Type code for standard program

	A10VS	O			/	31		–	V					
01	02	03	04	05		06	07		08	09	10	11	12	13

	Version	18	28	45	71	100	140	
01	Standard version (without symbol)	●	●	●	●	●	●	
	HFA, HFB, HFC hydraulic fluid (except for Skydrol)	–	●	●	●	●	●	**E**
	High-speed version	–	–	●	●	●	●	**H**

Axial piston unit

02	Swashplate design, variable, nominal pressure 280 bar, maximum pressure 350 bar	**A10VS**

Operation mode

03	Pump, open circuit	**O**

Size (NG)

		18	28	45	71	100	140
04	Geometric displacement, see table of values on pages 6 and 7	**18**	**28**	**45**	**71**	**100**	**140**

Control device

				18	28	45	71	100	140	
05	Two-point control, directly operated			●	●	●	●	●	●	**DG**
	Pressure control			●	●	●	●	●	●	**DR**
	with flow control, hydraulic									
		X-T open		●	●	●	●	●	●	**DFR**
		X-T closed		●	●	●	●	●	●	**DFR1**
	with swivel angle control, electric			–	●	●	●	●	●	**FE1**[1]
		pressure and swivel-angle control, electric		●	●	●	●	●	●	**DFE1**[1]
	with pressure cut-off, remotely operated									
	hydraulic			●	●	●	●	●	●	**DRG**
	electrical	negative characteristic	12V	●	●	●	●	●	●	**ED71**
			24V	●	●	●	●	●	●	**ED72**
		positive characteristic	12V	●	●	●	●	●	●	**ER71**[2]
			24V	●	●	●	●	●	●	**ER72**[2]
	Pressure, flow and power control			–	●	●	●	●	●	**DFLR**

Series

06	Series 3, Index 1	**31**

Direction of rotation

07	Viewed on drive shaft	clockwise	**R**
		counter clockwise	**L**

Seals

08	FKM (fluor-caoutchouc)	**V**

1) See RE 30030

2) The following must be taken into account during project planning:
Excessive current levels (I > 1200 mA with 12 V or I > 600 mA with 24 V) to the ER solenoid can result in undesired increase of pressure which can lead to pump or system damage:
- Use I_{max} current limiter solenoids.
- A sandwich plate pressure reducing valve can be used to protect the pump in the event of overflow.

● = available ❍ = on request – = not available

Type code for standard program

	A10VS	O			/	31		–	V					
01	02	03	04	05		06	07		08	09	10	11	12	13

	Drive shaft		18	28	45	71	100	140	
09	Splined shaft ANSI B92.1a	standard shaft	●	●	●	●	●	●	S
		similar to shaft "S" however for higher input torque	●	●	●	●	–	–	R
	Parallel keyed shaft DIN 6885	not for through drive	●	●	●	●	●	●	P

	Mounting flange		18	28	45	71	100	140	
10	ISO 3019-2	2-hole	●	●	●	●	●	–	A
		4-hole	–	–	–	–	–	●	B

	Service line port		18	28	45	71	100	140	
11	SAE flange ports on opposite side, metric fastening thread		●	●	●	–	●	●	12
			–	–	–	●	–	–	42

	Through drive			18	28	45	71	100	140	
12	without through drive			●	●	●	●	●	●	N00
	Flange ISO 3019-1 Diameter	coupling for splined shaft[1] diameter								
	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	17T 12/24DP	–	–	–	–	●	●	K24
	152-4 (D)	1 3/4 in	13T 8/16DP	–	–	–	–	–	●	K17
	Ø 63, metric 4-hole	shaft key Ø 25		–	●	●	●	●	●	K57
	Flange ISO 3019-2 Diameter									
	80, 2-hole	3/4 in	11T 16/32DP	●	●	●	●	●	●	KB2
	100, 2-hole	7/8 in	13T 16/32DP	–	●	●	●	●	●	KB3
		1 in	15T 16/32DP	–	–	●	●	●	●	KB4
	125, 2-hole	1 1/4 in	14T 12/24DP	–	–	–	●	●	●	KB5
		1 1/2 in	17T 12/24DP	–	–	–	–	●	●	KB6
	180, 4-hole	1 3/4 in	13T 8/16DP	–	–	–	–	–	●	KB7

	Connectors for solenoids[2]	18	28	45	71	100	140	
13	HIRSCHMANN connector – without suppressor diode	●	●	●	●	●	●	H

1) Coupling for splined shaft as per ANSI B92.1a
2) Connectors for other electric components can deviate.

● = available ❍ = on request – = not available

Technical data, standard unit

Table of values (theoretical values, without efficiencies and tolerances: values rounded)

Size		NG		18	28	45	71	100	140
Geometrical displacement per revolution									
		$V_{g\,max}$	cm^3	18	28	45	71	100	140
Speed[1]									
maximum at $V_{g\,max}$		n_{nom}	rpm	3300	3000	2600	2200	2000	1800
maximum at $V_g < V_{g\,max}$		$n_{max\,perm}$	rpm	3900	3600	3100	2600	2400	2100
Flow									
at n_{nom} and $V_{g\,max}$		$q_{v\,max}$	l/min	59	84	117	156	200	252
at $n_E = 1500$ rpm and $V_{g\,max}$		$q_{vE\,max}$	l/min	27	42	68	107	150	210
Power at $\Delta p = 280$ bar									
at n_{nom}, $V_{g\,max}$		P_{max}	kW	30	39	55	73	93	118
at $n_E = 1500$ rpm and $V_{g\,max}$		$P_{E\,max}$	kW	12.6	20	32	50	70	98
Torque									
at $V_{g\,max}$ and	$\Delta p = 280$ bar	T_{max}	Nm	80	125	200	316	445	623
	$\Delta p = 100$ bar	T	Nm	30	45	72	113	159	223
Rotary stiffness, drive shaft	S	c	Nm/rad	11087	22317	37500	71884	121142	169537
	R	c	Nm/rad	14850	26360	41025	76545	–	–
	P	c	Nm/rad	13158	25656	41232	80627	132335	188406
Moment of inertial rotary group		J_{TW}	kgm^2	0.00093	0.0017	0.0033	0.0083	0.0167	0.0242
Angular acceleration, maximum[2]		α	rad/s^2	6800	5500	4000	3300	2700	2700
Filling capacity		V	L	0.4	0.7	1.0	1.6	2.2	3.0
Weight (without through drive) approx.		m	kg	12	15	21	33	45	60

1) The values are applicable:
- for an absolute pressure $p_{abs} = 1$ bar at suction port S
- within the optimum viscosity range from $\nu_{opt} = 16$ to 36 mm^2/s
- for mineral-oil based hydraulic fluid.

2) The scope of application lies between the minimum necessary and the maximum permissible drive speeds.
Valid for external excitation (e.g. diesel engine 2- to 8-fold rotary frequency, cardan shaft 2-fold rotary frequency).
The limiting value is only valid for a single pump.
The loading capacity of the connecting parts must be taken into account.

Note

Exceeding the maximum or falling below the minimum permissible values can lead to a loss of function, a reduction in operational service life or total destruction of the axial piston unit. We recommend to check the loading through tests or calculation / simulation and comparison with the permissible values.

Determination of size

Flow $q_V = \dfrac{V_g \cdot n \cdot \eta_V}{1000}$ [l/min]

Torque $T = \dfrac{V_g \cdot \Delta p}{20 \cdot p \cdot h_{mh}}$ [Nm]

Power $P = \dfrac{2\pi \cdot T \cdot n}{60000} = \dfrac{q_V \cdot \Delta p}{600 \cdot \eta_t}$ [kW]

V_g = Displacement per revolution in cm^3
Δp = Differential pressure in bar
n = Speed in rpm
η_V = Volumetric efficiency
η_{mh} = Mechanical-hydraulic efficiency
η_t = Total efficiency ($\eta_t = \eta_V \cdot \eta_{mh}$)

Technical data, high-speed version

Table of values (theoretical values, without efficiencies and tolerances: values rounded)

Size		NG		45	71	100	140
Geometrical displacement per revolution							
		$V_{g\,max}$	cm^3	45	71	100	140
Speed[1]							
maximum at $V_{g\,max}$		n_{nom}	rpm	3000	2550	2300	2050
maximum at $V_g < V_{g\,max}$		$n_{max\,perm}$	rpm	3300	2800	2500	2200
Flow							
at n_{nom} and $V_{g\,max}$		$q_{v\,max}$	l/min	135	178	230	287
Power at $\Delta p = 280$ bar							
at n_{nom}, $V_{g\,max}$		P_{max}	kW	63	83	107	134
Torque							
at $V_{g\,max}$ and	$\Delta p = 280$ bar	T_{max}	Nm	200	316	445	623
	$\Delta p = 100$ bar	T	Nm	72	113	159	223
Rotary stiffness, drive shaft	S	c	Nm/rad	37500	71884	121142	169537
	R	c	Nm/rad	41025	76545	–	–
	P	c	Nm/rad	41232	80627	132335	188406
Moment of inertial rotary group		J_{TW}	kgm^2	0.0033	0.0083	0.0167	0.0242
Angular acceleration, maximum[2]		α	rad/s^2	4000	3300	2700	2700
Filling capacity		V	L	1.0	1.6	2.2	3.0
Weight (without through drive) approx.		m	kg	21	33	45	60

1) The values are applicable:
- for an absolute pressure $p_{abs} = 1$ bar at suction port S
- within the optimum viscosity range from $\nu_{opt} = 16$ to 36 mm^2/s
- for mineral-oil based hydraulic fluid.

2) The scope of application lies between the minimum necessary and the maximum permissible drive speeds.
Valid for external excitation (e.g. diesel engine 2- to 8-fold rotary frequency, cardan shaft 2-fold rotary frequency).
The limiting value is only valid for a single pump.
The loading capacity of the connecting parts must be taken into account.

Note

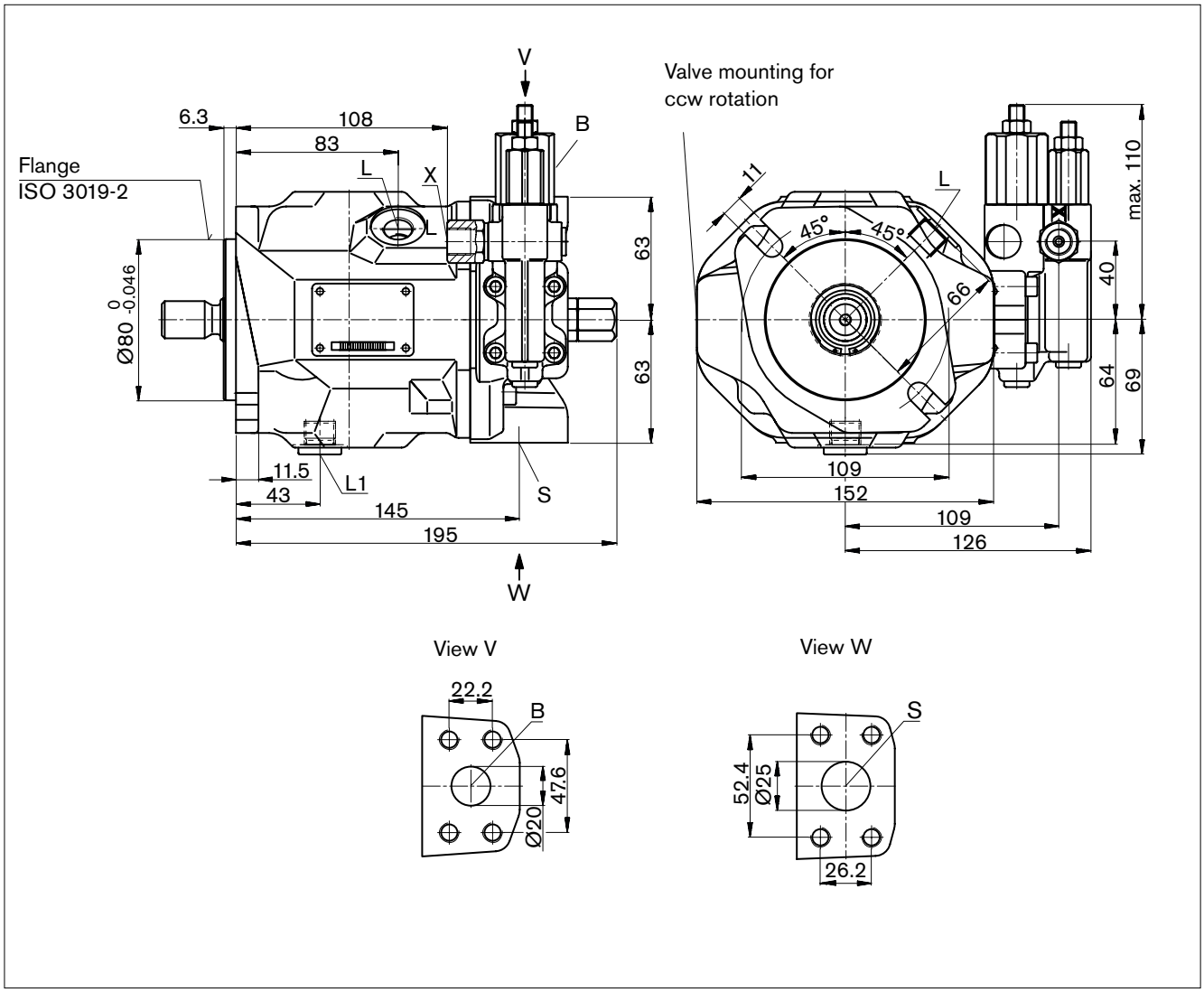
Exceeding the maximum or falling below the minimum permissible values can lead to a loss of function, a reduction in operational service life or total destruction of the axial piston unit. We recommend to check the loading through tests or calculation / simulation and comparison with the permissible values.

Sizes 45, 71, 100 and 140 are optionally available in high-speed version.
External dimensions are not affected by this option.

Dimensions size 18

DFR, DFR1 – Pressure and flow control, hydraulic

Clockwise rotation



Ports

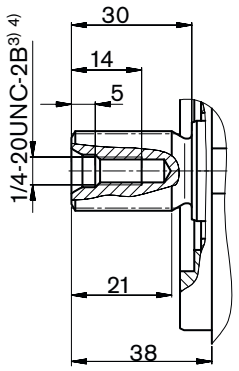
Designation	Port for	Standard	Size[1)]	Maximum pressure [bar][2)]	State
B	Service line, fastening thread	SAE J518[3)] DIN 13	3/4 in M10 x 1.5; 17 deep	350	O
S	Suction line, fastening thread	SAE J518[3)] DIN 13	1 in M10 x 1.5; 17 deep	10	O
L	Case drain fluid	DIN 3852[4)]	M16 x 1.5; 12 deep	2	O[5)]
L_1	Case drain fluid	DIN 3852[4)]	M16 x 1.5; 12 deep	2	X[5)]
X	Pilot pressure	DIN 3852[4)]	M14 x 1.5; 12 deep	350	O
X	Pilot pressure with DG-control	DIN ISO 228[4)]	G 1/4 in	350	O

Dimensions size 18

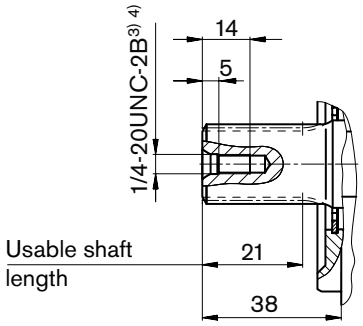
Before finalizing your design request a certified installation drawing. Dimensions in mm.

Drive shaft

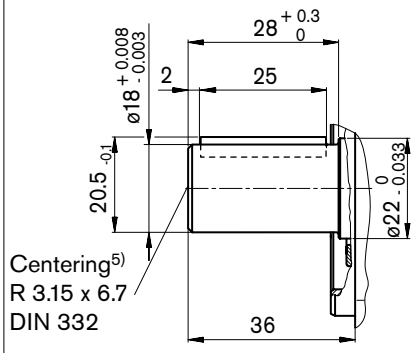
S Splined shaft 3/4 in
11T 16/32DP[1] (SAE J744)



R Splined shaft 3/4 in
11T 16/32DP[1][2] (SAE J744)



P Parallel shaft key
DIN 6885, A6x6x25

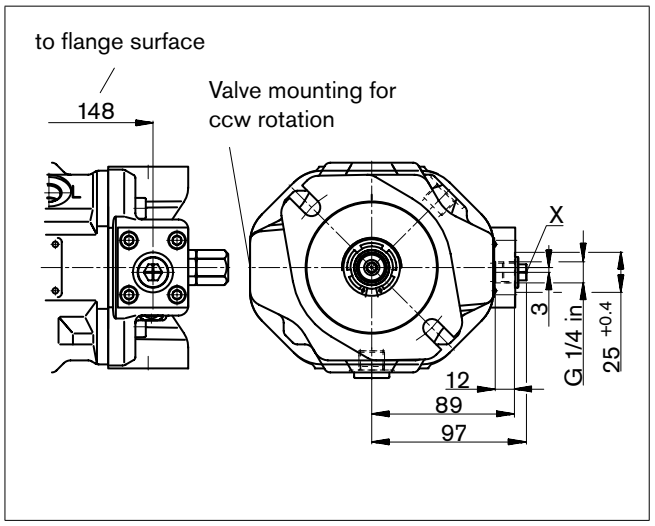


1) ANSI B92.1a, 30° pressure angle, flat root, side fit, tolerance class 5
2) Splines according to ANSI B92.1a, run out of spline is a deviation from standard
3) Thread according to ASME B1.1

Dimensions size 18

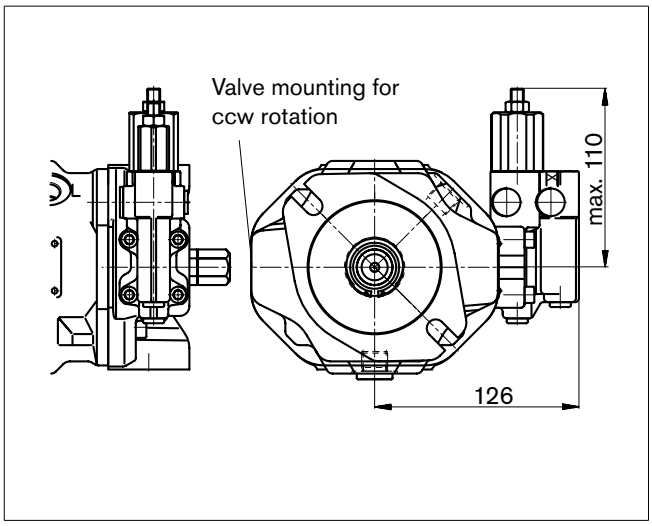
DG

Two-point control, directly operated



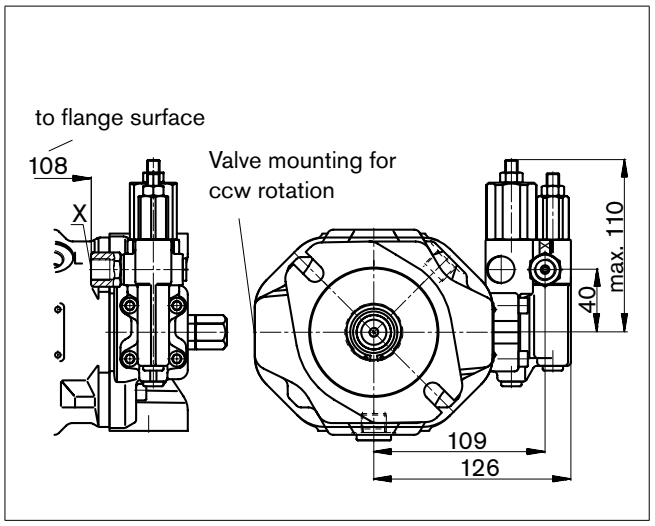
DR

Pressure control



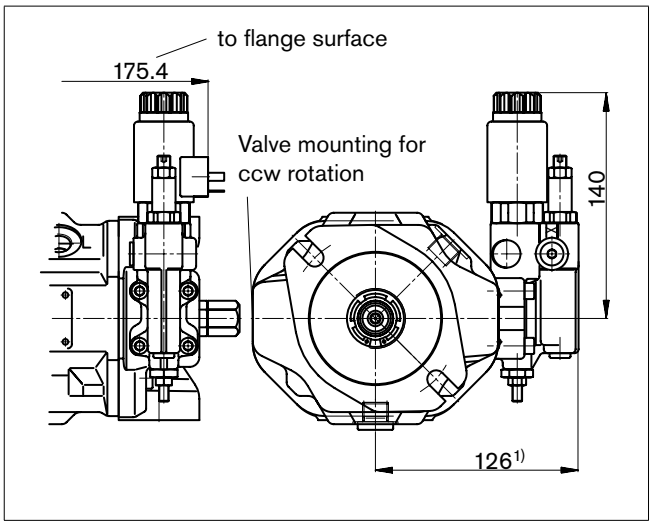
DRG

Pressure control, remotely operated



ED7., ER7.

Electro-hydraulic pressure control

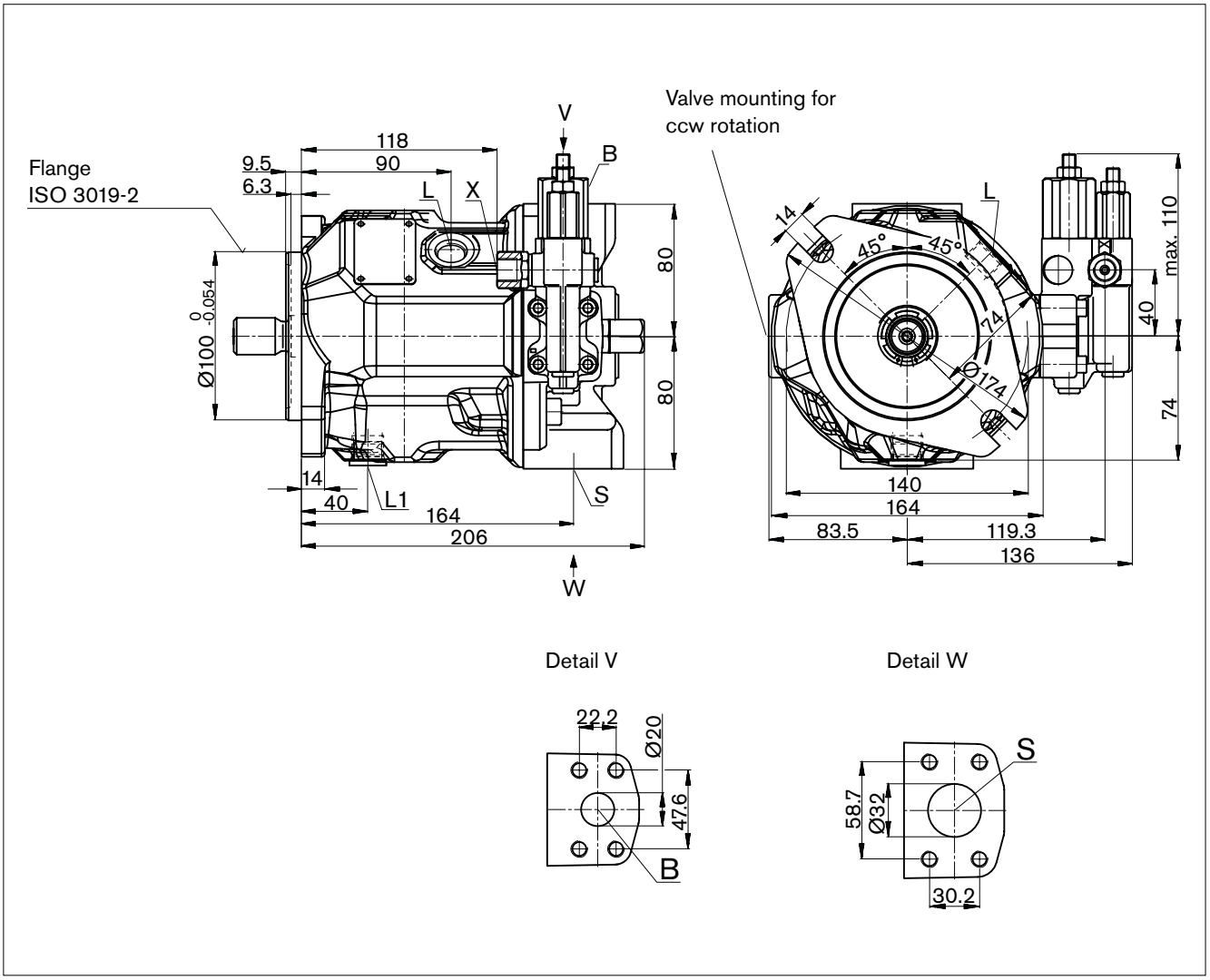


1) ER7.: 161 mm if using a sandwich plate pressure reducing valve.

Dimensions size 28

DFR/DFR1 – Pressure and flow control, hydraulic

Clockwise rotation



Ports

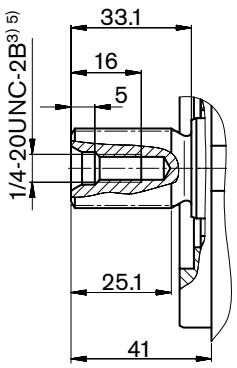
Designation	Port for	Standard	Size[1)]	Maximum pressure [bar][2)]	State
B	Service line, fastening thread	SAE J518[3)] DIN 13	3/4 in M10 x 1.5; 17 deep	350	O
S	Suction line, fastening thread	SAE J518[3)] DIN 13	1 1/4 in M10 x 1.5; 17 deep	10	O
L	Case drain fluid	DIN 3852[4)]	M18 x 1.5; 12 deep	2	O[5)]
L_1	Case drain fluid	DIN 3852[4)]	M18 x 1.5; 12 deep	2	X[5)]
X	Pilot pressure	DIN 3852[4)]	M14 x 1.5; 12 deep	350	O
X	Pilot pressure with DG-control	DIN ISO 228[4)]	G 1/4in; 12 deep	350	O

-

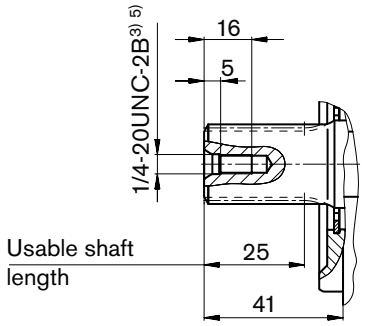
Dimensions size 28

Drive shaft

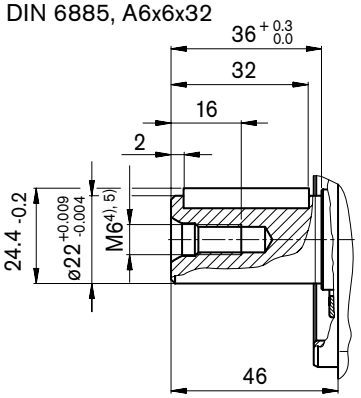
S Splined shaft 7/8 in
13T 16/32DP[1] (SAE J744)



R Splined shaft 7/8 in
13T 16/32DP[1)2)] (SAE J744)



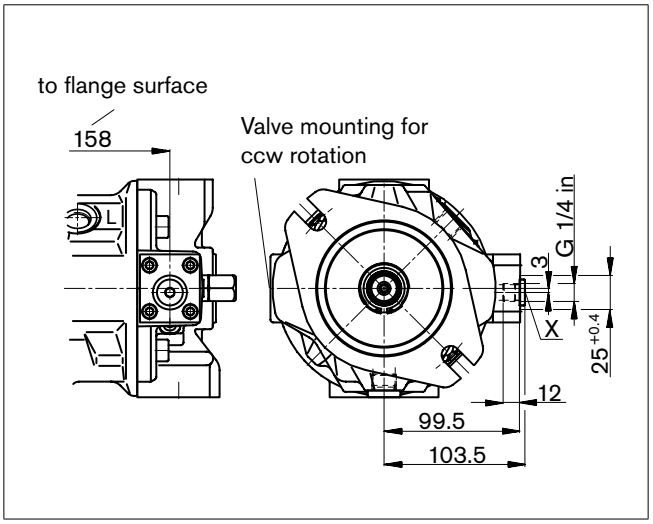
P Parallel shaft key
DIN 6885, A6x6x32



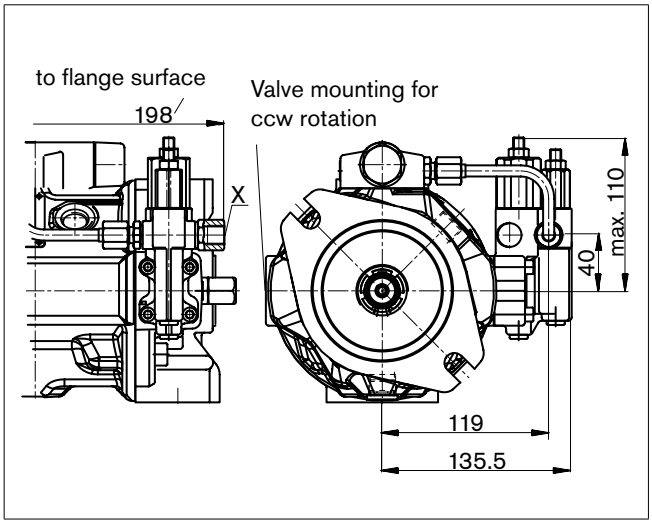
1) ANSI B92.1a, 30° pressure angle, flat root, side fit, tolerance class 5
2) Spline according to ANSI B92.1a, run out of spline is a deviation from standard.
3) Thread according to ASME B1.1
4) Thread according to DIN 13

Dimensions size 28

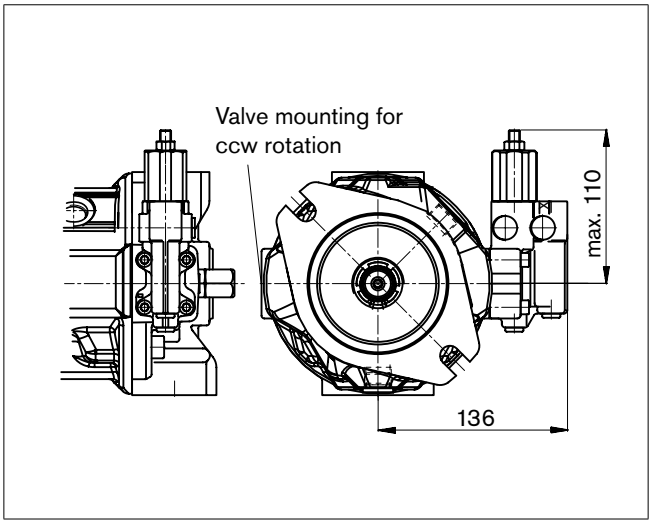
DG
Two-point control, directly operated



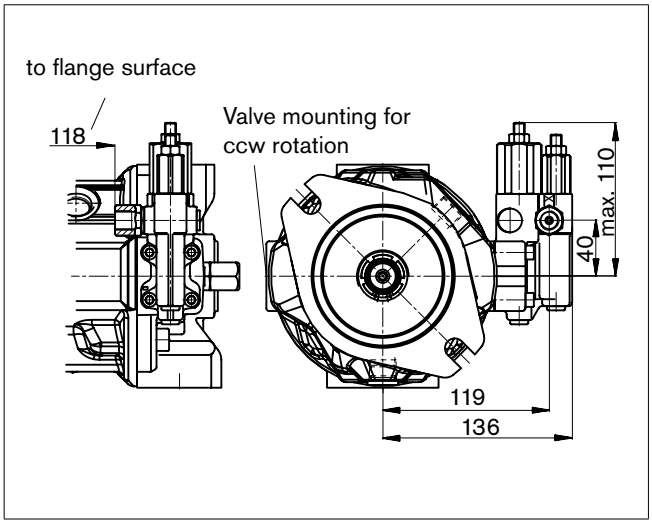
DFLR
Pressure, flow and power control



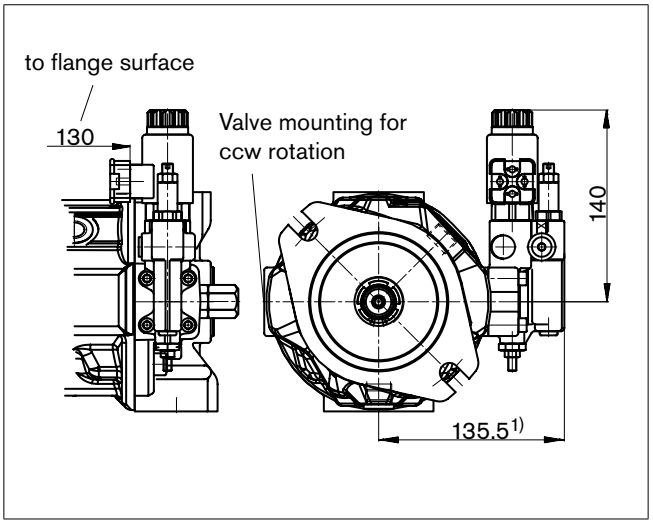
DR
Pressure control



DRG
Pressure control, remotely operated



ED7. / ER7.
Electro-hydraulic pressure control

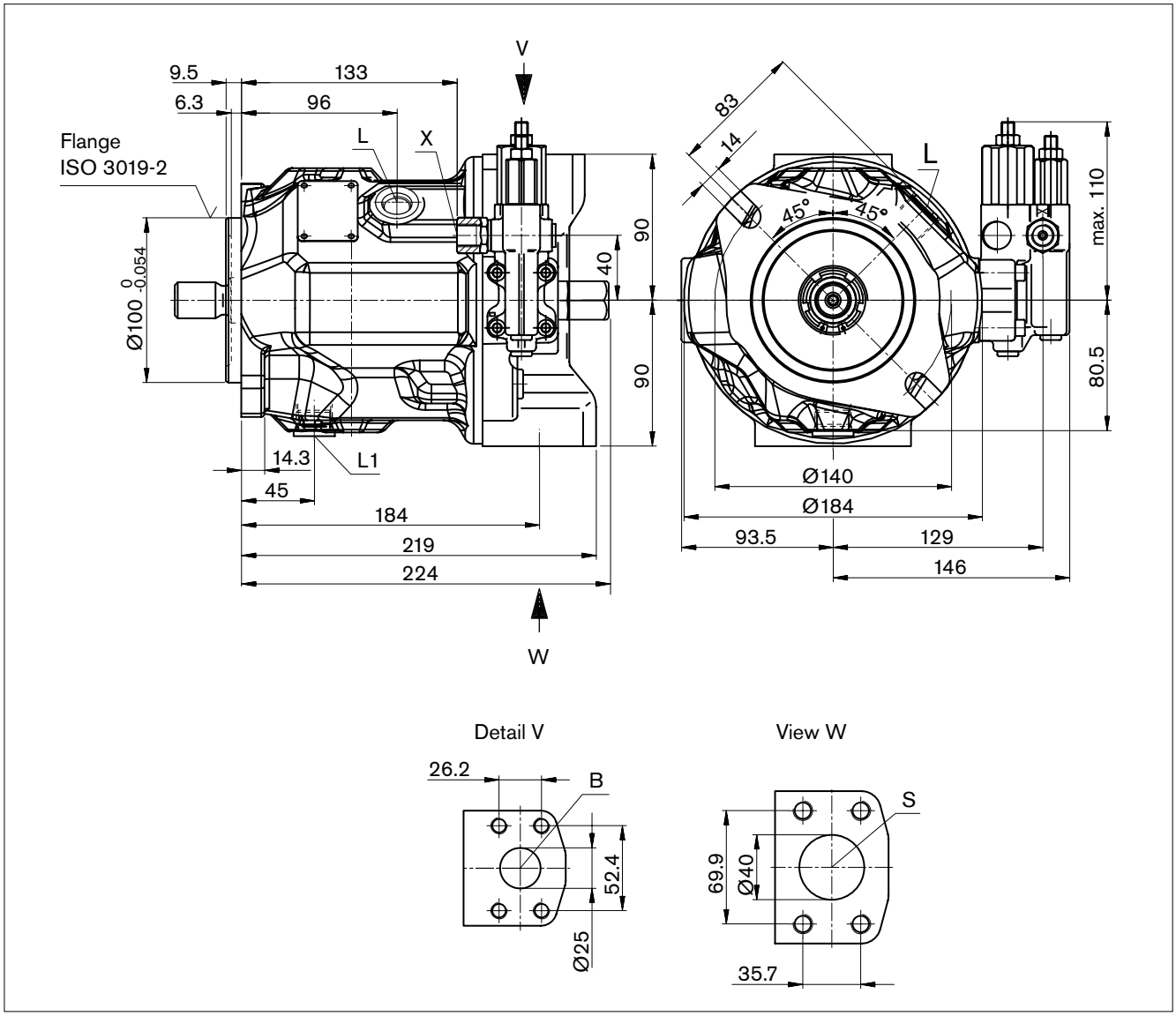


1) ER7.: 170.5 mm when using a sandwich plate pressure reducing valve.

Dimensions size 45

DFR/DFR1 – Pressure and flow control, hydraulic

Clockwise rotation



Ports

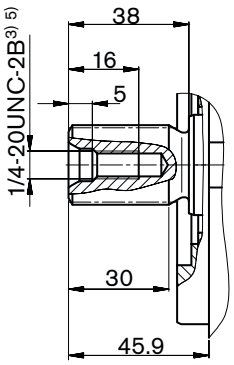
Designation	Port for	Standard	Size[1)]	Maximum pressure [bar][2)]	State
B	Service line, fastening thread	SAE J518[3)] DIN 13	1 in M10 x 1.5; 17 deep	350	O
S	Suction line, fastening thread	SAE J518[3)] DIN 13	1 1/2 in M12 x 1.75; 20 deep	10	O
L	Case drain fluid	DIN 3852[4)]	M22 x 1.5; 14 deep	2	O[5)]
L_1	Case drain fluid	DIN 3852[4)]	M22 x 1.5; 14 deep	2	X[5)]
X	Pilot pressure	DIN 3852[4)]	M14 x 1.5; 12 deep	350	O
X	Pilot pressure with DG-control	DIN ISO 228[4)]	G 1/4 in	350	O

-

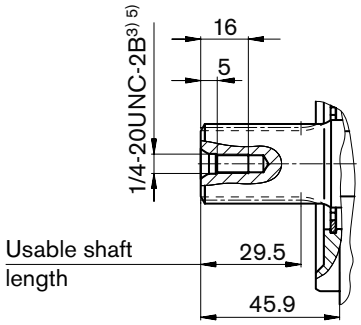
Dimensions size 45

Drive shaft

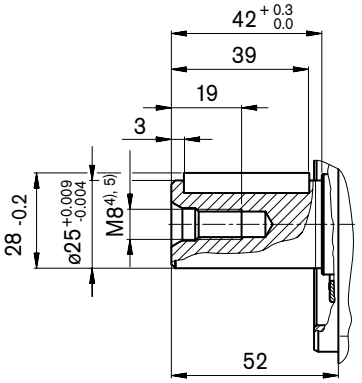
S Splined shaft 1 in
15T 16/32DP[1] (SAE J744)



R Splined shaft 1 in
15T 16/32DP[1,2] (SAE J744)



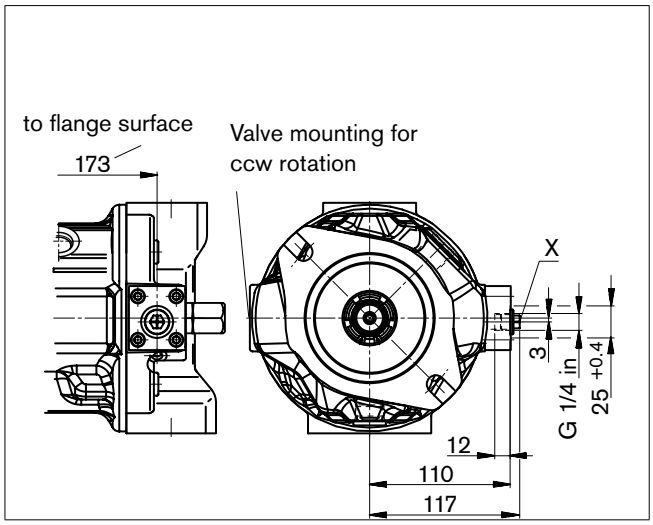
P Parallel shaft key
DIN 6885, A8x7x36



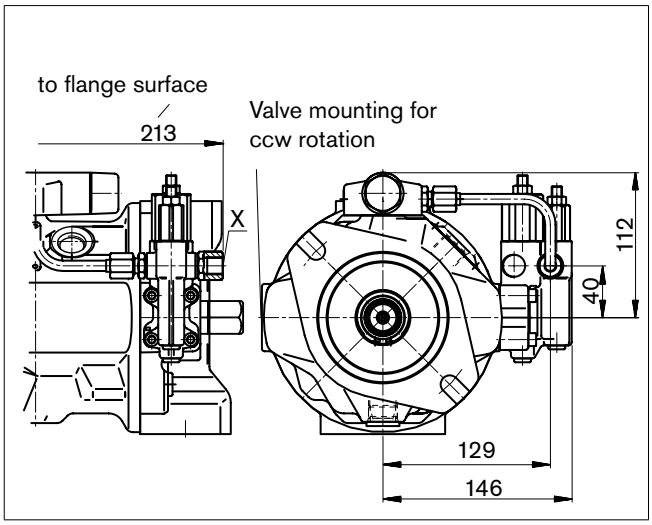
1) ANSI B92.1a, 30° pressure angle, flat root, side fit, tolerance class 5
2) Spline according to ANSI B92.1a, run out of spline is a deviation from standard.
3) Thread according to ASME B1.1
4) Thread according to DIN 13

Dimensions size 45

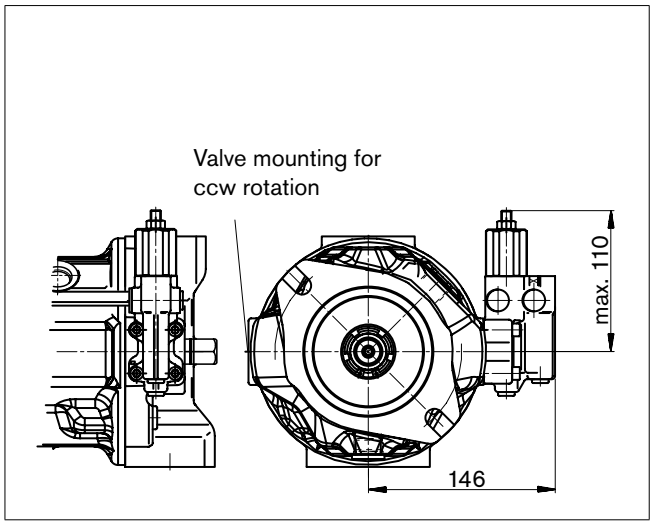
DG
Two-point control, directly operated



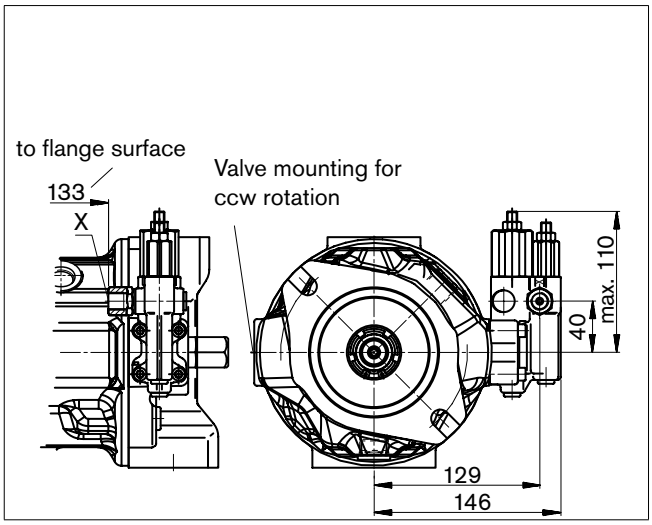
DFLR
Pressure, flow and power control



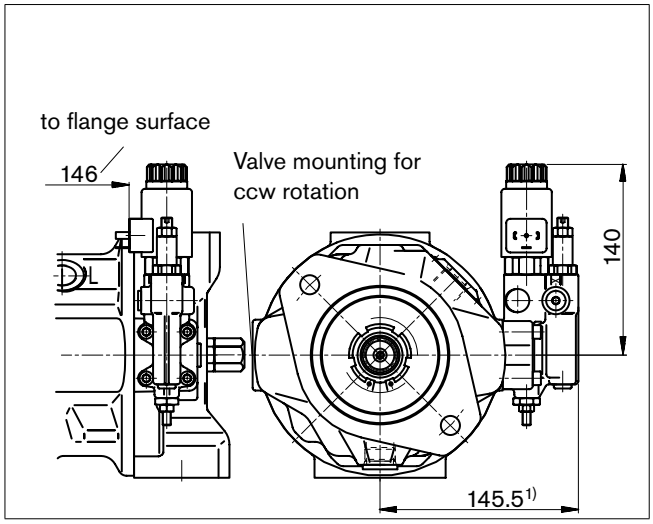
DR
Pressure control



DRG
Pressure control, remotely operated



ED7. / ER7.
Electro-hydraulic pressure control

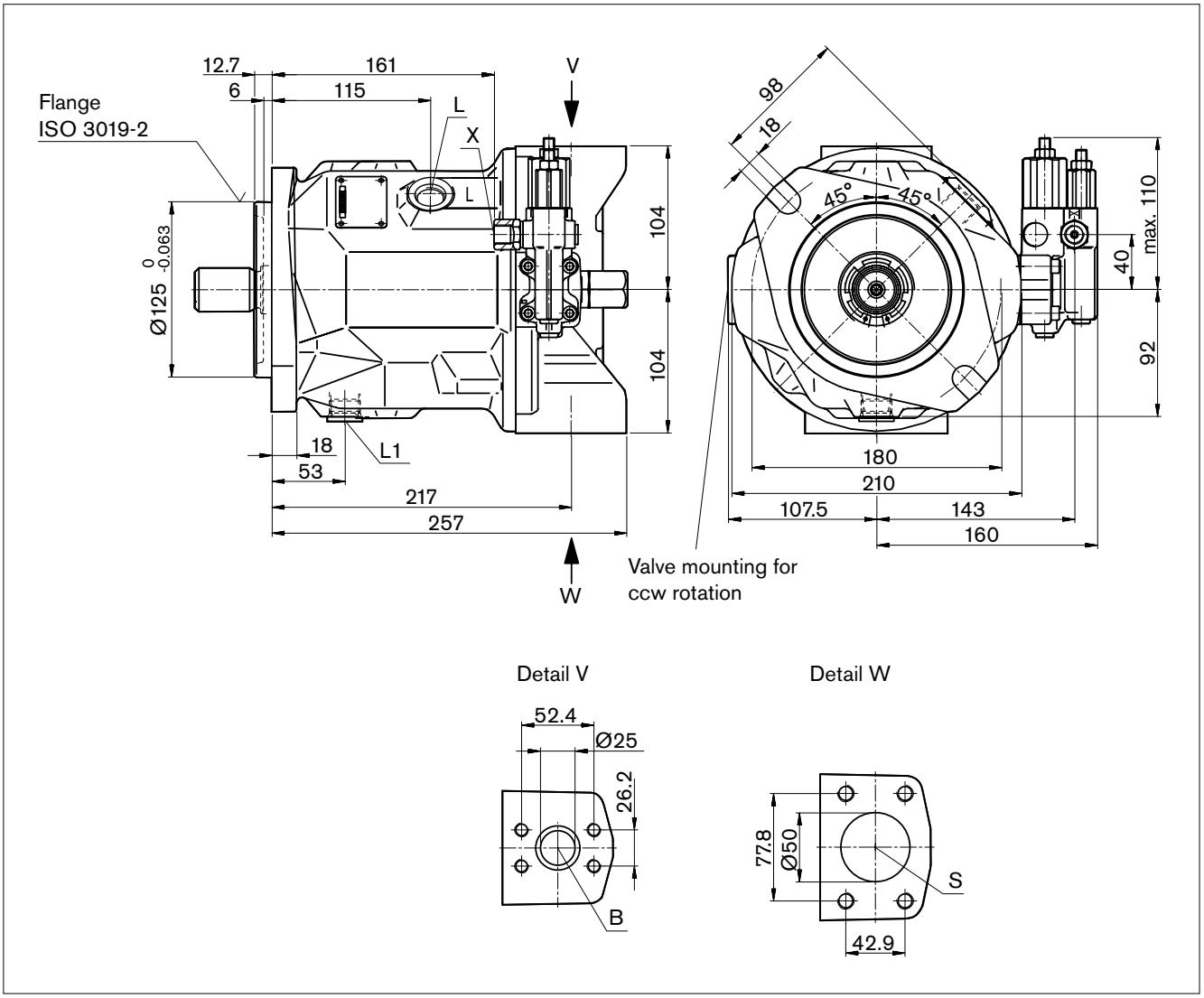


1) ER7.: 180.5 mm if using a sandwich plate pressure reducing valve.

Dimensions size 71

DFR/DFR1 – Pressure and flow control, hydraulic

Clockwise rotation



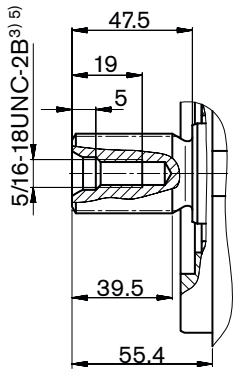
Ports

Designation	Port for	Standard	Size[1)]	Maximum pressure [bar][2)]	State
B	Service line, fastening thread	SAE J518[3)] DIN 13	1 in M10 x 1.5; 17 deep	350	O
S	Suction line, fastening thread	SAE J518[3)] DIN 13	2 in M12 x 1.75; 20 deep	10	O
L	Case drain fluid	DIN 3852[4)]	M22 x 1.5; 14 deep	2	O[5)]
L_1	Case drain fluid	DIN 3852[4)]	M22 x 1.5; 14 deep	2	X[5)]
X	Pilot pressure	DIN 3852[4)]	M14 x 1.5; 12 deep	350	O
X	Pilot pressure with DG-control	DIN ISO 228[4)]	G 1/4 in	350	O

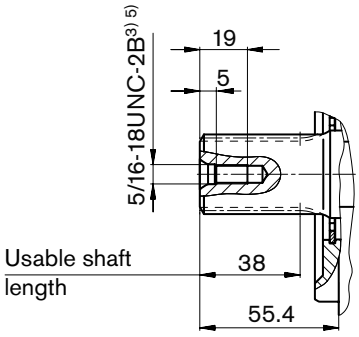
Dimensions size 71

Drive shaft

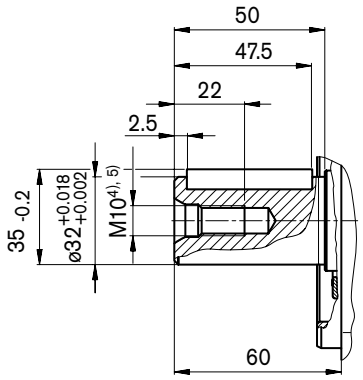
S Splined shaft 1 1/4 in
14T 12/24DP[1] (SAE J744)



R Splined shaft 1 1/4 in
14T 12/24DP[1)2)] (SAE J744)



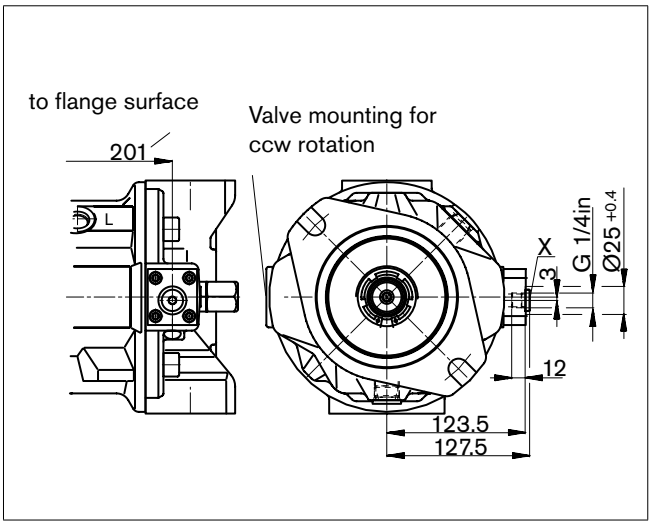
P Parallel shaft key
DIN 6885, A10x8x45



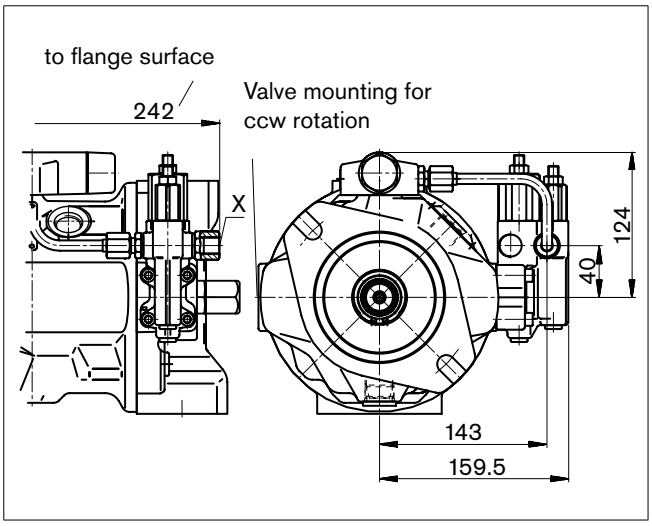
1) ANSI B92.1a, 30° pressure angle, flat root, side fit, tolerance class 5
2) Spline according to ANSI B92.1a, run out of spline is a deviation from standard.
3) Thread according to ASME B1.1
4) Thread according to DIN 13

Dimensions size 71

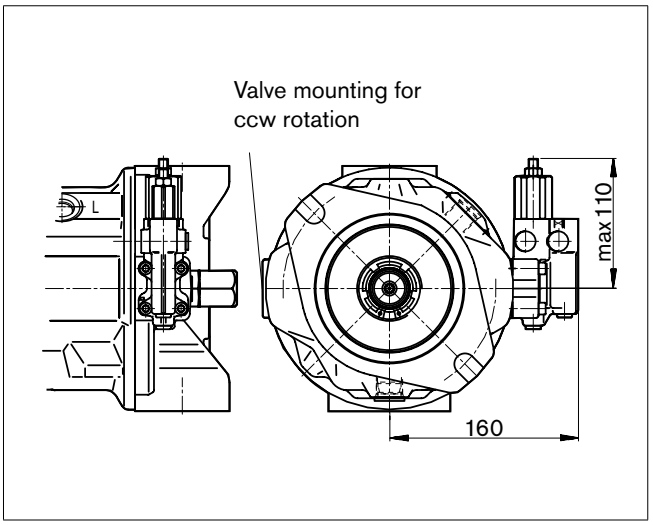
DG
Two-point control, directly operated



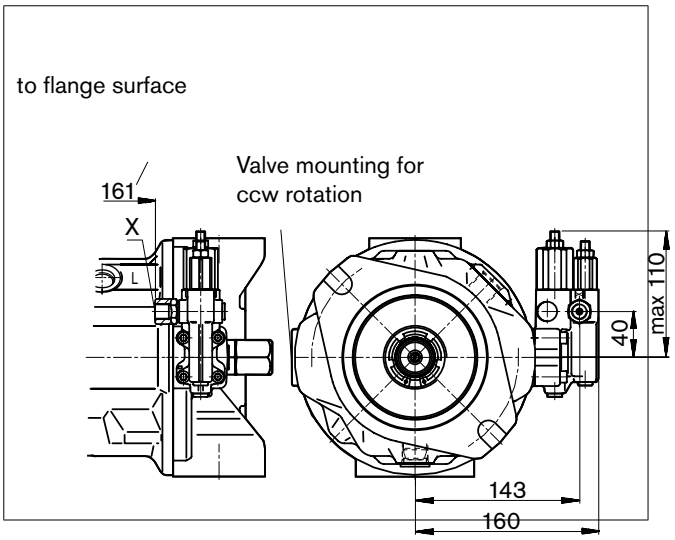
DFLR
Pressure, flow and power control



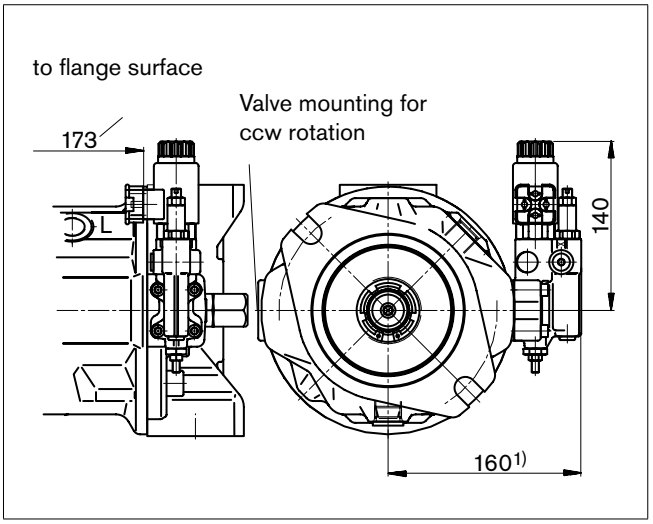
DR
Pressure control



DRG
Pressure control, remotely operated



ED7. / ER7.
Electro-hydraulic pressure control

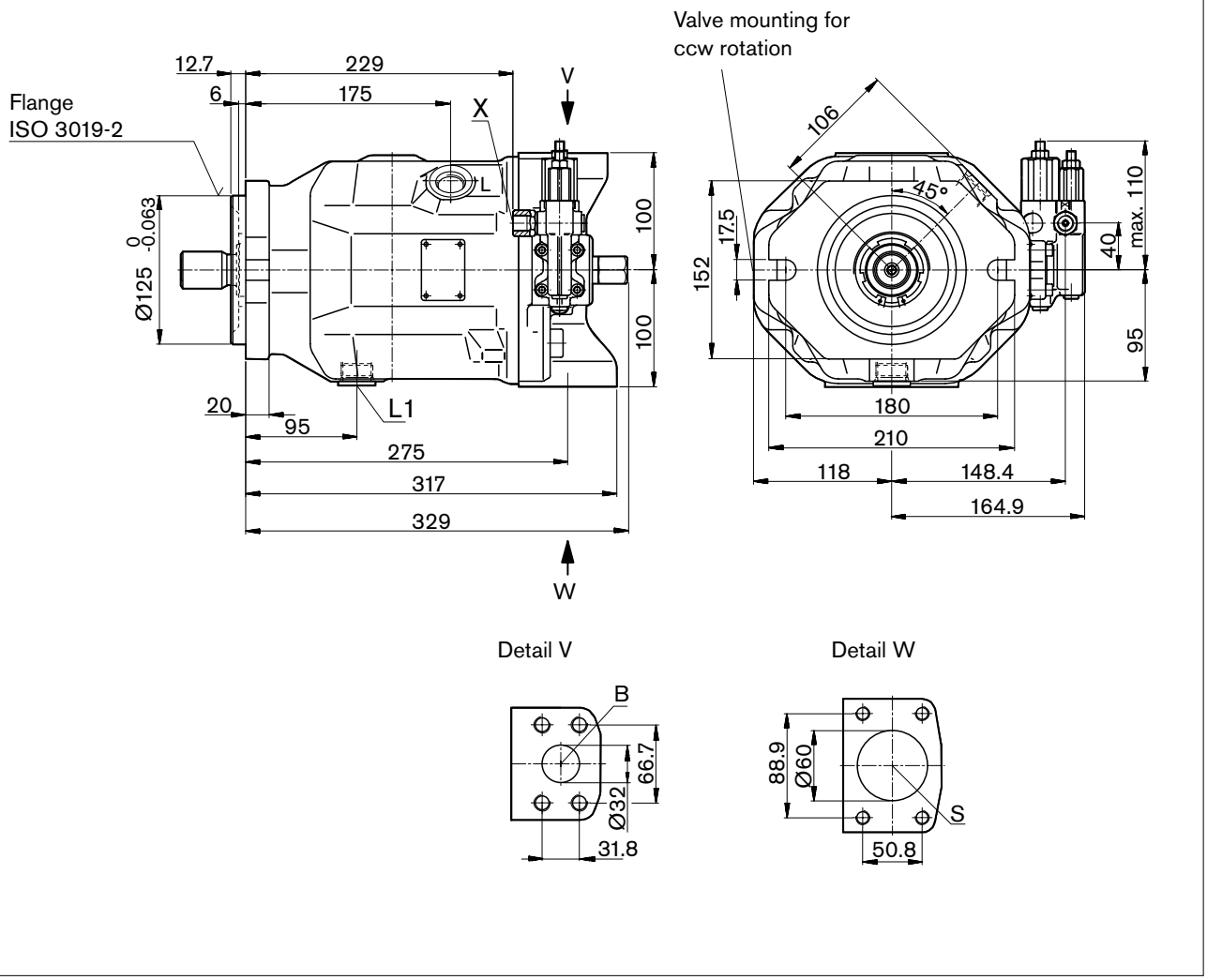


1) ER7.: 195 mm if using a sandwich plate pressure reducing valve.

Dimensions size 100

DFR/DFR1 – Pressure and flow control, hydraulic

Clockwise rotation



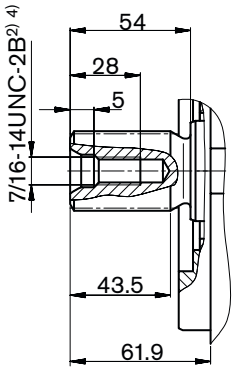
Ports

Designation	Port for	Standard	Size[1)]	Maximum pressure [bar][2)]	State
B	Service line, fastening thread	SAE J518[3)] DIN 13	1 1/4 in M14 x 2; 19 deep	350	O
S	Suction line, fastening thread	SAE J518[3)] DIN 13	2 1/2 in M12 x 1.75; 17 deep	10	O
L	Case drain fluid	DIN 3852[4)]	M27 x 2; 16 deep	2	O[5)]
L_1	Case drain fluid	DIN 3852[4)]	M27 x 2; 16 deep	2	X[5)]
X	Pilot pressure	DIN 3852[4)]	M14 x 1.5; 12 deep	350	O
X	Pilot pressure with DG-control	DIN ISO 228[4)]	G 1/4 in	350	O

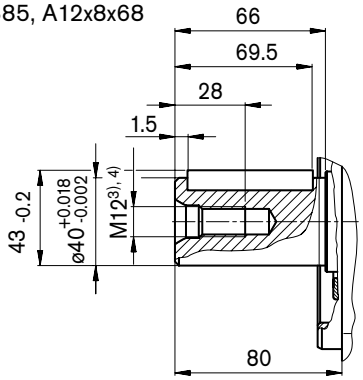
Dimensions size 100

Drive shaft

S Splined shaft 1 1/2 in
17T 12/24DP[1] (SAE J744)



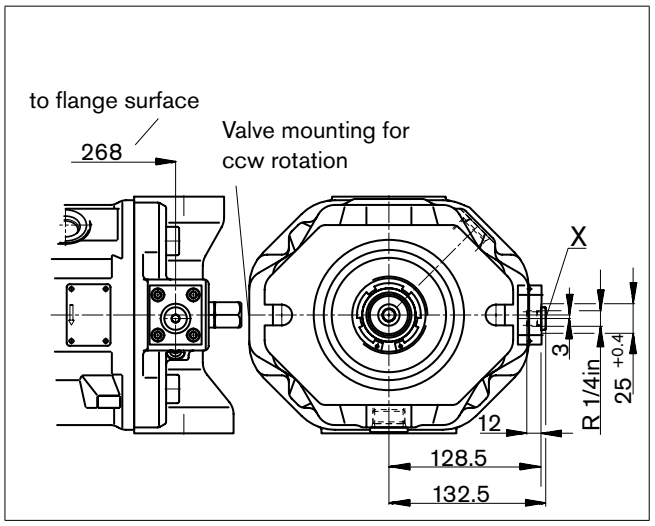
P Parallel shaft key
DIN 6885, A12x8x68



Dimensions size 100

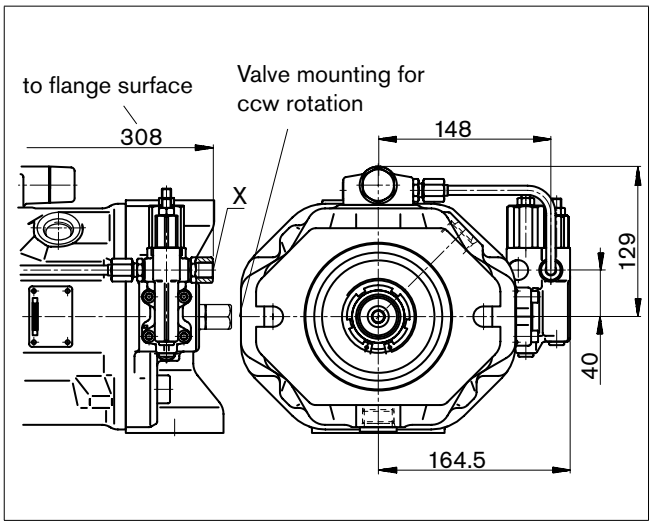
DG

Two-point control, directly operated



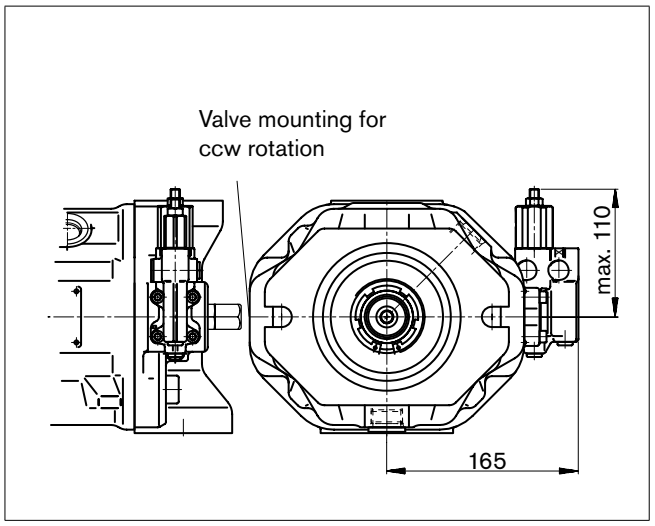
DFLR

Pressure, flow and power control



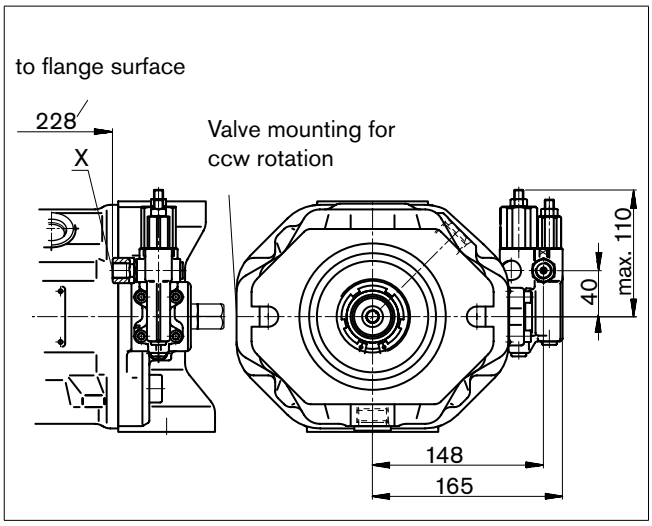
DR

Pressure control



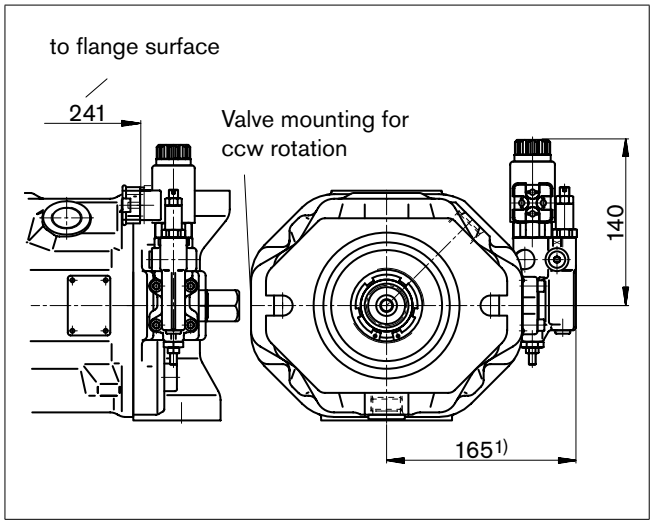
DRG

Pressure control, remotely operated



ED7. / ER7.

Electro-hydraulic pressure control

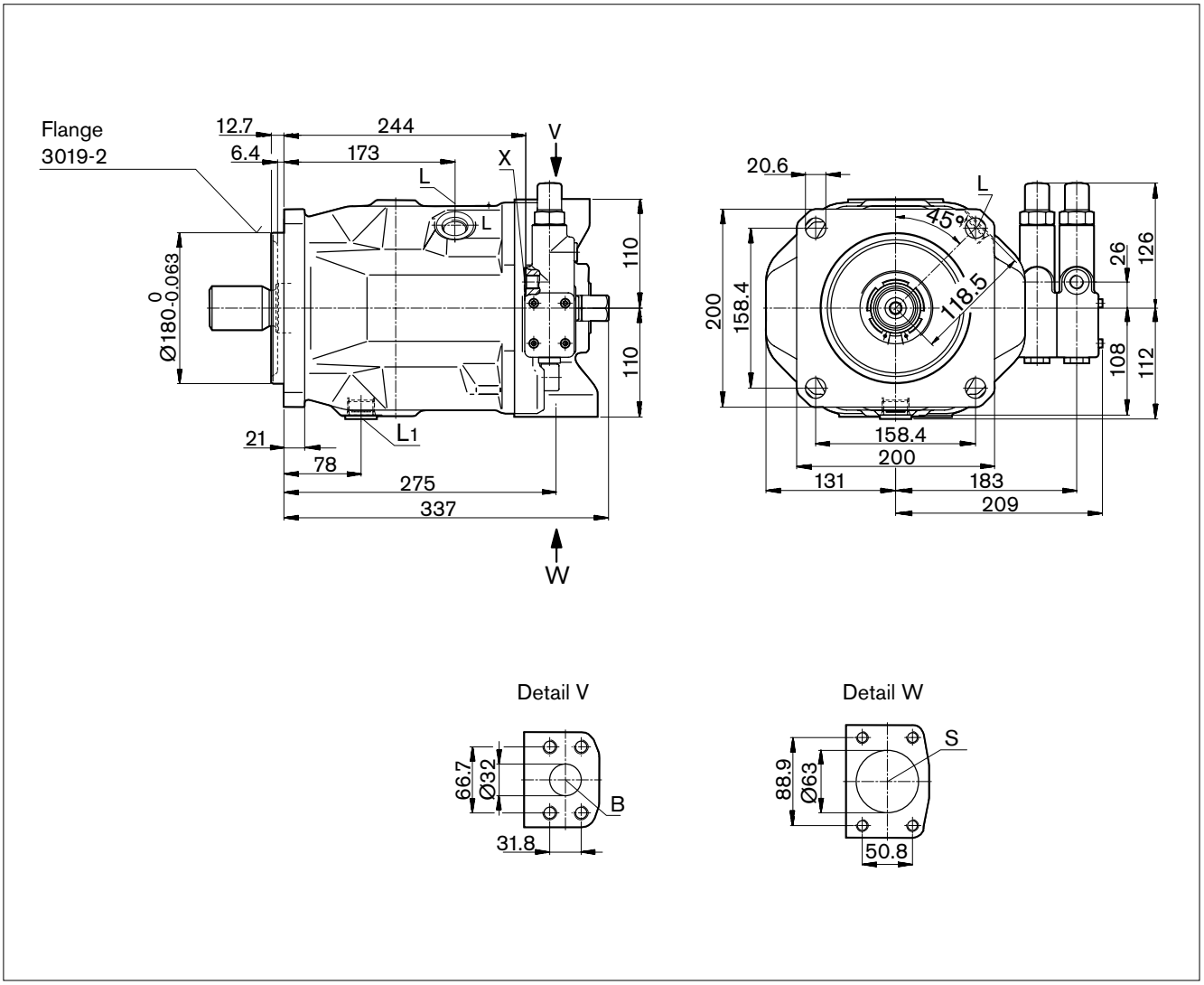


1) ER7.: 200 mm when using a sandwich plate pressure reducing valve.

Dimensions size 140

DFR/DFR1 – Pressure and flow control, hydraulic

Clockwise rotation



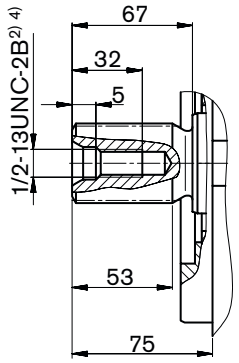
Ports

Designation	Port for	Standard	Size[1)]	Maximum pressure [bar][2)]	State
B	Service line, fastening thread	SAE J518[3)] DIN 13	1 1/4 in M14 x 2; 19 deep	350	O
S	Suction line, fastening thread	SAE J518[3)] DIN 13	2 1/2 in M12 x 1.75; 17 deep	10	O
L	Case drain fluid	DIN 3852[4)]	M27 x 2; 16 deep	2	O[5)]
L_1	Case drain fluid	DIN 3852[4)]	M27 x 2; 16 deep	2	X[5)]
X	Pilot pressure	DIN 3852[4)]	M14 x 1.5; 12 deep	350	O
X	Pilot pressure with DG-control	DIN 3852[4)]	M14 x 1.5; 12 deep	350	O
M_H	Gauge port, high pressure	DIN 3852	M14 x 1.5, 12 deep	350	X

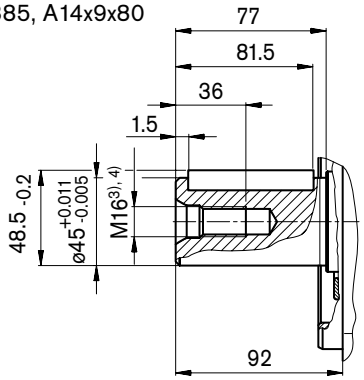
Dimensions size 140

Drive shaft

S Splined shaft 1 3/4 in
13T 8/16DP[1] (SAE J744)



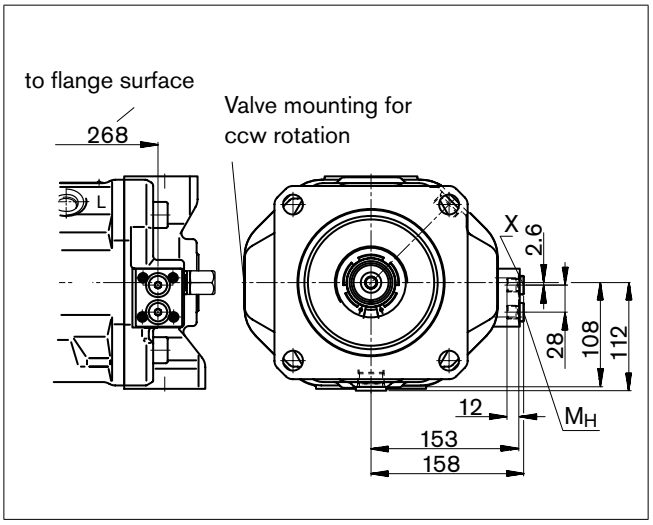
P Parallel shaft key
DIN 6885, A14x9x80



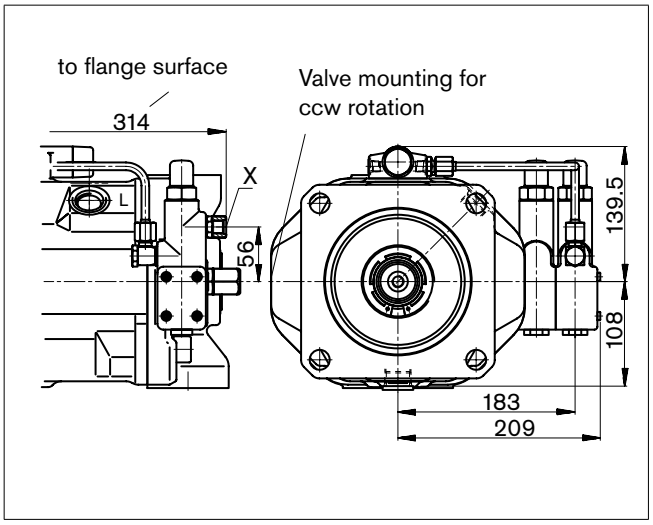
1) ANSI B92.1a, 30° pressure angle, flat root, side fit, tolerance class 5
2) Thread according to ASME B1.1
3) Thread according to DIN 13

Dimensions size 140

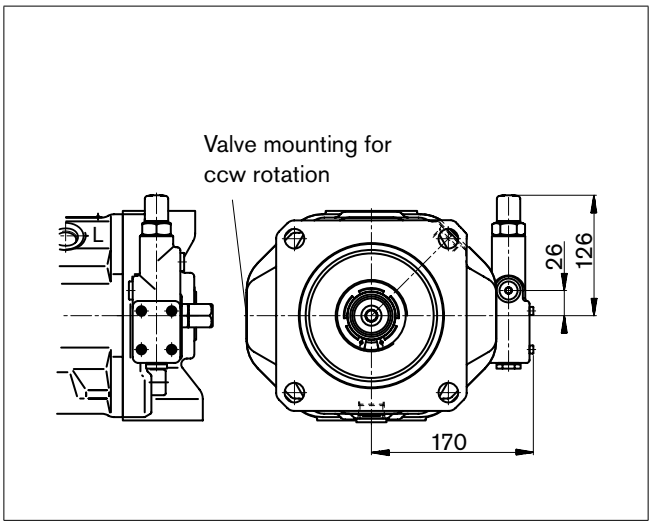
DG
Two-point control, directly operated



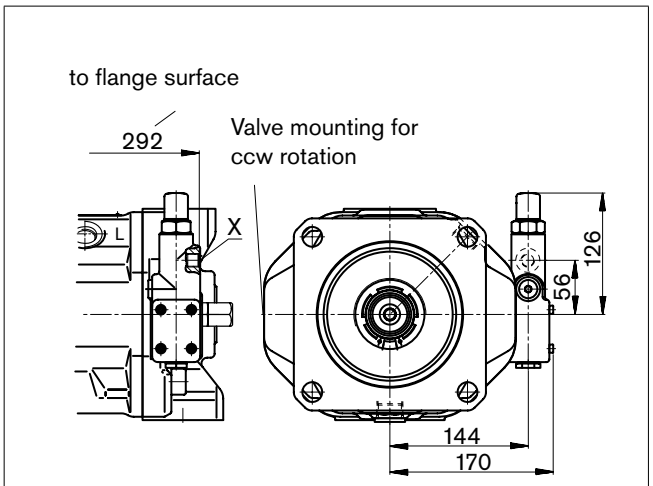
DFLR
Pressure, flow and power control



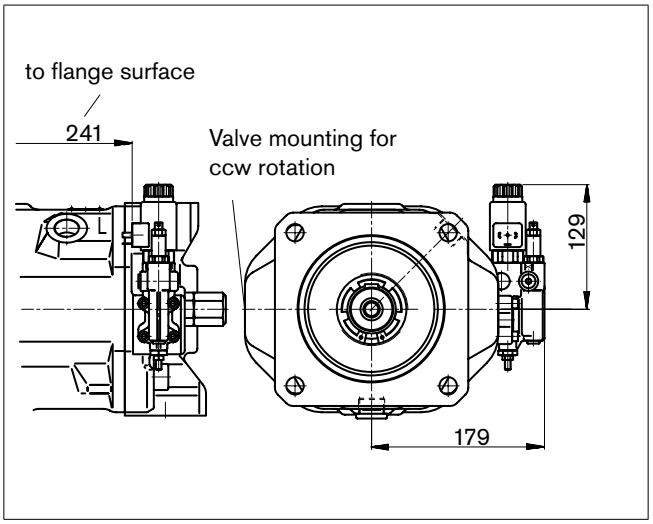
DR
Pressure control



DRG
Pressure control, remotely operated



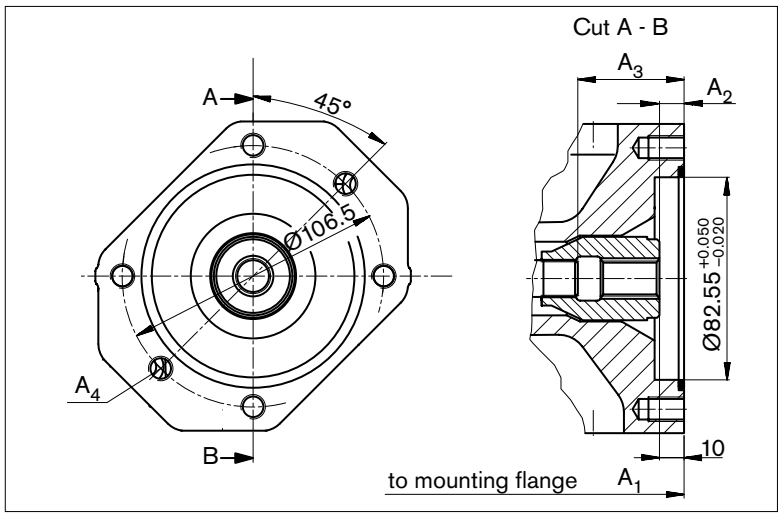
ED7. / ER7.
Electro-hydraulic pressure control



1) ER7.: 214 mm when using a sandwich plate pressure reducing valve.

Dimensions through drive

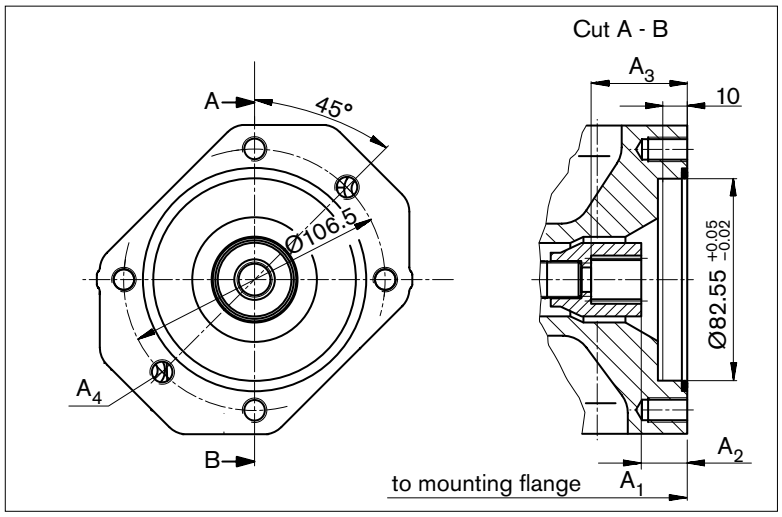
K01 flange ISO 3019-2 (SAE J744 - 82-2 (A))
Coupling for splined shaft according to ANSI B92.1a-1996



5/8 in 9T 16/32 DP[1] (SAE J744 - 16-4 (A))

NG	A_1	A_2	A_3	A_4[2]
18	182	10	43.3	M10 x 1.5, 14.5 deep
28	204	10	33.7	M10 x 1.5, 16 deep
45	229	10.7	53.4	M10 x 1.5, 16 deep
71	267	11.8	61.3	M10 x 1.5, 20 deep
100	338	10.5	65	M10 x 1.5, 16 deep
140	350	10.8	77.3	M10 x 1.5, 16 deep

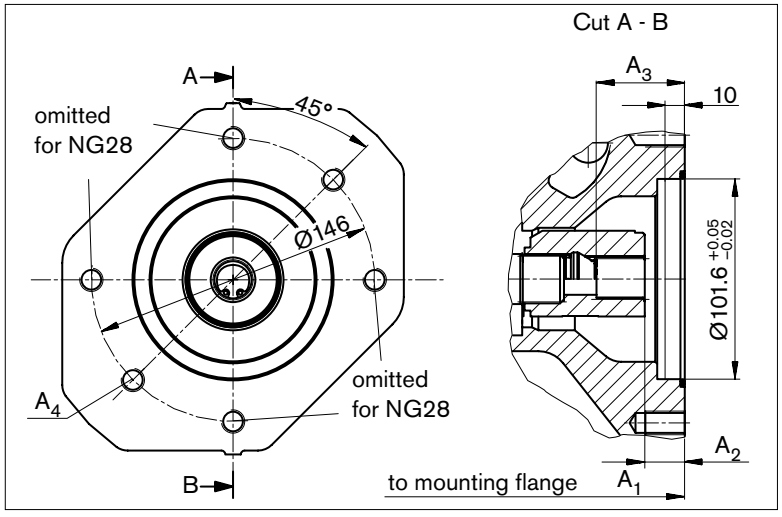
K52 flange ISO 3019-2 (SAE J744 - 82-2 (A))
Coupling for splined shaft according to ANSI B92.1a-1996



3/4 in 11T 16/32 DP[1] (SAE J744 - 19-4 (A-B))

NG	A_1	A_2	A_3	A_4[2]
18	182	18.8	38.7	M10 x 1.5, 14.5 deep
28	204	18.8	38.7	M10 x 1.5, 16 deep
45	229	18.9	38.7	M10 x 1.5, 16 deep
71	267	21.3	41.4	M10 x 1.5, 20 deep
100	338	19	38.9	M10 x 1.5, 16 deep
140	350	18.9	38.6	M10 x 1.5, 16 deep

K68 flange ISO 3019-2 (SAE J744 - 101-2 (B))
Coupling for splined shaft according to ANSI B92.1a-1996



7/8 in 13T 16/32 DP[1] (SAE J744 - 22-4 (B))

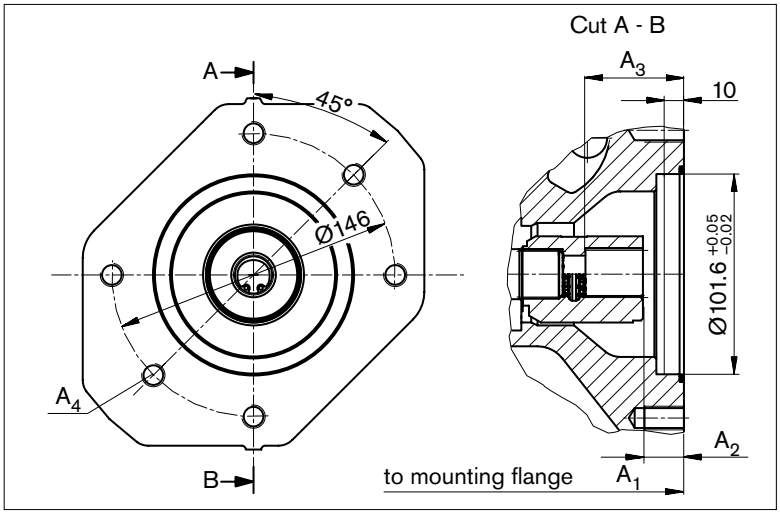
NG	A_1	A_2	A_3	A_4[2]
28	204	17.8	41.7	M12 x 1.75, continuous
45	229	17.9	41.7	M12 x 1.75, 18 deep
71	267	20.3	44.1	M12 x 1.75, 20 deep
100	338	18	41.9	M12 x 1.75, 20 deep
140	350	17.8	41.6	M12 x 1.75, 20 deep

1) 30° pressure angle, flat root, side fit, tolerance class 5

Dimensions through drive

K04 flange ISO 3019-2 (SAE J744 - 101-2 (B))
Coupling for splined shaft according to ANSI B92.1a-1996

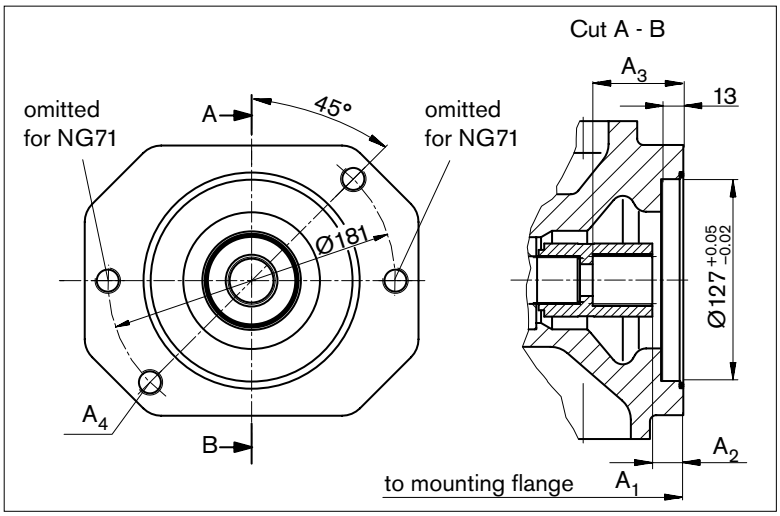
1 in 15T 16/32 DP[1] (SAE J744 - 25-4 (B-B))



NG	A_1	A_2	A_3	A_4[2]
45	229	18.4	46.7	M12 x 1.75, 18 deep
71	267	20.8	49.1	M12 x 1.75, 20 deep
100	338	18.2	46.6	M12 x 1.75, 20 deep
140	350	18.3	45.9	M12 x 1.75, 20 deep

K07 flange ISO 3019-2 (SAE J744 - 127-2 (C))
Coupling for splined shaft according to ANSI B92.1a-1996

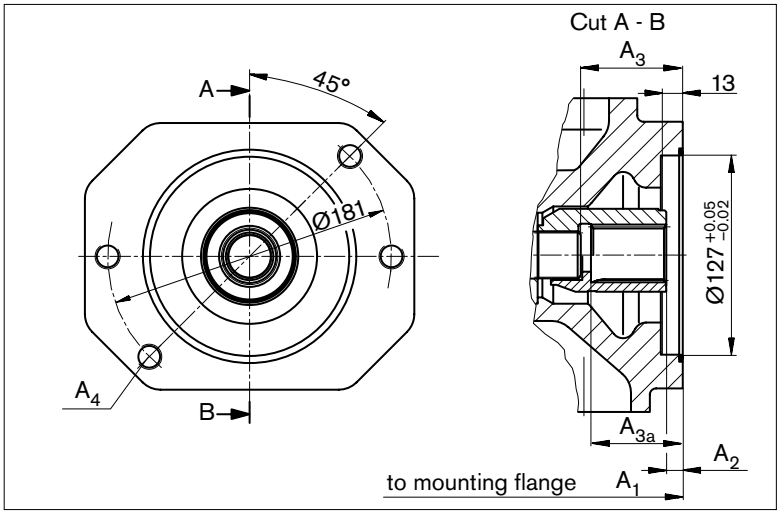
1 1/4 in 14T 12/24 DP[1] (SAE J744 - 32-4 (C))



NG	A_1	A_2	A_3	A_4[2]
71	267	21.8	58.6	M16 x 2, continuous
100	338	19.5	56.4	M16 x 2, continuous
140	350	19.3	56.1	M16 x 2, 24 deep

K24 flange ISO 3019-2 (SAE J744 - 127-2 (C))
Coupling for splined shaft according to ANSI B92.1a-1996

1 1/2 in 17T 12/24 DP[1] (SAE J744 - 38-4 (C-C))

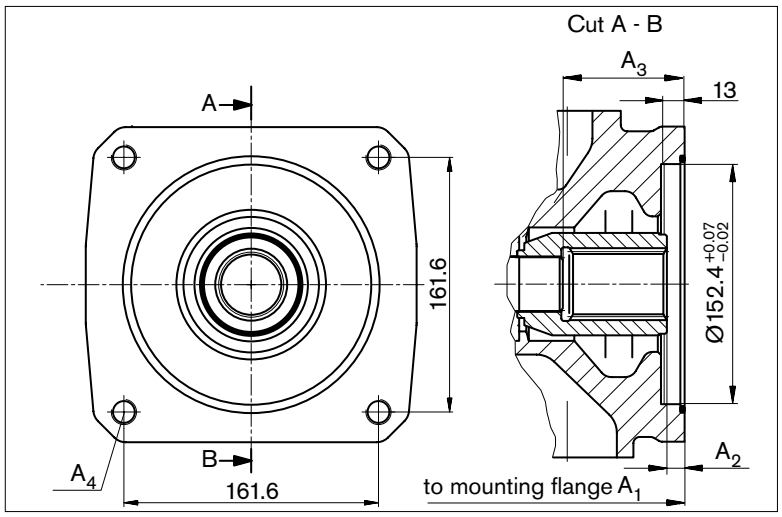


NG	A_1	A_2	A_3[3]	A_{3a}[4]	A_4[2]
100	338	10.5	65	–	M16 x 2, continuous
140	350	10.8	75	–	M16 x 2, 24 deep
	350	10.3	–	69.1	M16 x 2, 24 deep

1) 30° pressure angle, flat root, side fit, tolerance class 5

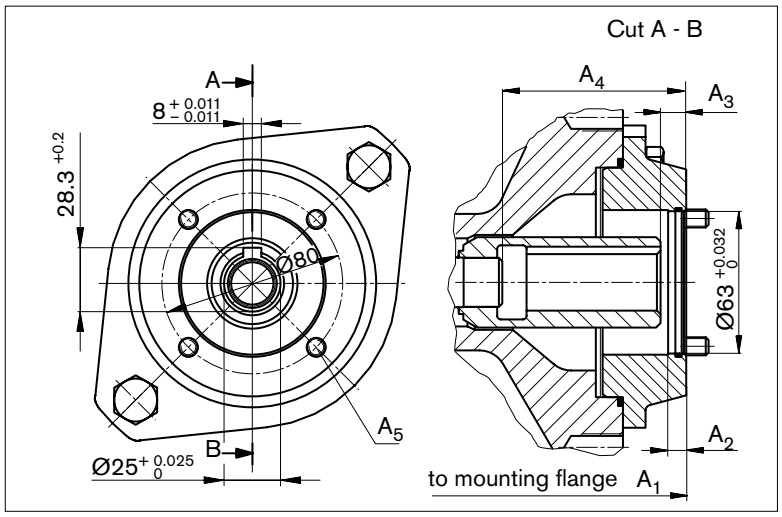
Dimensions through drive

K17 flange ISO 3019-2 (SAE J744 - 152-4 (A))
Coupling for splined shaft according to ANSI B92.1a-1996 1 3/4 in 13T 8/16 DP[1] (SAE J744 - 44-4 (D))



NG	A_1	A_2	A_3	A_4[2]
140	350	11	77.3	M6 x 2, continuous

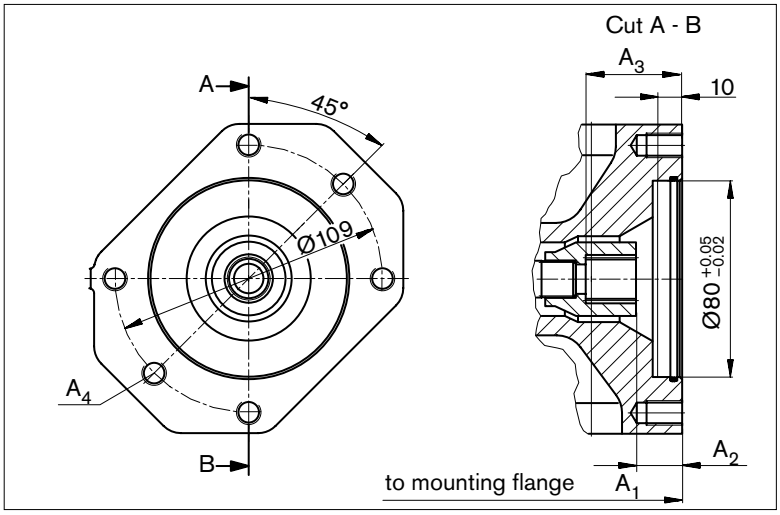
K57 Metric 4-hole flange for mounting an R4 radial piston pump (see RE 11263)
Coupling for metric shaft key



NG	A_1	A_2	A_3	A_4	A_5[3]
28	232	8	10.6	58.4	M8
45	257	8	11	81	M8
71	283	8	12.5	77	M10
100	354	8	10.5	81	M10
140	366	8	11	93	M8

Dimensions through drive

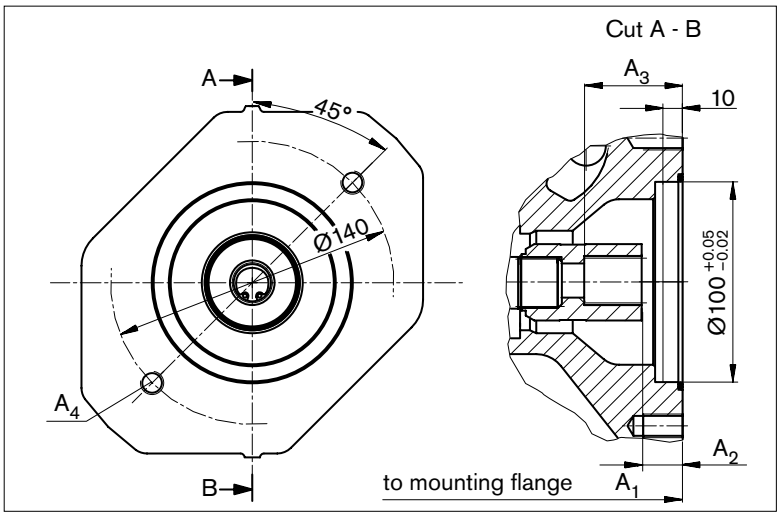
KB2 flange ISO 3019-2 - 80A2SW
Coupling for splined shaft according to ANSI B92.1a-1996



3/4 in 11T 16/32 DP[1] (SAE J744 - 19-4 (A-B))

NG	A_1	A_2	A_3	A_4[2]
18	182	18.8	38.7	M10 x 1.5, 14.5 deep
28	204	18.8	38.7	M10 x 1.5, 16 deep
45	229	18.9	38.7	M10 x 1.5, 16 deep
71	267	21.3	41.4	M10 x 1.5, 20 deep
100	338	19	38.9	M10 x 1.5, 20 deep
140	350	18.9	38.6	M10 x 1.5, 20 deep

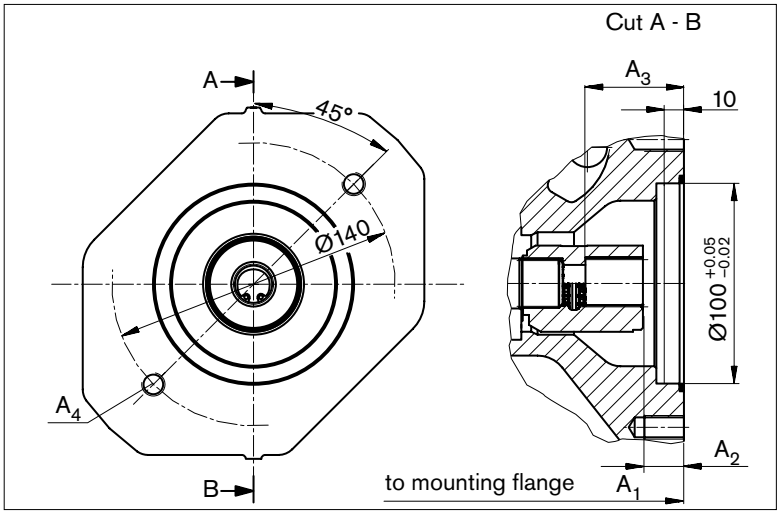
KB3 flange ISO 3019-2 - 100A2SW
Coupling for splined shaft according to ANSI B92.1a-1996



7/8 in 13T 16/32 DP[1] (SAE J744 - 22-4 (B))

NG	A_1	A_2	A_3	A_4[2]
28	204	17.8	41.7	M12 x 1.5, continuous
45	229	17.9	41.7	M12 x 1.5, continuous
71	267	20.3	44.1	M12 x 1.5, 20 deep
100	338	18	41.9	M12 x 1.5, 20 deep
140	350	17.8	41.6	M12 x 1.5, 20 deep

KB4 flange ISO 3019-2 - 100A2SW
Coupling for splined shaft according to ANSI B92.1a-1996



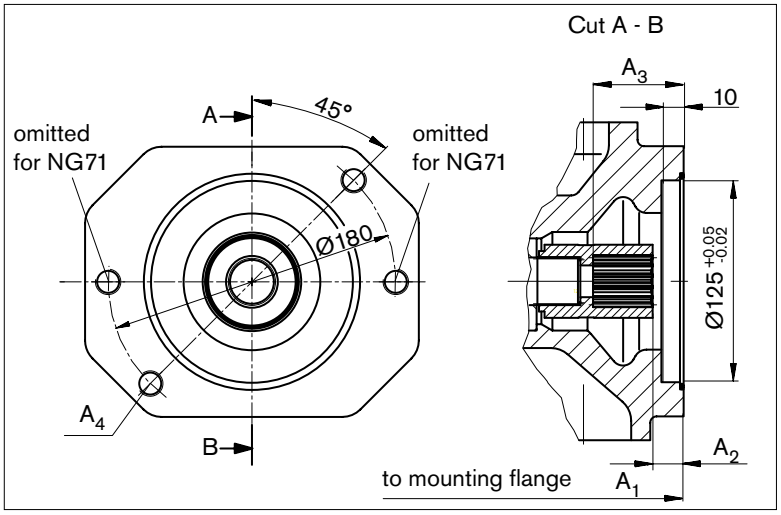
1 in 15T 16/32 DP[1] (SAE J744 - 25-4 (B-B))

NG	A_1	A_2	A_3	A_4[2]
45	229	18.4	46.7	M12 x 1.75, continuous
71	267	20.8	49.1	M12 x 1.75, 20 deep
100	338	18.2	46.6	M12 x 1.75, 20 deep
140	350	18.3	45.9	M12 x 1.75, 20 deep

1) 30° pressure angle, flat root, side fit, tolerance class 5

Dimensions through drive

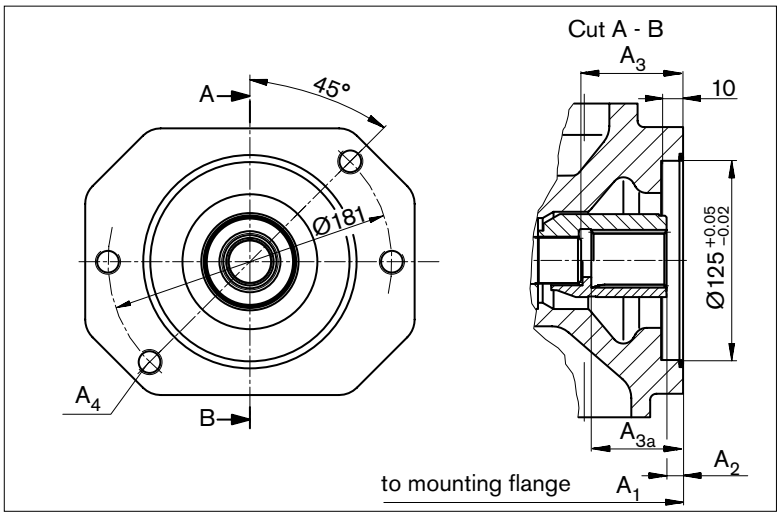
KB5 flange ISO 3019-2 - 125A2SW
Coupling for splined shaft according to ANSI B92.1a-1996



1 1/4 in 14T 12/24 DP[1] (SAE J744 - 32-4 (C))

NG	A_1	A_2	A_3	A_4[2]
71	267	21.8	58.6	M16 x 2, continuous
100	338	19.5	56.4	M16 x 2, continuous
140	350	19.3	56.1	M16 x 2, 24 deep

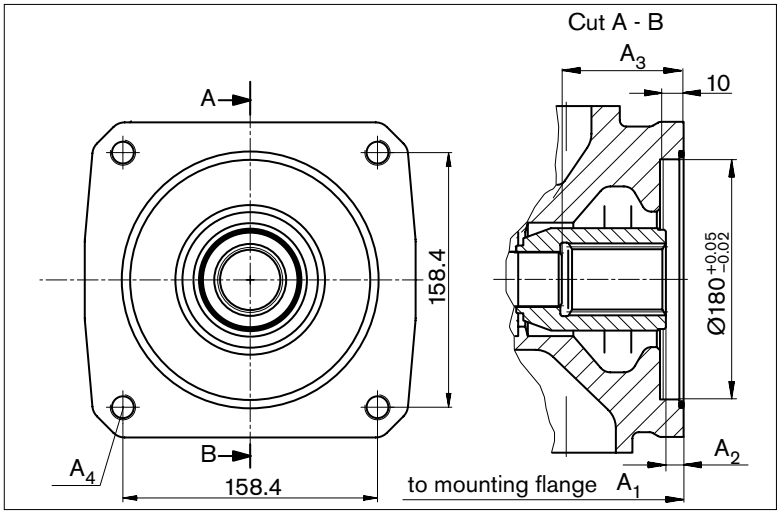
KB6 flange ISO 3019-2 - 125A2SW
Coupling for splined shaft according to ANSI B92.1a-1996



1 1/2 in 17T 12/24 DP[1] (SAE J744 - 38-4 (C-C))

NG	A_1	A_2	A_3[3]	A_{3a}[4]	A_4[2]
100	338	10.5	65	–	M16 x 2, continuous
140	350	10.8	75	–	M16 x 2, 24 deep
	350	10.3	–	69.1	M16 x 2, 24 deep

KB7 flange ISO 3019-2 - 180B4HW
Coupling for splined shaft according to ANSI B92.1a-1996



1 3/4 in 13T 8/16 DP[1] (SAE J744 - 44-4 (D))

NG	A_1	A_2	A_3	A_4[2]
140	350	11.3	77.3	M16 x 2, continuous

1) 30° pressure angle, flat root, side fit, tolerance class 5