

ZUBOVÁ ČERPADLA

ŘADY XV-2P

XP201



XP210



XP213



XP216



XP217



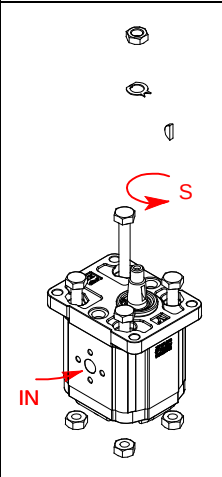
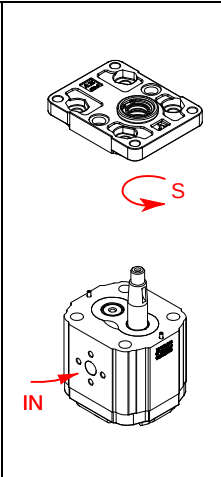
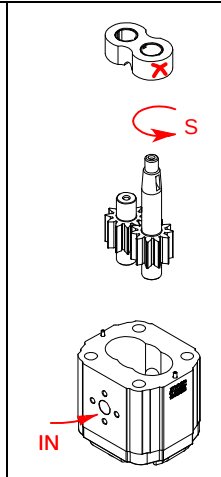
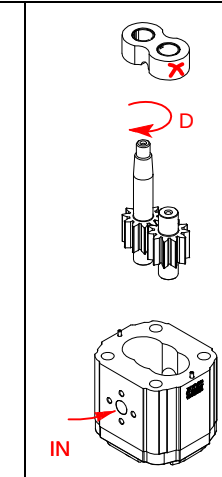
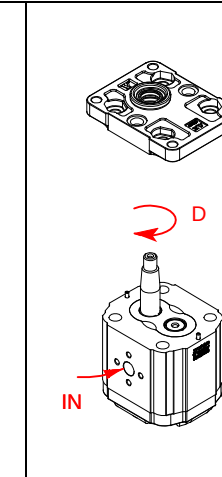
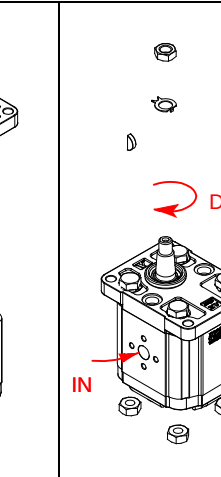
XP219



XV2-P with Flange ø36,5 (ref. XP- 201)

When changing the direction of rotation of the XV-2P pump, it is not necessary to change the flange, as the same one is used.

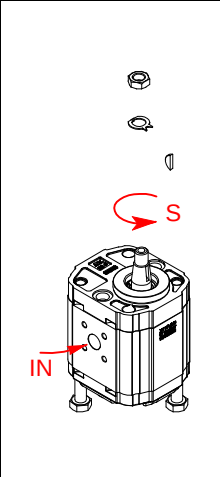
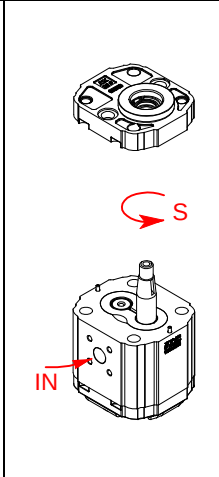
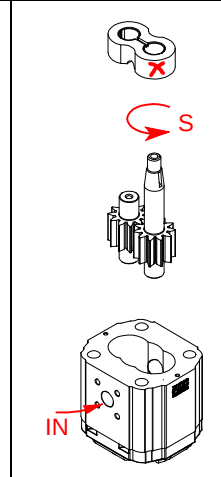
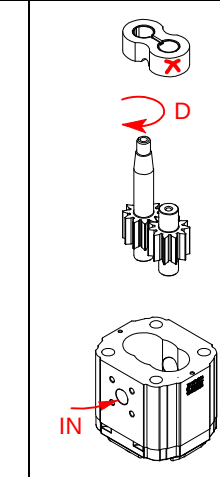
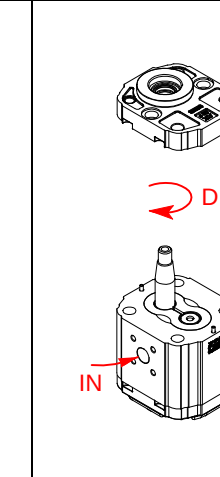
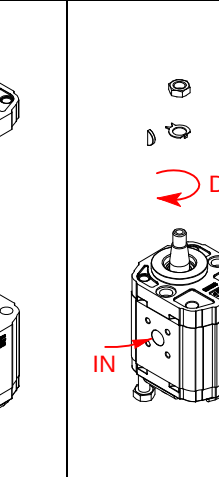
When disassembling and reassembling the pump, take special care to ensure that seals and back-up rings do not come out of place and that no foreign bodies, such as shavings or dirt in general, get inside the pump.

FLANGE ø36,5 (ref. XP- 201)					
					
Remove the key, nut and washer from the shaft. Loosen and remove the fastening screws.	Take off the flange.	Take out the gears and upper bush. Warning!! The bush must never be turned.	Invert the positions of the driven and driving shafts. Warning! The body and cover must not be turned. Use the marking on the body as your reference.	Fit the previously removed flange back in place taking care to clean the body-base contact surfaces.	Replace the screws and tighten the nuts with a torque of 54 Nm to 58.9 Nm. Check that the shaft turns on completing the operation.
Note: with this rotation change system, the inlets and outlets remain unchanged.					

XV2-P with Flange ø50 BH-HY (ref. da XP- 210 a: XP- 213)

When changing the direction of rotation of the XV-2P pump, it is not necessary to change the flange, as the same one is used.

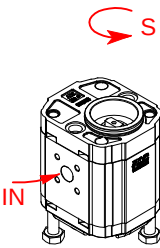
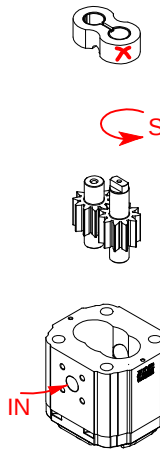
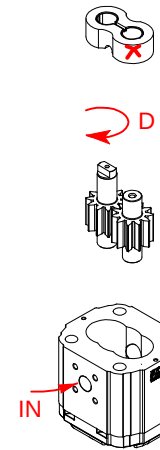
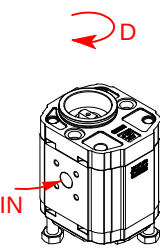
When disassembling and reassembling the pump, take special care to ensure that seals and back-up rings do not come out of place and that no foreign bodies, such as shavings or dirt in general, get inside the pump.

FLANGE ø50 BH-HY (ref. da XP- 210 a: XP- 213)					
					
Remove the key, nut and washer from the shaft. Loosen and remove the fastening screws.	Take off the flange.	Take out the gears and upper bush. Warning!! The bush must never be turned.	Invert the positions of the driven and driving shafts. Warning! The body and cover must not be turned. Use the marking on the body as your reference.	Fit the previously removed flange back in place taking care to clean the body-base contact surfaces.	Replace the screws and tighten the nuts with a torque of 54 Nm to 58.9Nm. Check that the shaft turns on completing the operation.
Note: with this rotation change system, the inlets and outlets remain unchanged.					

XV2-P with Flange ø52 BH (ref. XP- 216)

When changing the direction of rotation of the XV-2P pump, it is not necessary to change the flange, as the same one is used.

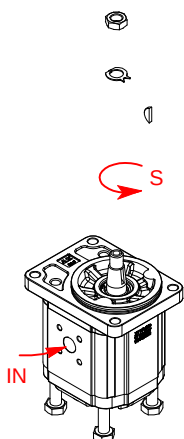
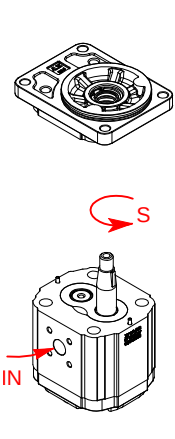
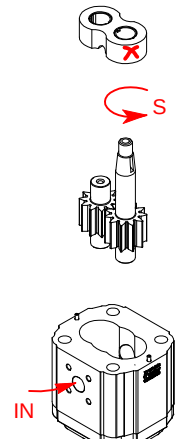
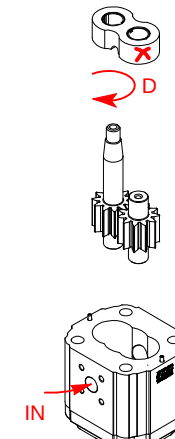
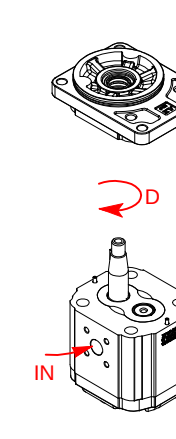
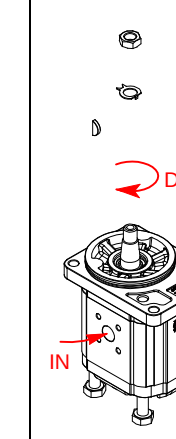
When disassembling and reassembling the pump, take special care to ensure that seals and back-up rings do not come out of place and that no foreign bodies, such as shavings or dirt in general, get inside the pump.

FLANGE ø52 BH (ref.XP- 216)					
					
Loosen and remove the fastening screws.	Take off the flange.	Take out the gears and upper bush. Warning!! The bush must never be turned.	Invert the positions of the driven and driving shafts. Warning! The body and cover must not be turned. Use the marking on the body as your reference.	Fit the previously removed flange back in place taking care to clean the body-base contact surfaces.	Replace the screws and tighten the nuts with a torque of 54 Nm to 58.9Nm. Check that the shaft turns on completing the operation.
Note: with this rotation change system, the inlets and outlets remain unchanged.					

XV2-P with Flange ø80 (ref. XP- 217)

When changing the direction of rotation of the XV-2P pump, it is not necessary to change the flange, as the same one is used.

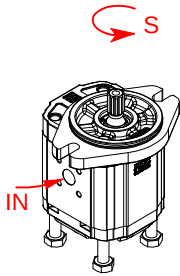
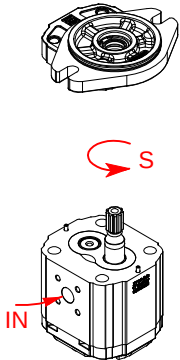
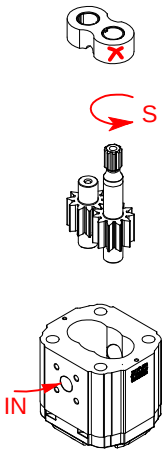
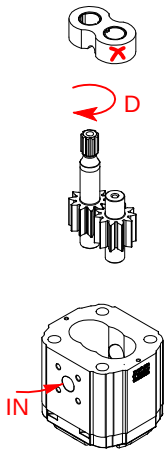
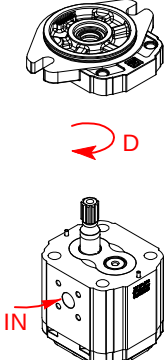
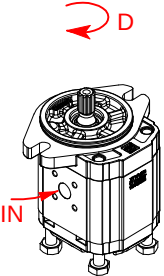
When disassembling and reassembling the pump, take special care to ensure that seals and back-up rings do not come out of place and that no foreign bodies, such as shavings or dirt in general, get inside the pump.

FLANGE ø80 (ref.XP- 217)					
					
Remove the key, nut and washer from the shaft. Loosen and remove the fastening screws.	Take off the flange.	Take out the gears and upper bush. Warning!! The bush must never be turned.	Invert the positions of the driven and driving shafts. Warning! The body and cover must not be turned. Use the marking on the body as your reference.	Fit the previously removed flange back in place taking care to clean the body-base contact surfaces.	Replace the screws and tighten the nuts with a torque of 54 Nm to 58.9 Nm. Check that the shaft turns on completing the operation.
Note: with this rotation change system, the inlets and outlets remain unchanged.					

XV2-P with Flange ø82,5 SAE-A (ref. da XP- 219 a: XP- 224)

When changing the direction of rotation of the XV-2P pump, it is not necessary to change the flange, as the same one is used.

When disassembling and reassembling the pump, take special care to ensure that seals and back-up rings do not come out of place and that no foreign bodies, such as shavings or dirt in general, get inside the pump.

FLANGE ø82,5 SAE-A (ref. XP- 219)					
					
Loosen and remove the fastening screws.	Take off the flange.	Take out the gears and upper bush. Warning!! The bush must never be turned.	Invert the positions of the driven and driving shafts. Warning! The body and cover must not be turned. Use the marking on the body as your reference.	Fit the previously removed flange back in place taking care to clean the body-base contact surfaces.	Replace the screws and tighten the nuts with a torque of 54 Nm to 58.9Nm. Check that the shaft turns on completing the operation.
Note: with this rotation change system, the inlets and outlets remain unchanged.					

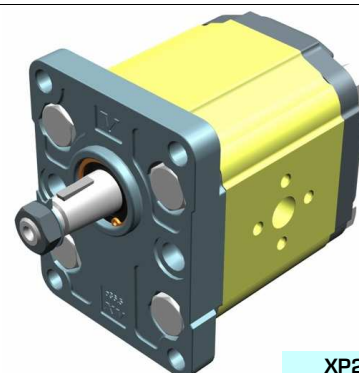
unidirectional pump - series XV

STANDARD EUROPEAN PUMP
ø36.5 FLANGE - TAPER SHAFT

XV-2P

X 2 P 51 02 E P O A

Series	X	series XV
Group	2	group 2
Category	P	unidirectional pump
Displacement	51	17
Flange	02	Ø36.5 STANDARD EUROPEAN right rotation
Shaft	E	C0001 - Tapered 1:8 - ø17.4 - M12x1.5 - key thk.4
Body	IN	P inlet - Ø40 Ø20 M8
	OUT	O outlet - Ø30 Ø13.5 M6
Cover	A	standard



XP201

Technical data table

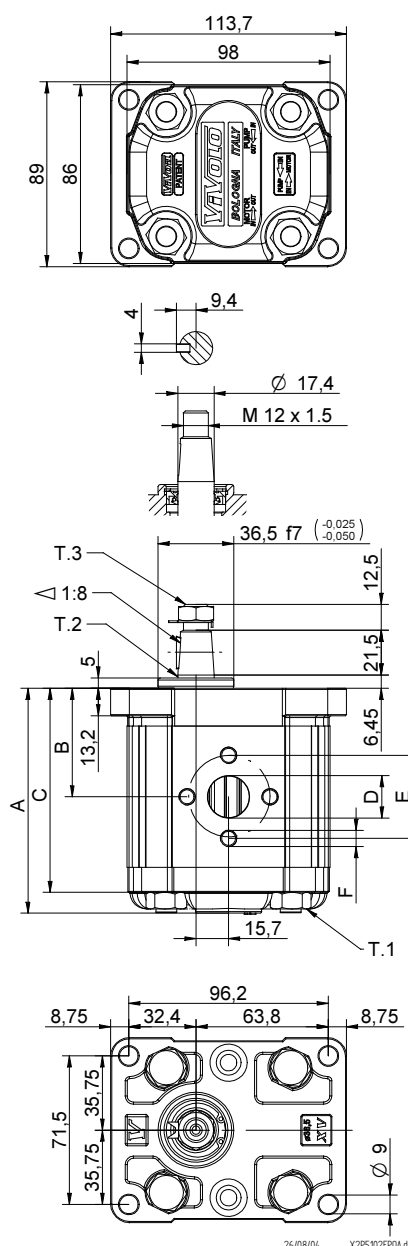
TYPE	Displacement	Max. Pressure		CODE	
	cm3/rev	P1 bar	P3 bar	Left rotation	Right rotation
XV-2P/04	4,20	260	300	X 2 P 41 01 E O O A	X 2 P 41 02 E O O A
XV-2P/06	6,00	260	300	X 2 P 43 01 E O O A	X 2 P 43 02 E O O A
XV-2P/09	8,40	260	300	X 2 P 45 01 E O O A	X 2 P 45 02 E O O A
XV-2P/11	10,80	260	300	X 2 P 47 01 E O O A	X 2 P 47 02 E O O A
XV-2P/14	14,40	250	290	X 2 P 49 01 E P O A	X 2 P 49 02 E P O A
XV-2P/17	16,80	230	270	X 2 P 51 01 E P O A	X 2 P 51 02 E P O A
XV-2P/19	19,20	210	250	X 2 P 53 01 E P O A	X 2 P 53 02 E P O A
XV-2P/22	22,80	200	240	X 2 P 55 01 E P O A	X 2 P 55 02 E P O A
XV-2P/26	26,20	170	210	X 2 P 57 01 E Q P A	X 2 P 57 02 E Q P A
XV-2P/30	30,00	160	200	X 2 P 59 01 E Q P A	X 2 P 59 02 E Q P A
XV-2P/34	34,20	150	190	X 2 P 61 01 E Q P A	X 2 P 61 02 E Q P A
XV-2P/40	39,60	140	180	X 2 P 63 01 E Q P A	X 2 P 63 02 E Q P A

P1) Max. working pressure - P3) Max. peak pressure

For heavy-duty applications, it is recommended to check the admissible torque of the shaft

Dimensions table

TYPE	Weight	A	B	C	D	E	F	D	E	F
	kg	mm	mm	mm	IN			OUT		
XV-2P/04	2,200	87,2	41,7	77,2	ø13,5	30	M6x1	ø13,5	30	M6x1
XV-2P/06	2,300	90,2	43,2	80,2	ø13,5	30	M6x1	ø13,5	30	M6x1
XV-2P/09	2,400	94,2	45,2	84,2	ø13,5	30	M6x1	ø13,5	30	M6x1
XV-2P/11	2,500	98,2	47,2	88,2	ø13,5	30	M6x1	ø13,5	30	M6x1
XV-2P/14	2,700	104,2	50,2	94,2	ø20	40	M8X1,25	ø13,5	30	M6x1
XV-2P/17	2,800	108,2	52,2	98,2	ø20	40	M8X1,25	ø13,5	30	M6x1
XV-2P/19	2,900	112,2	54,2	102,2	ø20	40	M8X1,25	ø13,5	30	M6x1
XV-2P/22	3,050	118,2	57,2	108,2	ø20	40	M8X1,25	ø13,5	30	M6x1
XV-2P/26	3,150	122,2	59,2	112,2	ø23,5	40	M8X1,25	ø20	40	M8X1,25
XV-2P/30	3,400	130,2	63,2	120,2	ø23,5	40	M8X1,25	ø20	40	M8X1,25
XV-2P/34	3,600	137,2	66,7	127,2	ø23,5	40	M8X1,25	ø20	40	M8X1,25
XV-2P/40	3,800	146,2	71,2	136,2	ø23,5	40	M8X1,25	ø20	40	M8X1,25



T.1 = 54±58.9 [Nm] - screw tightening torque M10

T.3 = 40 [Nm] - torque wrench setting 19

T.2 = 233.2 [Nm] - admissible shaft torque (N.B. When choosing a shaft, always check the admissible torque).

Table of variations

XV-2P

ø36.5 FLANGE

ø36.5 FLANGE				Shaft				Cover			
Left rotation		Right rotation						Left rotation		Right rotation	
	01		02	CI001 - Parallel T.2 = 44.1 [Nm] 	A	CI002 - Parallel T.2 = 67.5 [Nm] 	B				A
 OUT Ø 12	03	 OUT Ø 12	04	CO001 - Tapered T.2 = 233.2 [Nm] 	E	CO002 - Tapered T.2 = 233.2 [Nm] 	F	 1/2 BSP		 1/2 BSP	B
 IN Ø 12	05	 IN Ø 12	06	SCF02 - Splined T.2 = 86.1 [Nm] m=1.6 Z=9 DIN 5482 - 17x14 	G	SCF03 - Splined T.2 = 86.1 [Nm] m=1.6 Z=9 DIN 5482 - 17x14 	H	 1/2 BSP		 1/2 BSP	C
 OUT Ø 12 IN Ø 12	07	 IN Ø 12 OUT Ø 12	08	SCF04 - Splined T.2 = 67.1 [Nm] SAE J 498 9T 16/32 DP 	I	SCF01 - Splined T.2 = 86.2 [Nm] m=1.6 Z=9 DIN 5482 - 17x14 	L	 1/2 BSP		 1/2 BSP	D

Displacement	
TYPE	CODE
XV-2P/04	41
XV-2P/06	43
XV-2P/09	45
XV-2P/11	47
XV-2P/14	49
XV-2P/17	51
XV-2P/19	53
XV-2P/22	55
XV-2P/26	57
XV-2P/30	59
XV-2P/34	61
XV-2P/40	63

Standard bodies						
Displacement cm3/rev	Standard threads					
4	O - O	S - R	B - B	L - M	Z - Z	
6	O - O	S - R	B - B	L - M	Z - Z	
9	O - O	S - R	B - B	L - M	Z - Z	
11	O - O	S - R	B - B	L - M	Z - Z	
14	P - O	S - R	C - B	L - M	Z - Z	
17	P - O	S - R	C - B	L - M	Z - Z	
19	P - O	S - R	C - B	L - M	Z - Z	
22	P - O	S - R	C - B	L - M	Z - Z	
26	Q - P	S - R	D - C	L - M	Z - Z	
30	Q - P	S - S	D - C	L - M	Z - Z	
34	Q - P	S - S	D - C	L - M	Z - Z	
40	Q - P	S - S	D - C	L - M	Z - Z	

Table showing standard flange and thread combinations available in stock

											N
Internal drainage											
											O
External drainage											

Body (threads/flanges)											
 3/8" BSP	A	 1/2" BSP	B	 3/4" BSP	C	 1" BSP	D	 M14x1.5	E	 M16x1.5	F
 M20x1.5	H	 M22x1.5	I	 1-16"-12UNF	L	 7/8"-14UNF	M	 1-5/16"-12UNF	N	 M6x1	O
 M8x1.25	Q	 M6x1	R	 M6x1	S	 M6x1	T	 M8x1.25	U	 M6x1	V
Closed Body											Z

unidirectional pump - series XV

STANDARD EUROPEAN PUMP
ø36.5 FLANGE - TAPER SHAFT

XV-2P

X	2	P	51	02	E	C	B	A
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Series	X	series XV
Group	2	group 2
Category	P	unidirectional pump
Displacement	51	17
Flange	02	Ø36.5 STANDARD EUROPEAN right rotation
Shaft	E	CO001 - Tapered 1:8 - ø17.4 - M12x1.5 - key thk.4
Body	IN	C inlet - 3/4" GAS
	OUT	B outlet - 1/2" GAS
Cover	A	standard



XP207

Technical data table

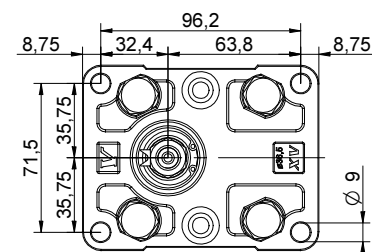
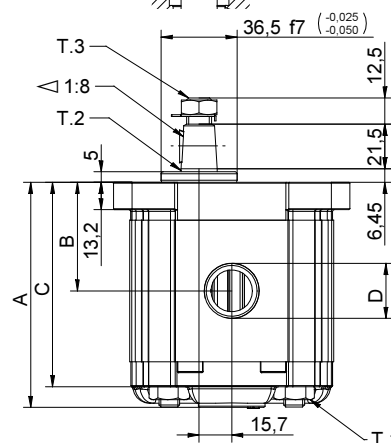
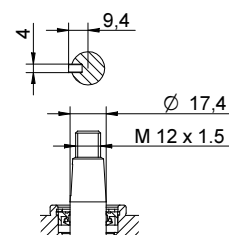
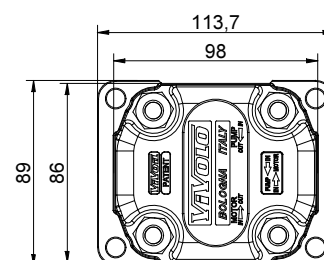
TYPE	Displacement cm3/rev	Max. Pressure		CODE	
		P1 bar	P3 bar	Left rotation	Right rotation
XV-2P/04	4,20	260	300	X 2 P 41 01 E B B A	X 2 P 41 02 E B B A
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XV-2P/09	8,40	260	300	X 2 P 45 01 E B B A	X 2 P 45 02 E B B A
XV-2P/11	10,80	260	300	X 2 P 47 01 E B B A	X 2 P 47 02 E B B A
XV-2P/14	14,40	250	290	X 2 P 49 01 E C B A	X 2 P 49 02 E C B A
XV-2P/17	16,80	230	270	X 2 P 51 01 E C B A	X 2 P 51 02 E C B A
XV-2P/19	19,20	210	250	X 2 P 53 01 E C B A	X 2 P 53 02 E C B A
XV-2P/22	22,80	200	240	X 2 P 55 01 E C B A	X 2 P 55 02 E C B A
XV-2P/26	26,20	170	210	X 2 P 57 01 E D C A	X 2 P 57 02 E D C A
XV-2P/30	30,00	160	200	X 2 P 59 01 E D C A	X 2 P 59 02 E D C A
XV-2P/34	34,20	150	190	X 2 P 61 01 E D C A	X 2 P 61 02 E D C A
XV-2P/40	39,60	140	180	X 2 P 63 01 E D C A	X 2 P 63 02 E D C A

P1) Max. working pressure - P3) Max. peak pressure

For heavy-duty applications, it is recommended to check the admissible torque of the shaft

Dimensions table

TYPE	Weight	A	B	C	D	D
	kg	mm	mm	mm	IN	OUT
XV-2P/04	2,200	87,2	41,7	77,2	1/2" BSPP	1/2" BSPP
XV-2P/06	2,300	90,2	43,2	80,2	1/2" BSPP	1/2" BSPP
XV-2P/09	2,400	94,2	45,2	84,2	1/2" BSPP	1/2" BSPP
XV-2P/11	2,500	98,2	47,2	88,2	1/2" BSPP	1/2" BSPP
XV-2P/14	2,700	104,2	50,2	94,2	3/4" BSPP	1/2" BSPP
XV-2P/17	2,800	108,2	52,2	98,2	3/4" BSPP	1/2" BSPP
XV-2P/19	2,900	112,2	54,2	102,2	3/4" BSPP	1/2" BSPP
XV-2P/22	3,050	118,2	57,2	108,2	3/4" BSPP	1/2" BSPP
XV-2P/26	3,150	122,2	59,2	112,2	1" BSPP	3/4" BSPP
XV-2P/30	3,400	130,2	63,2	120,2	1" BSPP	3/4" BSPP
XV-2P/34	3,600	137,2	66,7	127,2	1" BSPP	3/4" BSPP
XV-2P/40	3,800	146,2	71,2	136,2	1" BSPP	3/4" BSPP



26/08/04 XZPS102ETBA.dft

T.1 = 54÷58.9 [Nm] - screw tightening torque M10

T.3 = 40 [Nm] - torque wrench setting 19

T.2 = 233.2 [Nm] - admissible shaft torque (N.B. When choosing a shaft, always check the admissible torque).

Table of variations

XV-2P

ø36.5 FLANGE

ø36.5 FLANGE				Shaft				Cover			
Left rotation		Right rotation						Left rotation		Right rotation	
	01		02	CI001 - Parallel T.2 = 44.1 [Nm]	A	CI002 - Parallel T.2 = 67.5 [Nm]	B				A
	03		04	CO001 - Tapered T.2 = 233.2 [Nm]	E	CO002 - Tapered T.2 = 233.2 [Nm]	F				B
	05		06	SCF02 - Splined T.2 = 86.1 [Nm]	G	SCF03 - Splined T.2 = 86.1 [Nm]	H				C
	07		08	SCF04 - Splined T.2 = 67.1 [Nm]	I	SCF01 - Splined T.2 = 86.2 [Nm]	L				D

Displacement	
TYPE	CODE
XV-2P/04	41
XV-2P/06	43
XV-2P/09	45
XV-2P/11	47
XV-2P/14	49
XV-2P/17	51
XV-2P/19	53
XV-2P/22	55
XV-2P/26	57
XV-2P/30	59
XV-2P/34	61
XV-2P/40	63

Standard bodies						
Displacement cm3/rev		Standard threads				
4	O - O	S - R	B - B	L - M	Z - Z	
6	O - O	S - R	B - B	L - M	Z - Z	
9	O - O	S - R	B - B	L - M	Z - Z	
11	O - O	S - R	B - B	L - M	Z - Z	
14	P - O	S - R	C - B	L - M	Z - Z	
17	P - O	S - R	C - B	L - M	Z - Z	
19	P - O	S - R	C - B	L - M	Z - Z	
22	P - O	S - R	C - B	L - M	Z - Z	
26	Q - P	S - R	D - C	L - M	Z - Z	
30	Q - P	S - S	D - C	L - M	Z - Z	
34	Q - P	S - S	D - C	L - M	Z - Z	
40	Q - P	S - S	D - C	L - M	Z - Z	

Table showing standard flange and thread combinations available in stock

		N
		O

Body (threads/flanges)											
	A		B		C		D		E		F
	H		I		L		M		N		O
	Q		R		S		T		U		V
											Z

unidirectional pump - series XV

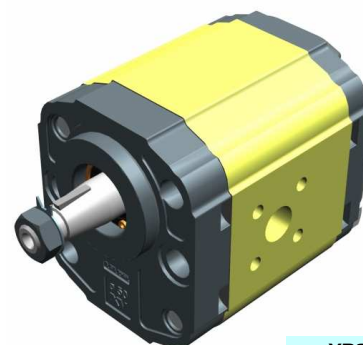
XV-2P

"BH" TYPE PUMP

Ø50 BODY-SHAPED FLANGE - TAPER SHAFT

X 2 P 51 12 F S R A

Series	X	series XV
Group	2	group 2
Category	P	unidirectional pump
Displacement	51	17
Flange	12	Ø50 BH GERMAN STANDARDIZED right rotation
Shaft	F	CO002 - Tapered 1:5 - Ø17.4 - M12x1.5 - key thk.3
Body	IN	S inlet - Ø40 a 45° Ø20 M6
	OUT	R outlet - Ø35 a 45° Ø15 M6
Cover	A	standard



XP210

Technical data table

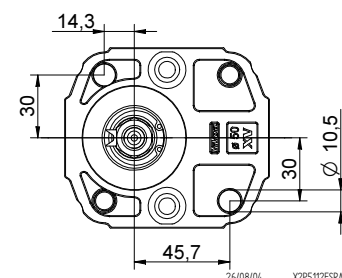
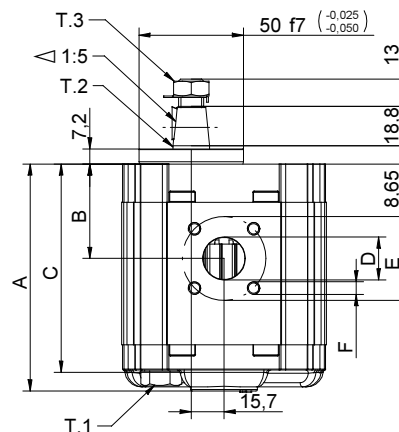
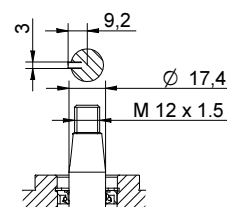
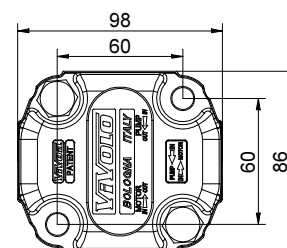
TYPE	Displacement cm ³ /rev	Max. Pressure		CODE	
		P1 bar	P3 bar	Left rotation	Right rotation
XV-2P/04	4,20	260	300	X 2 P 41 11 F S R A	X 2 P 41 12 F S R A
XV-2P/06	6,00	260	300	X 2 P 43 11 F S R A	X 2 P 43 12 F S R A
XV-2P/09	8,40	260	300	X 2 P 45 11 F S R A	X 2 P 45 12 F S R A
XV-2P/11	10,80	260	300	X 2 P 47 11 F S R A	X 2 P 47 12 F S R A
XV-2P/14	14,40	250	290	X 2 P 49 11 F S R A	X 2 P 49 12 F S R A
XV-2P/17	16,80	230	270	X 2 P 51 11 F S R A	X 2 P 51 12 F S R A
XV-2P/19	19,20	210	250	X 2 P 53 11 F S R A	X 2 P 53 12 F S R A
XV-2P/22	22,80	200	240	X 2 P 55 11 F S R A	X 2 P 55 12 F S R A
XV-2P/26	26,20	170	210	X 2 P 57 11 F S R A	X 2 P 57 12 F S R A
XV-2P/30	30,00	160	200	X 2 P 59 11 F S S A	X 2 P 59 12 F S S A
XV-2P/34	34,20	150	190	X 2 P 61 11 F S S A	X 2 P 61 12 F S S A
XV-2P/40	39,60	140	180	X 2 P 63 11 F S S A	X 2 P 63 12 F S S A

P1) Max. working pressure - P3) Max. peak pressure

For heavy-duty applications, it is recommended to check the admissible torque of the shaft

Dimensions table

TYPE	Weight kg	A	B	C	D	E	F	D	E	F
		mm	mm	mm	IN			OUT		
XV-2P/04	2,100	87,2	38,6	77,2	Ø20	40	M6x1	Ø15	35	M6x1
XV-2P/06	2,200	90,2	38,6	80,2	Ø20	40	M6x2	Ø15	35	M6x1
XV-2P/09	2,300	94,2	40,6	84,2	Ø20	40	M6x3	Ø15	35	M6x1
XV-2P/11	2,400	98,2	45,0	88,2	Ø20	40	M6x4	Ø15	35	M6x1
XV-2P/14	2,600	104,2	45,0	94,2	Ø20	40	M6x5	Ø15	35	M6x1
XV-2P/17	2,700	108,2	45,0	98,2	Ø20	40	M6x6	Ø15	35	M6x1
XV-2P/19	2,800	112,2	45,0	102,2	Ø20	40	M6x7	Ø15	35	M6x1
XV-2P/22	2,950	118,2	52,5	108,2	Ø20	40	M6x8	Ø15	35	M6x1
XV-2P/26	3,050	122,2	52,5	112,2	Ø20	40	M6x9	Ø15	35	M6x1
XV-2P/30	3,300	130,2	60,7	120,2	Ø20	40	M6x10	Ø20	40	M6x1
XV-2P/34	3,500	137,2	60,7	127,2	Ø20	40	M6x11	Ø20	40	M6x1
XV-2P/40	3,700	146,2	60,7	136,2	Ø20	40	M6x12	Ø20	40	M6x1



T.1 = 54÷58.9 [Nm] - screw tightening torque M10

T.3 = 40 [Nm] - torque wrench setting 19

T.2 = 233.2 [Nm] - admissible shaft torque (N.B. When choosing a shaft, always check the admissible torque).

Table of variations

XV-2P

ø50 "BH" Body-Shaped FLANGE

ø50 "BH" Body-Shaped FLANGE				Shaft				Cover			
Left rotation		Right rotation						Left rotation		Right rotation	
	11		12		A		B				A
	13		14		E		F				B
	15		16		H						C
	17		18								D

Displacement	
TYPE	CODE
XV-2P/04	41
XV-2P/06	43
XV-2P/09	45
XV-2P/11	47
XV-2P/14	49
XV-2P/17	51
XV-2P/19	53
XV-2P/22	55
XV-2P/26	57
XV-2P/30	59
XV-2P/34	61
XV-2P/40	63

Standard bodies						
Displacement cm3/rev	Standard threads					
4	O - O	S - R	B - B	L - M	Z - Z	
6	O - O	S - R	B - B	L - M	Z - Z	
9	O - O	S - R	B - B	L - M	Z - Z	
11	O - O	S - R	B - B	L - M	Z - Z	
14	P - O	S - R	C - B	L - M	Z - Z	
17	P - O	S - R	C - B	L - M	Z - Z	
19	P - O	S - R	C - B	L - M	Z - Z	
22	P - O	S - R	C - B	L - M	Z - Z	
26	Q - P	S - R	D - C	L - M	Z - Z	
30	Q - P	S - S	D - C	L - M	Z - Z	
34	Q - P	S - S	D - C	L - M	Z - Z	
40	Q - P	S - S	D - C	L - M	Z - Z	

Table showing standard flange and thread combinations available in stock

			N
			O

Body (threads/flanges)											
	A		B		C		D		E		F
	H		I		L		M		N		O
	Q		R		S		T		U		V

unidirectional pump - series XV

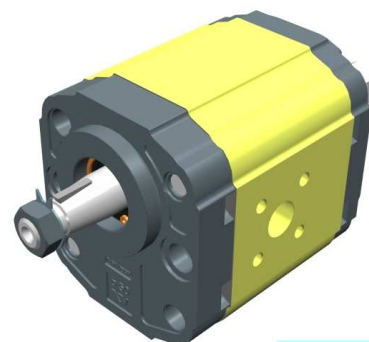
XV-2P

"HY" TYPE PUMP

Ø50 BODY-SHAPED FLANGE - TAPER SHAFT

X 2 P 51 22 F S R A

Series	X	series XV
Group	2	group 2
Category	P	unidirectional pump
Displacement	51	17
Flange	22	Ø50 HY GERMAN STANDARDIZED right rotation
Shaft	F	CO002 - Tapered 1:5 - Ø17.4 - M12x1.5 - key thk.3
Body	IN	S inlet - Ø40 a 45° Ø20 M6
	OUT	R outlet - Ø35 a 45° Ø15 M6
Cover	A	standard



XP213

Technical data table

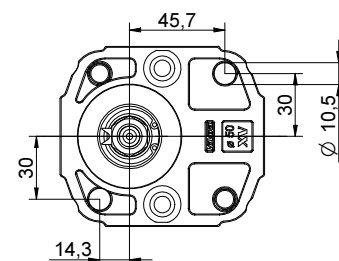
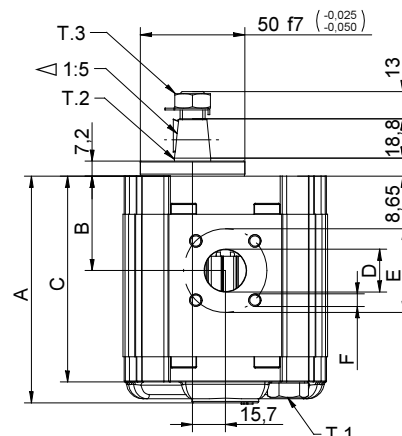
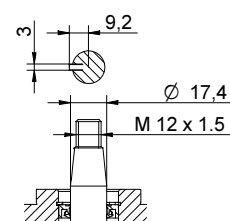
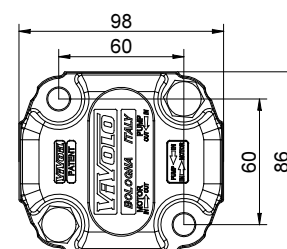
TYPE	Displacement cm3/rev	Max. Pressure		CODE	
		P1 bar	P3 bar	Left rotation	Right rotation
XV-2P/04	4,20	260	300	X 2 P 41 21 F S R A	X 2 P 41 22 F S R A
XV-2P/06	6,00	260	300	X 2 P 43 21 F S R A	X 2 P 43 22 F S R A
XV-2P/09	8,40	260	300	X 2 P 45 21 F S R A	X 2 P 45 22 F S R A
XV-2P/11	10,80	260	300	X 2 P 47 21 F S R A	X 2 P 47 22 F S R A
XV-2P/14	14,40	250	290	X 2 P 49 21 F S R A	X 2 P 49 22 F S R A
XV-2P/17	16,80	230	270	X 2 P 51 21 F S R A	X 2 P 51 22 F S R A
XV-2P/19	19,20	210	250	X 2 P 53 21 F S R A	X 2 P 53 22 F S R A
XV-2P/22	22,80	200	240	X 2 P 55 21 F S R A	X 2 P 55 22 F S R A
XV-2P/26	26,20	170	210	X 2 P 57 21 F S R A	X 2 P 57 22 F S R A
XV-2P/30	30,00	160	200	X 2 P 59 21 F S S A	X 2 P 59 22 F S S A
XV-2P/34	34,20	150	190	X 2 P 61 21 F S S A	X 2 P 61 22 F S S A
XV-2P/40	39,60	140	180	X 2 P 63 21 F S S A	X 2 P 63 22 F S S A

P1) Max. working pressure - P3) Max. peak pressure

For heavy-duty applications, it is recommended to check the admissible torque of the shaft

Dimensions table

TYPE	Weight kg	A	B	C	D	E	F	D	E	F
		mm	mm	mm	IN			OUT		
XV-2P/04	2,100	87,2	38,6	77,2	Ø20	40	M6x1	Ø15	35	M6x1
XV-2P/06	2,200	90,2	38,6	80,2	Ø20	40	M6x2	Ø15	35	M6x1
XV-2P/09	2,300	94,2	40,6	84,2	Ø20	40	M6x3	Ø15	35	M6x1
XV-2P/11	2,400	98,2	45,0	88,2	Ø20	40	M6x4	Ø15	35	M6x1
XV-2P/14	2,600	104,2	45,0	94,2	Ø20	40	M6x5	Ø15	35	M6x1
XV-2P/17	2,700	108,2	45,0	98,2	Ø20	40	M6x6	Ø15	35	M6x1
XV-2P/19	2,800	112,2	45,0	102,2	Ø20	40	M6x7	Ø15	35	M6x1
XV-2P/22	2,950	118,2	52,5	108,2	Ø20	40	M6x8	Ø15	35	M6x1
XV-2P/26	3,050	122,2	52,5	112,2	Ø20	40	M6x9	Ø15	35	M6x1
XV-2P/30	3,300	130,2	60,7	120,2	Ø20	40	M6x10	Ø20	40	M6x1
XV-2P/34	3,500	137,2	60,7	127,2	Ø20	40	M6x11	Ø20	40	M6x1
XV-2P/40	3,700	146,2	60,7	136,2	Ø20	40	M6x12	Ø20	40	M6x1



26/08/04 X2P512ZF5RA.dft

T.1 = 54÷58.9 [Nm] - screw tightening torque M10

T.3 = 40 [Nm] - torque wrench setting 19

T.2 = 233.2 [Nm] - admissible shaft torque (N.B. When choosing a shaft, always check the admissible torque).

Table of variations

XV-2P

ø50 "HY" Body-Shaped FLANGE

ø50 "HY" Body-Shaped FLANGE				Shaft				Cover			
Left rotation		Right rotation						Left rotation		Right rotation	
	21		22		A		B				A
	23		24		E		F				B
	25		26		H						C
	27		28								D
											N
											O

Displacement	
TYPE	CODE
XV-2P/04	41
XV-2P/06	43
XV-2P/09	45
XV-2P/11	47
XV-2P/14	49
XV-2P/17	51
XV-2P/19	53
XV-2P/22	55
XV-2P/26	57
XV-2P/30	59
XV-2P/34	61
XV-2P/40	63

Standard bodies						
Displacement cm3/rev	Standard threads					
4	O - O	S - R	B - B	L - M	Z - Z	
6	O - O	S - R	B - B	L - M	Z - Z	
9	O - O	S - R	B - B	L - M	Z - Z	
11	O - O	S - R	B - B	L - M	Z - Z	
14	P - O	S - R	C - B	L - M	Z - Z	
17	P - O	S - R	C - B	L - M	Z - Z	
19	P - O	S - R	C - B	L - M	Z - Z	
22	P - O	S - R	C - B	L - M	Z - Z	
26	Q - P	S - R	D - C	L - M	Z - Z	
30	Q - P	S - S	D - C	L - M	Z - Z	
34	Q - P	S - S	D - C	L - M	Z - Z	
40	Q - P	S - S	D - C	L - M	Z - Z	

Table showing standard flange and thread combinations available in stock

Body (threads/flanges)											
	A		B		C		D		E		F
	H		I		L		M		N		O
	Q		R		S		T		U		V
Closed Body											Z

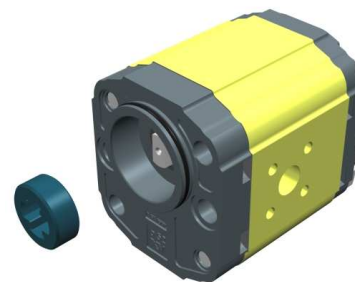
unidirectional pump - series XV

XV-2P

STANDARD GERMAN "BH" TYPE PUMP
ø52 BODY-SHAPED FLANGE - MILLED SHANK

X 2 P 51 32 C S R A

Series	X	series XV
Group	2	group 2
Category	P	unidirectional pump
Displacement	51	17
Flange	32	Ø52 BH GERMAN STANDARDIZED right rotation (with OR)
Shaft	C	CF001 - Milled shank ø15 - thk.8 ("BH" Standard German)
Body	IN	S inlet - Ø40 a 45° Ø20 M6
	OUT	R outlet - Ø35 a 45° Ø15 M6
Cover	A	standard



XP216

Technical data table

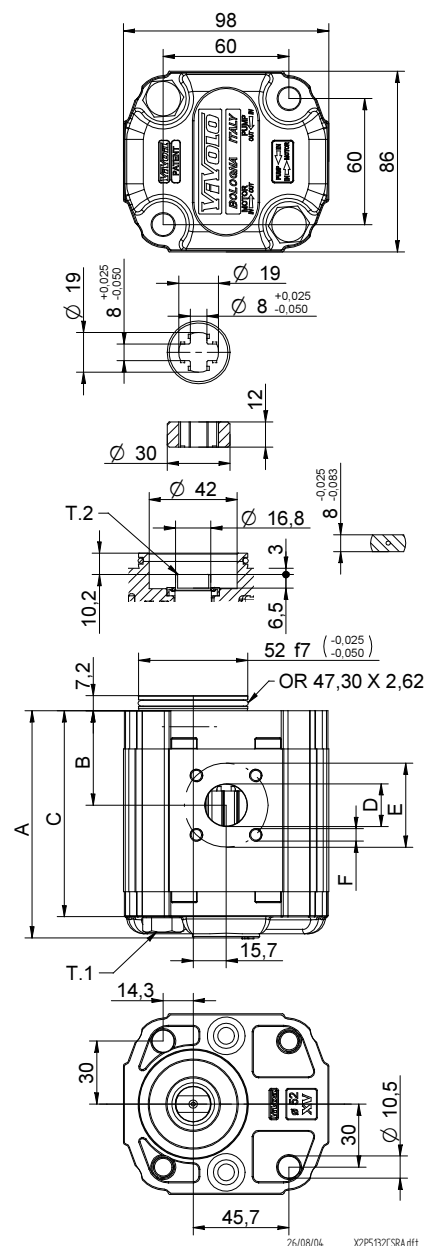
TYPE	Displacement cm3/rev	Max. Pressure		CODE	
		P1 bar	P3 bar	Left rotation	Right rotation
XV-2P/04	4,20	260	300	X 2 P 41 31 C S R A	X 2 P 41 32 C S R A
XV-2P/06	6,00	260	300	X 2 P 43 31 C S R A	X 2 P 43 32 C S R A
XV-2P/09	8,40	260	300	X 2 P 45 31 C S R A	X 2 P 45 32 C S R A
XV-2P/11	10,80	260	300	X 2 P 47 31 C S R A	X 2 P 47 32 C S R A
XV-2P/14	14,40	250	290	X 2 P 49 31 C S R A	X 2 P 49 32 C S R A
XV-2P/17	16,80	230	270	X 2 P 51 31 C S R A	X 2 P 51 32 C S R A
XV-2P/19	19,20	210	250	X 2 P 53 31 C S R A	X 2 P 53 32 C S R A
XV-2P/22	22,80	200	240	X 2 P 55 31 C S R A	X 2 P 55 32 C S R A
XV-2P/26	26,20	170	210	X 2 P 57 31 C S R A	X 2 P 57 32 C S R A
XV-2P/30	30,00	160	200	X 2 P 59 31 C S S A	X 2 P 59 32 C S S A
XV-2P/34	34,20	150	190	X 2 P 61 31 C S S A	X 2 P 61 32 C S S A
XV-2P/40	39,60	140	180	X 2 P 63 31 C S S A	X 2 P 63 32 C S S A

P1) Max. working pressure - P3) Max. peak pressure

For heavy-duty applications, it is recommended to check the admissible torque of the shaft

Dimensions table

TYPE	Weight kg	A	B	C	D	E	F	D	E	F
		mm	mm	mm	IN			OUT		
XV-2P/04	2,100	87,2	38,6	77,2	ø20	40	M6x1	ø15	35	M6x1
XV-2P/06	2,200	90,2	38,6	80,2	ø20	40	M6x2	ø15	35	M6x1
XV-2P/09	2,300	94,2	40,6	84,2	ø20	40	M6x3	ø15	35	M6x1
XV-2P/11	2,400	98,2	45,0	88,2	ø20	40	M6x4	ø15	35	M6x1
XV-2P/14	2,600	104,2	45,0	94,2	ø20	40	M6x5	ø15	35	M6x1
XV-2P/17	2,700	108,2	45,0	98,2	ø20	40	M6x6	ø15	35	M6x1
XV-2P/19	2,800	112,2	45,0	102,2	ø20	40	M6x7	ø15	35	M6x1
XV-2P/22	2,950	118,2	52,5	108,2	ø20	40	M6x8	ø15	35	M6x1
XV-2P/26	3,050	122,2	52,5	112,2	ø20	40	M6x9	ø15	35	M6x1
XV-2P/30	3,300	130,2	60,7	120,2	ø20	40	M6x10	ø20	40	M6x1
XV-2P/34	3,500	137,2	60,7	127,2	ø20	40	M6x11	ø20	40	M6x1
XV-2P/40	3,700	146,2	60,7	136,2	ø20	40	M6x12	ø20	40	M6x1



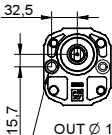
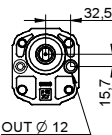
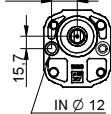
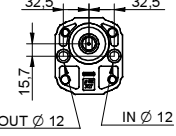
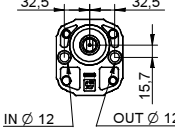
T.1 = 54÷58.9 [Nm] - screw tightening torque M10

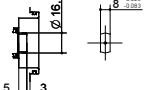
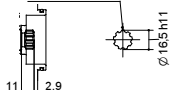
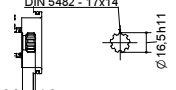
T.2 = 60.5 [Nm] - admissible shaft torque (N.B. When choosing a shaft, always check the admissible torque).

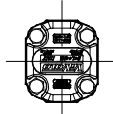
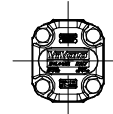
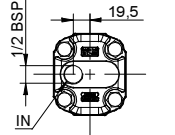
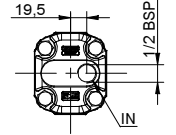
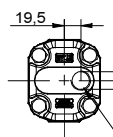
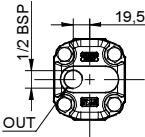
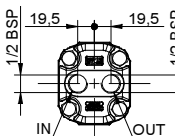
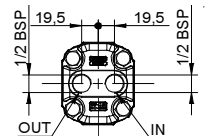
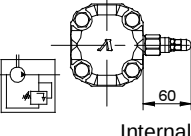
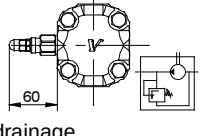
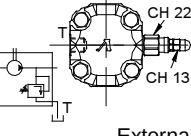
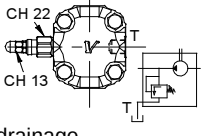
Table of variations

XV-2P

Standard German ø52 "BH" FLANGE

Standard German ø52 "BH" FLANGE			
Left rotation		Right rotation	
	31		32
	33		34
	35		36
	37		38

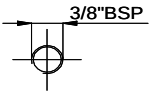
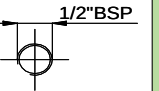
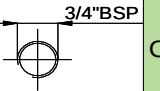
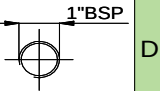
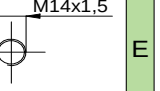
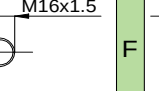
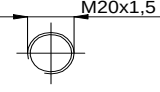
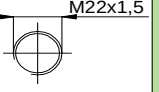
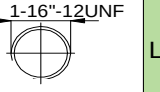
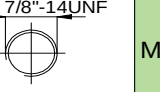
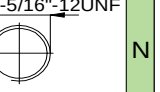
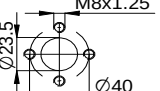
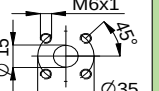
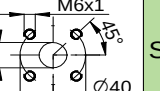
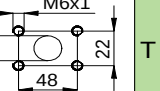
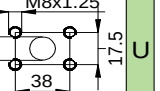
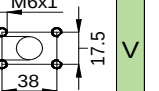
Shaft			
CF001 - Milled shank T.2 = 60.5 [Nm]		SCF05 - Splined T.2 = 86.2 [Nm]	
			
SCF01 - Splined T.2 = 86.2 [Nm]			
			

Cover		
Left rotation	Right rotation	
		A
		B
		C
		D
		N
		O

Displacement	
TYPE	CODE
XV-2P/04	41
XV-2P/06	43
XV-2P/09	45
XV-2P/11	47
XV-2P/14	49
XV-2P/17	51
XV-2P/19	53
XV-2P/22	55
XV-2P/26	57
XV-2P/30	59
XV-2P/34	61
XV-2P/40	63

Standard bodies						
Displacement cm3/rev	Standard threads					
4	O - O	S - R	B - B	L - M	Z - Z	
6	O - O	S - R	B - B	L - M	Z - Z	
9	O - O	S - R	B - B	L - M	Z - Z	
11	O - O	S - R	B - B	L - M	Z - Z	
14	P - O	S - R	C - B	L - M	Z - Z	
17	P - O	S - R	C - B	L - M	Z - Z	
19	P - O	S - R	C - B	L - M	Z - Z	
22	P - O	S - R	C - B	L - M	Z - Z	
26	Q - P	S - R	D - C	L - M	Z - Z	
30	Q - P	S - S	D - C	L - M	Z - Z	
34	Q - P	S - S	D - C	L - M	Z - Z	
40	Q - P	S - S	D - C	L - M	Z - Z	

Table showing standard flange and thread combinations available in stock

Body (threads/flanges)											
	A		B		C		D		E		F
	H		I		L		M		N		O
	Q		R		S		T		U		V
											W
											X
											Y
											Z

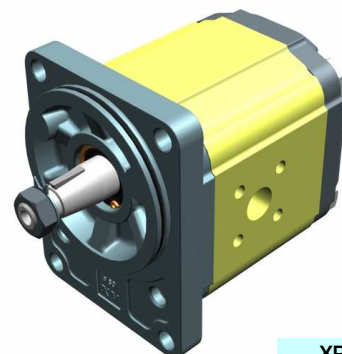
unidirectional pump - series XV

STANDARD GERMAN PUMP
ø80 FLANGE - TAPER SHAFT

XV-2P

X 2 P 51 42 F S R A

Series	X	series XV
Group	2	group 2
Category	P	unidirectional pump
Displacement	51	17
Flange	42	Ø80 GERMAN STANDARDIZED right rotation (with OR)
Shaft	F	CO002 - Tapered 1:5 - ø17.4 - M12x1.5 - key thk.3
Body	IN	S inlet - Ø40 a 45° Ø20 M6
	OUT	R outlet - Ø35 a 45° Ø15 M6
Cover	A	standard



XP217

Technical data table

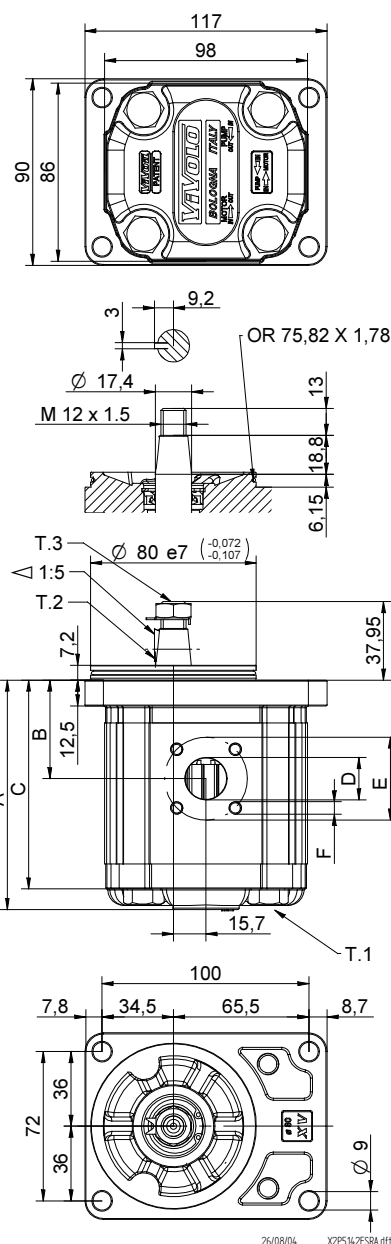
TYPE	Displacement cm3/rev	Max. Pressure		CODE	
		P1 bar	P3 bar	Left rotation	Right rotation
XV-2P/04	4,20	260	300	X 2 P 41 41 F S R A	X 2 P 41 42 F S R A
XV-2P/06	6,00	260	300	X 2 P 43 41 F S R A	X 2 P 43 42 F S R A
XV-2P/09	8,40	260	300	X 2 P 45 41 F S R A	X 2 P 45 42 F S R A
XV-2P/11	10,80	260	300	X 2 P 47 41 F S R A	X 2 P 47 42 F S R A
XV-2P/14	14,40	250	290	X 2 P 49 41 F S R A	X 2 P 49 42 F S R A
XV-2P/17	16,80	230	270	X 2 P 51 41 F S R A	X 2 P 51 42 F S R A
XV-2P/19	19,20	210	250	X 2 P 53 41 F S R A	X 2 P 53 42 F S R A
XV-2P/22	22,80	200	240	X 2 P 55 41 F S R A	X 2 P 55 42 F S R A
XV-2P/26	26,20	170	210	X 2 P 57 41 F S R A	X 2 P 57 42 F S R A
XV-2P/30	30,00	160	200	X 2 P 59 41 F S S A	X 2 P 59 42 F S S A
XV-2P/34	34,20	150	190	X 2 P 61 41 F S S A	X 2 P 61 42 F S S A
XV-2P/40	39,60	140	180	X 2 P 63 41 F S S A	X 2 P 63 42 F S S A

P1) Max. working pressure - P3) Max. peak pressure

For heavy-duty applications, it is recommended to check the admissible torque of the shaft

Dimensions table

TYPE	Weight kg	A	B	C	D	E	F	D	E	F
		mm	mm	mm	IN			OUT		
XV-2P/04	2,330	89,7	41,1	79,7	ø20	40	M6x1	ø15	35	M6x1
XV-2P/06	2,430	92,7	41,1	82,7	ø20	40	M6x2	ø15	35	M6x1
XV-2P/09	2,530	96,7	43,1	86,7	ø20	40	M6x3	ø15	35	M6x1
XV-2P/11	2,630	100,7	47,5	90,7	ø20	40	M6x4	ø15	35	M6x1
XV-2P/14	2,730	106,7	47,5	96,7	ø20	40	M6x5	ø15	35	M6x1
XV-2P/17	2,830	110,7	47,5	100,7	ø20	40	M6x6	ø15	35	M6x1
XV-2P/19	2,930	114,7	47,5	104,7	ø20	40	M6x7	ø15	35	M6x1
XV-2P/22	3,180	120,7	55,0	110,7	ø20	40	M6x8	ø15	35	M6x1
XV-2P/26	3,280	124,7	55,0	114,7	ø20	40	M6x9	ø15	35	M6x1
XV-2P/30	3,530	132,7	63,2	122,7	ø20	40	M6x10	ø20	40	M6x1
XV-2P/34	3,730	139,7	63,2	129,7	ø20	40	M6x11	ø20	40	M6x1
XV-2P/40	3,930	148,7	63,2	138,7	ø20	40	M6x12	ø20	40	M6x1



T.1 = 54÷58.9 [Nm] - screw tightening torque M10

T.3 = 40 [Nm] - torque wrench setting 19

T.2 = 233.2 [Nm] - admissible shaft torque (N.B. When choosing a shaft, always check the admissible torque).

Table of variations

XV-2P

ø80 FLANGE

ø80 FLANGE		Shaft		Cover	
Left rotation	Right rotation			Left rotation	Right rotation
		CI001 - Parallel $T_2 = 44.1 \text{ [Nm]}$ 	CI002 - Parallel $T_2 = 67.5 \text{ [Nm]}$ 		
41	42	A	B	A	A
		CO001 - Tapered $T_2 = 233.2 \text{ [Nm]}$ 	CO002 - Tapered $T_2 = 233.2 \text{ [Nm]}$ 		
		E	F	B	B
		SCF03 - Splined $T_2 = 86.1 \text{ [Nm]}$ 			
		H		C	C
				D	D
				N	N
				O	O
				Z	Z

Displacement	
TYPE	CODE
XV-2P/04	41
XV-2P/06	43
XV-2P/09	45
XV-2P/11	47
XV-2P/14	49
XV-2P/17	51
XV-2P/19	53
XV-2P/22	55
XV-2P/26	57
XV-2P/30	59
XV-2P/34	61
XV-2P/40	63

Standard bodies	
Displacement cm3/rev	Standard threads
4	O - O S - R B - B L - M Z - Z
6	O - O S - R B - B L - M Z - Z
9	O - O S - R B - B L - M Z - Z
11	O - O S - R B - B L - M Z - Z
14	P - O S - R C - B L - M Z - Z
17	P - O S - R C - B L - M Z - Z
19	P - O S - R C - B L - M Z - Z
22	P - O S - R C - B L - M Z - Z
26	Q - P S - R D - C L - M Z - Z
30	Q - P S - S D - C L - M Z - Z
34	Q - P S - S D - C L - M Z - Z
40	Q - P S - S D - C L - M Z - Z

Table showing standard flange and thread combinations available in stock

Body (threads/flanges)													
	A		B		C		D		E		F		G
	H		I		L		M		N		O		P
	Q		R		S		T		U		V	Closed Body	Z

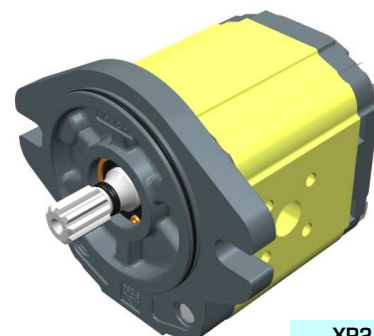
unidirectional pump - series XV

"SAE A" TYPE PUMP
ø82.5 FLANGE - SPLINED SHAFT

XV-2P

X 2 P 51 52 I S R A

Series	X	series XV
Group	2	group 2
Category	P	unidirectional pump
Displacement	51	17
Flange	52	Ø82.5 SAE A right rotation (with OR)
Shaft	I	SCF04 - Splined ø15.456 z=9, H=22.5 - SAE J498 9T 16/32DP
Body	IN	S inlet - Ø40 a 45° Ø20 M6
	OUT	R outlet - Ø35 a 45° Ø15 M6
Cover	A	standard



XP219

Technical data table

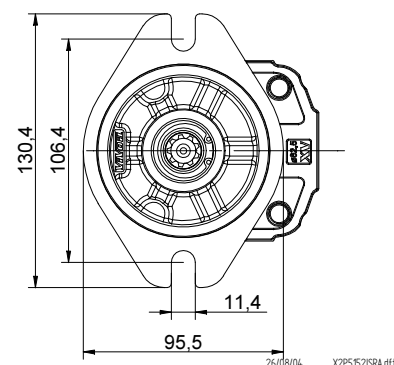
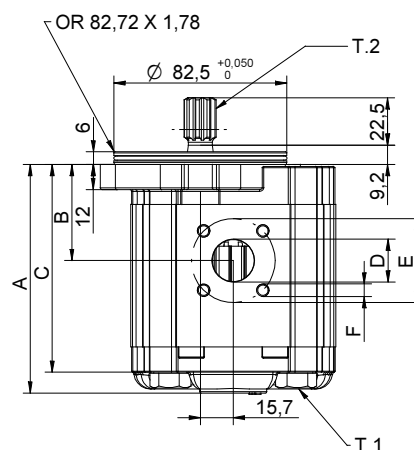
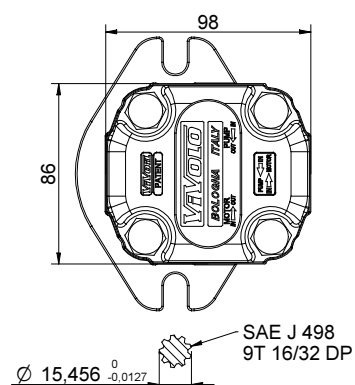
TYPE	Displacement	Max. Pressure		CODE	
	cm3/rev	P1 bar	P3 bar	Left rotation	Right rotation
XV-2P/04	4,20	260	300	X 2 P 41 51 I S R A	X 2 P 41 52 I S R A
XV-2P/06	6,00	260	300	X 2 P 43 51 I S R A	X 2 P 43 52 I S R A
XV-2P/09	8,40	260	300	X 2 P 45 51 I S R A	X 2 P 45 52 I S R A
XV-2P/11	10,80	260	300	X 2 P 47 51 I S R A	X 2 P 47 52 I S R A
XV-2P/14	14,40	250	290	X 2 P 49 51 I S R A	X 2 P 49 52 I S R A
XV-2P/17	16,80	230	270	X 2 P 51 51 I S R A	X 2 P 51 52 I S R A
XV-2P/19	19,20	210	250	X 2 P 53 51 I S R A	X 2 P 53 52 I S R A
XV-2P/22	22,80	200	240	X 2 P 55 51 I S R A	X 2 P 55 52 I S R A
XV-2P/26	26,20	170	210	X 2 P 57 51 I S R A	X 2 P 57 52 I S R A
XV-2P/30	30,00	160	200	X 2 P 59 51 I S S A	X 2 P 59 52 I S S A
XV-2P/34	34,20	150	190	X 2 P 61 51 I S S A	X 2 P 61 52 I S S A
XV-2P/40	39,60	140	180	X 2 P 63 51 I S S A	X 2 P 63 52 I S S A

P1) Max. working pressure - P3) Max. peak pressure

For heavy-duty applications, it is recommended to check the admissible torque of the shaft

Dimensions table

TYPE	Weight	A	B	C	D	E	F	D	E	F
	kg	mm	mm	mm	IN			OUT		
XV-2P/04	2,280	88,0	39,4	78,0	ø20	40	M6x1	ø15	35	M6x1
XV-2P/06	2,380	91,0	39,4	81,0	ø20	40	M6x2	ø15	35	M6x1
XV-2P/09	2,480	95,0	41,4	85,0	ø20	40	M6x3	ø15	35	M6x1
XV-2P/11	2,580	99,0	45,8	89,0	ø20	40	M6x4	ø15	35	M6x1
XV-2P/14	2,780	105,0	45,8	95,0	ø20	40	M6x5	ø15	35	M6x1
XV-2P/17	2,880	109,0	45,8	99,0	ø20	40	M6x6	ø15	35	M6x1
XV-2P/19	2,980	113,0	45,8	103,0	ø20	40	M6x7	ø15	35	M6x1
XV-2P/22	3,130	119,0	53,3	109,0	ø20	40	M6x8	ø15	35	M6x1
XV-2P/26	3,230	123,0	53,3	113,0	ø20	40	M6x9	ø15	35	M6x1
XV-2P/30	3,480	131,0	61,5	121,0	ø20	40	M6x10	ø20	40	M6x1
XV-2P/34	3,680	138,0	61,5	128,0	ø20	40	M6x11	ø20	40	M6x1
XV-2P/40	3,880	147,0	61,5	137,0	ø20	40	M6x12	ø20	40	M6x1



T.1 = 54÷58.9 [Nm] - screw tightening torque M10

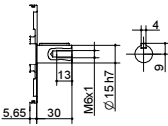
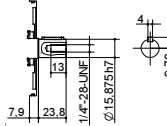
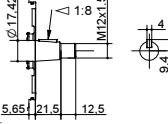
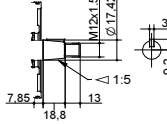
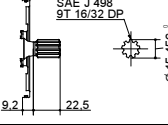
T.2 = 67.1 [Nm] - admissible shaft torque (N.B. When choosing a shaft, always check the admissible torque).

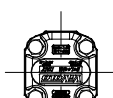
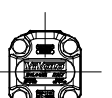
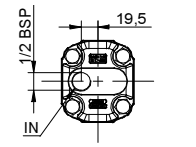
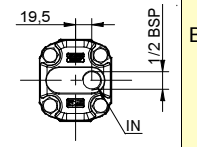
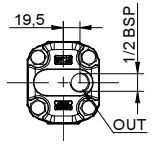
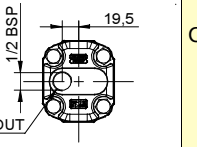
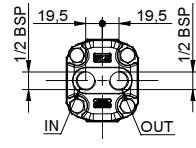
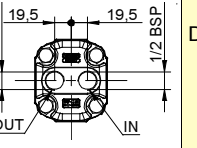
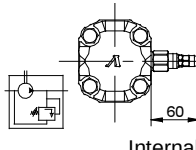
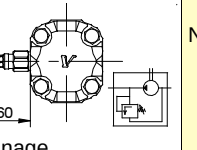
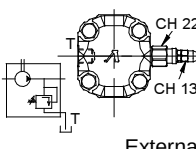
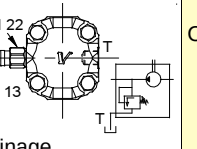
Table of variations

XV-2P

ø82.5 FLANGE "SAE A"

ø82.5 FLANGE "SAE A"			
Left rotation		Right rotation	
	51		52
	53		54
Without OR		Without OR	

Shaft			
CI001 - Parallel		CI002 - Parallel	
T.2 = 44.1 [Nm]		T.2 = 67.5 [Nm]	
	A		B
CO001 - Tapered		CO002 - Tapered	
T.2 = 233.2 [Nm]		T.2 = 233.2 [Nm]	
	E		F
SCF04 - Splined			
T.2 = 67.1 [Nm]			
SAE J 498 9T 16/32 DP			
	I		

Cover			
Left rotation		Right rotation	
			A
			B
			C
			D
			N
			O

Displacement	
TYPE	CODE
XV-2P/04	41
XV-2P/06	43
XV-2P/09	45
XV-2P/11	47
XV-2P/14	49
XV-2P/17	51
XV-2P/19	53
XV-2P/22	55
XV-2P/26	57
XV-2P/30	59
XV-2P/34	61
XV-2P/40	63

Standard bodies						
Displacement cm3/rev	Standard threads					
4	O - O	S - R	B - B	L - M	Z - Z	
6	O - O	S - R	B - B	L - M	Z - Z	
9	O - O	S - R	B - B	L - M	Z - Z	
11	O - O	S - R	B - B	L - M	Z - Z	
14	P - O	S - R	C - B	L - M	Z - Z	
17	P - O	S - R	C - B	L - M	Z - Z	
19	P - O	S - R	C - B	L - M	Z - Z	
22	P - O	S - R	C - B	L - M	Z - Z	
26	Q - P	S - R	D - C	L - M	Z - Z	
30	Q - P	S - S	D - C	L - M	Z - Z	
34	Q - P	S - S	D - C	L - M	Z - Z	
40	Q - P	S - S	D - C	L - M	Z - Z	