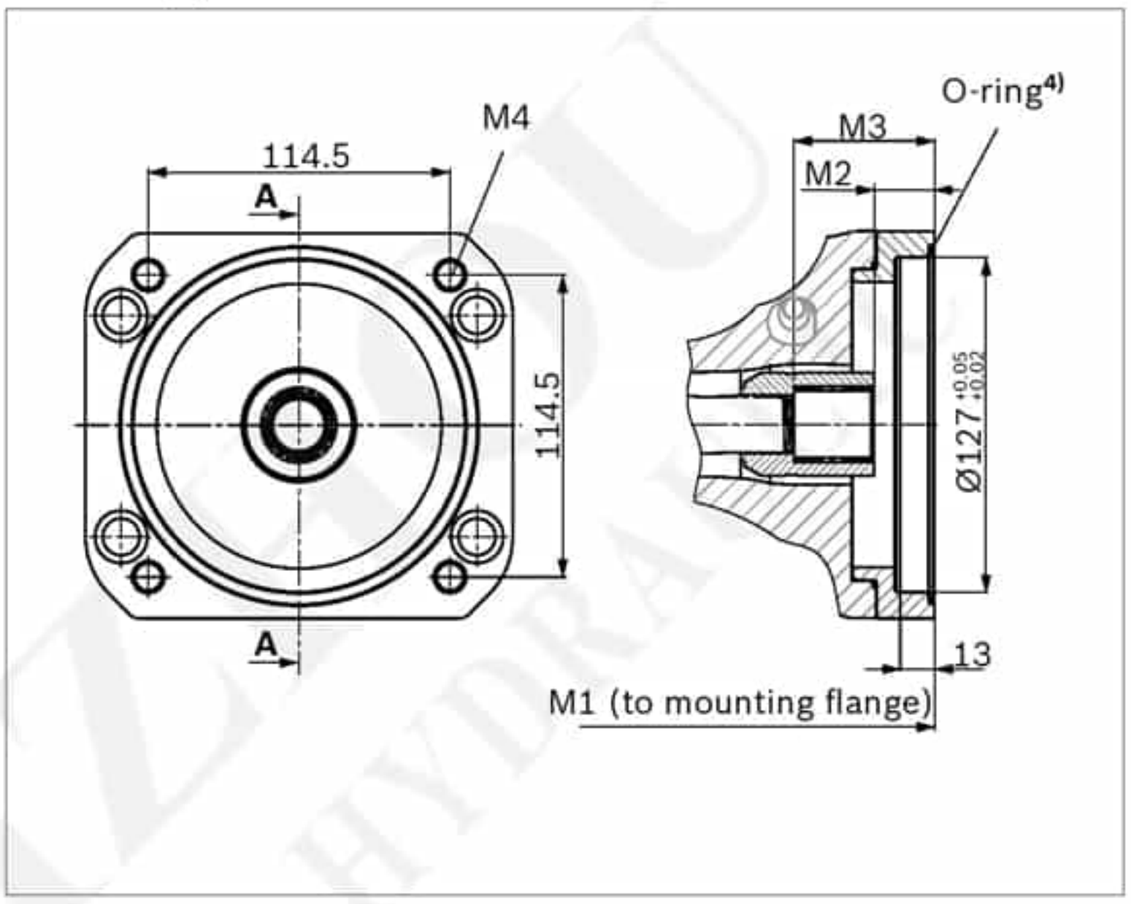
Flange ISO 3019-1 (SAE J744)		Splined shaft[1]	Availability across sizes					Code
Diameter	Attachment[2]	Diameter	45	71	100	140	180	
127-4 (C)	⌘	1 1/4 in 14T 12/24DP	–	○	●	●	–	K15
		1 1/4 in 14T 12/24DP	–	–	●	●	●	U15

● = Available ○ = On request – = Not available

▼ **127-4 (C)**



▼ **127-4 (C)**



K15 (SAE J744 32-4 (C))	NG	M1	M2	M3	M4[3]
	100	338	17.9	56.5	M12; 22 deep
	140	350	17.9	56.5	M12; 22 deep

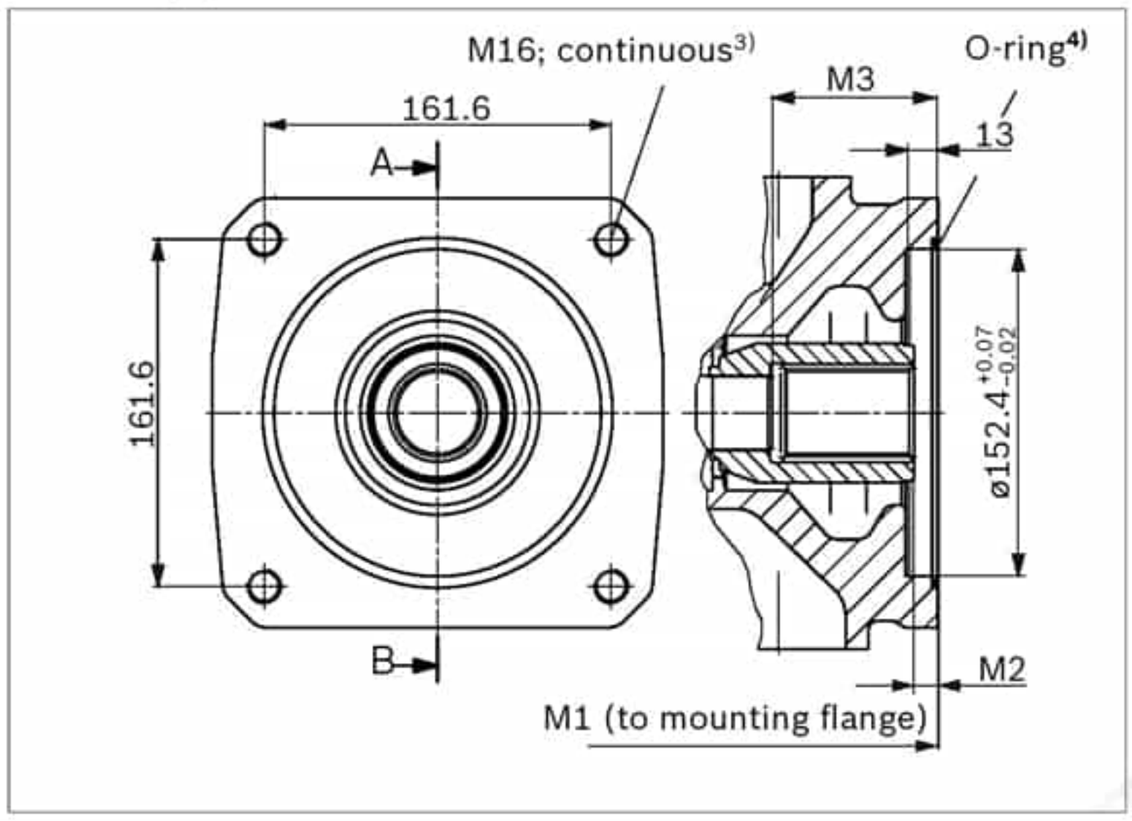
U15 (SAE J744 32-4 (C))	NG	M1	M2	M3	M4[3]
	100	360	20	57	M12; 22 deep
	140	377	20	57	M12; 22 deep
	180	387	20	57	M12; 22 deep

1) Hub for splined shaft according to ANSI B92.1a, 30° pressure angle, flat root, side fit, tolerance class 5
2) Mounting holes pattern viewed on through drive with control at top.
3) Thread according to DIN 13; observe the max. tightening torques in the instruction manual.
4) O-ring included in the scope of delivery

Flange ISO 3019-1 (SAE J744)		Splined shaft[1]	Availability across sizes					Code
Diameter	Attachment[2]	Diameter	45	71	100	140	180	
152-4 (C)	⌘	1 3/4 in 13T 8/16DP	–	–	–	●	–	K17
		1 3/4 in 13T 8/16DP	–	–	–	●	●	U17

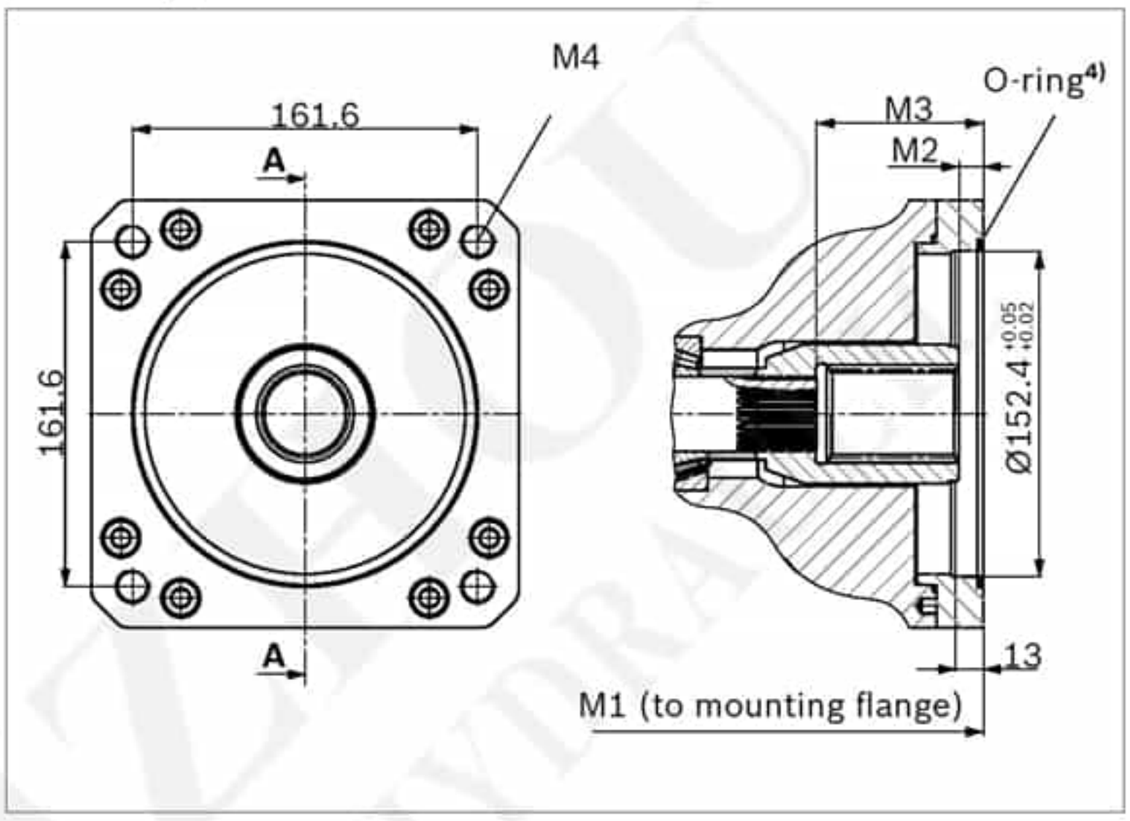
● = Available ○ = On request – = Not available

▼ **152-4 (D)**



K17 152-4 (D)	NG	M1	M2	M3
	140	350	11	77.3

▼ **152-4 (D)**



U17 152-4 (D)	NG	M1	M2	M3	M4[3]
	140	377	10.7	77.5	M16; 22 deep
	180	387	10.8	78.1	M16; 22 deep

1) Hub for splined shaft according to ANSI B92.1a, 30° pressure angle, flat root, side fit, tolerance class 5
2) Mounting holes pattern viewed on through drive with control at top.
3) Thread according to DIN 13; observe the max. tightening torques in the instruction manual.
4) O-ring included in the scope of delivery

Overview of mounting options

Through drive			Mounting options – 2nd pump			
Flange (SAE) ISO 3019-1	**Hub for splined shaft**	**Code[1)]**	**A10VO/31 and 32 NG (shaft)**	**A10VO/52 and 53 NG (shaft)**	**A1VO/10 NG (shaft)**	**External gear pump**
82-2 (A)	5/8 in	(K)(U)01	18 (U)/31	10 (U), 18 (U)	–	Design F
	3/4 in	(K)(U)52	18 (S, R)/31	10 (S) 18 (S, R)	18, 28 (S3)	
101-2 (B)	7/8 in	(K)(U)68	28 (S, R)/31 45 (U, W)	28 (S, R) 45 (U, W)	28 (S4) 35 (S4)	Design N/G
	1 in	(K)(U)04	45 (S, R)	45 (S, R) 60, 63 (U, W) 72 (U, W)	35 (S5)	–
127-2 (C)	1 1/4 in	(K)(U)07	71 (S, R) 88 (S, R)/31 100 (U, W)	85 (U, W) 100 (U, W)		–
	1 1/2 in	(K)(U)24	100 (S) 140 (W)/31	85 (S, R) 100 (S)		–
127-4 (C)	1 in	UE2	45 (S, R)/32	60, 63 (U, W) 72 (U, W)		–
	1 1/4 in	(K)(U)15	71 (S, R)/32	60, 63 (S, R) 72 (S, R) 85 (U, W) 100 (U, W)		–
152-4 (D)	1 3/4 in	(K)(U)17	140 (S); 180 (S)/32	–		–

Mounting flange C, D and U (see order item 09 in the type code) and port plate with a K.. or U.. Through drive (see or items 10 and 11 in the type code) directly connected by the static and dynamic loading when installed.
The following table shows the version to be selected:

Mounting flange	**C**	**D**	**U**
Port plate	12	22/32	22/32
Through drive	K..	U..	U..

1) 1st pump only with mounting flanges D or U for Uxx through drives (for more information, see also type code on page 3).

Combination pumps A10VO + A10VO

By using combination pumps, it is possible to have independent circuits without the need for splitter gearboxes. When ordering combination pumps, the type designations of the 1st and 2nd pumps must be linked by a "**+**".

Order example:

A10VO100DR/32R-VSC12K07+

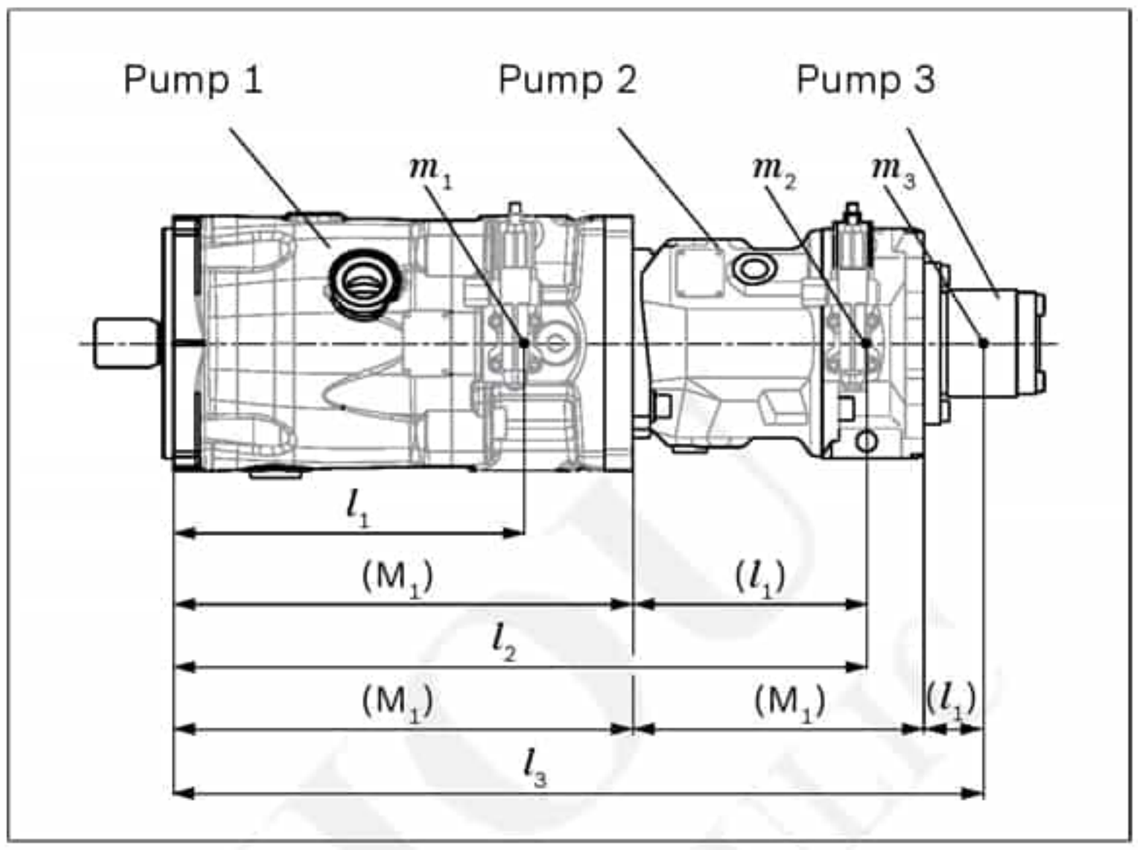
A10VO71DR/32R-VSC12N00

A tandem pump, with two pumps of equal size, is permissible without additional supports, assuming that the dynamic mass acceleration does not exceed maximum 10 *g* (= 98.1 m/s²).

For combination pumps consisting of more than two pumps, the mounting flange must be rated for the permissible mass torque (please contact us).

The "K.." through drives are plugged with a **non-pressure-resistant** cover. This means the units must be sealed with a pressure-resistant cover before commissioning. Through drives can also be ordered with pressure-resistant covers, please state in plain text.

The "U.." through drives are equipped with a flexible, universal through drive (without hub and intermediate flange) and a pressure-resistant cover. This enables the utilization of various through drive options without mechanical machining of the port plate. Details of the necessary assembled parts can be found in data sheet RE 95581.



m_1, m_2, m_3	Weight of pump	[kg]
l_1, l_2, l_3	Distance from center of gravity	[mm]
$T_m = (m_1 \bullet l_1 + m_2 \bullet l_2 + m_3 \bullet l_3) \bullet \frac{1}{102}$		[Nm]

Calculation for multiple pumps

l_1 = Front pump distance from center of gravity (values from "Permissible moments of inertia" table)

l_2 = Dimension "M1" from through drive drawings (from page 53) + l_1 of the 2nd pump

l_3 = Dimension "M1" from through drive drawings (from page 53) of the 1st pump + "M1" of the 2nd pump + l_1 of the 3rd pump

Permissible moments of inertia

Size			45	71	100	140	180
for 4-hole flange							
static	T_m	Nm	3000	3000	7000	7000	7000
dynamic at 10 *g* (98.1 m/s²)	T_m	Nm	300	300	700	700	700
for 2-hole flange							
static	T_m	Nm	1370	2160	3000	On request[1)]	–
dynamic at 10 *g* (98.1 m/s²)	T_m	Nm	137	216	300		–
Weight with port plate 11/12N00 and mounting flange C or D	m	kg	25.8	40.4	56.4	70.5	75.2
Weight with port plate 12K.. and mounting flange C	m	kg	27.4	43.3	62.6	79.5	–
Weight with port plate 22(32)Uxx and mounting flange D or U	m	kg	32.6	51.8	76	90.2	89.4
Distance from center of gravity with 11/12N00	l_1	mm	108	120	138	158	159
Distance from center of gravity with 12Kxx	l_1	mm	115	129	153	177	–
Distance from center of gravity with 22/32Uxx	l_1	mm	135	153	184	196	190

Please also pay attention to the installation information on page 66.

1) Pump combinations permissible only max. as double pump up to the same size.