

INTERNATIONAL CENTRE FOR AUTOMOTIVE TECHNOLOGY

[A Division of NATRiP Implementation Society (NATIS), Govt. of India]

Non - Transferable

TEST REPORT

C D O C O 1589




Date: 03.09.2019


1.	Name & Address of Customer	M/s. Fogmaker International AB P.O. Box: 8005, Sandvagen 4, Vaxjo - 35245, Kronobergs län, Sweden
2.	Customer's Reference	IOCS Registration No. 66372
3.	Description of Device under Test (DUT)	Fire Detection And Suppression System (FDSS) Name of the Manufacturer : M/s. Fogmaker International AB Trade Name/Model : Fogmaker FDSS acc. to AIS-135 Part No. (For Assembly) : 33*-AIS135 Drawing Nos. : Appendix-A , Appendix-B & Appendix - C Applicable Vehicle Category : Buses
4.	Date of Receipt of sample	NA
5.	Condition of Sample	<i>No physical damage observed.</i>
6.	Test Objective	To conduct test on Fire Detection and Suppression System (FDSS) as a component as mentioned at Sr. No. 3.0 above as per AIS-135 : 2016.
7.	Test Method	AIS 135:2016
8.	Functional Verification	No functional verification is required
9.	Test Procedure/Test Conditions	Please refer Annexure-II for test procedures.
10.	Date of performance of Test	26.04.2019
11.	Test Results/Test Observations	Please refer Annexure-II for Test Results/Test Observations, and photograph of test set up.
12.	Conclusion	The test component as mentioned above in Sr. No. 3.0, met all the applicable requirements of AIS-135 : 2016. The detailed component specifications are mentioned in Annexure I and The Test Procedure, Test Results & Test Set-up Photographs are given at Annexure II


Note: This FDSS Test on Component Level as per AIS 135:2016 was witnessed by Mr. Mayank Bansal, ICAT at M/s. RISE, Sweden on 26.04.2019.

DISCLAIMER

This test report pertains only to the test samples / components / parts/ assemblies/ gensets/ materials /fuels/chemicals/engines/vehicles/Agr. Tractors etc. actually tested /witnessed / verified by ICAT in the presented condition based on the documents / information produced / submitted by the customer. The issuance of this test report alone does not indicate any measure of approval, certification, supervision, COP, control of quality surveillance by ICAT of the test samples / items/ components. No extract, abridgment or abstraction from this test report may be published or used to advertise the product without the written consent of the Director, ICAT, who reserves the absolute right to agree or reject all or any of the details of any items of publicity for which consent may be sought. ICAT is in no way responsible for any misuse or copying of any design in connection with entire vehicle / components / systems and assemblies. Breach of any statutory provisions, of Indian laws or laws of other countries, will be sole responsibility of the customer. ICAT shall not be liable for any claims or damages made by the customer, whatsoever. The customer shall alone be liable for the same and undertakes to indemnify ICAT in this regard. Further, ICAT has the right to initiate cancellation / withdrawal of the certificate / report issued, in case of any fraud, misrepresentation, when it comes to the knowledge of ICAT. The appropriate local court at Gurgeon shall have the jurisdiction in respect of any dispute, claim or liability arising out of this report.

Prepared By	Checked By	Approved By
		
MAYANK BANSAL Deputy Manager	AMIT KARWAL Asst. General Manager	PAMELA TIKKU Sr. General Manager








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+
Dwg. (12)
[66372]

Annexure – I

(A) Detailed Specifications:

Sr. No.	Technical Specifications	Description
1	Make (Trade Name of Manufacturer)	M/s. Fogmaker International AB (Trade Name : Fogmaker FDSS acc. to AIS-135)
2	Type/General Description	FIRE DETECTION AND SUPPRESSION SYSTEM (FDSS) FOR BUSES AS A COMPONENT
3	Type of fire detector (s) used	Loss of pressure Tube (Tube pressurized to 16.5 bar Nitrogen type)
4	Name and address of manufacturer of the Fire detector (Temperature & Length)	M/s Rotarex Inc North America ,Westmoreland Technology Park 1,221 Westec Dr. MT. Pleasant PA 15666-2761. (190°C & 08 meters)
5	Description of the device or sketch showing location relevant dimensions of fire detector	Appendix A (Fire Detector Layout) (Attached)
6	Devices provided additionally Acoustic or visual. If visual, Duration and type of optical signal.	i) Acoustic Signal (Buzzer Make:- Kingstate Electronics , Model No. – KPE-260 (85 dB) ii) Visual signal (Blinking Red Light) iii) Fault Signal (Constant Yellow Light)
7	Extinguishing Agent (make and type)	M/s Fogmaker (Fogmaker-35) (Water Mist (AFFF Foam))
8	Mass of Extinguishing Agent	15.6 Kg (02 Cylinders of 7.8 Kg each)
9	Type of Discharge point (s.)	Nozzle Discharge Rate: 1.2 lt./min. at 30 bar, Cone angle= 88° Appendix B (Nozzle Layout/Co-ordinates)
10	Length of Discharge Pipe	Total Pipe Consumption – 12948 mm (Appendix B & Appendix C attached for detailed description)
11	Number of Discharge Points (s)	Spray Nozzles - 18 Nos.




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Annexure – I (Contd....)

(A) Detailed Specifications:

Sr. No.	Technical Specifications	Description
12	Type of propellant gas, if applicable	Nitrogen
13	Pressure of propellant gas	105 bar
14	Minimum operation temperature	-10°C
15	Details of pipes and fittings	Length of Hoses – 2.5 + 2.0 meters ID – Ø6.5 mm OD – Ø13.5mm (Appendix B attached for detailed description)
16	Detailed description, layout drawings and installation manual of the fire detection & suppression system and its components	Appendix – A (Linear Heat Detector Layout) (attached) Appendix – B & Appendix - C (Suppression system Layout) (attached)
17	Test report no. Complying to FM/UL standard for each supplier.	20160322-S35703
18	Make of Control Panel & Address	M/s. Fogmaker International AB P.O. Box: 8005, Sandvagen 4, Vaxjo - 35245, Kronobergs län, Sweden



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Annexure – II

1.0 TEST REQUIREMENTS, RESULTS & OBSERVATIONS (as per Annex V of AIS135:2016) :

Clause No.	Description	Test Results/ Observations	Remarks
1.0	SPECIFICATIONS :		
1.1	Fire detection & suppression system (FDSS) conforming to this standard shall comply with the requirements of high fire load, low fire load, high fire load with fan and re-ignition described in Appendix 1 as per Annexure V of AIS-135 : 2016.	Refer Table (A),(B),(C) & (D) for Results	Complied
1.2	The test apparatus, test fires and general test conditions are described in Appendix 1 of AIS-135 : 2016.	-	Complied
2.0	HIGH FIRE LOAD :		
2.1	The high fire load test shall be conducted in accordance with Appendix 2 of AIS-135 : 2016.	Refer Table (A) for results	Complied
2.2	The detector/s will be mounted in the engine compartment in such a manner that there will be line of sight to at least one detector from any point surrounding the engine, in order to ensure optimal coverage of threats of fire liable to break out in the engine compartment.	-	Complied
2.3	The installation of the detectors will prevent mechanical damage that is liable to disrupt the operation thereof.	-	Complied
2.4	The command and control system will be mounted outside of the engine compartment, if possible.	-	Complied
2.5	The manual means of activation and warning will be positioned in the vicinity of the driver's dashboard, in such a manner that the driver will be able to see, hear and activate them, and such will be connected to the command and control system of the extinguishing system	-	Physical Verification on the Bus to be taken by Vehicle/Bus Body Building Manufacturer
2.6	The fire shall be detected and warning signal shall be activated within 10 seconds after ignition.	Refer Table (A) for Results (06 seconds)	Complied
2.7	The test shall be conducted with the extinguishing agent and the propellant gas vessel or the suppression agent generator cooled to the minimum operating temperature ("0" degrees celsius) for the fire suppression system, as declared by the manufacturer.	Before Test extinguishing cylinders cooled till -10 deg. C	Complied

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Annexure – II (contd..)

Clause No.	Description	Test Results/ Observations	Remarks
2.8	The fires shall be fully extinguished, either, in the minute after activation or upon end of the discharge of the suppression system.	Refer Table (A)	Complied
2.9	The test is considered passed either after success at first attempt or at two of three attempts in a case when first of these attempts fails.	Success Achieved in 1 st Attempt Refer Table (A)	Complied
3.0	LOW FIRE LOAD :		
3.1	The low fire load test shall be conducted in accordance with Appendix 3.	Refer Table (B) for Results	Complied
3.2	The detector/s will be mounted in the engine compartment in such a manner that there will be line of sight to at least one detector from any point surrounding the engine, in order to ensure optimal coverage of threats of fire liable to break out in the engine compartment.	-	Complied
3.3	The installation of the detectors will prevent mechanical damage that is liable to disrupt the operation thereof.	-	Complied
3.4	The command and control system will be mounted outside of the engine compartment, if possible.	-	Complied
3.5	The manual means of activation and warning will be positioned in the vicinity of the driver's dashboard, in such a manner that the driver will be able to see, hear and activate them, and such will be connected to the command and control system of the extinguishing system.		Physical Verification on the Bus to be taken by Vehicle/Bus Body Building Manufacturer.
3.6	The fire shall be detected and warning signal shall be activated within 10 seconds after ignition.	Refer Table (B) for Results (07 Seconds)	Complied
3.7	The test shall be conducted with the extinguishing agent and the propellant gas vessel or the suppression agent generator cooled to the minimum operating temperature ("0" degrees celsius) for the fire suppression system, as declared by the manufacturer.	Before Test extinguishing cylinders cooled till -10 deg. C	Complied
3.8	The fires shall be fully extinguished either in the minute after activation or upon end of the discharge of the suppression system.	Refer Table (B)	Complied

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Annexure – II (contd..)

Clause No.	Description	Test Results/ Observations	Remarks
3.9	The test is considered passed if success was achieved at the first attempt or at two of three attempts in a case when first of these attempts fails.	Success Achieved in 1 st Attempt Refer Table (B)	Complied
4.0	HIGH FIRE LOAD WITH FAN :		
4.1	The high fire load test with fan shall be conducted in accordance with Appendix 4.	Refer Table (C) for results	Complied
4.2	The detector/s will be mounted in the engine compartment in such a manner that there will be line of sight to at least one detector from any point surrounding the engine, in order to ensure optimal coverage of threats of fire liable to break out in the engine compartment.	-	Complied
4.3	The installation of the detectors will prevent mechanical damage that is liable to disrupt the operation thereof.	-	Complied
4.4	The command and control system will be mounted outside of the engine compartment, if possible.	-	Complied
4.5	The manual means of activation and warning will be positioned in the vicinity of the driver's dashboard, in such a manner that the driver will be able to see, hear and activate them, and such will be connected to the command and control system of the extinguishing system	-	Physical Verification on the Bus to be taken by Vehicle/Bus Body Building Manufacturer.
4.6	The fire shall be detected and warning signal shall be activated within 10 seconds after ignition.	Refer Table (C) for results (07 Seconds)	Complied
4.7	The test shall be conducted with the extinguishing agent and the propellant gas vessel or the suppression agent generator cooled to the minimum operating temperature ("0" degrees celsius) for the fire suppression system, as declared by the manufacturer.	Before Test extinguishing cylinders cooled till - 10 deg. C	Complied (Cooled to - 10°C)

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Annexure – II (contd..)

Clause No.	Description	Test Results/ Observations	Remarks
4.8	The fires shall be fully extinguished either in the minute after activation or upon end of the discharge of the suppression system.	Refer Table (C)	Complied (02:07)
4.9	The test is considered passed if success was achieved at the first attempt or at two of three attempts in a case when first of these attempts fails.	Success Achieved in 1 st Attempt (Refer Table (C).	Complied (In 1 st attempt)
5.0	Re-ignition test :		
5.1	The re-ignition test shall be conducted in accordance with Appendix 5.	Refer Table (D) for Results	Complied
5.2	The fire shall be fully extinguished and no re-ignition shall occur 45 seconds after the extinguishing of the fire.	(No re-ignition occurred 45 sec after the extinguishing of fire)	Complied
5.3	The test is considered passed either if success was achieved at the first attempt or at two of three attempts in a case when first of these attempts fails.	Success achieved in first attempt	Complied



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Annexure – II (contd..)




Table (A) High Fire Load Scenario (as per Appendix 2) :

TIME REQUIRED (mm:ss)	ACTION	OBSERVATION / ACTUAL TIME RECORDED (mm:ss)	TEST RESULT
00:00*	Start Igniting	Ignited Fire	Complied (In 1 ST attempt)
00:10*	Alarm should have activated	Alarm Activated (00:06)	
01:20*	Ignition complete	Complied(01:20)	
01:50*	Start of Diesel Spray	Diesel Spray Started (01:50)	
02:00*	Manual activation of suppression system	Activated Suppression System (02:00)	
02:30*	FDSS should have suppressed the fire	Fire Extinguished (02:07)	

Table (B) Low Fire Load Scenario (as per Appendix 3) :

TIME REQUIRED (mm:ss)	ACTION	OBSERVATION / ACTUAL TIME RECORDED (mm:ss)	TEST RESULT
00:00*	Start Igniting	Ignited Fire	Complied (In 1 ST attempt)
00:10*	Alarm & fire suppression should have activated automatically	Alarm activated in 00:07 and suppression system activated automatically	

mm= minutes, ss=seconds.

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Annexure – II (contd..)

TIME REQUIRED (mm:ss)	ACTION	OBSERVATION / ACTUAL TIME RECORDED (mm:ss)	TEST RESULT
00:00*	Start Igniting	Ignited Fire	Complied (In 1 ST attempt)
00:10*	Alarm should have activated	Alarm Activated (00:07)	
01:00*	Ignition complete	Complied(01:00)	
01:30*	Start the Fan (Air Flow- 1.5 m ³ /sec)	Fan Started (01:30)	
02:00*	Manual activation of suppression system	Suppression System Activated (02:00)	
02:30*	FDSS should have suppressed the fire	Fire Extinguished (02:06)	

Table (C) High Fire Load Scenario with Fan (as per Appendix 4) :

TIME REQUIRED (mm:ss)	ACTION	OBSERVATION / ACTUAL TIME RECORDED (mm:ss)	TEST RESULT
00:00*	Start Igniting	Ignited Fire	Complied (In 1 ST attempt)
00:10*	Alarm should have activated	Alarm Activated (00:07)	
01:00*	Ignition complete	Complied(01:00)	
01:30*	Start the Fan (Air Flow – 1.5 m ³ /sec)	Fan Started (01:30)	
01:45*	Start of diesel spray	Diesel Spray Started (01:45)	
02:00*	Manual activation of suppression system	Suppression System Activated (02:00)	
02:30*	FDSS should have suppressed the fire	Fire Extinguished (02:09)	

mm= minutes, ss=seconds.

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Annexure – II (contd..)

Table (D) Re – Ignition Scenario (as per Appendix 5) :

TIME REQUIRED (mm:ss)	ACTION	OBSERVATION / ACTUAL TIME RECORDED (mm:ss)	TEST RESULT
Prior to test	Pre - Heat Tube (as per clause no. 3.4.6 of Appendix 1.)	Complied	Complied (In 1 ST attempt)
00:00*	Predefined temperatures are reached	Test Started once the Pre-defined temperatures are reached	
00:30*	Start oil dripping	Oil Dripping started (00:30)	
00:45*	FDSS should have activated suppression system & suppressed the fire	FDSS was activated and Fire Extinguished. No Re-Ignition Occurred 45 seconds after the Extinguishing of Fire. (00:45)	

mm= minutes, ss=seconds.



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Annexure – II (contd..)

Test Set-up Photographs (Engine Mock-up)






FRONT VIEW



SIDE and REAR VIEW

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Annexure – II (contd..)
Test Set-up Photographs






High Fire Load Scenario



High Fire Load with Fan Scenario

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Annexure – II (contd..)
Test Set-up Photographs



Low Fire Load Scenario



Re-Ignition Test Scenario

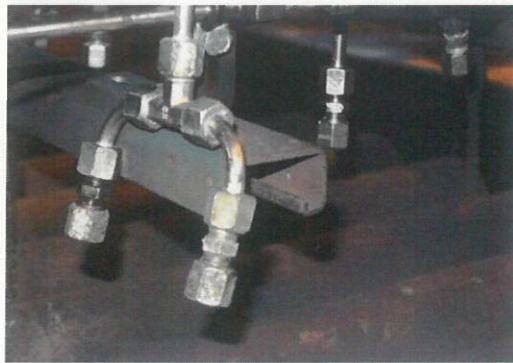
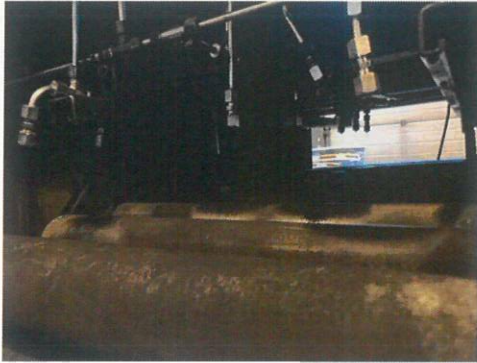
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Annexure – II (contd..)

Test Set-up Photographs






Nozzles on Ceiling



Nozzle in the Box



Nozzle at rear wall

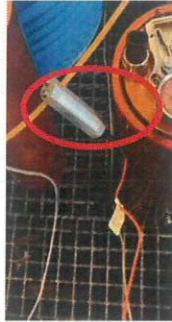
<p>Prepared By</p> 		<p>Checked By</p> 	<p>Page 14 of 15</p>
<p>MAYANK BANSAL Deputy Manager</p>		<p>AMIT KARWAL Asst. General Manager</p>	

C D O C O 1589

Date: 03.09.2019

Annexure – II (contd..)

Test Set-up Photographs






Control Panel (Buzzer, Activation Switch and Visual Signal)



Extinguishing Agent Cooled to
-10 deg. C

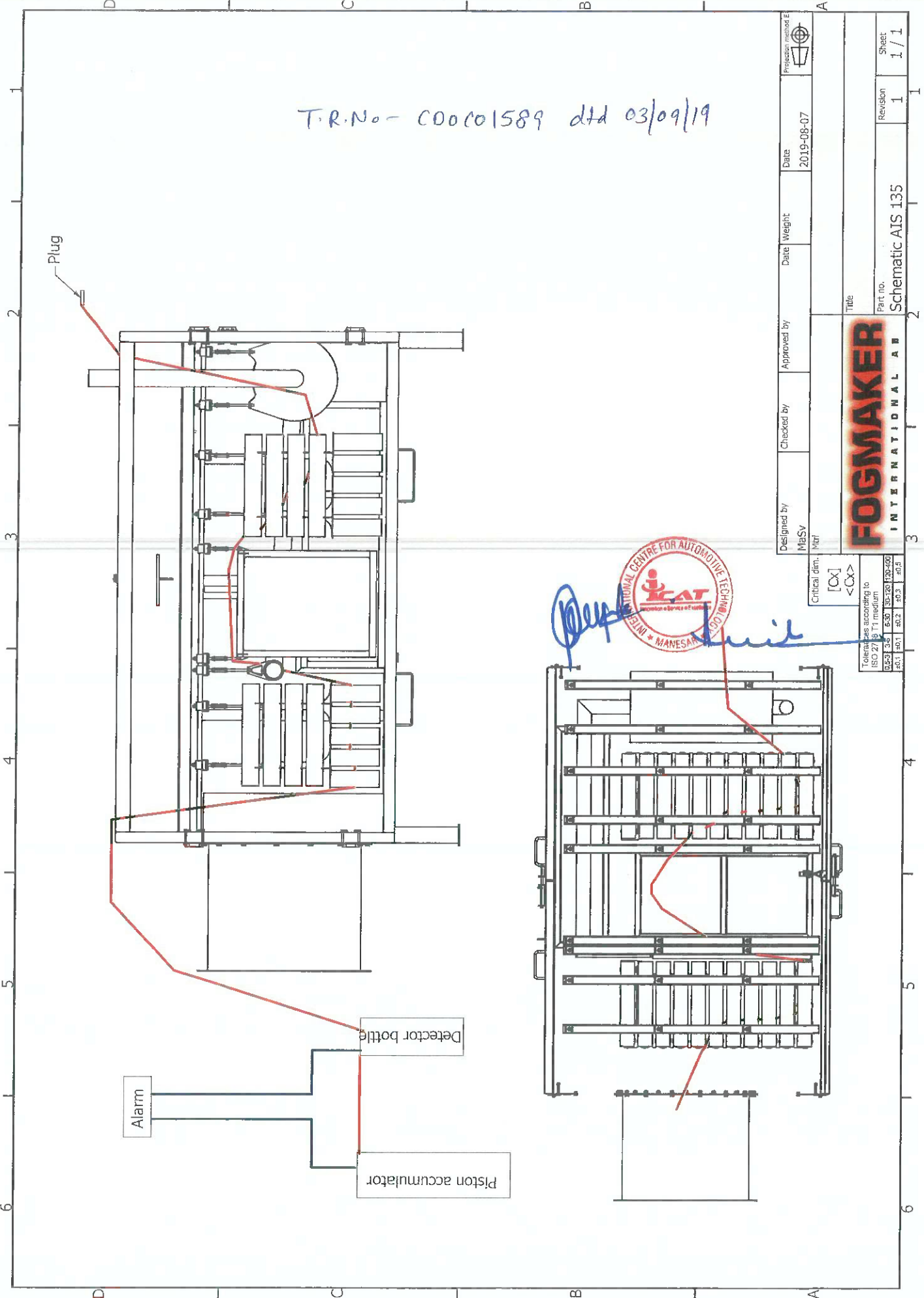
Detector Cable Used

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APPENDIX A

T.R.No - C00C01589 dtd 03/09/19



Designed by MaSV	Checked by	Approved by	Date 2019-08-07	Weight	Date	Projector method E1
Critical dim. $\frac{1}{100}$			Title			
Tolerances according to ISO 2768 Ts medium			Part no. Schematic AIS 135			
ISO 2768 Ts medium			Revision 1			
ISO 2768 Ts medium			Sheet 1 / 1			

FOGMAKER
INTERNATIONAL AB



Handwritten signature in blue ink.

ISO 2768 Ts medium
ISO 2768 Ts medium
ISO 2768 Ts medium

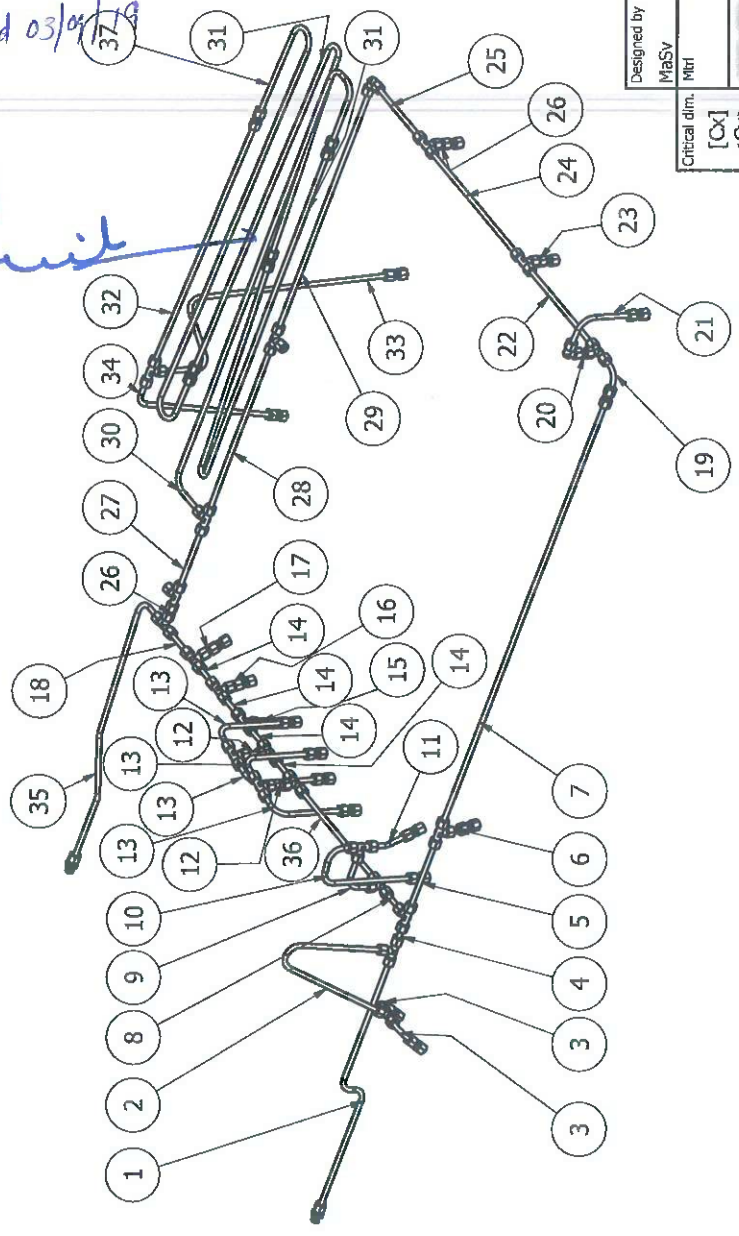
APPENDIX B

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PARTS LIST		
ITEM	QTY	DESCRIPTION
1	1	Pipe 1
2	1	Pipe 2
3	2	Pipe 3
4	1	Pipe 4
5	1	Pipe 5
6	1	Pipe 6
7	1	Pipe 7
8	1	Pipe 8
9	1	Pipe 9
10	1	Pipe 10
11	1	Pipe 11
12	2	Pipe 12
13	4	Pipe 13
14	4	Pipe 14

Total pipe consumption (mm): 12948
 Bending radius: 25mm
 Pipe length tolerance: ±3mm
 Pipe angle tolerance: ±3°

T.R.No - CD0001589 dtd 03/09/18



PARTS LIST			
ITEM	QTY	PART NUMBER	DESCRIPTION
15	1	4008	Pipe 15
16	1	4008	Pipe 16
17	1	4008	Pipe 17
18	1	4008	Pipe 18
19	1	4008	Pipe 19
20	1	4008	Pipe 20
21	1	4008	Pipe 21
22	1	4008	Pipe 22
23	1	4008	Pipe 23
24	1	4008	Pipe 24
25	1	4008	Pipe 25
26	2	4008	Pipe 26
27	1	4008	Pipe 27
28	1	4008	Pipe 28
29	1	4008	Pipe 29
30	1	4008	Pipe 30
31	2	4008	Pipe 31
32	1	4008	Pipe 32
33	1	4008	Pipe 33
34	1	4008	Pipe 34
35	1	4008	Pipe 35
36	1	4008	Pipe 36
37	1	4008	Pipe 37
38	18	1503-010	Nozzle 1.2 L/min
39	1	1510	Plug
40	2	4400	Straight coupling 8x1/4"
41	21	4401	T-coupling 8x8x8
42	23	4402	Straight coupling 8x8
43	2	4409	L-coupling 8x8

Designed by: MaSv
 Checked by: GuSt
 Approved by: GuSt
 Date: 2019-06-14
 Date: 2019-05-06
 Projection method: E
 Title: **FOGMAKER**
 INTERNATIONAL AB
 Part no: RS SP 4912 AIS 135-1 coordinates
 Revision: 1 / 7
 Sheet: 1 / 7

Tolerances according to ISO 2768 T1 medium	
CS3	3-6
CS2	6-30
CS1	30-125
CS	125-400
CC3	3-6
CC2	6-30
CC1	30-125
CC	125-400

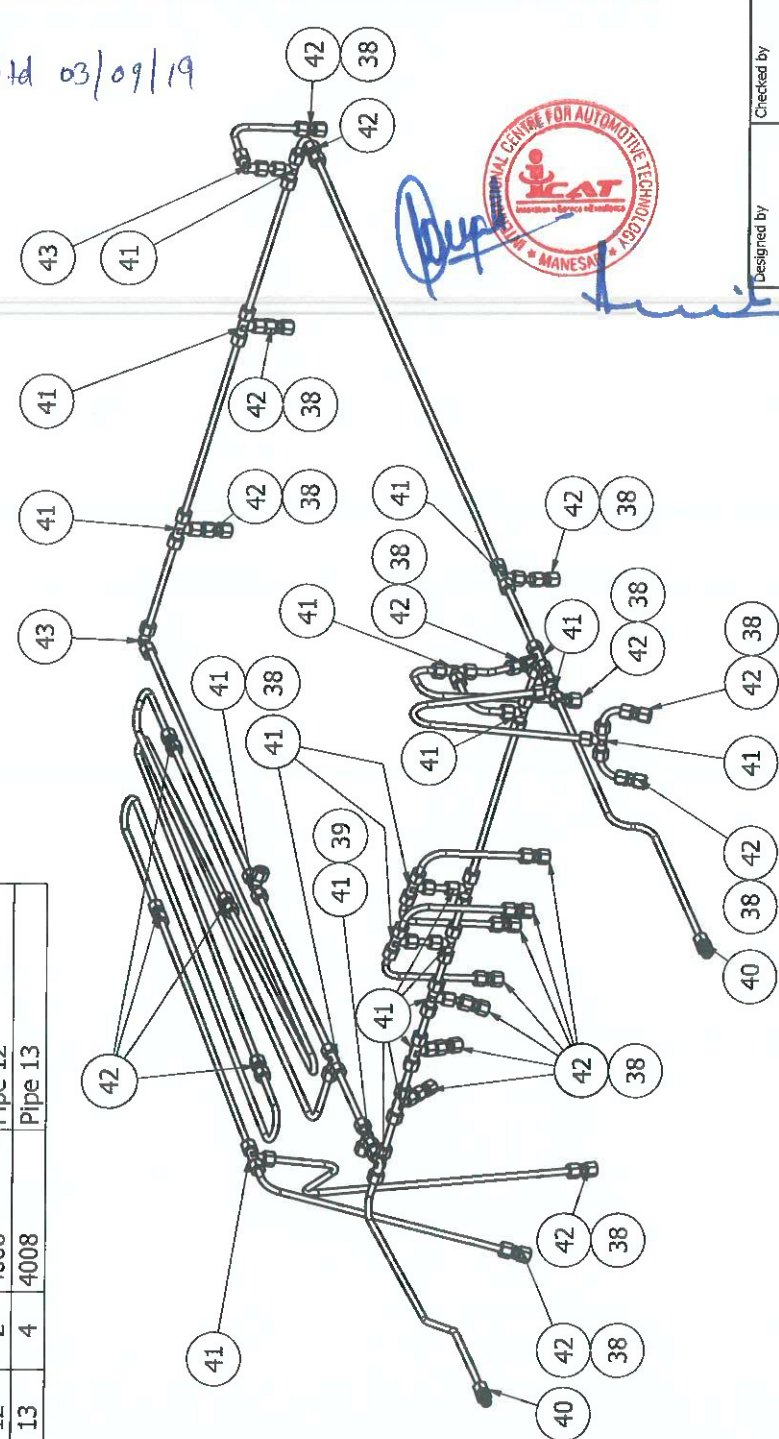
Critical dim: [CX] <CX>

APPENDIX B (contd..)

PARTS LIST		
ITEM	QTY	DESCRIPTION
1	1	Pipe 1
2	1	Pipe 2
3	2	Pipe 3
4	1	Pipe 4
5	1	Pipe 5
6	1	Pipe 6
7	1	Pipe 7
8	1	Pipe 8
9	1	Pipe 9
10	1	Pipe 10
11	1	Pipe 11
12	2	Pipe 12
13	4	Pipe 13

PARTS LIST			
ITEM	QTY	PART NUMBER	DESCRIPTION
14	4	4008	Pipe 14
15	1	4008	Pipe 15
16	1	4008	Pipe 16
17	1	4008	Pipe 17
18	1	4008	Pipe 18
19	1	4008	Pipe 19
20	1	4008	Pipe 20
21	1	4008	Pipe 21
22	1	4008	Pipe 22
23	1	4008	Pipe 23
24	1	4008	Pipe 24
25	1	4008	Pipe 25
26	2	4008	Pipe 26
27	1	4008	Pipe 27
28	1	4008	Pipe 28
29	1	4008	Pipe 29
30	1	4008	Pipe 30
31	2	4008	Pipe 31
32	1	4008	Pipe 32
33	1	4008	Pipe 33
34	1	4008	Pipe 34
35	1	4008	Pipe 35
36	1	4008	Pipe 36
37	1	4008	Pipe 37
38	18	1503-010	Nozzle 1.2 L/min
39	1	1510	Plug
40	2	4400	Straight coupling 8x1/4"
41	21	4401	T-coupling 8x8x8
42	23	4402	Straight coupling 8x8
43	2	4409	L-coupling 8x8

T.R.No - 00001589 dtd 03/09/19



Critical dim. Mm

0.5-3	3-6	6-30	30-120	120-400
±0.1	±0.1	±0.2	±0.3	±0.5

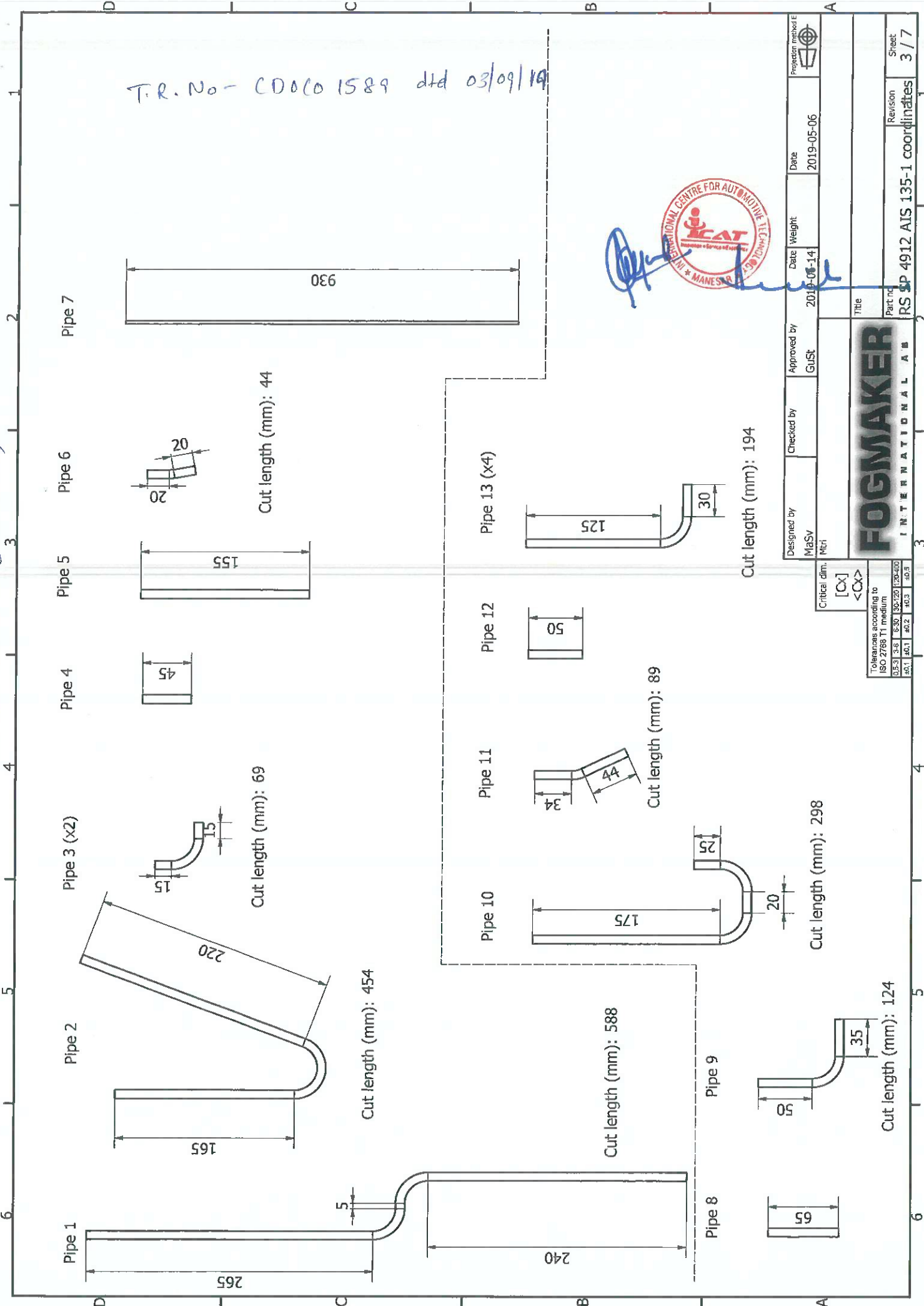
Tolerances according to
ISO 2768 M1 medium

Designed by MaSv	Checked by GuSt	Approved by GuSt	Date 2019-06-14	Weight	Date 2019-05-06	Projection 1st angle
Title						
Part no. RS SP 4912 AIS 135-1 coordinates						
Revision 2 / 7						

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APPENDIX B (Contd. --)

T.R.No - CD0C0 1589 dtd 03/09/19



Designed by MaSv	Checked by GuSt	Approved by GuSt	Date 2019-08-14	Date 2019-05-06	Projection method
Title FOGMAKER INTERNATIONAL AB			Part no RS SP 4912 AIS 135-1 coordinates	Revision 3 / 7	
Tolerances according to ISO 2768 T1 medium 0.3-3 0.45 0.50 0.63 0.80 1.00 1.25 1.60 2.00 2.50 3.15 4.00 5.00 6.30 8.00 10.00 12.50 16.00 20.00 25.00 31.50 40.00 50.00 63.00 80.00 100.00 125.00 160.00 200.00 250.00 315.00 400.00 500.00 630.00 800.00 1000.00			Critical dim. Mfr	[Cx] <Cx>	

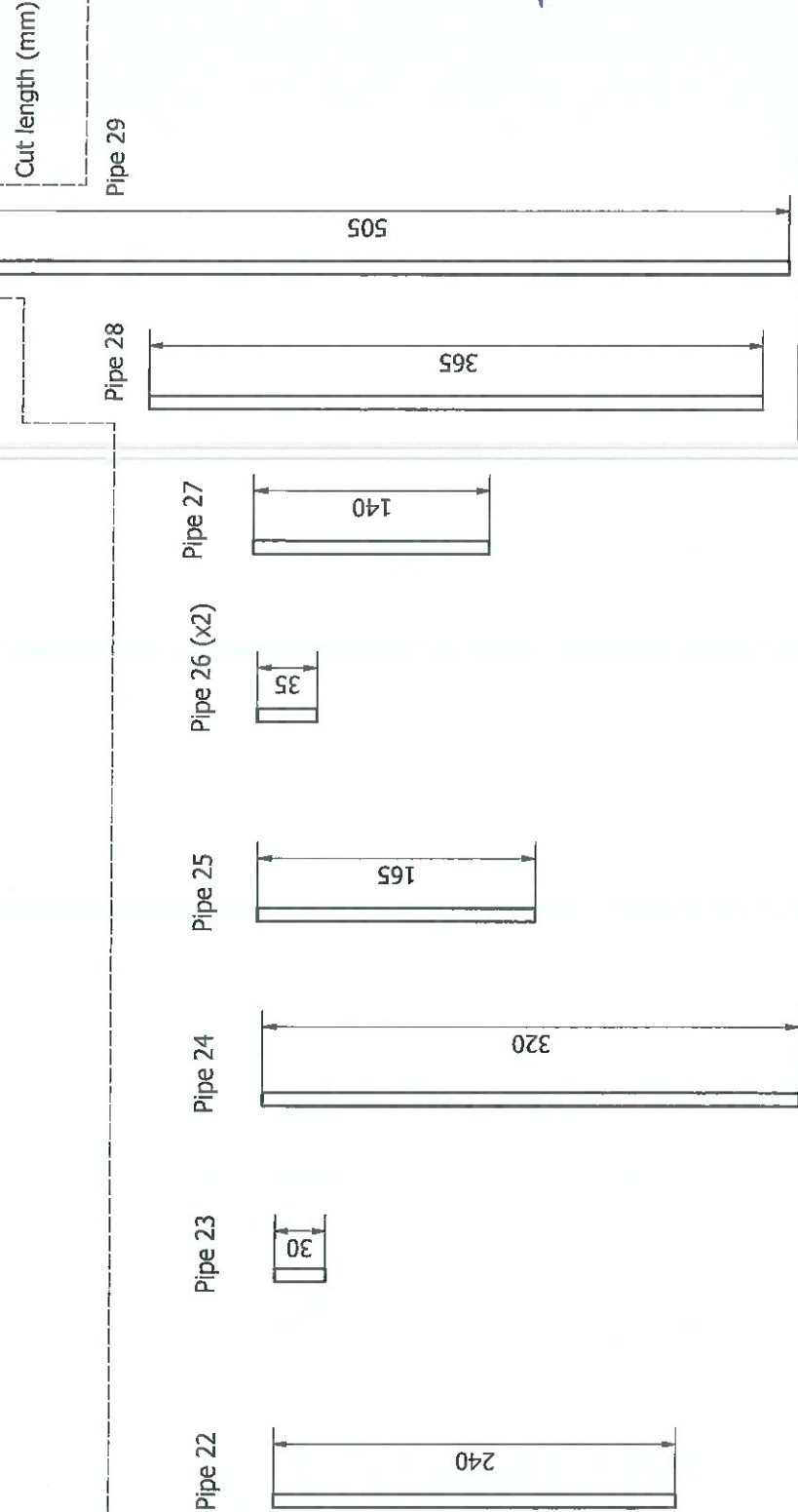
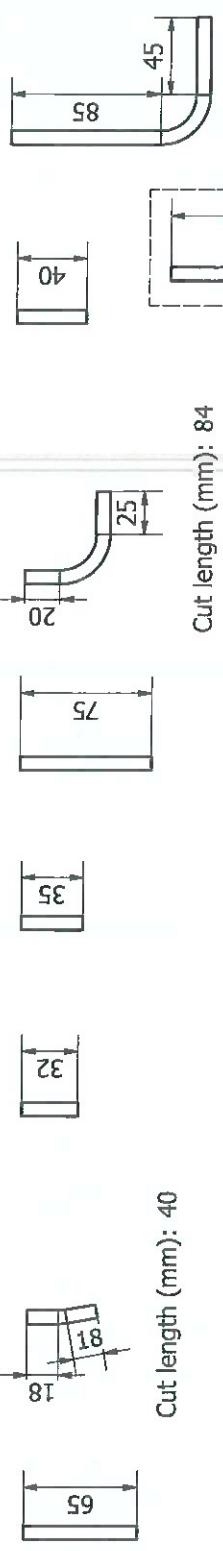
APPENDIX B (contd...)

T.R. No- C00C01589 dtd 03/09/19



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- Pipe 14 (x4)
- Pipe 15
- Pipe 16
- Pipe 17
- Pipe 18
- Pipe 19
- Pipe 20
- Pipe 21
- Pipe 22
- Pipe 23
- Pipe 24
- Pipe 25
- Pipe 26 (x2)
- Pipe 27
- Pipe 28
- Pipe 29



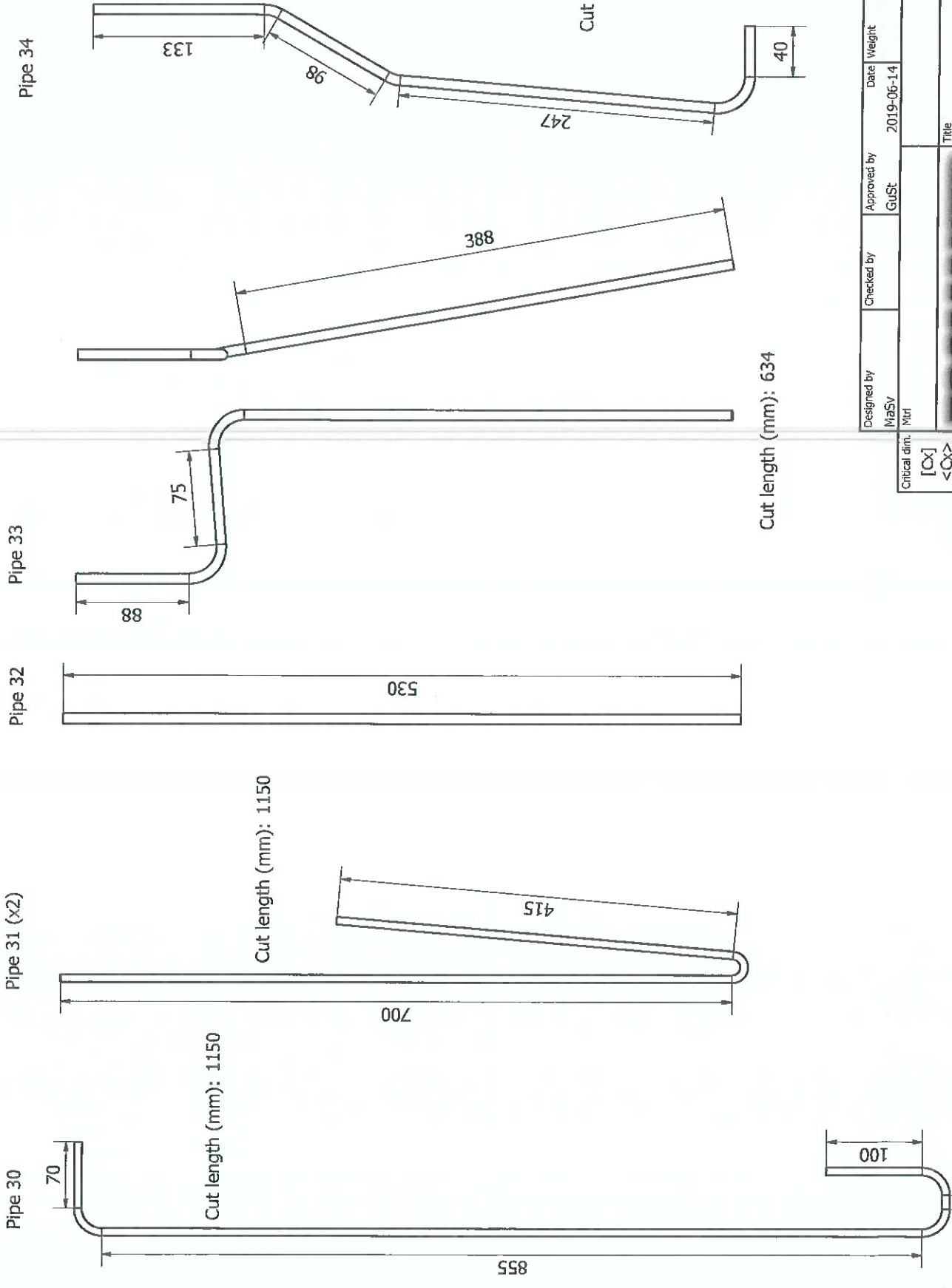
Designed by MaSv	Checked by GuSt	Approved by GuSt	Date 2019-05-14	Weight	Date 2019-05-06	Projection method E
Title			Part no. RS SP 4912 AIS 135-1 coordinates			
Revision			Sheet 4 / 7			

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INTERNATIONAL AB

Tolerances according to ISO 2768 TS medium	
0.53	3.6
0.13	0.51
0.075	0.25
0.05	0.16

APPENDIX B (contd...)

T.R.No - C00C01589 dtd. 03/09/19



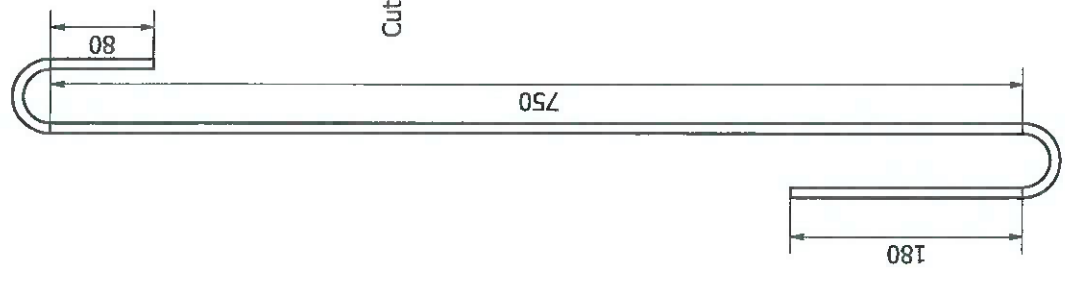
Designed by MaSV	Checked by GUST	Approved by GUST	Date 2019-06-14	Weight	Date 2019-05-06	Projection method E
Title						Part no. RS SP 4912 AIS 135-1
Critical dim. [X] <Cx>						Revision 5 / 7
Tolerances according to ISO 2768 T1 Medium						Sheet 5 / 7
0.3-1	3-6	6-30	30-120	120-400		
+0.1	+0.1	+0.2	+0.3	+0.5		

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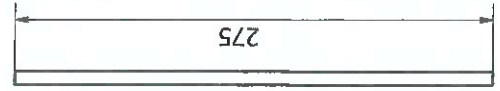
APPENDIX B (contd....)

T.R.No- CD0001589 dtd. 03/09/19

Pipe 37



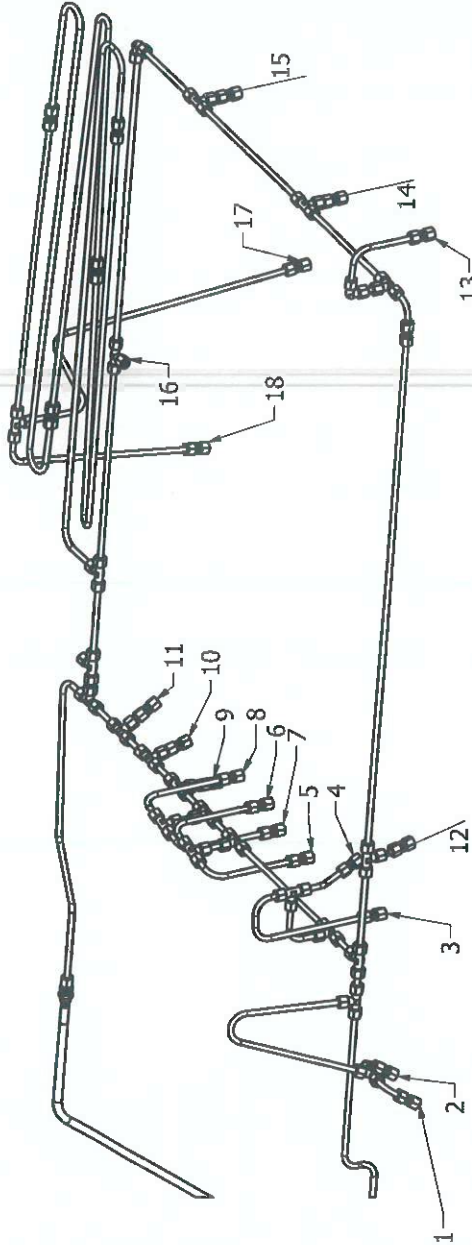
Pipe 36



Designed by MaSv	Checked by	Approved by GuSt	Date 2019-06-14	Weight	Date 2019-05-06	Projection method E
Mtr						
Critical dim. [X] <X>						Title
Tolerances according to ISO 2768 T1 medium 0.5-3 3.6 5.3 13-128 129-400 ±0.1 ±0.1 ±0.2 ±0.3 ±0.6						Part no. RS SP 4912 AISI 35-1 coordinates
FOGMAKER INTERNATIONAL AB						Revision 6 / 7
						Sheet 6 / 7

APPENDIX B (Contd...)

Coordinates of Nozzles AIS 135



- 1: [0.28; 0.13; 0.76]
- 2: [0.28; 0.23; 0.76]
- 3: [0.46; 0.28; 0.76]
- 4: [0.57; 0.31; 0.78]
- 5: [0.43; 0.54; 0.77]
- 6: [0.45; 0.68; 0.77]
- 7: [0.49; 0.63; 0.77]
- 8: [0.46; 0.77; 0.77]
- 9: [0.43; 0.81; 0.76]
- 10: [0.44; 0.89; 0.76]
- 11: [0.44; 0.99; 0.76]
- 12: [0.64; 0.20; 0.76]
- 13: [1.73; 0.29; 0.78]
- 14: [1.65; 0.55; 0.76]
- 15: [1.66; 0.90; 0.76]
- 16: [1.11; 1.06; 0.82]
- 17: [0.90; 1.31; 0.31]
- 18: [0.58; 1.30; 0.47]

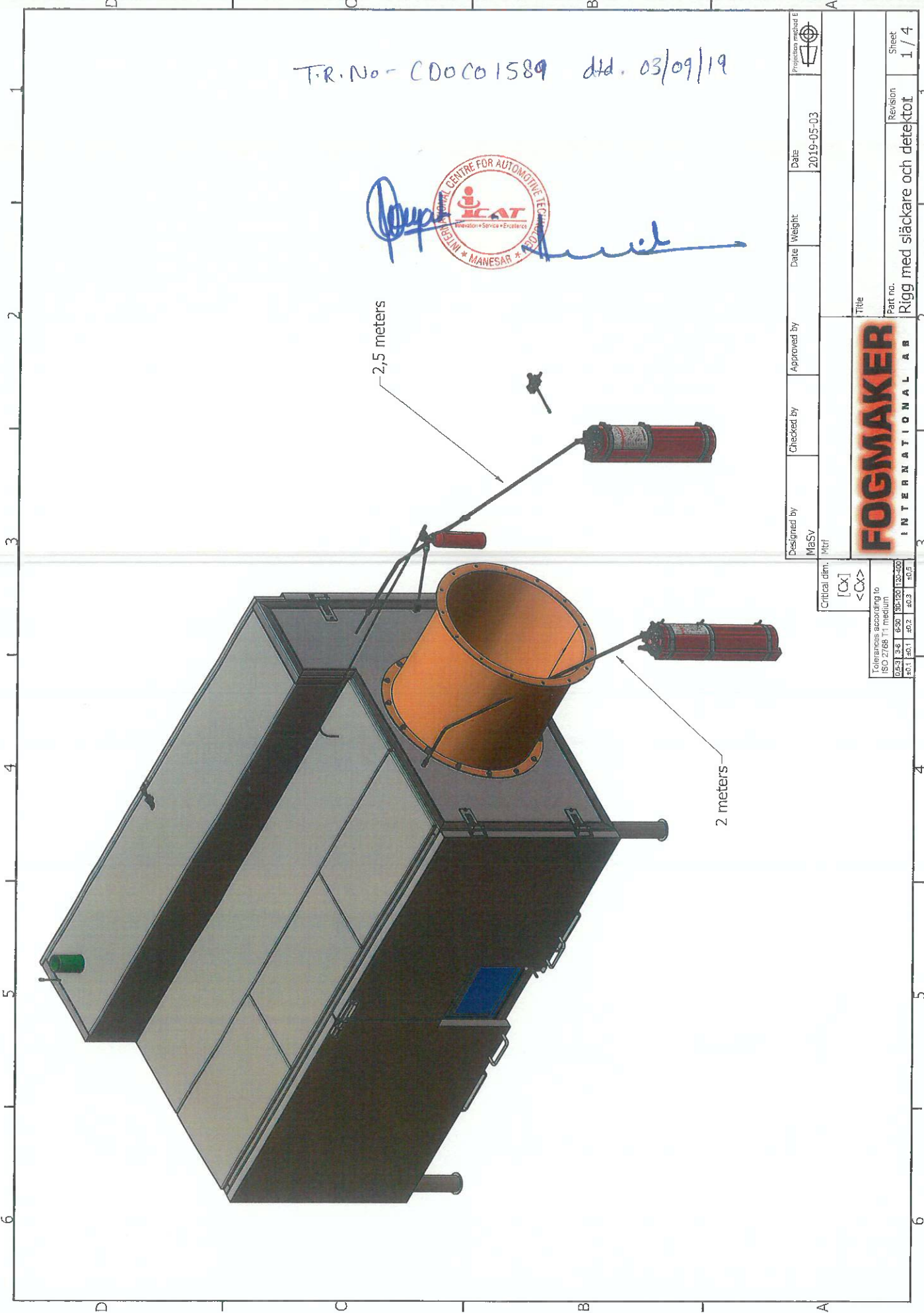
T.R.No- C00C01589 dtd. 03/09/19



Designed by MaSy	Checked by GUSK	Approved by GUSK	Date 2019-05-14	Weight Mtl	Date 2019-05-06	Projection method E																		
Critical dim. [X] <X>																								
Tolerances according to ISO 2768 T1 medium																								
<table border="1"> <tr> <td>ISO 1</td> <td>3.6</td> <td>6.3</td> <td>10</td> <td>12.5</td> <td>20</td> </tr> <tr> <td>ISO 2</td> <td>4.0</td> <td>7.0</td> <td>11</td> <td>14</td> <td>22.4</td> </tr> <tr> <td>ISO 3</td> <td>4.5</td> <td>7.5</td> <td>12.5</td> <td>16</td> <td>25</td> </tr> </table>						ISO 1	3.6	6.3	10	12.5	20	ISO 2	4.0	7.0	11	14	22.4	ISO 3	4.5	7.5	12.5	16	25	
ISO 1	3.6	6.3	10	12.5	20																			
ISO 2	4.0	7.0	11	14	22.4																			
ISO 3	4.5	7.5	12.5	16	25																			
Title																								
Part no. RS SP 4912 AIS 135-1 coordinates						Revision 7/7																		
Sheet						7/7																		

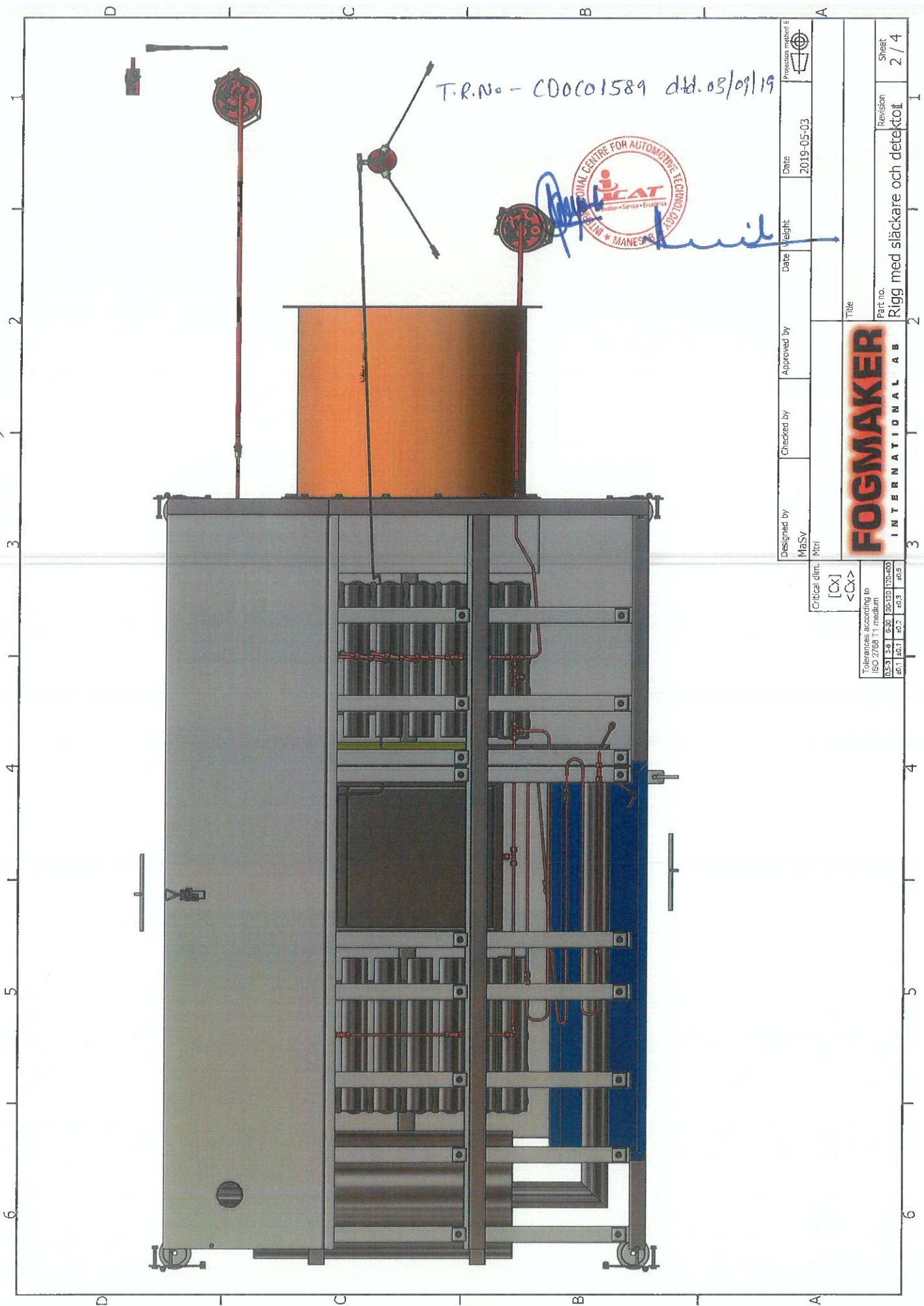
APPENDIX C

T.R.No - CD0001589 dtd. 03/09/19



Designed by MaSy	Checked by	Approved by	Date 2019-05-03	Weight	Date	2019-05-03	Projection method E														
<p>FOGMAKER INTERNATIONAL AB</p>							<p>Title Rigg med släckare och detektor</p>														
<p>Tolerances according to ISO 2768 T1 medium</p> <table border="1"> <tr> <td>0.25</td> <td>0.30</td> <td>0.50</td> <td>0.63</td> <td>1.00</td> <td>1.60</td> <td>2.50</td> </tr> <tr> <td>0.12</td> <td>0.15</td> <td>0.25</td> <td>0.31</td> <td>0.50</td> <td>0.80</td> <td>1.25</td> </tr> </table>							0.25	0.30	0.50	0.63	1.00	1.60	2.50	0.12	0.15	0.25	0.31	0.50	0.80	1.25	<p>Part no. Revision</p>
0.25	0.30	0.50	0.63	1.00	1.60	2.50															
0.12	0.15	0.25	0.31	0.50	0.80	1.25															
							<p>Sheet 1 / 4</p>														

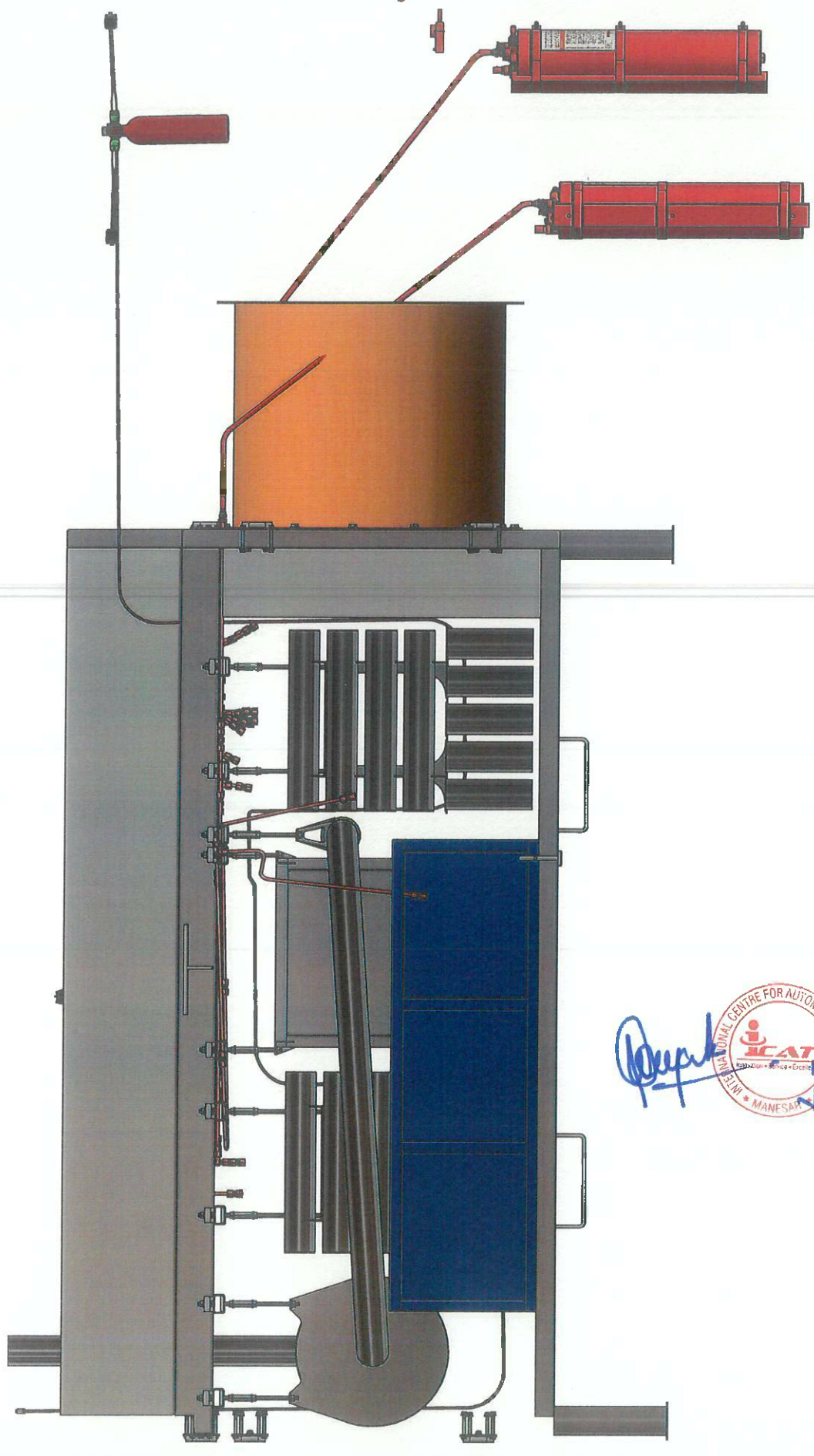
APPENDIX C (Contd...)



Designed by MaSV	Checked by	Approved by	Date 2019-05-03	Date 2019-05-03	Projection method E
Miri					
FOGMAKER INTERNATIONAL AB					Title Rigg med släckare och detektor
Tolerances according to ISO 2768 T1 modified [CS] L30 L30 [20-400] [20-400] [20-400] [20-400] [20-400] [20-400] [20-400] [20-400] [20-400]					Part no. Revision 2 / 4

APPENDIX C (Contd...)

T.R.No-CD0101589 dtd. 03/09/19



Designed by MaSv	Checked by	Approved by	Date 2019-05-03	Revision 3 / 4
Critical dim. [X] <OX>			Title Rigg med släckare och detektor	
Tolerances according to ISO 2768 T1 medium			Part no. Rigg med släckare och detektor	
0.2-3	3-6	6-30	30-120	120-400
±0.1	±0.1	±0.2	±0.3	±0.5

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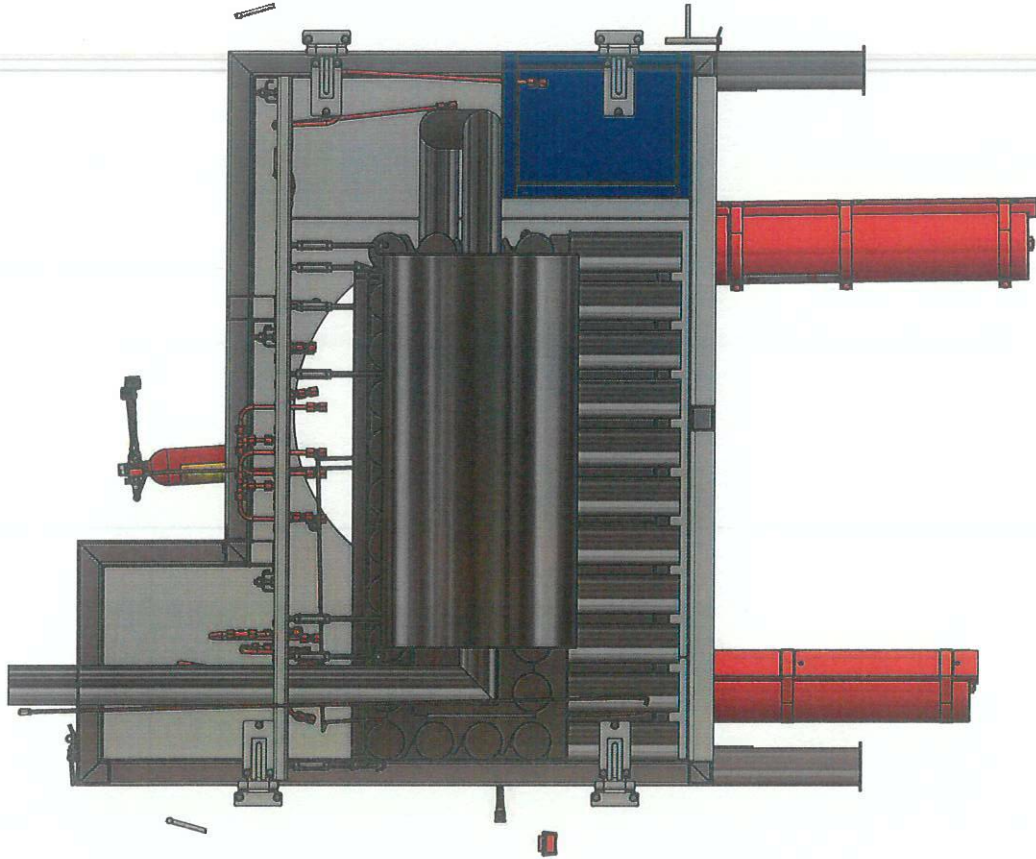


Handwritten signature in blue ink.

APPENDIX C (Contd. ...)

T.R.No- CD0001589 dtd. 03/09/19

[Handwritten signature]



Designed by MaSy	Checked by	Approved by	Date / Weight	Date	2019-05-03	Projection method E
Critical dim. Mtr			Title			
Tolerances according to ISO 2768 T1 medium			Part no. Rigg med släckare och detektor			
0.5-3	3-6	6-30	30-120	120-100	Revision	Sheet
±0.1	±0.1	±0.2	±0.3	±0.5	4 / 4	4 / 4

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