

Installation guideline RSV

Function diagram RSV



- Pressure resistant design
- Flame and pressure barrier
- The control unit including pressure and/or infrared detectors are designed/equipped and supplied by our distributors or rather system providers
- In case of an explosion the RSV closes by means of the pressure generated by gas generator(s)
- Two buffers stop the slide blade
- The inherent time of the detection and control unit must be added to the closing times in order to obtain the total closing time of the complete active protection system.
- Position indication by switches (mechanical or inductive)
- Flanges according DIN 1092-1 or ASME B16.5 Class 150 (ANSI)
- Pneumatic constant operation pressure to open/close the valve min. 6 bar (oil- and water free air)
- Junction box on the slide valve for electrical connection
- Gas/Pharma execution for overpressure suitable and with special flanges

Certified for

- Zone inside RSV-D: Ex II 1D / Zone 20, 21, 22
- Zone inside RSV-G / RSV-P: Ex II 1GD IIB / Zone 0, 1, 2, 20, 21, 22
- Zone outside: The outside zone is depending on the execution of the mounting parts (e.g.switches)



Description

Application	Installation position any installation position
for dust	RSV-D
for dusts, gases, hybrid mixtures	RSV-G
for dusts, gases, hybrid mixtures, WIP/CIP with inliner possible	RSV-P

Technical data RSV-D

	Nominal diameter										
	DN50	DN65	DN80	DN100	DN125	DN150	DN200	DN250	DN300	DN400	DN500
Test certificate	FSA 17 ATEX 1669 X						FSA 17 ATEX 1671 X			FSA 17 ATEX 1673 X	FSA 18 ATEX 1692 X
Quantity of gas generator piece (s)	1	1	1	1	1	1	2	2	2	2	3
Explosion pressure at 20°C max. bar(g)	50	50	50	30	30	30	30	30	30	16	7
Closing time ms	10	10	10	13	13	16	16	26	26	34	34
Organic dust											
max. K-Value bar x m x s ⁻¹	300	300	300	300	300	300	300	300	300	300	300
Installation distance (from wall of protected vessel) min. m	1	1	1	1	1	1	1	2	2	3	5
Installation distance (from wall of protected vessel) max. m	8	8	8	8	8	8	8	12	12	12	12.3
max. K-Value bar x m x s ⁻¹	420	420	420	420	420	420	420	420	420	---	---
Installation distance (from wall of protected vessel) min. m	1	1	1	1	1	1.5	1.5	3	3	---	---
Installation distance (from wall of protected vessel) max. m	3	3	3	4	4	4.5	4.5	5	5	---	---
max. K-Value bar x m x s ⁻¹	600	600	600	600	600	600	600	600	600	---	---
Installation distance (from wall of protected vessel) min. m	1	1	1	2	2	3	3	3.5	3.5	---	---
Installation distance (from wall of protected vessel) max. m	2	2	2	3	3	3	3	5	5	---	---
Metallic dust (Aluminium)											
max. K-Value bar x m x s ⁻¹	420	420	420	420	420	420	420	420	420	220	---
Installation distance (from wall of protected vessel) min. m	1	1	1	1	1	1.5	1.5	3	3	3.12	---
Installation distance (from wall of protected vessel) max. m	3	3	3	4	4	4.5	4.5	5	5	5.62	---
max. K-Value bar x m x s ⁻¹	600	600	600	600	600	600	600	600	600	---	---
Installation distance (from wall of protected vessel) min. m	1	1	1	2	2	3	3	3.5	3.5	---	---
Installation distance (from wall of protected vessel) max. m	2	2	2	3	3	3	3	5	5	---	---

The control unit must have an inherent time of ≤2.7ms to meet the installation distances.

Installation guideline RSV

Technical data RSV-G / -P

	Nominal diameter											
	DN50	DN65	DN80	DN100	DN125	DN150	DN200	DN250	DN300	DN400	DN500	
Test certificate	FSA 17 ATEX 1670X						FSA 17 ATEX 1672 X				FSA 17 ATEX 1674 X	---
Quantity of gas generator	piece	1	1	1	1	1	2	2	2	2	2	---
Explosion pressure	max. bar(g)	50	50	50	30	30	30	30	30	30	16	---
Closing time	ms	10	10	10	13	13	16	16	26	26	34	---
Organic dust												
max. K-Value	bar x m x s ⁻¹	300	300	300	300	300	300	300	300	300	300	---
Installation distance	min. m	1	1	1	1	1	1	1	2	2	3	---
(from wall of protected vessel)	max. m	8	8	8	8	8	8	8	12	12	12	---
max. K-Value	bar x m x s ⁻¹	420	420	420	420	420	420	420	420	420	---	---
Installation distance	min. m	1	1	1	1	1	1.5	1.5	3	3	---	---
(from wall of protected vessel)	max. m	3	3	3	4	4	4.5	4.5	5	5	---	---
max. K-Value	bar x m x s ⁻¹	600	600	600	600	600	600	600	600	600	---	---
Installation distance	min. m	1	1	1	2	2	3	3	3.5	3.5	---	---
(from wall of protected vessel)	max. m	2	2	2	3	3	3	3	5	5	---	---
Gas												
Gas group		IIB	IIB	IIB	IIB	IIB	IIB	IIB	IIB	IIB	IIA	---
max. K-Value	bar x m x s ⁻¹	100	100	100	100	100	100	100	100	100	100	---
Installation distance	min. m	1	1	1	1	1	1	1	2	2	3	---
(from wall of protected vessel)	max. m	5	5	5	5	5	5	5	5	5	3	---
Hybrid mixtures												
max. K-Value	bar x m x s ⁻¹	500	500	500	500	500	500	500	500	500	---	---
Installation distance	min. m	1	1	1	1	1	1	1	3	3	---	---
(from wall of protected vessel)	max. m	3	3	3	3.5	3.5	4.5	4.5	5	5	---	---
Metallic dust (Aluminium)												
max. K-Value	bar x m x s ⁻¹	420	420	420	420	420	420	420	420	420	---	---
Installation distance	min. m	1	1	1	1	1	1.5	1.5	3	3	---	---
(from wall of protected vessel)	max. m	3	3	3	4	4	4.5	4.5	5	5	---	---
max. K-Value	bar x m x s ⁻¹	600	600	600	600	600	600	600	600	600	---	---
Installation distance	min. m	1	1	1	2	2	3	3	3.5	3.5	---	---
(from wall of protected vessel)	max. m	2	2	2	3	3	3	3	5	5	---	---

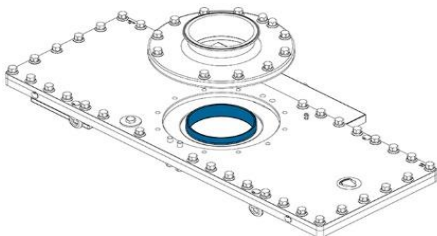
The control unit must have an inherent time of ≤2.7ms to meet the installation distances.

Technical data RSV-G / -P with inliner

- The inliner consists out of conductive PTFE with an FDA-approval and prevents ingress of fluids (WIP/CIP), gases and dusts into the housing of the valve
- In case of an activation the inliner will be cut at a rated break point by the slide blade and has to be changed to operate the valve again
- Pneumatical cycling of the valve for functional and maintenance purposes is not allowed (see operation manual)
- Suitable for overpressure >0.5bar up to max. 6bar

	Nominal diameter						
	DN50	DN65	DN80	DN100	DN125	DN150	DN200
Test certificate	FSA 17 ATEX 1670 X					FAS 17 ATEX 1672 X	
Quantity of gas generator	pieces	1	1	1	1	2	2
Explosion pressure	max. bar(g)	50	50	30	30	30	30
Closing time	ms	10	10	13	13	16	26
Organic dust							
max. K-Value	bar x m x s ⁻¹	300	300	300	300	300	300
Installation distance	min. m	1	1	1	1	1	2
(from wall of protected vessel)	max. m	8	8	8	8	8	12
max. K-Value	bar x m x s ⁻¹	420	420	420	420	420	420
Installation distance	min. m	1	1	1	1	1.5	1.5
(from wall of protected vessel)	max. m	3	3	4	4	4.5	5
max. K-Value	bar x m x s ⁻¹	600	600	600	600	600	600
Installation distance	min. m	1	1	2	2	3	3.5
(from wall of protected vessel)	max. m	2	2	3	3	3	5
Gas							
Gas group		IIB	IIB	IIB	IIB	IIB	IIB
max. K-Value	bar x m x s ⁻¹	100	100	100	100	100	100
Installation distance	min. m	1	1	1	1	1	2
(from wall of protected vessel)	max. m	5	5	5	5	5	5
Hybrid mixtures							
max. K-Value	bar x m x s ⁻¹	500	500	500	500	500	500
Installation distance	min. m	1	1	1	1	1	3
(from wall of protected vessel)	max. m	3	3	3.5	3.5	4.5	5
Metallic dust (Aluminium)							
max. K-Value	bar x m x s ⁻¹	420	420	420	420	420	420
Installation distance	min. m	1	1	1	1	1.5	1.5
(from wall of protected vessel)	max. m	3	3	4	4	4.5	5
max. K-Value	bar x m x s ⁻¹	600	600	600	600	600	600
Installation distance	min. m	1	1	2	2	3	3.5
(from wall of protected vessel)	max. m	2	2	3	3	3	5

The control unit must have an inherent time of ≤2.7ms to meet the installation distances.



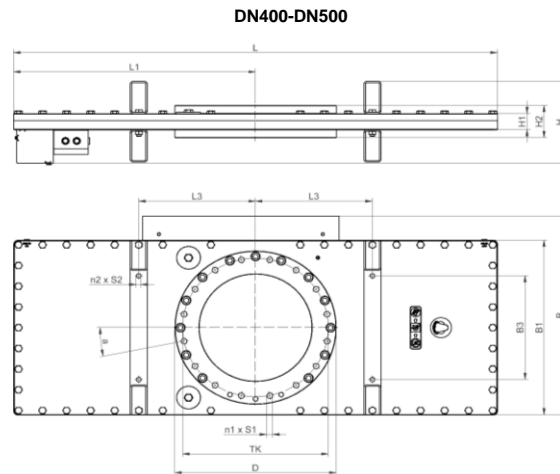
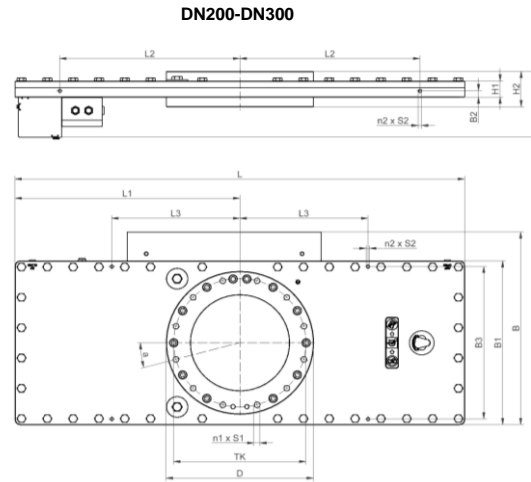
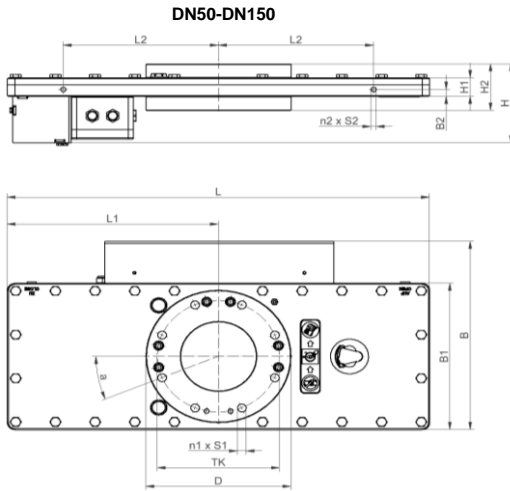
Installation guideline RSV

Requirements on the installation situation RSV-D / -G / -P

Installation situation	Requirements and notes
Max. explosion pressure	If the temperature of the air, which flows through the pipe, is higher than +60°C the maximum allowed explosion pressure is reduced (see the technical data sheet).
Installation	The slide valve must not be mounted on a pipe end due to the risk of injury. The pipe length on both sides of the connection flange must be at least 850mm (compare ISO 13587). Stresses in the RSV due to inaccurately aligned pipes must be avoided. In this case, expansion joints must be used.
Over pressure in the pipe	RSV-D: The slide valve must not be used in pipes which have over pressure. RSV-G / RSV-P: The slide valve can be used in pipes having over pressure ($\leq 0.5\text{bar}$). RSV-G / RSV-P with inliner: overpressure application $>0.5\text{bar}$ to max. 6bar is possible
Liquid substances in the pipe	Generally the slide valve must not be used in pipes which contain liquid substances. In case of a cleaning process with liquid substances use the RSV-G and RSV-P with an Inliner.
Cleaning from outside	RSV-D/-G/-P: The slide valve can be cleaned/washed with liquid substances from outside (no high pressure). The RSV has protection IP65 level.
Support structure	The slide valve must be supported independent from the piping and needs to support the double weight of the RSV. See therefore also document MB0035. Please use for this purpose the provided threads on the slide valve.
Ambient temperature $<+5^{\circ}\text{C}$	If the ambient temperature is $<+5^{\circ}\text{C}$ there is risk of freezing of the moving parts, with the result of malfunction of the slide valve.
Ambient temperature $>+60^{\circ}\text{C}$	If the ambient temperature is $>+60^{\circ}\text{C}$ and the pipes are isolated, the isolation must not include the flanges and the slide valve itself. For the attached switches, gas generators, pneumatic components the technical data sheets of the relevant components have to be taken in account.
Allowed process conditions	Dry air and no condensate.
Maintenance area	Sufficient space must be planned in order to access the valve during maintenance. We recommend planning an inspection hatch in the pipework before and after the valve or an easily removable intermediate pipe section.
Maintenance for RSV-G / -P with inliner	In case of a side blade activation the inliner will be cutted at the predetermined breaking point and must then be replaced. A pneumatic activation of the slide valve just for function control or maintenance purposes is not possible.
System integrator	The RSV is a partly completed machinery according Machinery Directive 2006/42/EC. The system provider is responsible for the correct dimensioning/layout of the sensors/detections and the control unit.

Installation guideline RSV

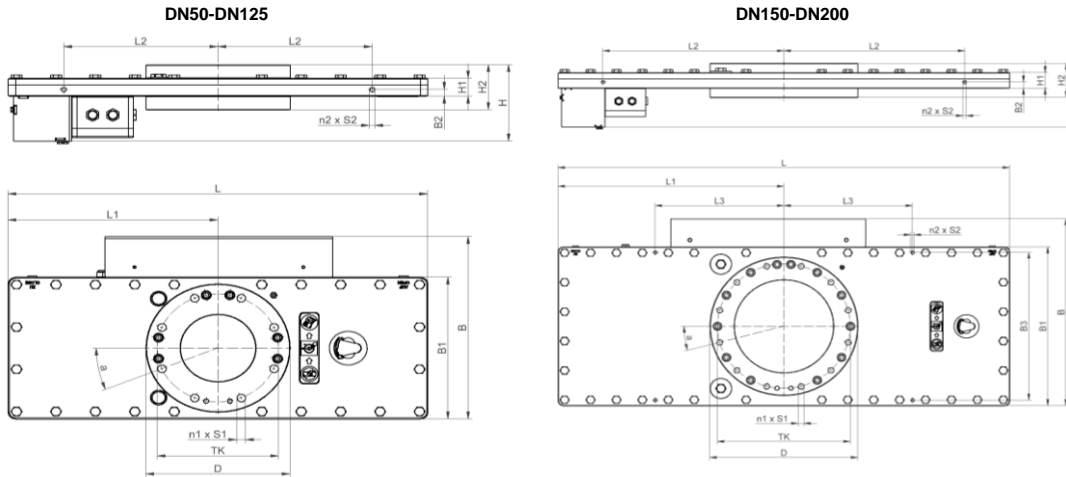
Dimensions RSV-D / -G



Dimensions in mm Connecting flange according EN 1092-1 PN10		Nominal diameter										
		DN50	DN65	DN80	DN100	DN125	DN150	DN200	DN250	DN300	DN400	DN500
Length	L	830	830	830	830	830	830	1358	1358	1358	1710	1944
Width	B	405	405	405	405	405	405	600	600	600	740	840
Height RSV	H	175	175	175	175	175	175	210	210	210	310	310
Height of the housing	H1	40	40	40	40	40	40	50	50	50	60	60
Height flange	H2	100	100	100	100	100	100	110	110	110	120	120
Flange position	L1	415	415	415	415	415	415	679	679	679	855	972
Flange diameter	D	285	285	285	285	285	285	445	445	445	570	670
Pitch circle diameter	TK	125	145	160	180	210	240	295	350	400	515	620
Pitch circle offset	a	45°	22.5°	22.5°	22.5°	22.5°	22.5°	22.5°	15°	15°	11.25°	9°
Quantity of the threads	n1	4	8	8	8	8	8	8	12	12	16	20
Dimension of the threads	S1	M16	M16	M16	M16	M16	M20	M20	M20	M20	M24	M24
Position of the threads	L2	305	305	305	305	305	305	544	544	544	---	---
Position of the threads	L3	---	---	---	---	---	---	387	387	387	413	477
Position of the threads	B1	315	315	315	315	315	315	510	510	510	650	750
Position of the tapped hole	B2	15	15	15	15	15	15	20	20	20	---	---
Position of the tapped hole	B3	---	---	---	---	---	---	475	475	475	386	486
Quantity of the threads	n2	4	4	4	4	4	4	8	8	8	8	8
Thread size	S2	M12	M12	M12	M12	M12	M12	M12	M12	M12	∅ 17	∅ 17
Weight RSV-D/-G (net)	approx. kg	107	105	104	102	99	95	293	280	261	512	650

Installation guideline RSV

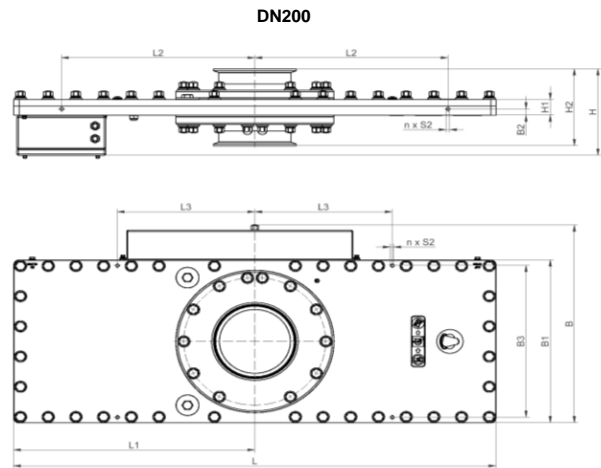
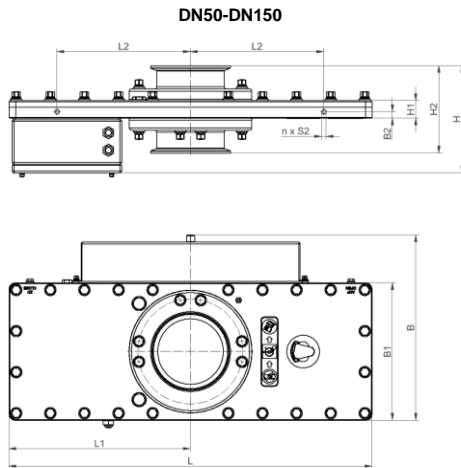
Dimensions RSV-G with Inliner



Dimensions in mm Connecting flange according DIN EN 1092-1	Nominal diameter							
	DN50	DN65	DN80	DN100	DN125	DN150	DN200	
Length	L	830	830	830	830	830	1358	1358
Width	B	405	405	405	405	405	600	600
Height RSV	H	175	175	175	175	175	210	210
Height of the housing	H1	40	40	40	40	40	50	50
Height flange	H2	100	100	100	100	100	110	110
Flange position	L1	415	415	415	415	415	679	679
Flange diameter	D	285	285	285	285	285	445	445
Pitch circle diameter	TK	125	145	160	180	210	240	295
Pitch circle offset	a	45°	22.5°	22.5°	22.5°	22.5°	22.5°	22.5°
Quantity of the threads	n1	4	8	8	8	8	8	8
Dimension of the threads	S1	M16	M16	M16	M16	M16	M20	M20
Position of the threads	L2	305	305	305	305	305	544	544
Position of the threads	L3	---	---	---	---	---	387	387
Position of the threads	B1	315	315	315	315	315	510	510
Position of the tapped hole	B2	15	15	15	15	15	20	20
Position of the tapped hole	B3	---	---	---	---	---	475	475
Quantity of the threads	n2	4	4	4	4	4	8	8
Thread size / Bore sizes	S2	M12	M12	M12	M12	M12	M12	M12
Weight RSV-G (net)	approx. kg	105	104	102	99	95	293	280

Installation guideline RSV

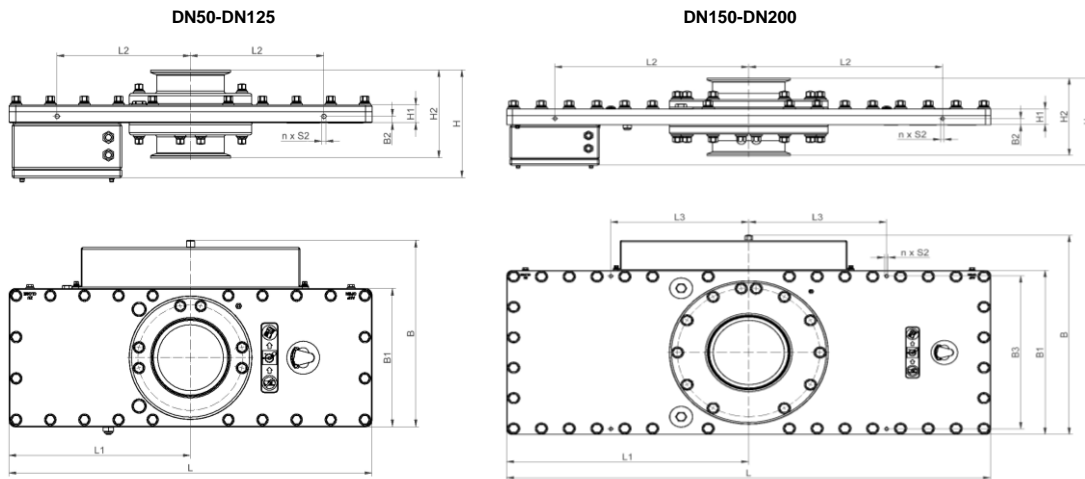
Dimensions RSV-P



Dimensions in mm Connecting flange with Tri-clamp/Aseptic (Pictured Norm DIN 32676)	Nominal diameter										
	DN50	DN65	DN80	DN100	DN125	DN150	DN200	DN250	DN300	DN400	DN500
Length	L	830	830	830	830	830	830	1358			---
Width of the housing	B	424	424	424	424	424	424	630			---
Height	H	245	245	245	245	245	245	270			---
Height of the housing	H1	40	40	40	40	40	40	50			---
Height flange	H2	245.2	245.2	245.2	245.2	245.2	245.2	270			---
Flange position	L1	415	415	415	415	415	415	679			---
Position of the tapped hole	L2	305	305	305	305	305	305	544			---
Position of the tapped hole	L3	---	---	---	---	---	---	387			---
Position thread	B1	315	315	315	315	315	315	510			---
Position of the tapped hole	B2	15	15	15	15	15	15	20			---
Position of the tapped hole	B3	---	---	---	---	---	---	475			---
Quantity of the tapped hole	n	4	4	4	4	4	4	8			---
Size of the tapped hole	S2	M12	M12	M12	M12	M12	M12	M12			---
Weight RSV-P (net)	approximately kg	107	107	106	104	102	98	300			---

Installation guideline RSV

Dimensions RSV-P with Inliner



Dimensions in mm		Nominal diameter						
Connecting flange with Tri-clamp/Aseptic		DN50	DN65	DN80	DN100	DN125	DN150	DN200
Length	L	830	830	830	830	830	1358	1358
Width of the housing	B	424	424	424	424	424	630	630
Height	H	245	245	245	245	245	270	270
Height RSV-P	H1	40	40	40	40	40	50	50
Height of the housing	H2	200	200	200	200	200	240	240
Flange position	L1	415	415	415	415	415	679	679
Position of the tapped hole	L2	305	305	305	305	305	544	544
Position of the tapped hole	L3	---	---	---	---	---	387	387
Position thread	B1	315	315	0	0	0	510	51
Position of the tapped hole	B2	15	15	0	0	0	20	20
Position of the tapped hole	B3	---	---	---	---	---	475	475
Quantity of the tapped hole	n	4	4	4	4	4	8	8
Size of the tapped hole	S2	M12	M12	M12	M12	M12	M12	M12
Weight RSV-P (net)	approx. kg	107	106	104	102	98	307	300

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