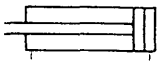
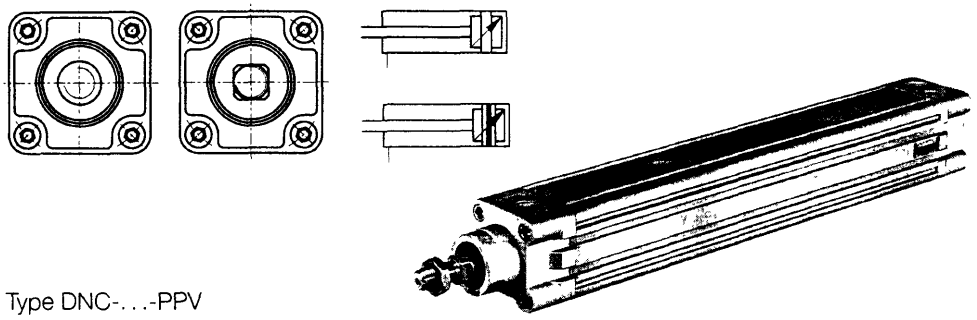


Double-acting cylinders

FESTO

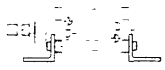


Type DNC-...-PPV
DNC-...-PPV-A

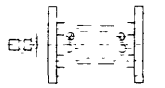
Designed to meet the specifications of ISO 6431, VDMA 24562, UNI 10290 and NF E 49003.1. Light profile cylinder barrel made of aluminium, with a roller burnished stainless rod. This cylinder is available in numerous variants (for details see pages C.1/28-2 to C.1/28-4).

- Piston diameters from 32 to 125 mm
- Standard strokes 25 to 500 mm, others on request
- Fully adjustable cushioning at end of stroke
- Magnetic proximity sensing
- Non-lubricated operation
- Type DNC-... with clamping unit type DNC-...-KP

Accessories:

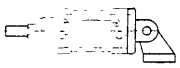


Foot mounting
Type HNC + piston dia.

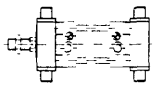


Flange mounting (front or rear)
Type FNC + piston dia.

Swivel flange
Type SNCL + piston dia.
SNC + piston dia.
SNCB + piston dia.



Clevis foot mounting for swivel flange
Type LSNG + piston dia. (SNC)
LSNSG + piston dia. (SNC)
LSN + piston dia. (SNCB)



Trunnion
Type ZNCF + piston dia.

Bearing block
Type LNZG + piston dia.

Central trunnion
Type ZNCM + piston dia.

Swivel flange (spherical bearing)
Type SNCS + piston dia.

Clevis foot mounting for swivel flange
Type LBG + piston dia. (SNCS)
LNG + piston dia. (SNCB)

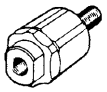
Mounting kit
Type DPNC-...
(for details see page C.1/48)

Type	DNC-...						
Piston dia. mm	32	40	50	63	80	100	125
Thrust N	483	754	1178	1870	3016	4712	7363
Return force N	415	633	990	1682	2720	4418	6881
Connection	G1/8	G1/4	G1/4	G3/8	G3/8	G1/2	G1/2
Standard strokes	25, 40, 50, 80, 100, 125, 160, 200, 250, 320, 400, 500 mm						
Stroke length min. – max. mm	10 to 2000						

Max. permissible operating pressure 12 bar,
for piston dia. 125 mm: 10 bar
Force values quoted for 6 bar (theoretical values).
Can be combined with guide unit Type FENG.

Type	DNC-...-KP						
Piston dia. mm	32	40	50	63	80	100	125
Clamping unit holding force N	600	1000	1400	2000	5000	5000	7500

Operating pressure range of clamping unit: 4 to 10 bar
(Clamping is applied below normal operating pressure range).
Temperature range: –20 to +80 °C



Rod-end couplings
Type FK, SG, SGS, SGA
(for details see page C.11/10)

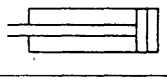
Coupling piece
Type KSG-...
(for details see page C.11/10)

Proximity switches
Type SME-8, SMT-8, SMTSO
(for details see page F/1)

How to order: Standard version: DNC + piston dia. + stroke length + cushioning + sensing Variants: Order code on request	**Example:** Piston dia. 63 mm, stroke length 50 mm = DNC-63-50-PPV-A

For more information contact Festo	For dimensions see page D.1/28

Standard cylinder variants



Possible combinations of individual cylinder variants

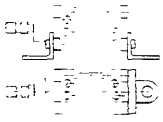
	Q	KP	S2	S6	S10	S11	K2	K3	K5	K8	R3	R8	CT	V1	V2	V3	V4	V5	V6	Piston Ø mm	Stroke mm	PPV	A
Q		x(1)	x	x			x	x	x	x				x	x	x	x	x	x	32 to 100	10 to 2000	x	x
KP	x(1)		x				x	x	x	x				x	x	x	x	x	x	32 to 125	10 to 2000	x	x
S2	x	x		x	x		x	x	x	x	x	x	x	x	x	x	x	x	x	32 to 125	10 to 2000	x	x
S6	x		x				x	x	x	x	x	x								32 to 125	10 to 2000	x	x
S10			x				x	x	x	x				x	x	x	x	x	x	32 to 100	10 to 500	x	x
S11							x	x						x	x	x	x	x	x	32 to 100	10 to 2000		x
K2	x	x	x	x	x	x			x	x	x	x	x	x	x	x	x	x	x	32 to 125	10 to 2000	x	x
K3	x	x	x	x	x	x				x	x	x	x	x	x	x	x	x	x	32 to 125	10 to 2000	x	x
K5	x	x	x	x	x		x			x	x	x	x	x	x	x	x	x	x	32 to 125	10 to 2000	x	x
K8	x	x	x	x	x		x	x	x		x	x	x	x	x	x	x	x	x	32 to 125	10 to 2000	x	x
R3			x	x			x	x	x	x										32 to 125	10 to 2000	x	x
R8			x	x			x	x	x	x				x	x	x	x	x	x	32 to 125	10 to 2000	x	x
CT			x				x	x	x	x										32 to 125	10 to 2000	x	x
V1	x	x	x		x	x	x	x	x	x		x								32 to 100	100 to 2000	x	x
V2	x	x	x		x	x	x	x	x	x		x								32 to 100	100 to 2000	x	x
V3	x	x	x		x	x	x	x	x	x		x								32 to 100	100 to 2000	x	x
V4	x	x	x		x	x	x	x	x	x		x								32 to 100	100 to 2000	x	x
V5	x	x	x		x	x	x	x	x	x		x								32 to 100	100 to 2000	x	x
V6	x	x	x		x	x	x	x	x	x		x								32 to 100	100 to 2000	x	x

(1) Note Variant Q with variant KP can only be supplied in conjunction with S2.

Accessories for type DNC-...-Q:

Self-aligning rod flange
Type KSZ + piston rod thread

Accessories for type DNC-...-R3:



Foot mounting
Type CRHNC + piston Ø
Swivel flange
Type SNCB + piston Ø + R3

Order code for cylinder variants:
If a cylinder variant is ordered, the order designation of the basic cylinder up to the letter A must be included in the code sequence shown below:
x = to be completed by the customer

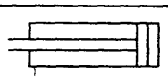
DNC-xxx-xxxx-PPV-A-Q-KP-S2-S6-S10-S11-xxK2-K3-"..."K5-xxxK8-R3-R8-Vx

- Cylinder type
- Piston Ø in mm
- Cylinder stroke in mm
- Adjustable end position cushioning at both ends
- Contactless sensing
- Square piston rod
- Clamping cartridge
- Through piston rod
- Heat resistant seals up to 150°C
- Slow speed
- Low friction
- Extended external piston rod thread
- Internal thread on piston rod
- Special thread
- Extended piston rod
- Increased corrosion protection
- Dust protection
- Cylinder/valve combination

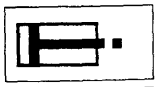
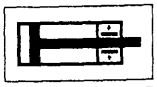
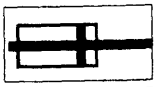
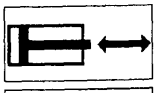
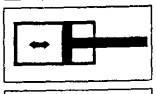
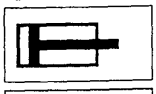
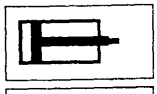
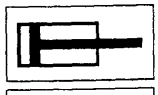
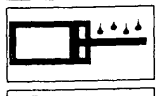
How to order: Type + piston Ø + stroke + adjustable end position cushioning + sensing + square piston rod + through piston rod + extended piston rod + heat resistant seals	**Example:** 50 mm piston Ø, 200 mm stroke, 150 mm extended piston rod = DNC-50-200-PPV-A-Q-S2-S6-150K8

For more information contact Festo	For dimensions see page D.1/28

Standard cylinder variants



The following variants are available in the modular system of the DNC cylinder:

Symbol	Characteristics	DNC + Piston Ø in mm 32 | 40 | 50 | 63 | 80 | 100 | 125 Stroke in mm 1 to 2000 | 1 to 2000 | 1 to 2000 | 1 to 2000 | 1 to 2000 | 1 to 2000 | 1 to 2000	Order code
	Cushioning type	Cushioning with elastomer ring or adjustable cushioning	...-P ...-PPV
	Sensing	Contactless position sensing	...-A
	Square piston rod	In the case of Q in conjunction with S2 the front piston rod is square in design and the rear round. If further variants are required in addition to variants Q and S2, only the square piston rod is extended	...-Q
	Clamping cartridge	To retain the piston rod in the event of pressure failure or retention of the piston rod during clamping or handling processes. Note: If variant KP is required together with K8 and S2, the clamping unit is mounted on the non-extended piston rod side	...-KP
	Through piston rod	Note: The thread designs on the two piston rod ends are identical. If S2 is required in conjunction with variant KP, the clamping unit is mounted on one side only. In the case of S2 in conjunction with Q, the front piston rod design is square and the rear round.	...-S2
	Heat resistant seals at 150°C		...-S6
	Slow speed	Note: Vmax is 100 mm/s for all S10 cylinders. Vmin for stiction-free operation, 6 bar throttled, horizontal without load: piston Ø 32 to 50 mm: 8 mm/s, piston Ø 63 to 100: 5 mm/s Not for piston Ø 125 mm	...-S10
	Low friction	Not for piston Ø 125 mm	...-S11
	Extended external piston rod diameter	1 to 35 mm Basic length 22 mm | 1 to 35 mm Basic length 24 mm | 1 to 70 mm Basic length 32 mm | 1 to 70 mm Basic length 32 mm | 1 to 70 mm Basic length 40 mm | 1 to 70 mm Basic length 40 mm | 1 to 70 mm Basic length 54 mm	...-xx K2
	Internal thread on piston rod	M6 | M8 | M10 | M10 | M12 | M12 | M16	...-K3
	Special thread on piston rod (external thread)	M10 | M12 | M16 | M16 | M20 | M20 | M27	...-xxK5
	Extended piston rod (1 to 500 mm)	Note: If variant K8 is required in conjunction with S2, then the piston rod is extended on one side only. If variant Q is required in addition to this, only the square piston rod is extended.	...-xxK8
	Increased corrosion protection	Note: All external cylinder surfaces comply with corrosion resistance class KBK3 to FN 940 070, the piston rod is made of corrosion and acid resistant steel.	...-R3
	Dust protection	Available 3rd quarter 1998	...-R8
	Copper and teflon-free	Available 3rd quarter 1998	...-CT
	Cylinder valve combination: + pneumatic cylinder + solenoid valve + 2 one-way flow control valves + 2 shock absorbers ready assembled and tested Not in conjunction with S6, R3, CT	Piston Ø in mm 32 | 40 | 50 | 63 | 80 | 100 | Not for piston Ø 125 Stroke in mm 100 to 2000 | 100 to 2000 | 100 to 2000 | 100 to 2000 | 100 to 2000 | 100 to 2000	
		Single solenoid valve, mounted on the right*, piston rod retracted when pressurised	.. -V1
		Single solenoid valve, mounted on the right*, piston rod extended when pressurised	...-V2
		Double solenoid valve, mounted on the right*, piston rod retracted when pressurised	...-V3
		Single solenoid valve, mounted on the left**, piston rod retracted when pressurised	...-V4
		Single solenoid valve, mounted on the left**, piston rod extended when pressurised	...-V5
		Double solenoid valve, mounted on the left**, piston rod retracted when pressurised	...-V6

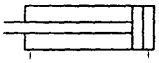
For more information contact Festo

For dimensions see page D.1/28

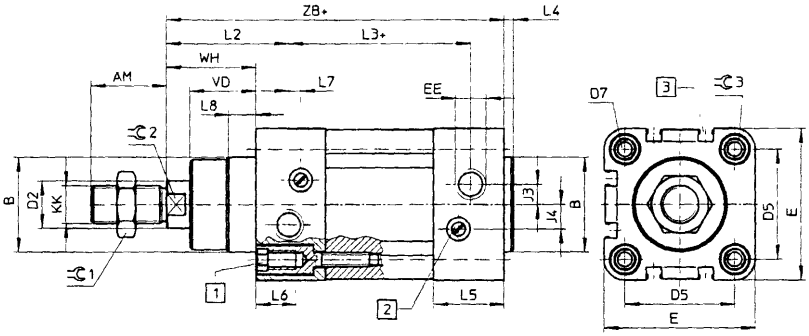
* When viewing the piston rod from the front, the valve is mounted on the right

** When viewing the piston rod from the front, the valve is mounted on the left

Double Acting Cylinders

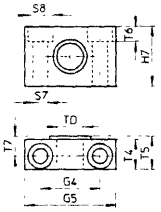


DNC- -PPV
DNC-...-PPV-A



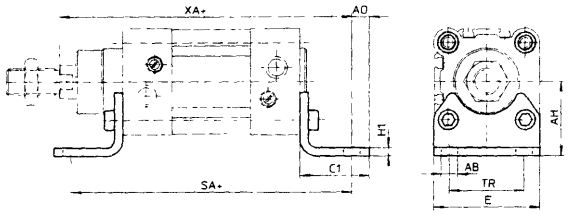
1 Socket head screw with female thread for mounting attachments
2 Regulating screw for adjustable end position cushioning
3 Slot for proximity sensors Type SME-8/SMT-8

LNZG-. .



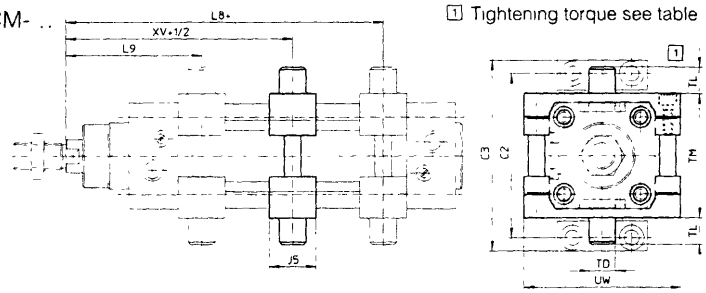
Ø	AM	B Ø d_{11}	D_2 Ø f_8	D_5	D_7	E	EE	J_4	J_3	KK	L_2	L_3	L_4	L_5	L_6	L_7	L_8	1	2	3	VD	WH	ZB
32	22	30	12	32 5	M6	45	G¼	6	5 2	M10x1 25	41 6	62 8	4	25 1	16	3 3	10	16	10	6	18	26	120
40	24	35	16	38	M6	54	G¼	8	6	M12x1 25	44	77	4	29 6	16	3 6	10 5	18	13	6	21 5	30	135
50	32	40	20	46 5	M8	64	G¼	10 4	8 5	M16x1 5	51	78	4	29 6	17	5 1	11 5	24	17	8	28	37	143
63	32	45	20	56 5	M8	75	G¼	12 4	10	M16x1 5	54	87	4	35 6	17	6 6	15	24	17	8	28 5	37	158
80	40	45	25	72	M10	93	G¼	12 5	8	M20x1 5	62 4	95 2	4	35 9	17	10 5	15 7	30	22	6	34 7	46	174
100	40	55	25	89	M10	110	G¼	12	10	M20x1 5	69 8	100 4	4	38 8	17	8	19 2	30	22	6	38 2	51	189
125	54	60	32	110	M12	134	G¼	13	8	M27x2	83	124	6	44 7	22	14	20 5	36	27	8	46	65	225

HNC- .
CRHNC-. .

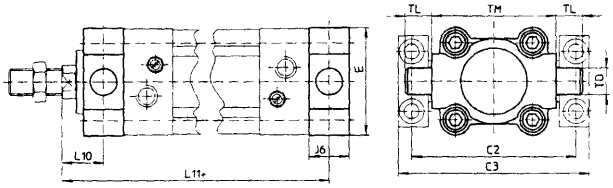


ZNCM- ..

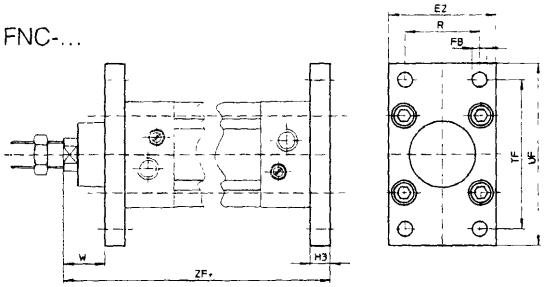
1 Tightening torque see table



ZNCF-...



FNC-...

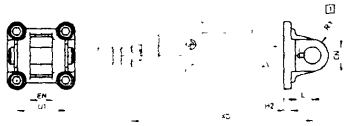


Ø	AB Ø	AH	AO	C_1	C_2	C_3	E	E_2	FB Ø H_{13}	G_4	G_5	H_1	H_3	H_7	J_5	J_6	L_8	L_9	L_{10}	L_{11}
32	7	32	6 5	30 5	71	86	45	50	7	32	46	5	10	30	30	16	79 9	66 1	18	128
40	10	36	9	37	87	105	54	55	9	36	55	5	10	36	32	20	89 4	75 6	20	145
50	10	45	9 5	41 5	99	117	64	65	9	36	55	6	12	36	34	24	96 4	83 6	25	155
63	10	50	12 5	44 5	116	136	75	75	9	42	65	6	12	40	41	24	101 9	93 1	25	170
80	12	63	15	56	136	156	93	110	12	42	65	6	16	40	44	28	116 1	103 9	32	188
100	14 5	71	17 5	58 5	164	189	110	120	14	50	75	6	16	50	48	38	126 2	113 8	32	208
125	16 5	90	22	67	192	217	131	150	16	50	75	8	20	50	50	50	155 3	134 7	40	250

Ø	Tightening torque Nm	R	S_7 Ø	S_8 Ø	SA	T_4	T_5	T_6	T_7	TD Ø e_9/H_7	TF	TL	TM	TR	UF	UW	W	XA	XV	ZF
32	4+1	32	6 6	11	142	15	18	6 8	10 5	12	64	12	50	32	80	65	16	144	73	130
40	8+1	36	9	15	161	18	21	9	12	16	72	16	63	36	90	75	20	163	82 5	145
50	8+2	45	9	15	170	18	21	9	12	16	90	16	75	45	110	95	25	175	90	*55
63	18+2	50	11	18	185	20	23	11	13	20	100	20	90	50	125	105	25	190	97 5	170
80	28+2	63	11	18	210	20	23	11	13	20	126	20	110	63	154	130	30	215	110	190
100	28+2	75	14	20	220	25	28 5	13	16	25	150	25	132	75	175	145	35	230	120	205
125	40+2	90	14	20	250	25	28 5	13	16	25	180	25	160	90	220	175	45	270	145	245

+ = Plus stroke length

SNC-...



SNCL-..

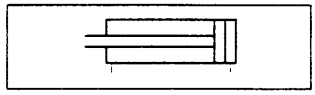
1 Hinge bolt secured against rotation by means of a dowel pin

SNCS-...

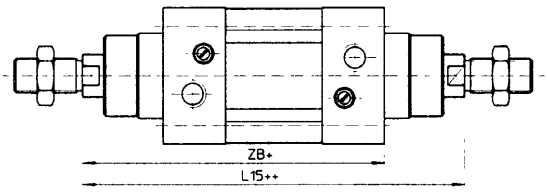
SNCB- ..

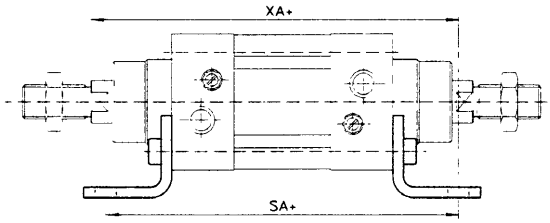
Ø	CB	CD Ø	CN Ø	E_3	EN	ER	EU	H_2	L	L_3	MR	R_1	U_1	UB	XD
32	26	10	10	55	14	15	10 5	6	13	13	10	10	34	45	142
40	28	12	12	63	16	17	12	6	16	16	12	13	40	52	160
50	32	12	16	71	21	20	15	7	16	18	12	16	45	60	170
63	40	16	16	83	21	22	15	7	21	21	16	18	51	70	190
80	50	16	20	103	25	27	18	10 5	22	22	16	22	65	90	210
100	60	20	20	127	25	29	18	10 5	27	27	20	22	75	110	230
125	70	25	30	148	37	39	25	10 5	30	30	25	30	97	130	275

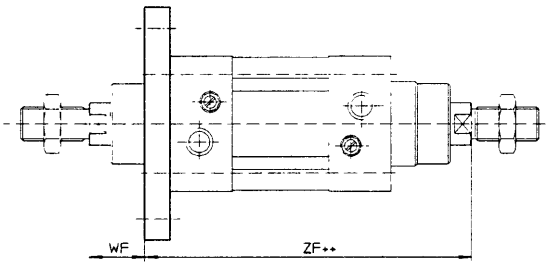
Double Acting Cylinders



DNC-...-PPV-S2
DNC- -PPV-A-S2



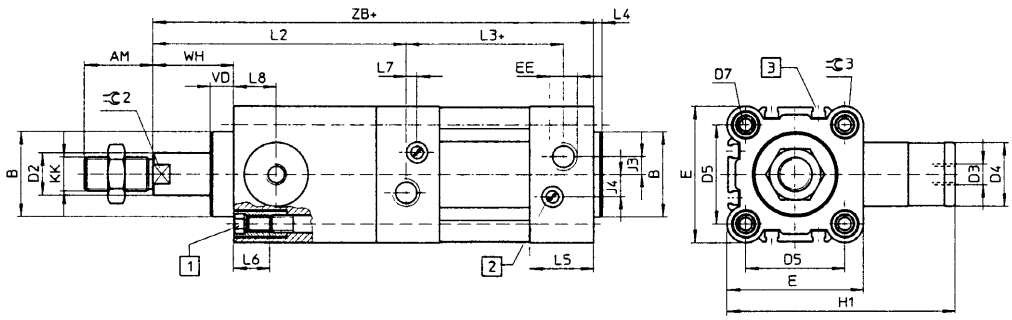




D

Ø	Thrust = return force at 6 bar for S2 N	L5	SA	WF	XA	ZB	ZF
32	415	148	142	16	144	120	130
40	633	167	161	20	163	135	145
50	990	183	170	25	175	143	155
63	1682	199	185	25	190	158	170
80	2721	222	210	30	215	174	190
100	4418	240	220	35	230	189	205
125	6881	291	250	45	270	225	245

DNC-...-KP



1 Socket head screw with female thread for mounting attachments
2 Regulating screw for adjustable end position cushioning
3 Slot for proximity sensors

Ø	AM	B Ø d11	D2 Ø f8	D3	D4 Ø f9	D5	D7	E	EE	H1	J3	J4	J5	KK	L2	L3	L4	L5	L6	L7	L8	2	3	VD	WH	ZB
32	22	30	12	M5	20	32 5	M6	45	G⅛	67	5 2	6	5 2	M10x1 25	86 6	62 8	4	25 1	16	3 3	14	10	6	11 5	26	165
40	24	35	16	G⅛	24	38	M6	54	G¼	88	6	8	6	M12x1 25	97	77	4	29 6	16	3 6	16	13	6	11 5	30	188
50	32	40	20	G⅛	30	46 5	M8	64	G¼	107	8 5	10 4	8 5	M16x1 5	118	78	4	29 6	17	5 1	20	17	8	11	37	210
63	32	45	20	G⅛	38	56 5	M8	75	G⅜	123	10	12 4	10	M16x1 5	130	87	4	35 6	17	6 6	24	17	8	11	37	234
80	40	45	25	G¼	48	72	M10	93	G⅜	165 5	8	12 5	8	M20x1 5	157 4	95 2	4	35 9	17	10 5	31 5	22	6	12 5	46	269
100	40	55	25	G¼	48	89	M10	110	G½	174	10	12	10	M20x1 5	167 4	100 4	4	38 8	17	8	31	22	6	12	51	287
125	54	60	32	G¼	65	110	M12	134	G½	204	8	13	8	M27x2	208	124	6	44 7	22	14	42	27	8	27 5	65	350

+ = Plus stroke length
++ = Plus 2 x stroke length