



# Technical Specification Exhaust System

**Customer** : [REDACTED]  
**Contact** : [REDACTED]  
**Address** : [REDACTED]  
**Zipcode / Town** : [REDACTED]  
**Country** : [REDACTED]

**Project** : Flexible suspension exhaust gassystem,  
[REDACTED]

**RD Project:** : 1324174

## Technical data:

Above each specification of the used items you will find the technical data for that system which are used for the calculation of the flexible suspension of the exhaust gas piping system. These data are received from the customer.

Missing data can be assumed by Rubber Design because they are crucial for the calculations.

**We kindly ask you to check all data thoroughly.** When one or more data are not correct, this specification is not valid and will have to be revised.



### Main engine PS

Type	Mitsubishi S12R-MPTA	2 or 4-Stroke	4	Number of cylinders	12
In Line / V	V-Configuration	Speed [rpm]	1600	Temperature °C	420

### Exhaust system Main engine

Diameter (NB)	300	mm	Wall thickness	6,4	mm
Silencer	235	kg	Boiler		kg
		kg			kg

Position	Articlecode	Description
P101.0 - 02 pieces	UV0251S100B60	Fixed point type RD 251/60°
P102.0 - 02 pieces	UP0251S100A60	Stabilizer type RD 251D/60°
P103.0 - 02 pieces	UVMP04S100B45	Fixed point type RD MP4/45°
P104.0 - 02 pieces	UP0501S100A60	Stabilizer type RD 501D/60°
P105.0 - 01 pieces	UD0323S100	Funnel deck piperun ø323,9 mm, with raincap.



### Main engine SB

<b>Type</b>	Mitsubishi S12R-MPTA	<b>2 or 4-Stroke</b>	4	<b>Number of cylinders</b>	12
<b>In Line / V</b>	V-Configuration	<b>Speed [rpm]</b>	1600	<b>Temperature °C</b>	420

### Exhaust system Main engine

<b>Diameter (NB)</b>	300	mm	<b>Wall thickness</b>	6,4	mm
<b>Silencer</b>	235	kg	<b>Boiler</b>		kg
		kg			kg

<b>Position</b>	<b>Articlecode</b>	<b>Description</b>
P201.0 - 02 pieces	UV0251S100B60	Fixed point type RD 251/60°
P202.0 - 02 pieces	UP0251S100A60	Stabilizer type RD 251D/60°
P203.0 - 02 pieces	UVMP04S100B45	Fixed point type RD MP4/45°
P204.0 - 02 pieces	UP0501S100A60	Stabilizer type RD 501D/60°
P205.0 - 01 pieces	UD0323S100	Funnel deck piperun ø323,9 mm, with raincap.



## Generatorset PS

Type	Cummins 6BT	2 or 4-Stroke	4	Number of cylinders	6
In Line / V	In Line	Speed [rpm]	1800	Temperature °C	420

## Exhaust system Generatorset

Diameter (NB)	100	mm	Wall thickness	4,0	mm
Silencer	36	kg	Boiler		kg
		kg			kg

Position	Articlecode	Description
P301.0 - 02 pieces	UV0101S100B60	Fixed point type RD 101/60°
P302.0 - 02 pieces	UP0101S100B45	Stabilizer type RD 101/45°
P303.0 - 02 pieces	UVMP02S100B45	Fixed point type RD MP2/45°
P304.0 - 02 pieces	UP0101S100B60	Stabilizer type RD 101/60°
P305.0 - 02 pieces	UP0101S100B45	Stabilizer type RD 101/45°
P306.0 - 02 pieces	UP0101S100B45	Stabilizer type RD 101/45°
P307.0 - 02 pieces	UVMP02S100B55	Fixed point type RD MP2/55°
P308.0 - 02 pieces	UP0251S100A45	Stabilizer type RD 251D/45°
P309.0 - 02 pieces	UP0101S100B60	Stabilizer type RD 101/60°
P310.0 - 01 pieces	UD0114S100	Funnel deck piperun ø114,3 mm, with raincap.



## Generatorset SB

Type	Cummins 6BT	2 or 4-Stroke	4	Number of cylinders	6
In Line / V	In Line	Speed [rpm]	1800	Temperature °C	420

## Exhaust system Generatorset

Diameter (NB)	100	mm	Wall thickness	4,0	mm
Silencer	36	kg	Boiler		kg
		kg			kg

Position	Articlecode	Description
P401.0 - 02 pieces	UV0101S100B60	Fixed point type RD 101/60°
P402.0 - 02 pieces	UP0101S100B45	Stabilizer type RD 101/45°
P403.0 - 02 pieces	UVMP02S100B45	Fixed point type RD MP2/45°
P404.0 - 02 pieces	UP0101S100B60	Stabilizer type RD 101/60°
P405.0 - 02 pieces	UP0101S100B45	Stabilizer type RD 101/45°
P406.0 - 02 pieces	UP0101S100B45	Stabilizer type RD 101/45°
P407.0 - 02 pieces	UVMP02S100B55	Fixed point type RD MP2/55°
P408.0 - 02 pieces	UP0251S100A45	Stabilizer type RD 251D/45°
P409.0 - 02 pieces	UP0101S100B60	Stabilizer type RD 101/60°
P410.0 - 01 pieces	UD0114S100	Funnel deck piperun ø114,3 mm, with raincap.



**Stainless steel bellows**

- K001.0 - 02 pieces      Stainless steel bellows, NW 300, type Single, without innersleeve, with carbon steel flanges drilled to ANSI 150 LBS, length 320 mm, according to drawing nr. D08-S0300-14000.
- K002.0 - 04 pieces      Stainless steel bellows, NW 100, type Single, without innersleeve, with carbon steel flanges drilled to ANSI 150 LBS, length 290 mm, according to drawing nr. D08-S0100-14000.



## Cross-reference list

**Customer:** SOUNDDOWN CORPORATION  
**Project:** Flexible suspension exhaust gassystem,  
Bourg Drydock, yard no. 056.  
**RD Project:** P130600972

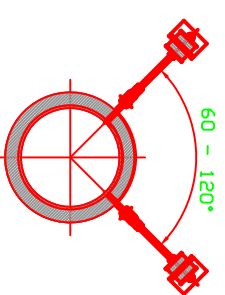
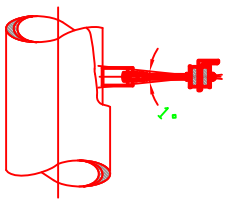
Quantity	Articlecode	Description	Positions
2	UD0114S100	Funnel deck piperun ø114,3 mm, with raincap.	P310.0, P410.0
2	UD0323S100	Funnel deck piperun ø323,9 mm, with raincap.	P105.0, P205.0
12	UP0101S100B45	Stabilizer type RD 101/45°	P302.0, P305.0, P306.0, P402.0, P405.0, P406.0
8	UP0101S100B60	Stabilizer type RD 101/60°	P304.0, P309.0, P404.0, P409.0
4	UP0251S100A45	Stabilizer type RD 251D/45°	P308.0, P408.0
4	UP0251S100A60	Stabilizer type RD 251D/60°	P102.0, P202.0
4	UP0501S100A60	Stabilizer type RD 501D/60°	P104.0, P204.0
4	UV0101S100B60	Fixed point type RD 101/60°	P301.0, P401.0
4	UV0251S100B60	Fixed point type RD 251/60°	P101.0, P201.0
4	UVMP02S100B45	Fixed point type RD MP2/45°	P303.0, P403.0
4	UVMP02S100B55	Fixed point type RD MP2/55°	P307.0, P407.0
4	UVMP04S100B45	Fixed point type RD MP4/45°	P103.0, P203.0
4	KBN0100SEED100	Stainless steel bellows, NW 100, type Single, without innersleeve, with carbon steel flanges drilled to ANSI 150 LBS, length 290 mm, according to drawing nr. D08-S0100-14000.	K002.0
2	KBN0300SEED100	Stainless steel bellows, NW 300, type Single, without innersleeve, with carbon steel flanges drilled to ANSI 150 LBS, length 320 mm, according to drawing nr. D08-S0300-14000.	K001.0

GENERAL

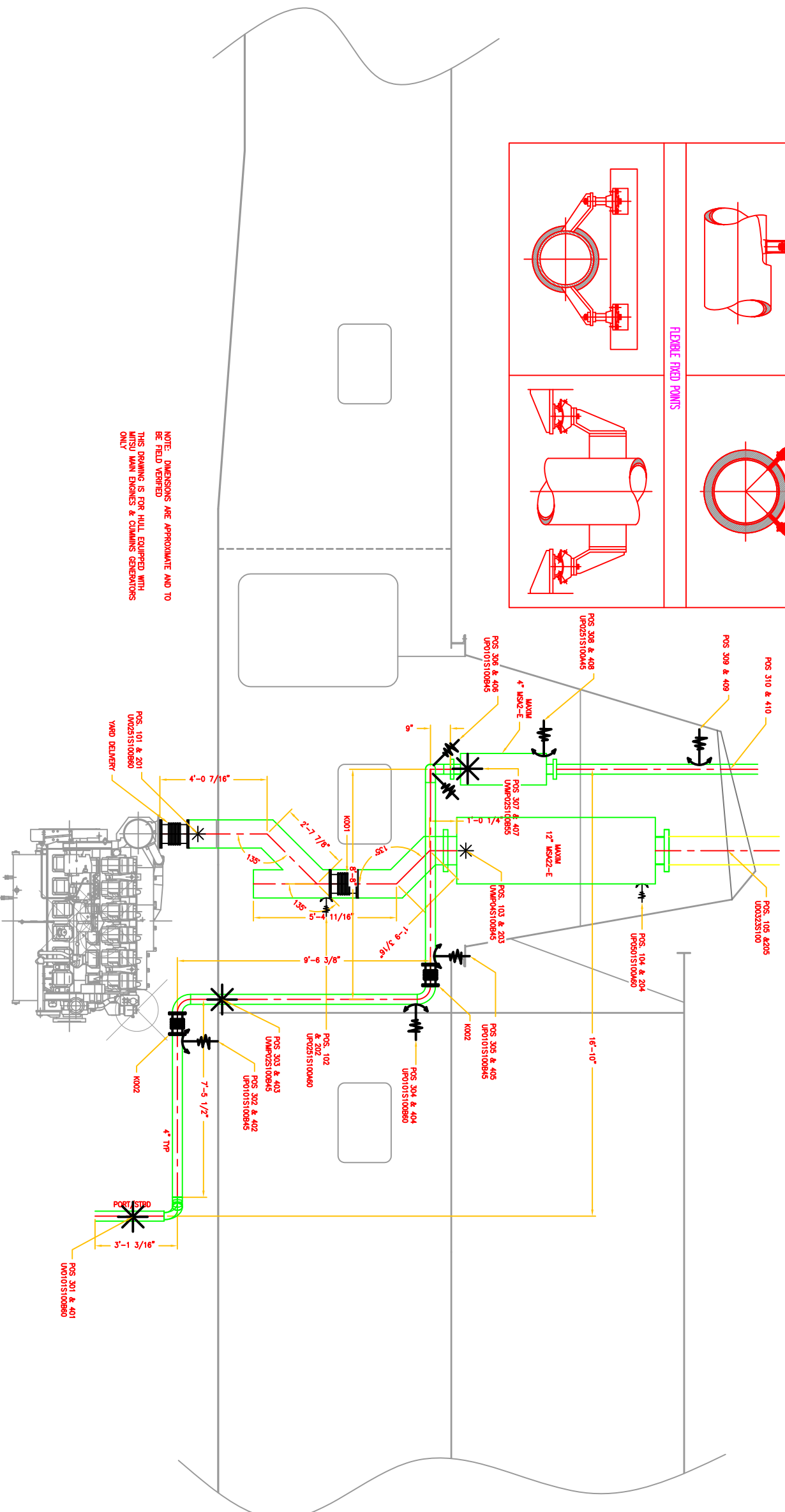
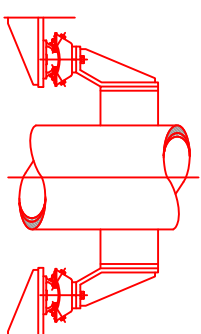
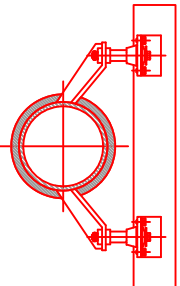
-  FLEXIBLE STABILIZERS
-  FLEXIBLE FIXED POINTS
-  STAINLESS STEEL BELLOWS

**Rubber Design**  
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 E-mail: info@rubberdesign.nl  
 Website: www.rubberdesign.nl

FLEXIBLE STABILIZERS



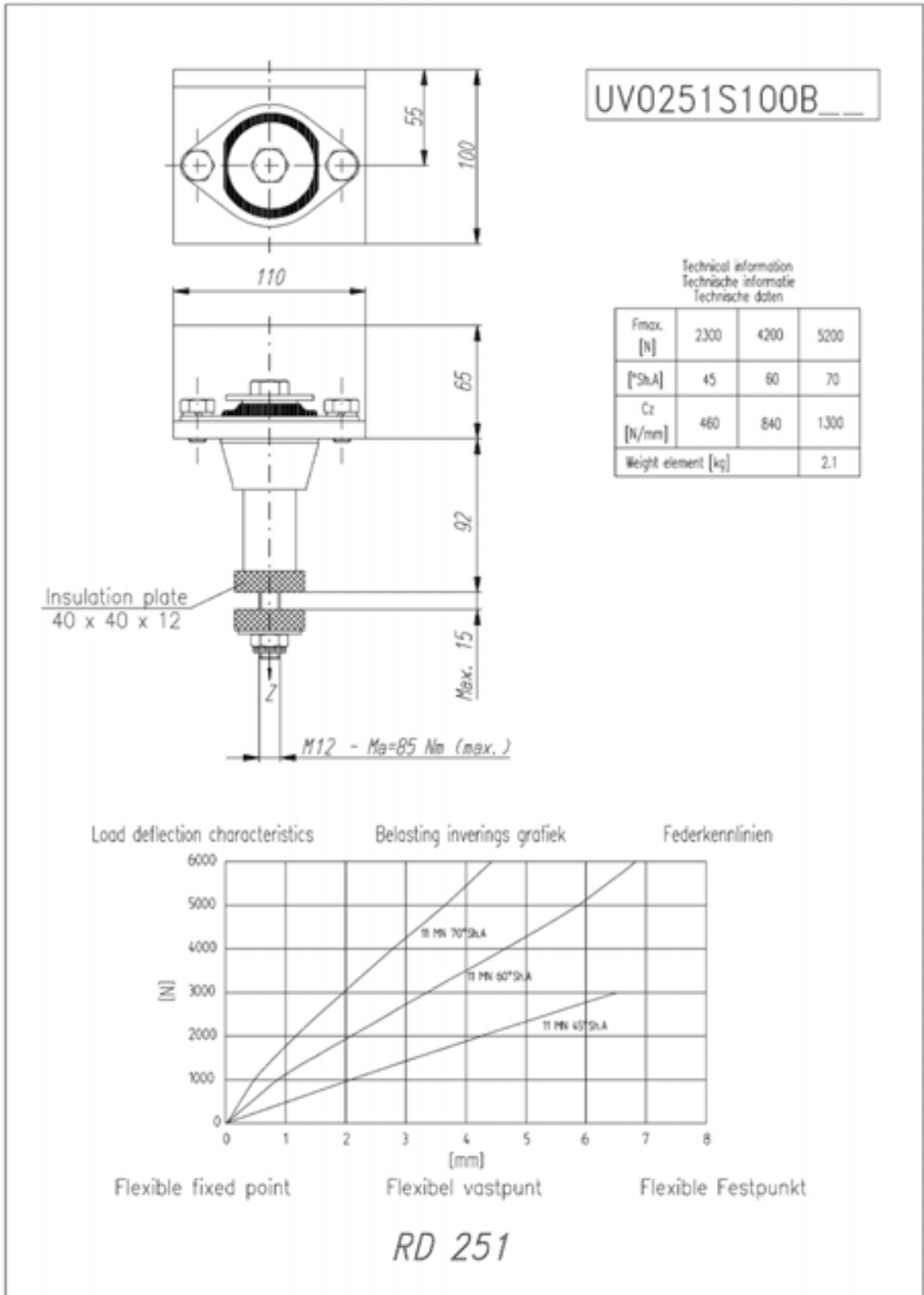
FLEXIBLE FIXED POINTS

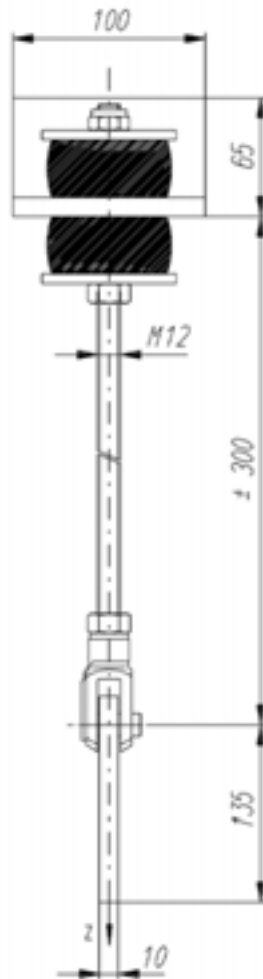


NOTE: DIMENSIONS ARE APPROXIMATE AND TO BE FIELD VERIFIED  
 THIS DRAWING IS FOR HULL EQUIPPED WITH MITSU MAIN ENGINES & CUMMINS GENERATORS ONLY

44 43 42 41 40 39 38 37 36 35 34 33 32 31 30 29 28 27 26 25 24 23 22 21 20 19 18 17







UP0251S100A\_\_

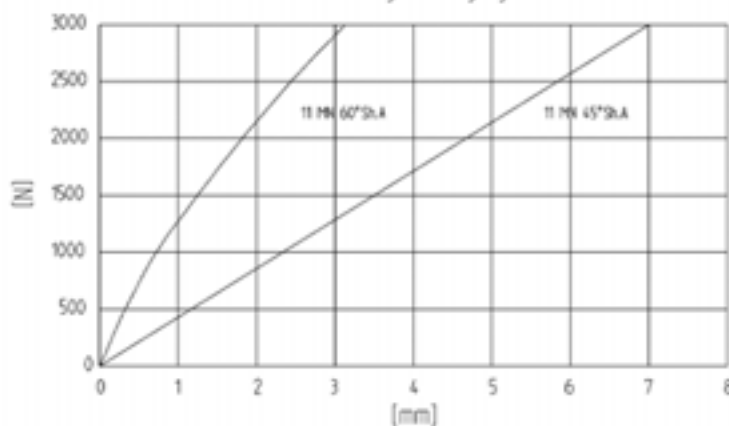
Technical information  
Technische informatie  
Technische daten

$f_{max}$ [N]	1750	3000
[°ShA]	45	60
$C_z$ [N/mm]	420	900
Weight element [kg]	2.6	

Load deflection characteristics

Belasting inverings grafiek

Federkennlinien

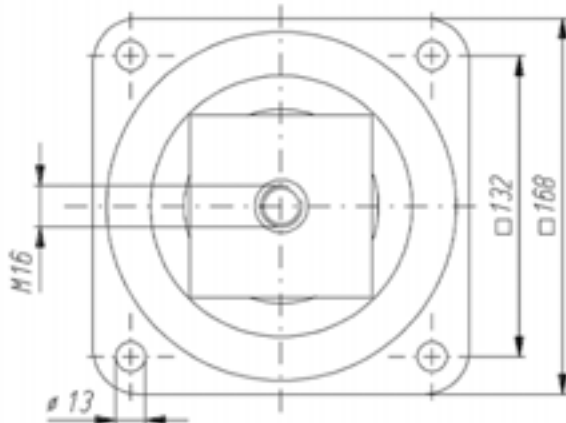


Flexible stabilizer

Flexibel pendelpunt

Flexible Pendelpunkt

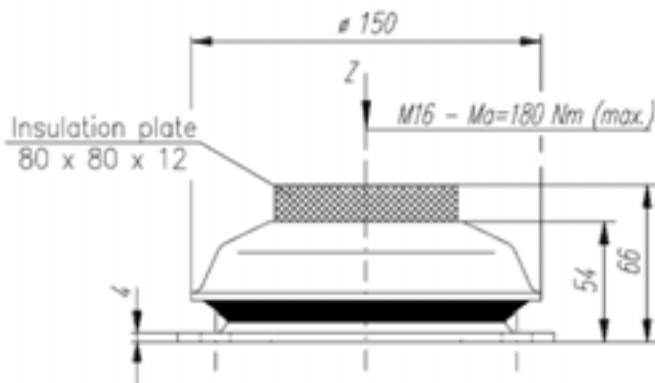
RD 251(D)



UVMP04S100B\_

Technical information  
Technische informatie  
Technische Daten

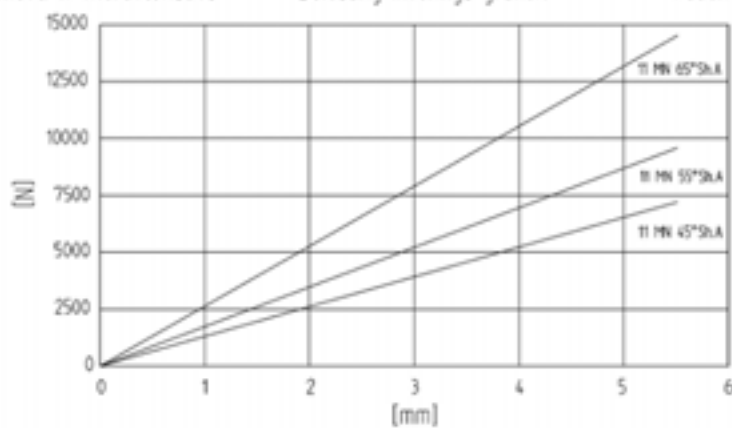
F <sub>max</sub> [N]	7500	9300	11850
[°ShA]	45	55	65
C <sub>z</sub> [N/mm]	1350	1780	2850
Weight element [kg]			2.2



Load deflection characteristics

Belasting inverings grafiek

Federkennlinien

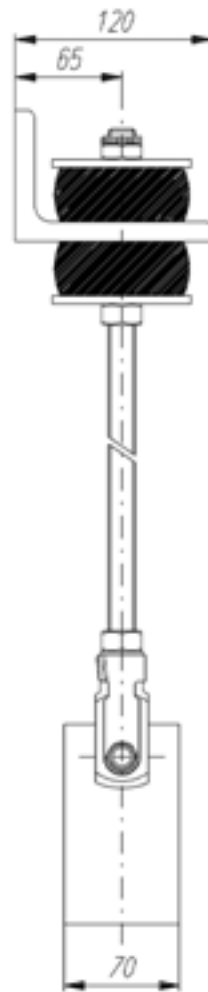
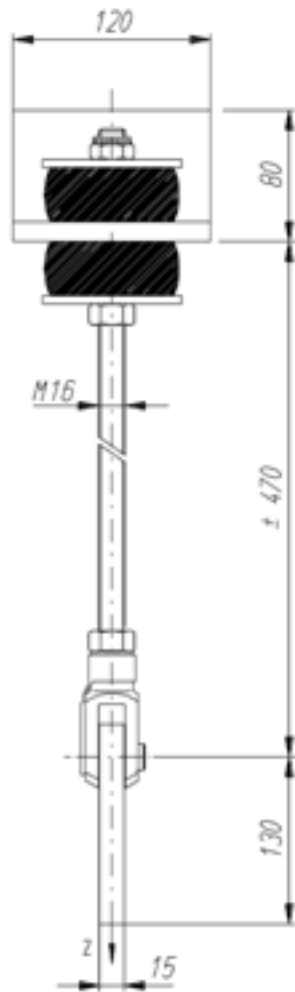


Flexible fixed point

Flexibel vastpunt

Flexible Festpunkt

RD MP4



UP0501S100A\_\_

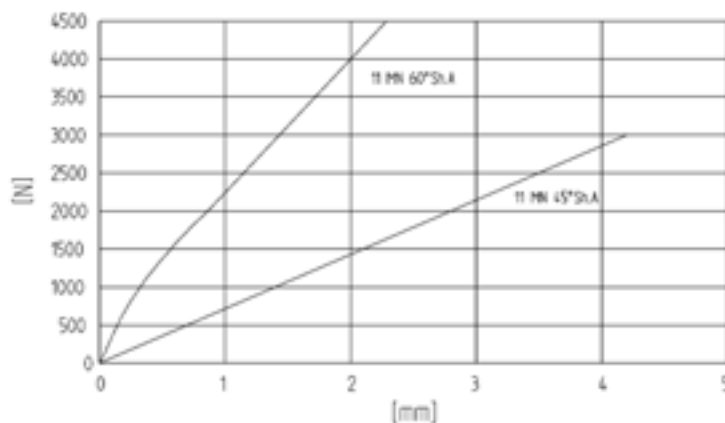
Technical information  
Technische informatie  
Technische daten

F <sub>max</sub> [N]	3000	4500
[°Sh.A]	45	60
C <sub>z</sub> [N/mm]	720	1800
Weight element [kg]	5.0	

Load deflection characteristics

Belasting inverings grafiek

Federkennlinien

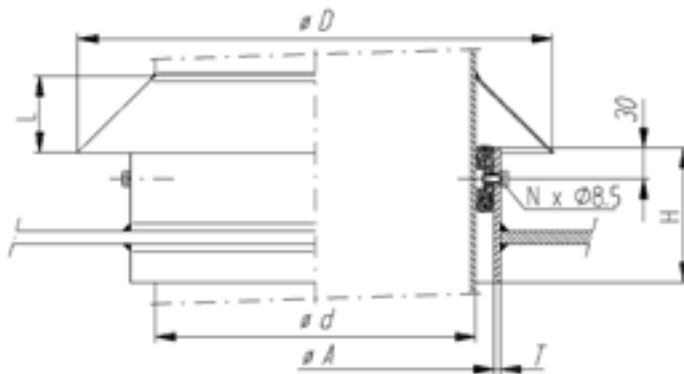


Flexible stabilizer

Flexibel pendelpunt

Flexible Pendelpunkt

*RD 501(D)*

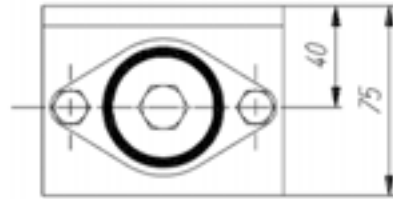


$\varnothing d$	$\varnothing A$	T	H	N	$\varnothing D$	L	ART. CODE
60.3	109.8	5.6	130	2 x $\varnothing 60$ x 180°	215	75	UD0060S100
76.1	127.1	6.3	130	2 x $\varnothing 60$ x 180°	230	75	UD0076S100
88.9	136	5	130	3 x $\varnothing 60$ x 120°	240	75	UD0088S100
114.3	161	5	130	3 x $\varnothing 60$ x 120°	265	75	UD0114S100
139.7	187	6	130	3 x $\varnothing 60$ x 120°	290	75	UD0139S100
168.3	215	8	160	3 x $\varnothing 60$ x 120°	318	75	UD0168S100
193.7	241	8	160	3 x $\varnothing 60$ x 120°	339	75	UD0193S100
219.1	266	8	160	3 x $\varnothing 60$ x 120°	369	75	UD0219S100
273.0	320	8	160	3 x $\varnothing 60$ x 120°	423	75	UD0273S100
323.9	370	8	160	4 x $\varnothing 60$ x 90°	474	75	UD0323S100
355.6	402	8	200	4 x $\varnothing 60$ x 90°	506	75	UD0355S100
406.4	453	8	200	4 x $\varnothing 60$ x 90°	556	75	UD0406S100
457.2	505	8	200	5 x $\varnothing 60$ x 72°	607	75	UD0457S100
508.0	555	8	200	5 x $\varnothing 60$ x 72°	658	75	UD0508S100
608.0	655	8	200	5 x $\varnothing 60$ x 72°	758	75	UD0608S100
660.4	706	8	200	5 x $\varnothing 60$ x 72°	810	75	UD0660S100
711.0	758	8	200	5 x $\varnothing 60$ x 72°	862	75	UD0711S100
762.0	809	8	200	8 x $\varnothing 60$ x 45°	912	75	UD0762S100
813.0	860	8	200	8 x $\varnothing 60$ x 45°	970	75	UD0813S100
914.0	961	8	200	8 x $\varnothing 60$ x 45°	1065	75	UD0914S100
1016.0	1063	8	200	8 x $\varnothing 60$ x 45°	1173	75	UD1016S100
1120.0	1167	8	200	8 x $\varnothing 60$ x 45°	1277	75	UD1120S100
1220.0	1267	8	200	8 x $\varnothing 60$ x 45°	1377	75	UD1220S100
1320.0	1367	8	200	10 x $\varnothing 60$ x 36°	1477	75	UD1320S100
1620.0	1667	8	200	12 x $\varnothing 60$ x 30°	1780	75	UD1620S100
1820.0	1867	8	200	12 x $\varnothing 60$ x 30°	1980	75	UD1820S100
2220.0	2267	8	200	20 x $\varnothing 60$ x 18°	2380	75	UD2220S100
2420.0	2467	8	200	20 x $\varnothing 60$ x 18°	2580	75	UD2420S100

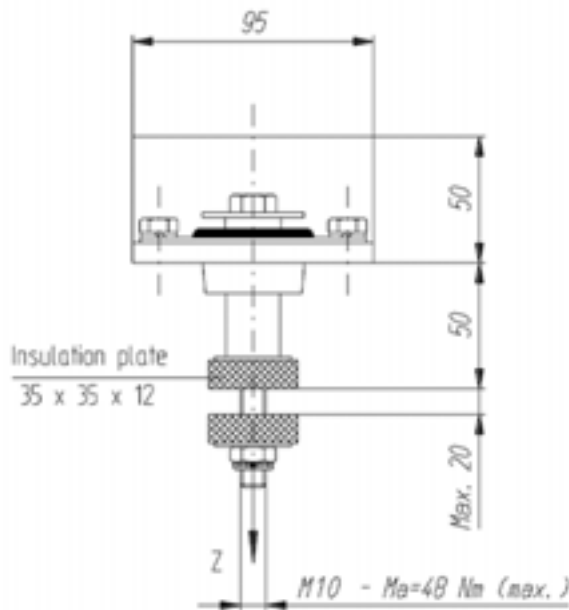
Funnel deck piperun

Schoorsteen dekdoorvoering

Schorstein Deckdurchführung



UV0101S100B\_\_



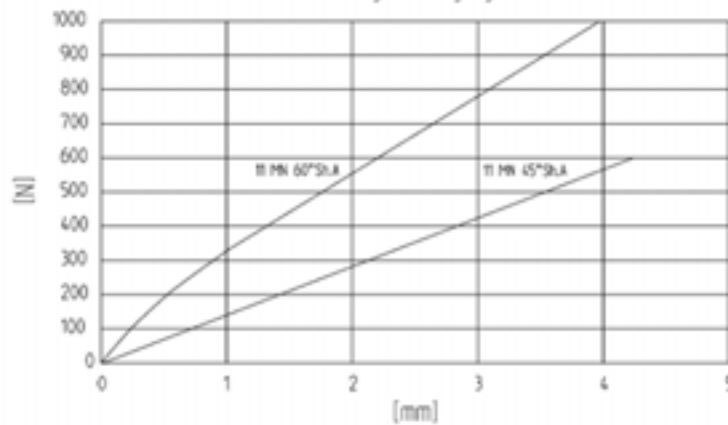
Technical information  
Technische informatie  
Technische Daten

F <sub>max</sub> [N]	500	900
f <sub>Sh.A</sub>	45	60
C <sub>z</sub> [N/mm]	143	257
Weight element [kg]	0.9	

Load deflection characteristics

Belasting inverings grafiek

Federkennlinien

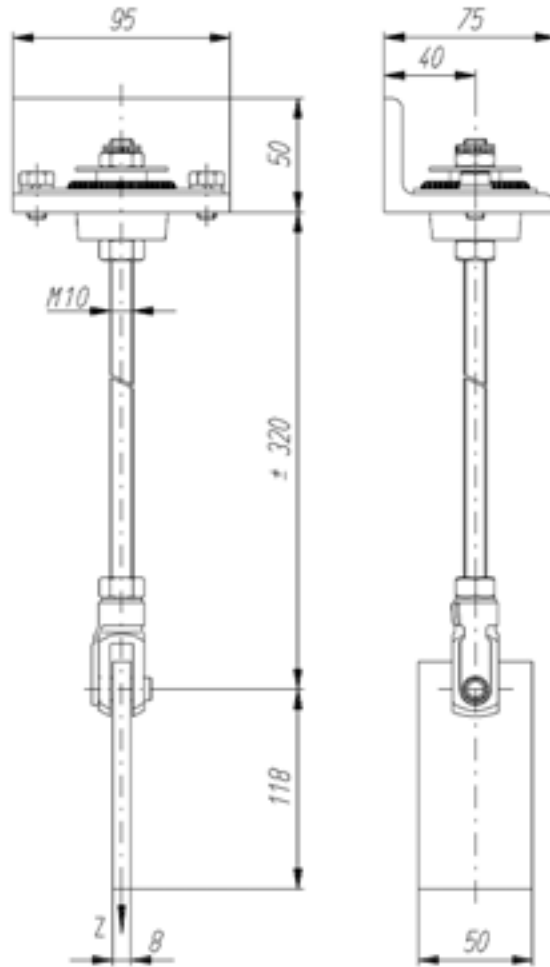


Flexible fixed point

Flexibel vastpunt

Flexibele Festpunkt

*RD 101*



UP0101S100B\_

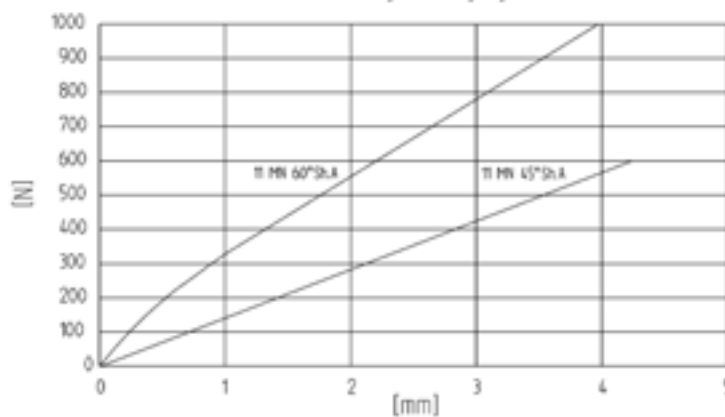
Technical information  
Technische informatie  
Technische daten

Fmax. [N]	500	900
[°ShA]	45	60
Cz [N/mm]	143	257
Weight element [kg]	1.4	

Load deflection characteristics

Belasting inverings grafiek

Federkennlinien



Flexible stabilizer

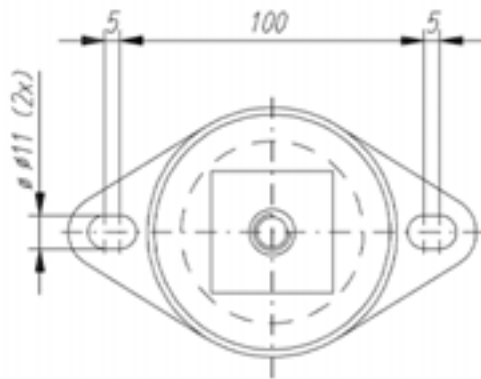
Flexibel pendelpunt

Flexible Pendelpunkt

*RD 101*

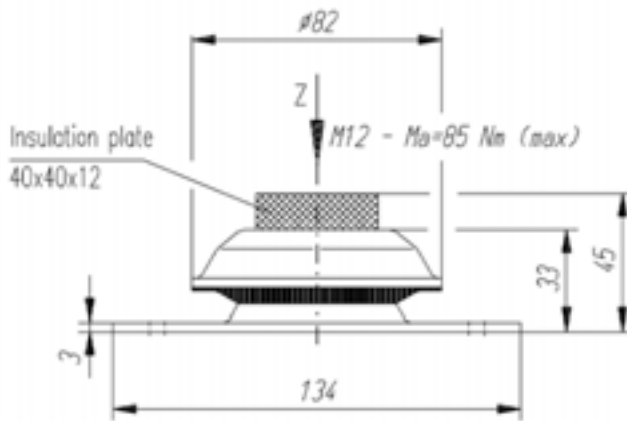


UVMP02S100B\_



Technical information  
Technische informatie  
Technische data

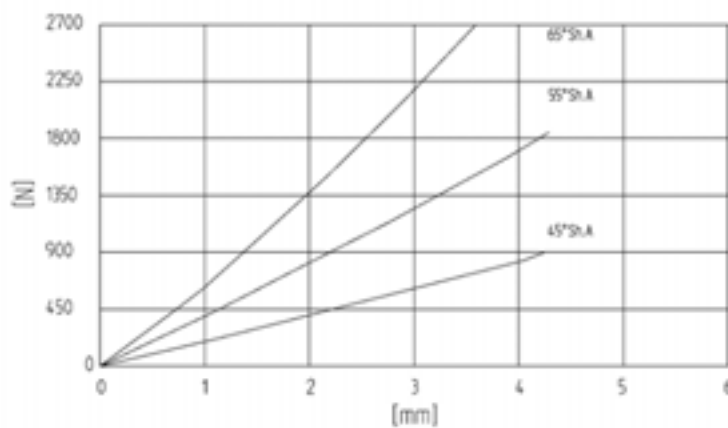
Fmax. [N]	865	1600	2445
[°Sh.A]	45	55	65
Cz [N/mm]	200	400	600
Weight element [kg]			0.4



Load deflection characteristics

Belasting inverings grafiek

Federkennlijnen



Flexible fixed point

Flexible vastpunt

Flexible Festpunkt

RD MP2



