

**Angle Seat Globe Valve,
Metal****Construction**

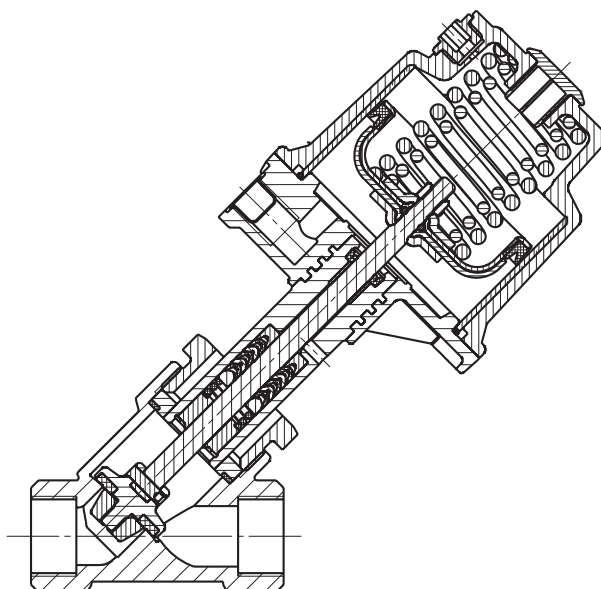
The GEMÜ 514 pneumatically operated 2/2-way angle seat globe valve has a low maintenance aluminium piston actuator. The valve spindle is sealed by a self-adjusting gland packing providing low maintenance and reliable valve spindle sealing even after a long service life. The wiper ring fitted in front of the gland packing protects it against contamination and damage.

Features

- Substantially reduced installation dimensions when using the body with male threads which can be removed using union nuts
- Suitable for high operating temperatures and pressures
- Control medium connection can be rotated through 360°

Advantages

- Various valve body connections: threaded sockets, threaded spigots, butt weld spigots
- Good flow capability due to angle seat design
- Extensive range of accessories
- Versions with bellows available
- Special connections and materials on request

Sectional drawing

Technical data

Working medium

Corrosive, inert, gaseous and liquid media which have no negative impact on the physical and chemical properties of the body and seal material.

Max. perm. pressure of working medium see table

Medium temperature -10 °C to 180 °C

Max. permissible viscosity 600 mm²/s (cSt)

Other versions for lower/higher temperatures and viscosities on request.

Control medium

Inert gases

Max. perm. temperature of control medium: 60 °C

Filling volume	Actuator size 0 and 3:	0.05 dm ³
	Actuator size 1 and 4:	0.125 dm ³
	Actuator size 5:	0.248 dm ³
	Actuator size 2:	0.625 dm ³

Ambient conditions

Max. ambient temperature 60 °C

Leakage rate

Leakage rate A to P11/P12 EN 12266-1

Flow direction

See page 4

Nominal size	Max. operating pressure [bar] Normally closed						Control pressure [bar] Normally closed						Kv value [m ³ /h]
	Actuator size 0 piston ø 50 mm	Actuator size 3 piston ø 50 mm	Actuator size 1 piston ø 70 mm	Actuator size 4 piston ø 70 mm	Actuator size 5 piston ø 100 mm	Actuator size 2 piston ø 120 mm	Actuator size 0	Actuator size 3	Actuator size 1	Actuator size 4	Actuator size 5	Actuator size 2	
10	12,0	10	25.0	10	-	-	4.7 - 10	min. control pressure see diagram max. control pressure 7 bar	5.5 - 10	min. control pressure see diagram max. control pressure 8 bar	-	-	4.5
15	12.0	10	25.0	10	-	-	4.7 - 10		5.5 - 10		-	-	5.4
20	6.0	10	20.0	10	-	25	4.7 - 10		5.5 - 10		-	4.5 - 8	10.0
25	2.5	10	10.0	10	-	25	4.7 - 10		5.5 - 10		-	4.5 - 8	15.2
32	-	-	7.0	10	12	16	-		5.5 - 10		4.0 - 8	4.5 - 8	23.0
40	-	-	4.5	10	9	12	-		5.5 - 10		4.0 - 8	4.5 - 8	41.0
50	-	-	3.0	10	7	10	-		5.5 - 10		4.2 - 8	5.5 - 8	68.0
65	-	-	-	-	-	7	-		-		-	5.5 - 8	95.0
80	-	-	-	-	-	5	-	-	-	5.5 - 8	130.0		

Operating pressure for seal material PTFE (code 5), for seal material steel (code 10) only 60% of the values indicated above.

Kv values determined acc. to IEC 534 standard, body with threaded sockets DIN ISO 228. The Kv value data refers to control function 1 (NC) and the largest actuator for each nominal size. Kv values may be different for other combinations. Consult GEMÜ.

Nominal size	Max. operating pressure [bar] Normally open/ Double acting		Control pressure [bar] Normally open/ Double acting	
	Actuator size 1 piston ø 70 mm	Actuator size 2 piston ø 120 mm	Actuator size 1	Actuator size 2
10	25	-	max. 7 bar for values see diagram	max. 7 bar for values see diagram
15	25	-		
20	25	25		
25	25	25		
32	20	25		
40	12	25		
50	8	25		
65	-	18		
80	-	10		

For max. operating pressures the pressure/temperature correlation must be observed (see table on page 3). All pressures are gauge pressures.

Pressure / temperature correlation for angle seat globe valve bodies

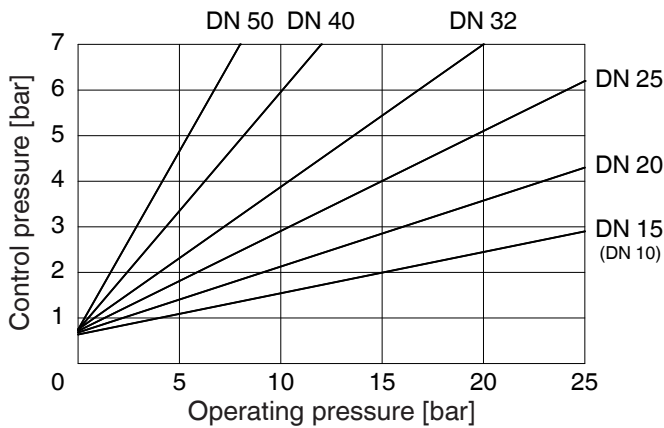
Connection code	Material code	Max. allowable pressure (barg) at temperature °C*						
		RT	50	100	150	200	250	300
1, 31, 3B, 9 (up to DN 50)	9	16.0	16.0	16.0	16.0	13.5	-	-
1, 31, 3B, 9 (from DN 65)	9	10.0	10.0	10.0	10.0	8.5	-	-
1, 9, 17, 60	37	25.0	23.7	21.3	19.2	17.7	16.4	15.4
0, 16, 17, 18, 37, 59, 60	34	25.0	24.2	21.2	19.3	17.9	16.8	15.9
31, 3B	C1	25.0	24.2	21.2	19.3	17.9	16.8	15.9
13	34	25.0	24.2	21.2	19.3	17.9	16.8	15.9
47	34	19.0	19.0	16.0	14.8	13.6	12.1	10.2

* The valves can be used down to -10°C RT = Room Temperature

Operating pressure / Control pressure characteristics

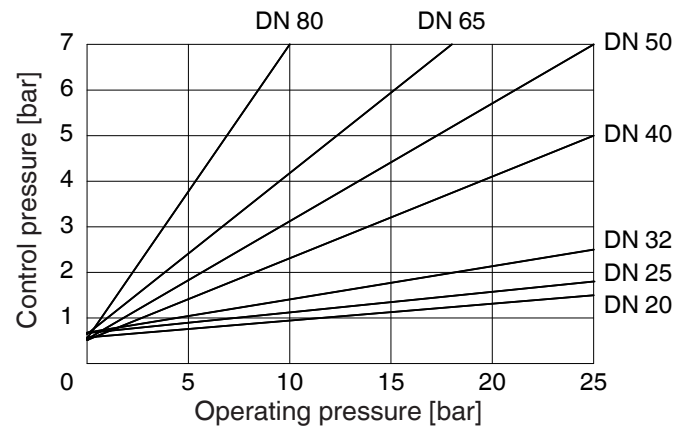
Actuator size 1 Normally open (NO) Double acting (DA)

Min. control pressure dependent on operating pressure
(Flow direction: under the seat)



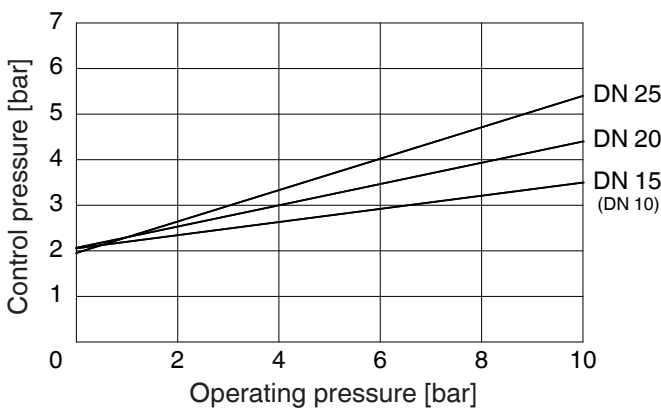
Actuator size 2 Normally open (NO) Double acting (DA)

Min. control pressure dependent on operating pressure
(Flow direction: under the seat)



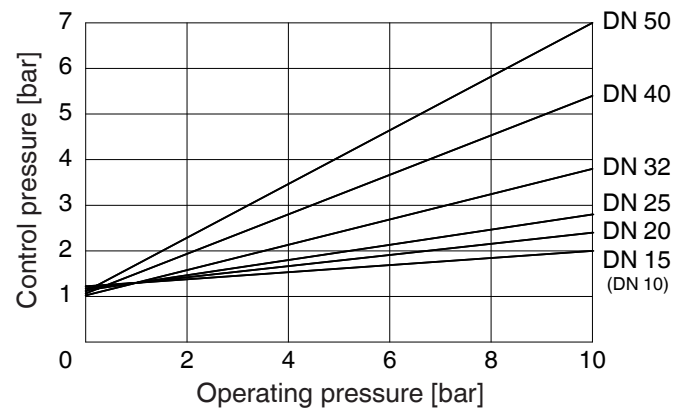
Actuator size 3 Normally closed (NC)

Min. control pressure dependent on operating pressure
(Flow direction: over the seat)



Actuator size 4 Normally closed (NC)

Min. control pressure dependent on operating pressure
(Durchflussrichtung: Flow direction: over the seat)



Order data

Body configuration	Code
2/2-way body	D

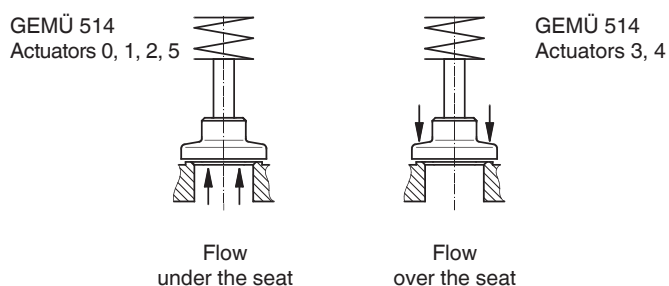
Connection	Code
Butt weld spigots	
Spigots DIN	0
Spigots DIN 11850, series 1	16
Spigots DIN 11850, series 2	17
Spigots DIN 11850, series 3	18
Spigots SMS 3008	37
Spigots ASME BPE	59
Spigots EN ISO 1127	60
Threaded connections	
Threaded sockets DIN ISO 228	1
Threaded sockets BS 21 Rc	3B
Threaded spigots DIN ISO 228	9
Threaded sockets NPT	31
Flanges	
Flanges EN 1092 / PN25 /form B length see body dimensions	13
Flanges ANSI class 125/150 RF length see body dimensions	47
Bodies with clamp connections available on request	

Valve body material	Code
Rg 5, Cast bronze	9
1.4435 (ASTM A 351 CF3M \triangleq 316L), Investment casting	34
1.4408, Cast stainless steel	37
ASTM A 351 CF3M, Investment casting*	C1
* Material equivalency 316L	

Seat seal	Code
PTFE	5
PTFE, glass reinforced	5G
Steel	10
Other seat seals on request	

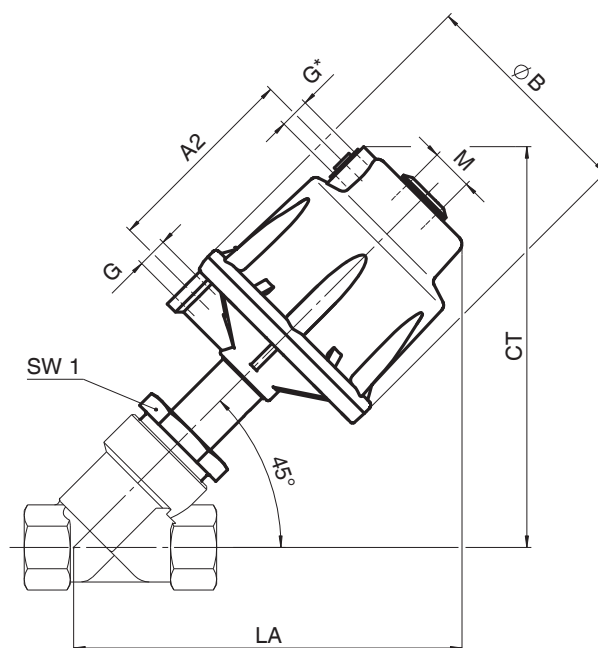
Control function	Code
Normally closed (NC)	1
Normally open (NO)	2*
Double acting (DA)	3*
*not with piston \varnothing 50 mm and \varnothing 100 mm	

Actuator size	Flow	Code
Actuator 0 piston \varnothing 50 mm	Flow under the seat	0*
Actuator 1 piston \varnothing 70 mm	Flow under the seat	1*
Actuator 2 piston \varnothing 120 mm	Flow under the seat	2*
Actuator 5 piston \varnothing 100 mm	Flow under the seat	5*
Actuator 3 piston \varnothing 50 mm	Flow over the seat	3**
Actuator 4 piston \varnothing 70 mm	Flow over the seat	4**
* Preferred flow direction with incompressible liquid media to avoid "water hammer"		
** only control function NC		



Order example	514	25	D	1	9	5	1	1
Type	514							
Nominal size		25						
Body configuration (code)			D					
Connection (code)				1				
Valve body material (code)					9			
Seat seal (code)						5		
Control function (code)							1	
Actuator size (code)								1

Actuator dimensions / Installation dimensions [mm]



* Connection only for actuator sizes 1, 2 and 5; c.f. 2 and 3

Actuator dimensions [mm]

Actuator size	ø B	M	A2	G
0 + 3	71	M 16x1	-	G 1/4
1 + 4	96	M 16x1	85.5	G 1/4
2	164	M 22x1.5	123.0	G 1/4
5	140	M 22x1.5	117.0	G 1/4

Installation dimensions / Weight [kg]

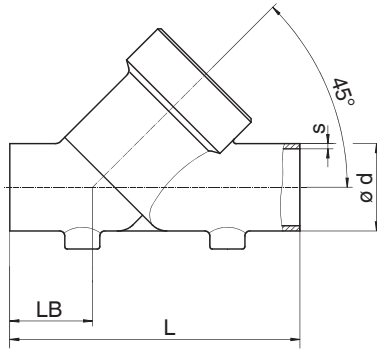
DN	Wrench size SW1	Actuator size 0 and 3		Actuator size 1 and 4		Actuator size 2		Actuator size 5	
		CT/LA	Weight	CT/LA	Weight	CT/LA	Weight	CT/LA	Weight
10	36	148	0.9	159	1.4	-	-	-	-
15	36	151	0.9	162	1.4	-	-	-	-
20	41	161	1.1	172	1.6	239	-	-	-
25	46	161	1.3	172	1.8	239	-	-	-
32	55	-	-	180	2.4	247	4.6	237	3.7
40	60	-	-	186	2.7	253	5.5	243	4.6
50	75	-	-	194	3.4	261	6.4	251	5.5
65	75	-	-	-	-	273	8.5	-	-
80	75	-	-	-	-	290	9.6	-	-

Body dimensions [mm]

Butt weld spigots, connection code 0, 16, 17, 18, 37, 59, 60
Valve body material: 1.4435 (code 34), 1.4408 (code 37)

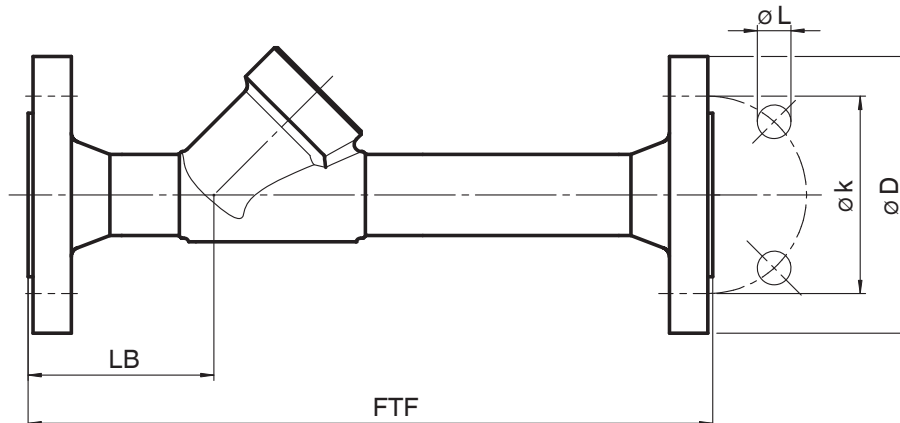
					Connection code														
		Material code 34		Material code 37		0		16		17		18		37		59		60	
DN	L	LB	L	LB	$\varnothing d$	s	$\varnothing d$	s	$\varnothing d$	s	$\varnothing d$	s	$\varnothing d$	s	$\varnothing d$	s	$\varnothing d$	s	
10	105	35.5	-	-	-	-	12	1.0	13	1.5	14	2.0	-	-	-	-	17.2	1.6	
15	105	35.5	100	33	18	1.5	18	1.0	19	1.5	20	2.0	-	-	12.70	1.65	21.3	1.6	
20	120	39.0	108	33	22	1.5	22	1.0	23	1.5	24	2.0	-	-	19.05	1.65	26.9	1.6	
25	125	38.5	112	32	28	1.5	28	1.0	29	1.5	30	2.0	25.0	1.2	25.40	1.65	33.7	2.0	
32	155	48.0	137	39	-	-	34	1.0	35	1.5	36	2.0	-	-	-	-	42.4	2.0	
40	160	47.0	146	40	40	1.5	40	1.0	41	1.5	42	2.0	38.0	1.2	38.10	1.65	48.3	2.0	
50	180	48.0	160	38	52	1.5	52	1.0	53	1.5	54	2.0	51.0	1.2	50.80	1.65	60.3	2.0	
65	-	-	290	96	-	-	-	-	70	2.0	-	-	63.5	1.6	63.50	1.65	76.1	2.0	
80	-	-	310	95	-	-	-	-	85	2.0	-	-	76.1	1.6	76.20	1.65	88.9	2.3	

For materials see overview on last page



Flanges, connection code 13, 47
Valve body material: 1.4435 (code 34)

			Connection code 13				Connection code 47			
DN	FTF	LB	$\varnothing D$	$\varnothing L$	$\varnothing k$	Number of bolt	$\varnothing D$	$\varnothing L$	$\varnothing k$	Number of bolt
15	210	72	95	14	65	4	89.0	15.7	60.5	4
20	280	78	105	14	75	4	98.6	15.7	69.8	4
25	280	77	115	14	85	4	108.0	15.7	79.2	4
32	310	89	140	18	100	4	117.3	15.7	88.9	4
40	320	91	150	18	110	4	127.0	15.7	98.6	4
50	333	95	165	18	125	4	152.4	19.1	120.7	4



Body dimensions [mm]

Threaded sockets DIN, connection code 1 Valve body material: Cast bronze (code 9), 1.4408 (code 37)

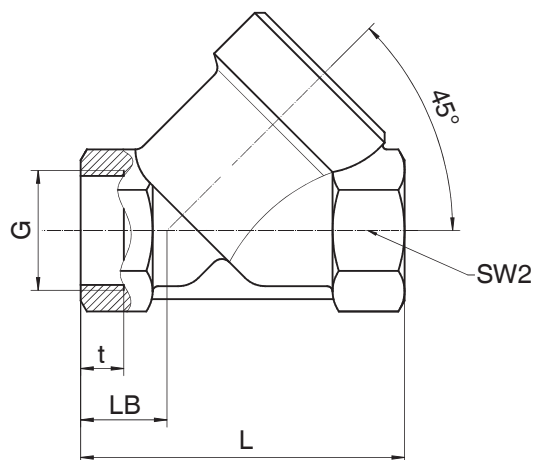
				Material code					
				9			37		
DN	L	LB	G	t	SW2		t	SW2	
10	65	16.5	G 3/8	-	-	-	9	27	hexagonal
15	65	17.0	G 1/2	15.0	27	hexagonal	9	25	hexagonal
20	75	18.0	G 3/4	16.3	32	hexagonal	11	31	hexagonal
25	90	24.0	G 1	19.0	41	hexagonal	12	39	hexagonal
32	110	33.0	G 1 1/4	21.4	50	octagonal	14	48	octagonal
40	120	30.0	G 1 1/2	21.4	55	octagonal	14	55	octagonal
50	150	40.0	G 2	25.7	70	octagonal	15	66	octagonal
65	190	46.0	G 2 1/2	24.0	85	octagonal	22	85	octagonal
80	220	50.0	G 3	27.0	100	octagonal	25	100	octagonal

For materials see overview on last page

Threaded sockets NPT. BS 21 Rc. connection code 31. 3B Valve body material: Cast bronze (code 9), 316L (code C1)

				Connection code				
				31		3B		
DN	L	LB	SW2		G	t	G	t
15	81	24.5	27	6	1/2" NPT	13.6	Rc 1/2	15.0
20	87	24.0	32	6	3/4" NPT	14.0	Rc 3/4	16.3
25	104	31.0	41	6	1" NPT	16.8	Rc 1	19.0
32	122	39.0	50	8	1 1/4" NPT	17.3	Rc 1 1/4	21.4
40	136	38.0	55	8	1 1/2" NPT	17.3	Rc 1 1/2	21.4
50	165	47.5	70	8	2" NPT	17.7	Rc 2	25.7
65	212	57.0	85	8	2 1/2" NPT	23.7	Rc 2 1/2	30.2
80	242	61.0	100	8	3" NPT	25.9	Rc 3	33.3

For materials see overview on last page.

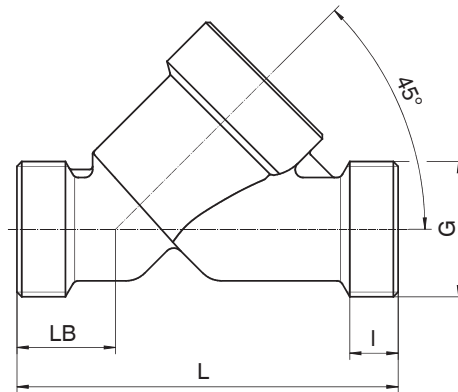


Body dimensions [mm]

Threaded spigots, connection code 9 Valve body material: Cast bronze (code 9), 1.4408 (code 37)

DN	L	LB	I	G
15	90	25	12	G 3/4
20	110	30	15	G 1
25	118	30	15	G 1 1/4
32	130	38	13	G 1 1/2
40	140	35	13	G 1 3/4
50	175	50	15	G 2 3/8
65	216	52	15	G 3
80	254	64	18	G 3 1/2

For materials see overview below



Overview of metal bodies for GEMÜ 514

Connection code	Threaded connections								Spigots								Flanges				
	1		3B		9		31		0	16	17	18	37		59		60		13	47	
Material code	9	37	9	C1	9	37	9	C1	34	34	34	37	34	34	37	34	37	34	37	34	34
DN 10	-	X	-	-	-	-	-	-	-	X	X	-	X	-	-	-	-	X	-	-	-
DN 15	X	X	X	X	X	X	X	X	X	X	X	X	X	-	-	X	-	X	X	X	X
DN 20	X	X	X	X	X	X	X	X	X	X	X	X	X	-	-	X	-	X	X	X	X
DN 25	X	X	X	X	X	X	X	X	X	X	X	X	X	X	-	X	-	X	X	X	X
DN 32	X	X	X	-	-	X	X	-	-	X	X	X	X	-	-	-	-	X	X	X	X
DN 40	X	X	X	X	X	X	X	X	X	X	X	X	X	X	-	X	-	X	X	X	X
DN 50	X	X	X	X	X	X	X	X	X	X	X	X	X	X	-	X	-	X	X	X	X
DN 65	X	X	X	-	X	X	X	-	-	-	-	X	-	-	X	-	X	-	X	-	-
DN 80	X	X	X	-	X	X	X	-	-	-	-	X	-	-	X	-	X	-	X	-	-

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