galland

CATENARY EXPERTISE
SINCE 1946

www.galland-sas.com

OUR VALUES

MANUFACTURER

QUALITY

INNOVATION

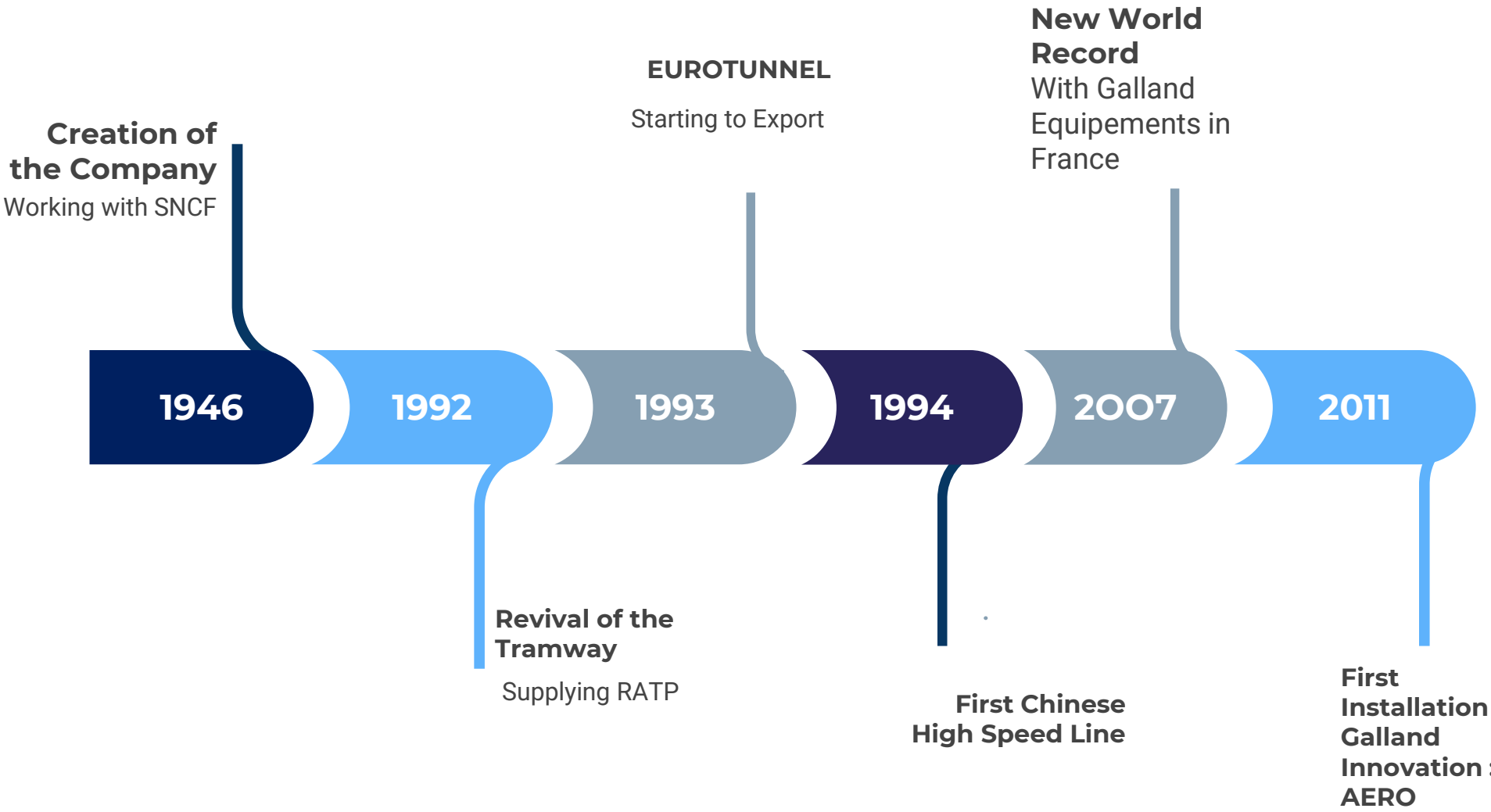
SERVICE

OUR FACILITIES

A manufacturing site based in La-Lande-De-Fronsac (Near Bordeaux, Southwest of France) fully dedicated to catenary component

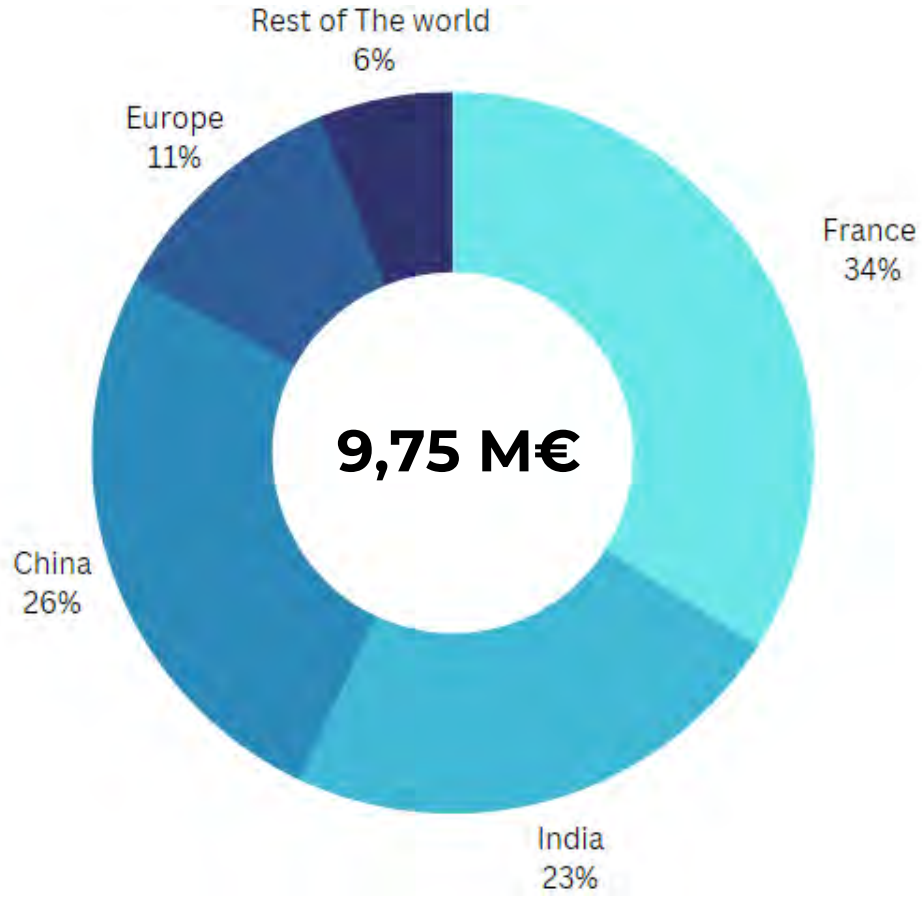
certified ISO 9001 : 2015 14001 : 2015

OUR TIMELINE



OUR FACILITIES

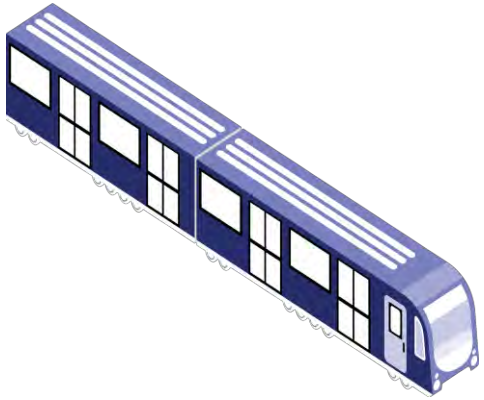
AVERAGE YEARLY TURNOVER 2019 - 2022



OUR TEAM


Sales
6 Peoples
Finance
2 Peoples
Design
5 Peoples
galland
Quality
4 Peoples
Purchase
3 Peoples
Planning
2 Peoples
Production
25 Peoples

OUR APPLICATIONS



TRAMWAY

Up to 100km/h
760V DC

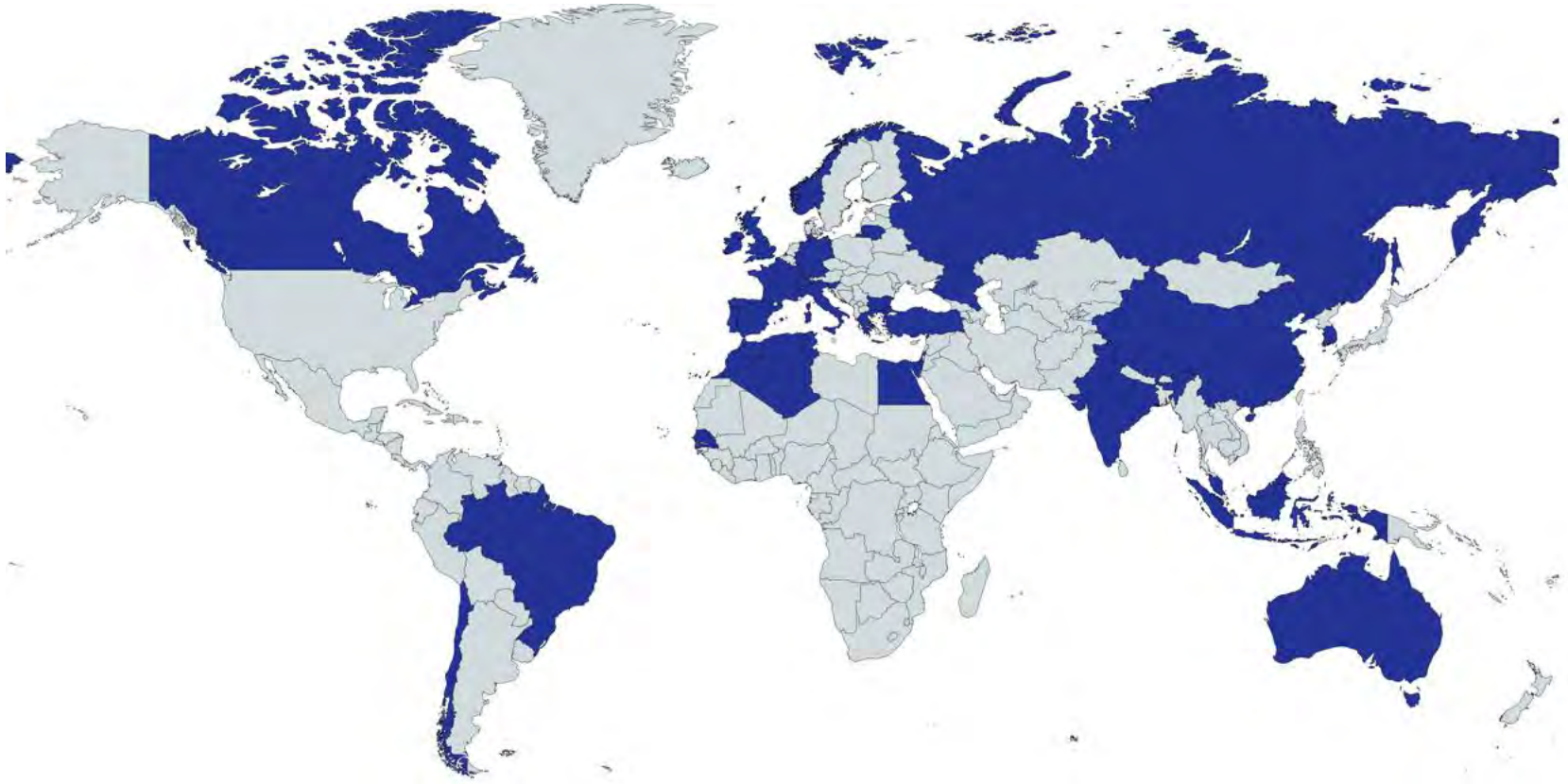
CONVENTIONAL LINE

Up to 200km/h
1.5 to 3kV DC

HIGH SPEED

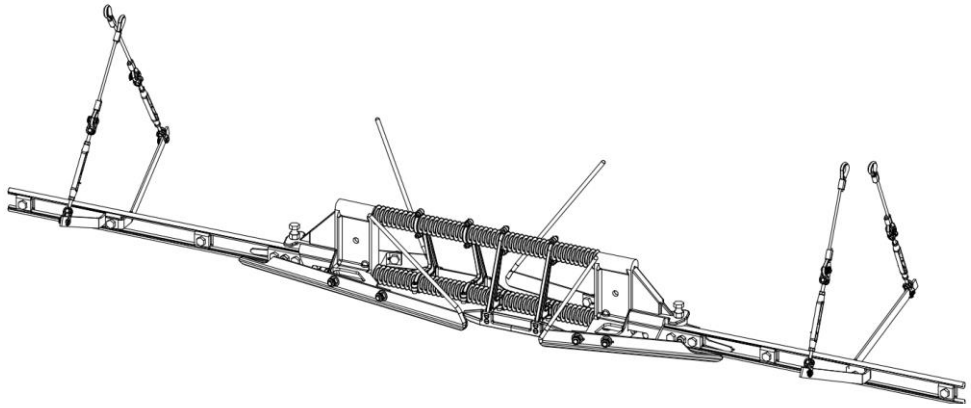
Above 200km/h
25 kV AC

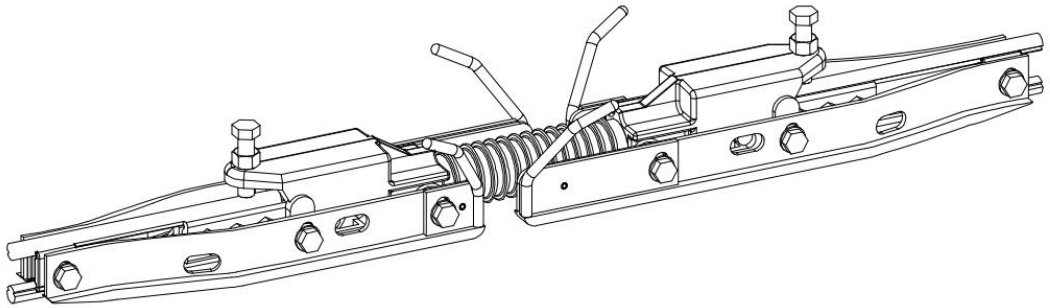
OUR GLOBAL PRESENCE

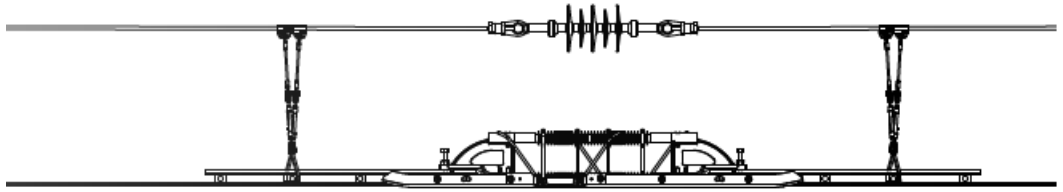


A Global Presence through a network of local partners

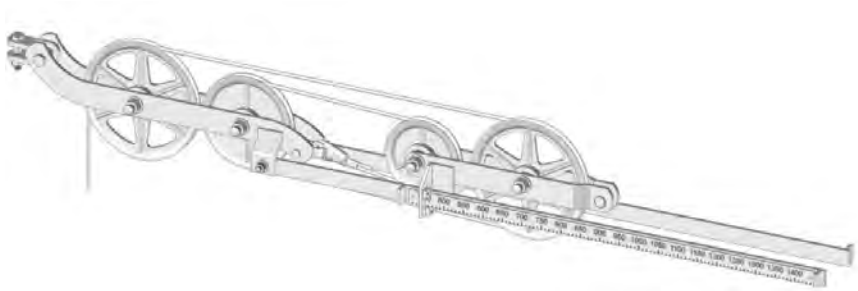
SECTION INSULATORS



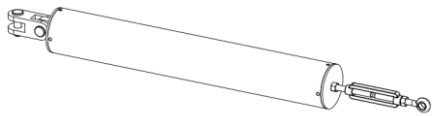




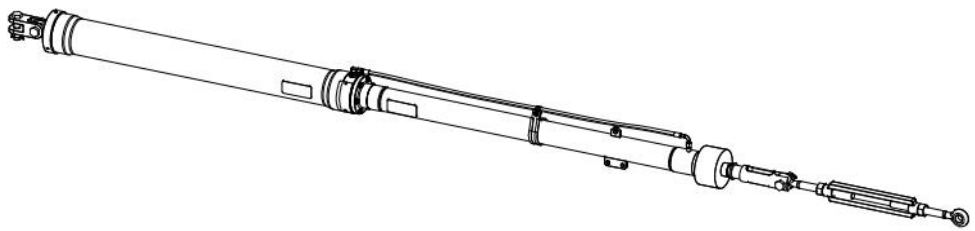
TENSIONING DEVICES



PULLEYS

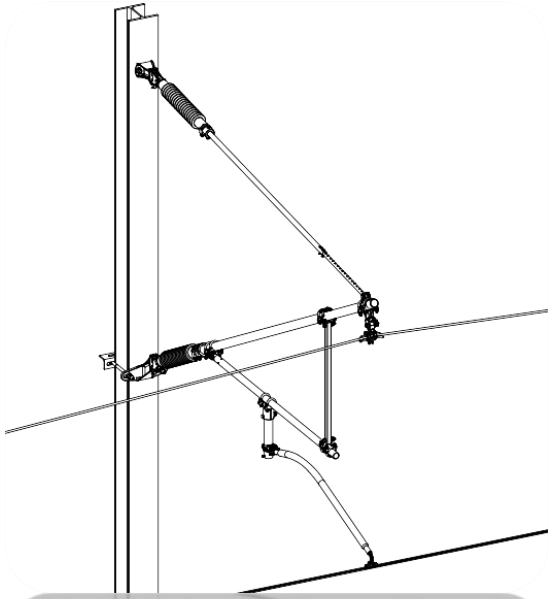


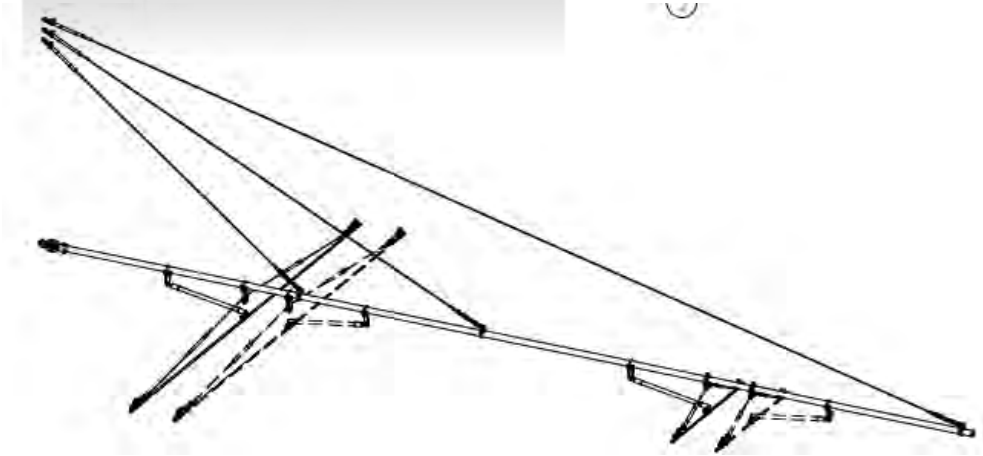
SPRING



GALLAND INNOVATION :
AUTOMATIC TENSIONING DEVICE AERO

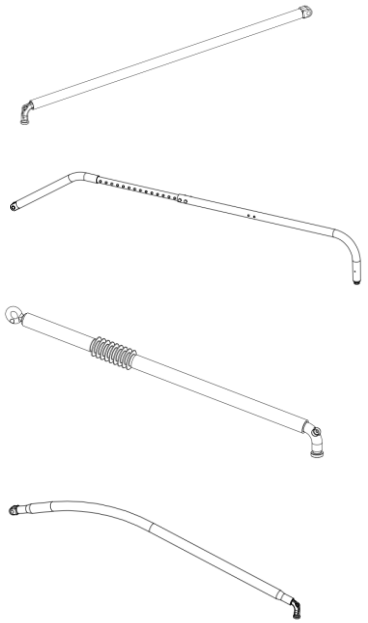
CANTILEVER AND STEADY ARMS



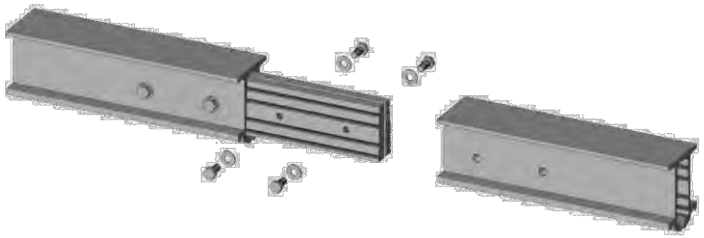


SINGLE TRACK
DOUBLE TRACK
MID-POINT ARRANGEMENT
NORMAL/CURVED

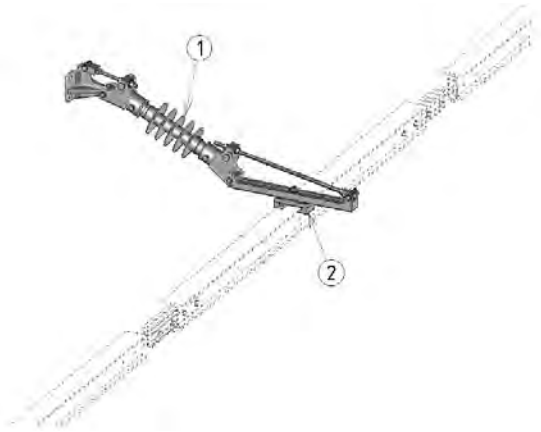
ALUMINIUM
GALVANIZED STEEL



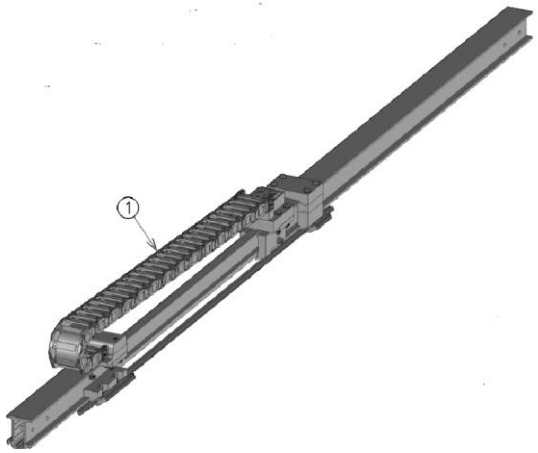
RIGID OVERHEAD CATENARY



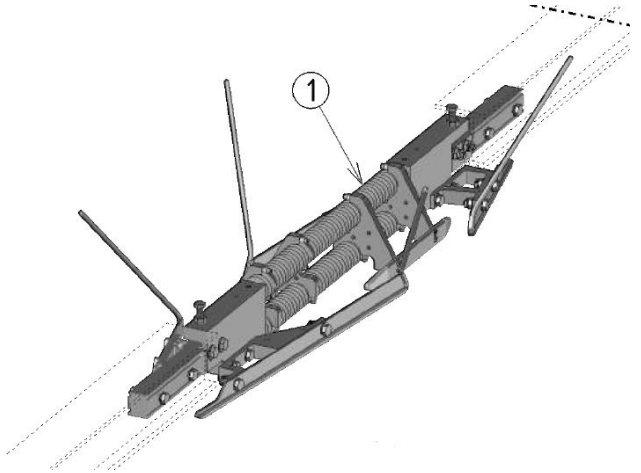
ALUMINIUM PROFILE



INSULATED SUPPORT BRACKET

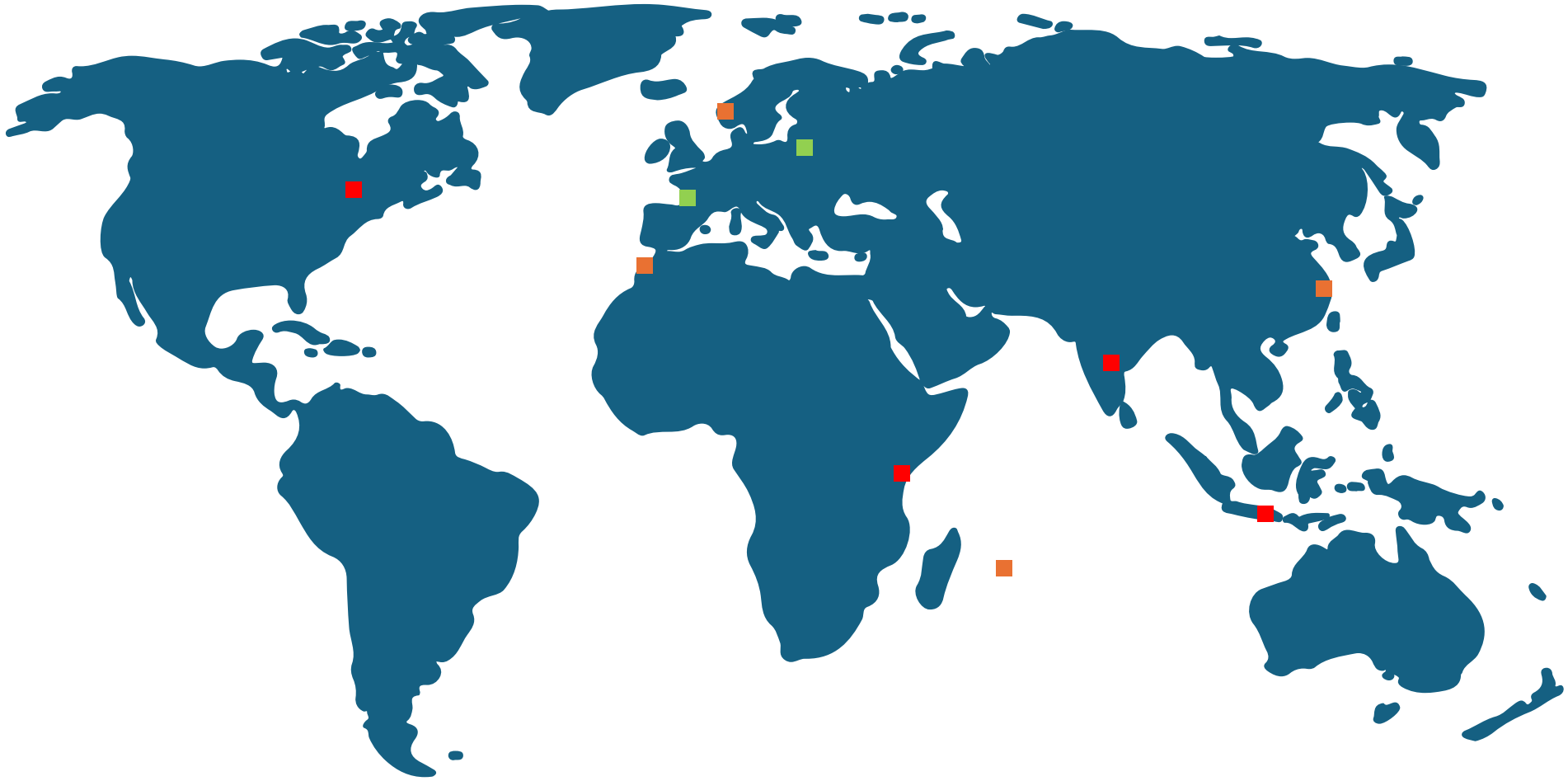


EXPANSION JOINT



SECTION INSULATOR ROC

PROJECT REFERENCES



- METRO EXPRESS MAURITIUS (2019)
- CASABLANCA TRAMWAY
- SUZHOU TRAMWAY
- BERGEN TRAMWAY
- ROC OTTAWA LIGHT METRO
- KRL YOGYAKARTA SOLO
- ELECNOR – LITHUANIA
- AERO INSTALLED ON NRIC NETWORK (BULGARIA)
- SEA HIGH SPEED LINE BORDEAUX- TOURS

OUR REFERENCES

NATIONAL COMPANIES

DB
SNCF
KORAIL
Infraestruturas de Portugal
NSB
INDIAN RAILWAYS
RATP
ONCF
CFL
adif
الشركة الوطنية للسكك الحديدية التونسية
SOCIETE NATIONALE DES CHEMINS DE FER TUNISIENS
KAI

CONTRACTORS

COLAS RAIL
ENGIE Ineo
ETF
L&T
TSO CATENAIRES
ALSTOM
SIEMENS
elecnor

MAINTENANCE

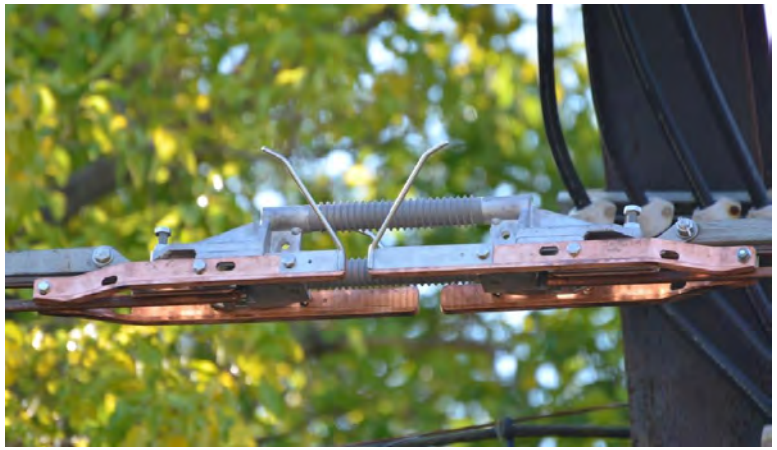
KEOLIS
RATP DEV
transdev

SECTION INSULATORS

- Full Range of Section insulators
- Light and compact
- Easy to install

Section Insulators

1,5 to 3kV : JG2178 – JG1772
Section insulator « Compact »



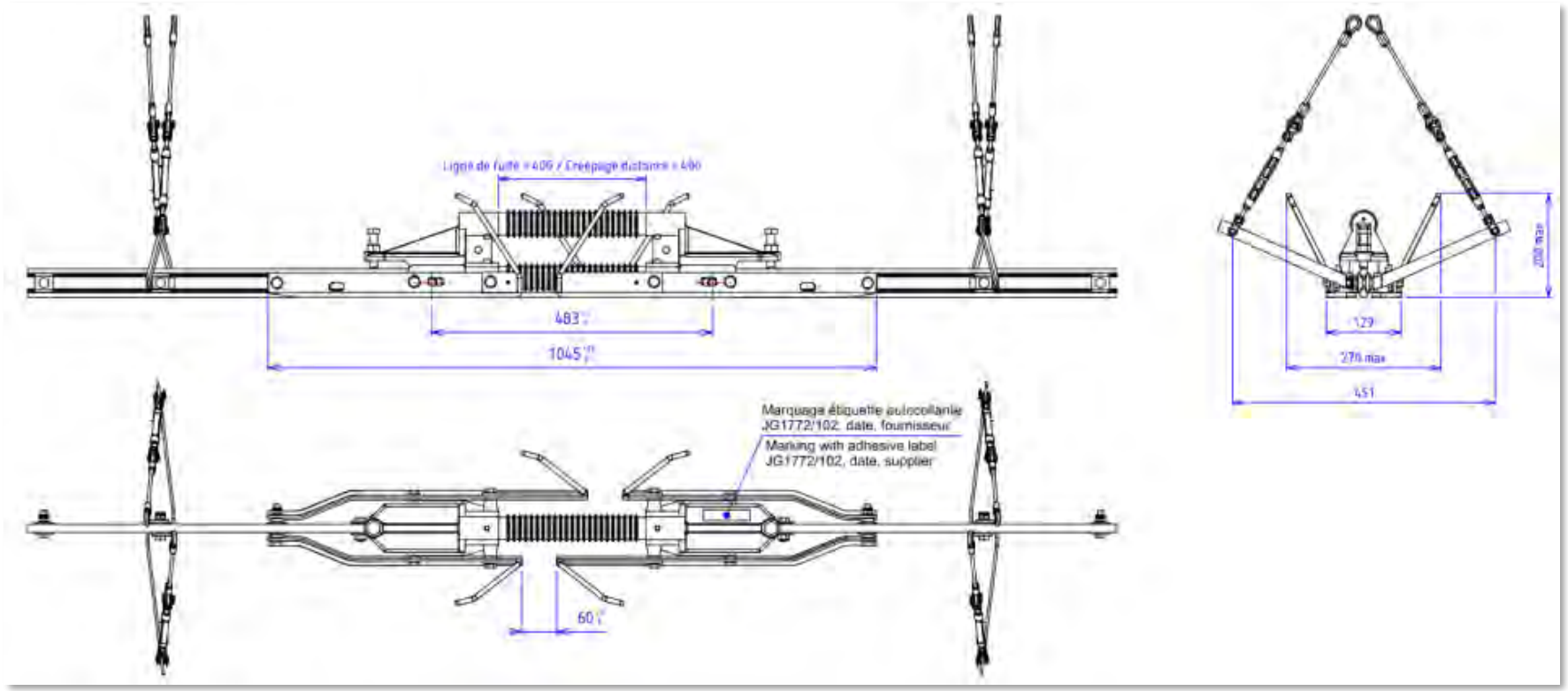
Caractéristiques	JG2178	JG1772
Vitesse de franchissement	200 km/h	200 km/h
Lame d'air	32 mm	60 mm
Charge de travail max.	40 kN	40 kN
Charge de rupture min.	120 kN	120 kN
Poids	10,5 kg	10,4 kg
Nombre de FC	1 or 2	1 or 2

Use by

SNCF RATP CPTM DE LIJN

JG2178/ JG1772 3 kV

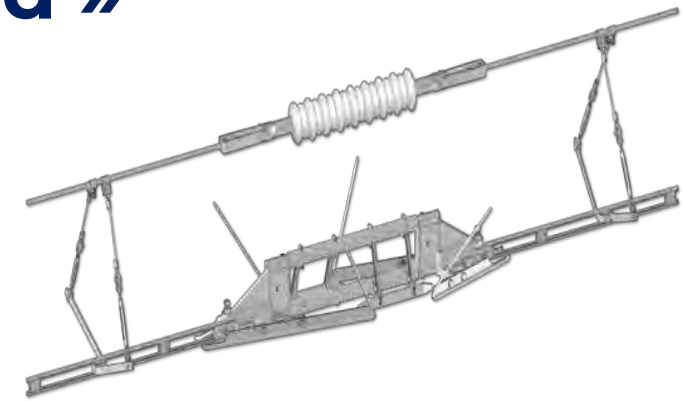
JG2178
1.5 / 3 kV



JG1352

Section insulator « High Speed »

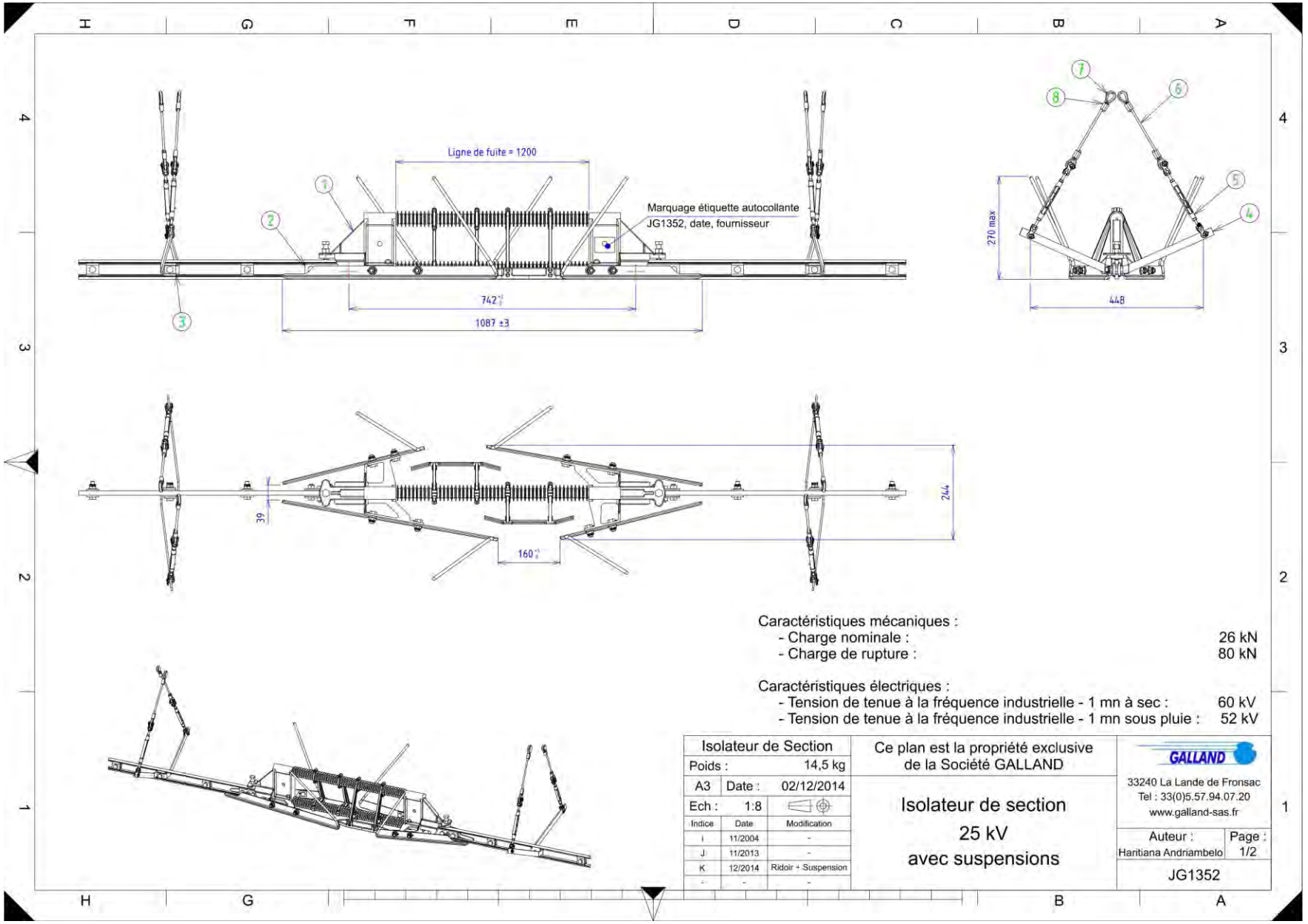
JG1352	
Crossing Speed	200 km/h
Air Gap	160 mm
Max. working load	26 kN
Min. breaking load	80 kN
Weight	7,2 kg
Number of CW	1



Utilisé sur ces réseaux

JG1352
25 kV

JG1352
25 kV



Caractéristiques mécaniques :
- Charge nominale : 26 kN
- Charge de rupture : 80 kN

Caractéristiques électriques :
- Tension de tenue à la fréquence industrielle - 1 mn à sec : 60 kV
- Tension de tenue à la fréquence industrielle - 1 mn sous pluie : 52 kV

Isolateur de Section		Ce plan est la propriété exclusive de la Société GALLAND
Poids :	14,5 kg	
A3	Date : 02/12/2014	Isolateur de section 25 kV avec suspensions
Ech :	1:8	

Indice	Date	Modification
I	11/2004	-
J	11/2013	-
K	12/2014	Ridoir + Suspension
-	-	-

GALLAND
33240 La Lande de Fronsac
Tel : 33(0)5.57.94.07.20
www.galland-sas.fr

Auteur : Haritiana Andriambelo | Page : 1/2

JG1352

JG2202

Section insulator « Mid Speed »

JG2202	
Crossing Speed	120-160 km/h
Air Gap	220 mm
Max. working load	26 Kn
Min. breaking load	80 kN
Weight	9,9 kg
Number of CW	1

Utilisé sur ces réseaux

QueenslandRail

NATIONAL RAILWAY INFRASTRUCTURE COMPANY

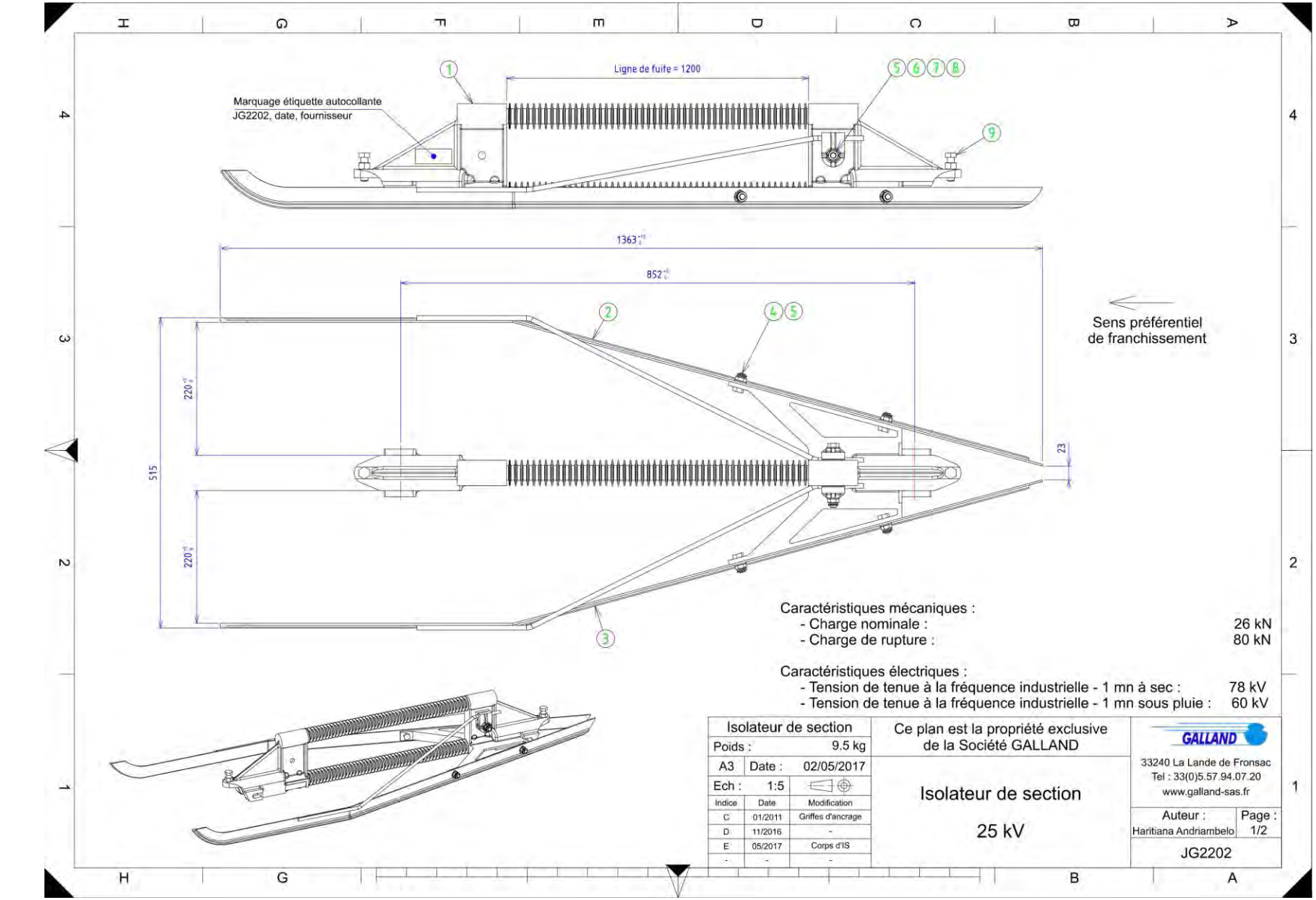
Infraestruturas de Portugal

DELHI METRO

SNCF

JG2202
25 kV

JG2202
25 kV



Caractéristiques mécaniques :
- Charge nominale : 26 kN
- Charge de rupture : 80 kN

Caractéristiques électriques :
- Tension de tenue à la fréquence industrielle - 1 mn à sec : 78 kV
- Tension de tenue à la fréquence industrielle - 1 mn sous pluie : 60 kV

Isolateur de section		
Poids :	9.5 kg	
A3	Date :	02/05/2017
Ech :	1:5	

Indice	Date	Modification
C	01/2011	Griffes d'ancrage
D	11/2016	-
E	05/2017	Corps d'IS

Isolateur de section

25 kV

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33240 La Lande de Fronsac
Tel : 33(0)5.57.94.07.20
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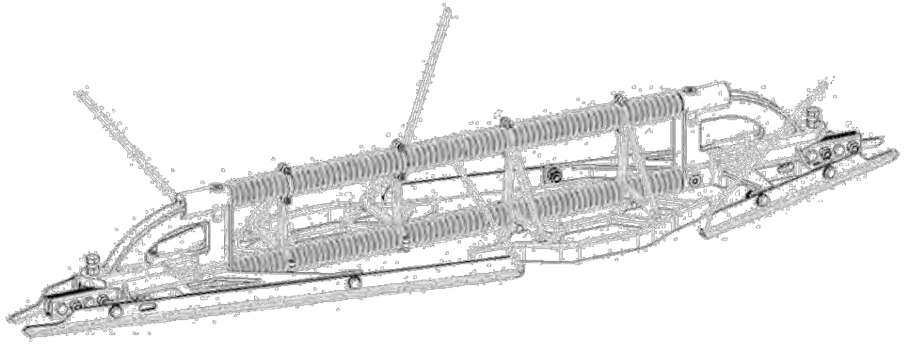
Auteur :	Page :
Haritiana Andriambelo	1/2

JG2202

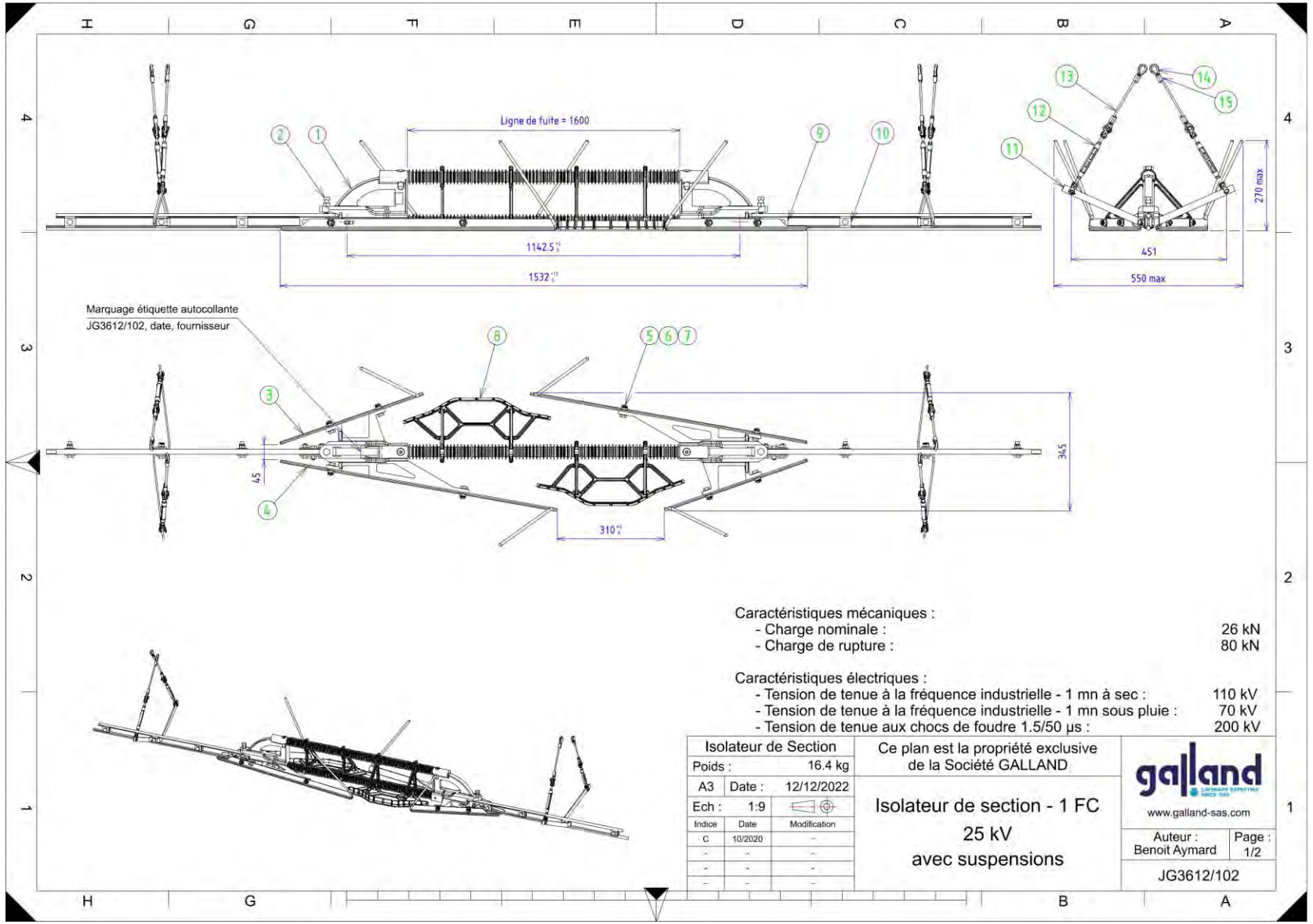
JG3612

Section insulator « High Speed »

JG3612	
Crossing Speed	200 km/h
Air Gap	310 mm
Max. working load	26 Kn
Min. breaking load	80 Kn
Weight	13 kg
Number of CW	1



JG1352



Caractéristiques mécaniques :

- Charge nominale :	26 kN
- Charge de rupture :	80 kN

Caractéristiques électriques :

- Tension de tenue à la fréquence industrielle - 1 mn à sec :	110 kV
- Tension de tenue à la fréquence industrielle - 1 mn sous pluie :	70 kV
- Tension de tenue aux chocs de foudre 1.5/50 µs :	200 kV

Isolateur de Section		Ce plan est la propriété exclusive de la Société GALLAND
Poids :	16.4 kg	
A3	Date : 12/12/2022	Isolateur de section - 1 FC 25 kV avec suspensions
Ech :	1:9	

Indice	Date	Modification
C	10/2020	–
-	-	-
-	-	-
-	-	-

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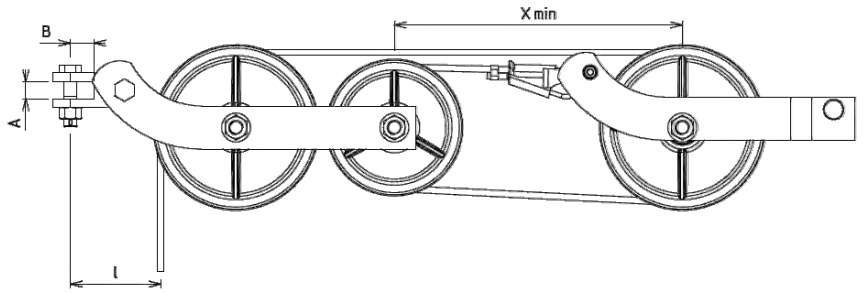
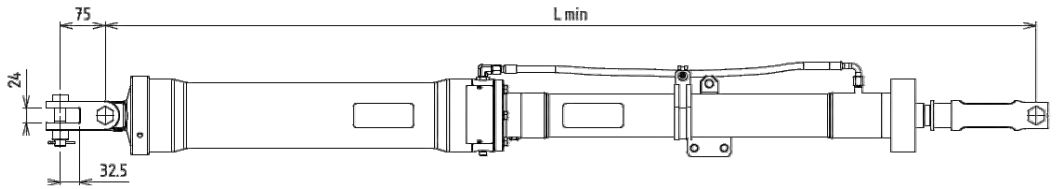
Auteur : Benoit Aymard | Page : 1/2

JG3612/102

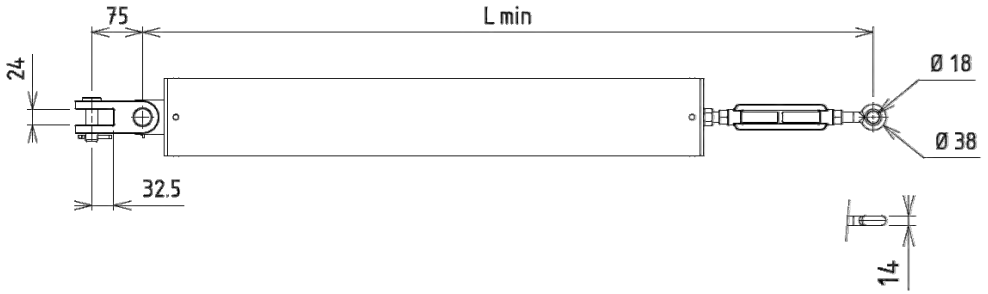
TENSIONING DEVICES



PULLEY TD -
RATIO 1/3 TO 1/5



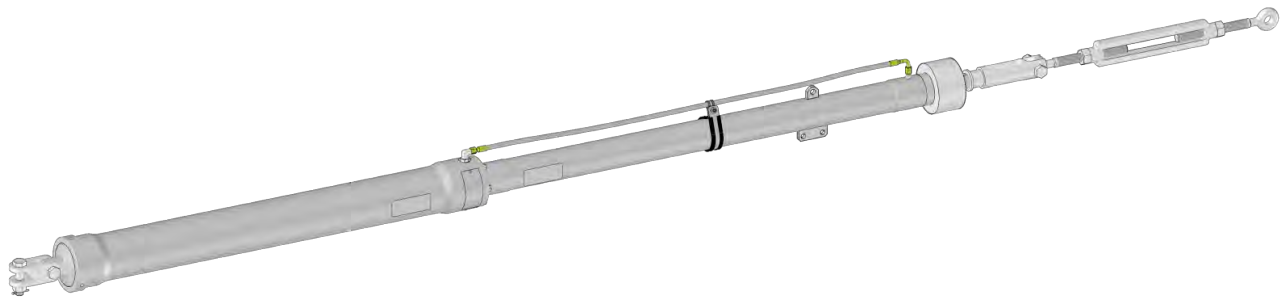
OLEOPNEUMATIC TD - AÉRO



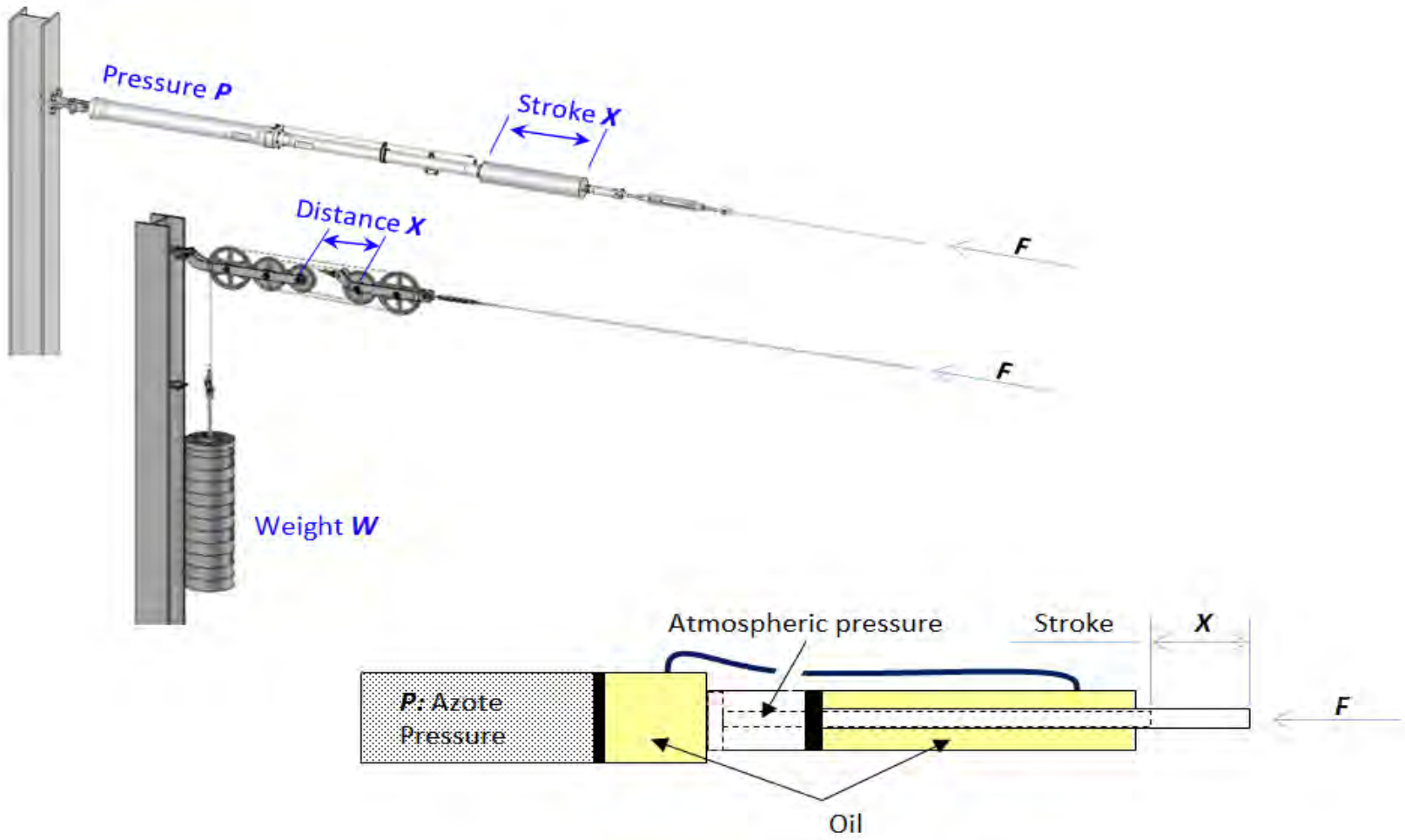
SPRING TD -
FOR CONNECTIONS

TENSIONING DEVICES : AERO

In partnership with **Kaller**, **Galland** has developped **the Aéro**: a tensioning device, **without counterweights**, which uses **hydraupneumatic** technology to maintain, autonomously, a constant effort on the catenary line according to the temperature variation.



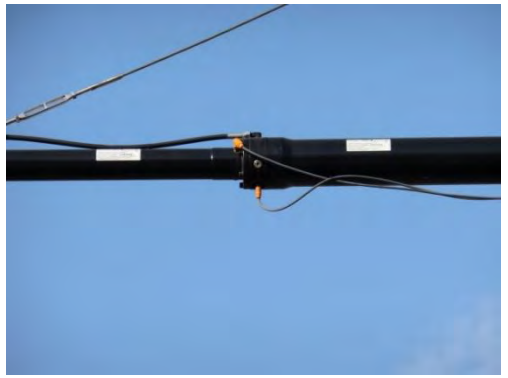
TENSIONING DEVICES : AERO

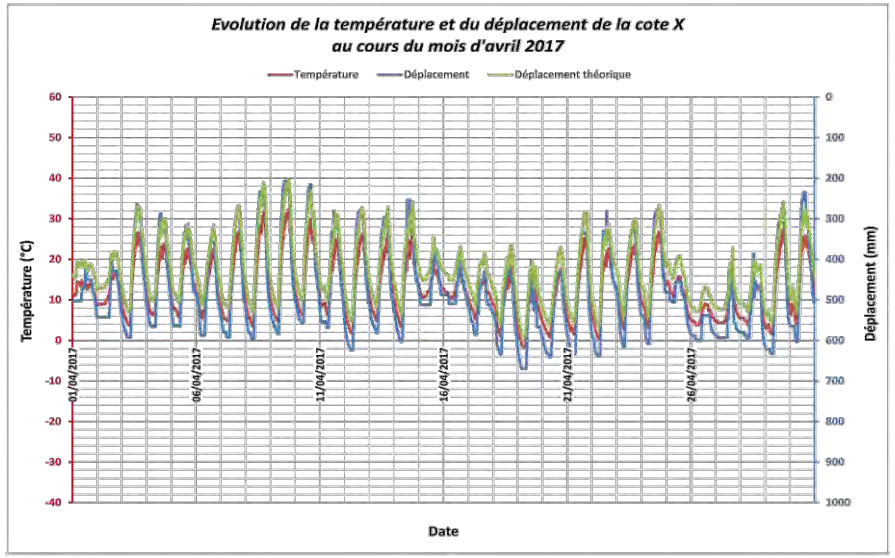


TENSIONING DEVICES : AERO

Version 2.0. in service since February 2015

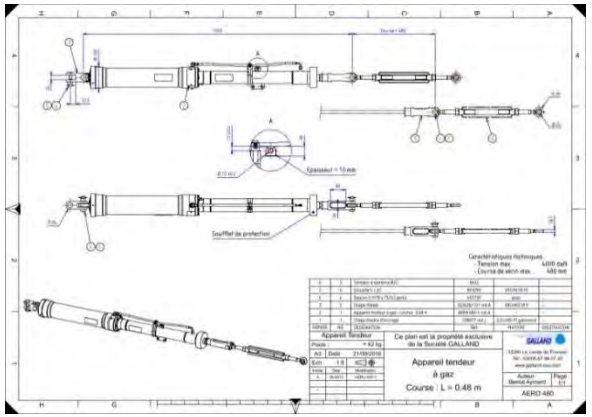
- The monitoring box, collects and powers the sensors (4-20mA) integrated in the Aéro and sends data to a dedicated server through 3G local network
- This box is powered by an internal battery recharged by a solar panel for a total autonomous operation

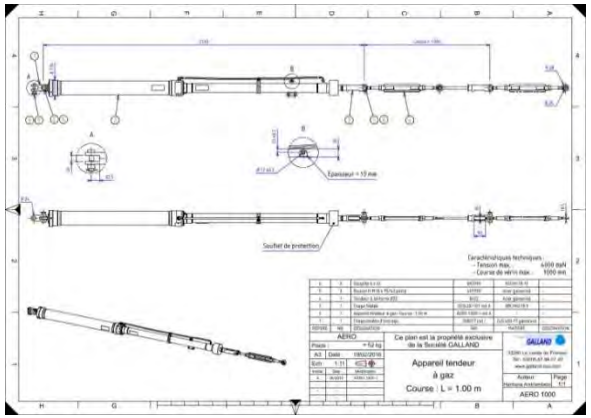




TENSIONING DEVICES : AERO

	AÉRO 480	AÉRO 1000
Weight (Kg)	42	52
Min. breaking load (kN)	191	191
Max. stroke (mm)	480	1 000
Max. tension load (kN)	40	40
L x Ø (mm)	1 630 x Ø130	2 470 x Ø130
Compensation capacity, Δt = 70°C, (m)*	200 - 400	400 - 800
Δ Temperature	-20°C to +50°C	-20°C to +50°C



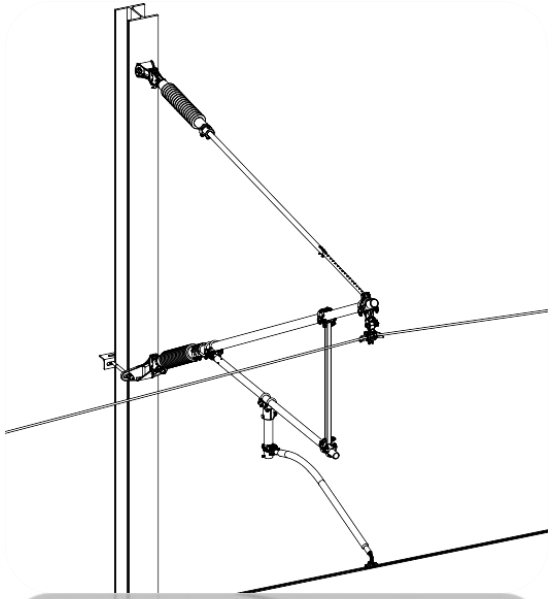


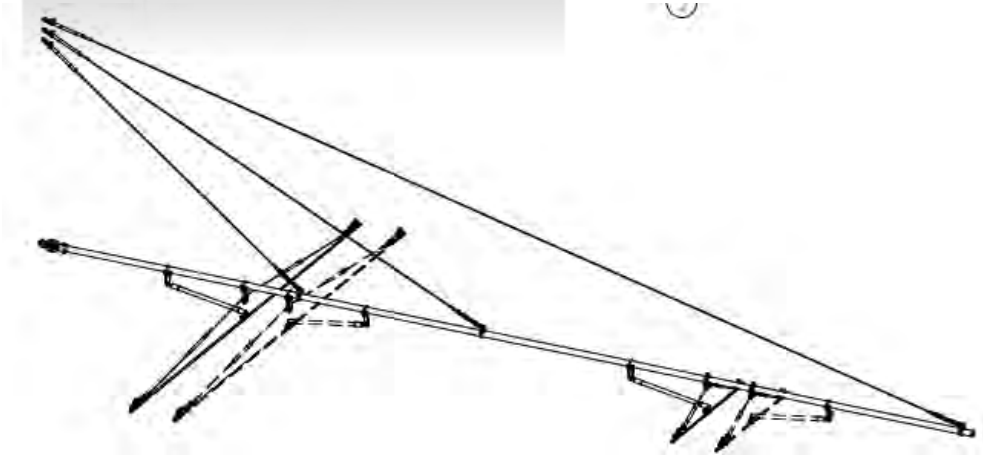
AERO is installed on :

- ✓ France
  - ❑ Paris (RATP)
  - ❑ Besançon (Kéolis)
  - ❑ Montpellier (TAM)
  - ❑ Grenoble (TAG)
  - ❑ Le Havre (LIA/CTPO)
  - ❑ Dijon (Kéolis)
  - ❑ Strasbourg (CTS)
  - ❑ Saint-Etienne (STAS)
  - ❑ SNCF

- ✓ Europe/Export
  - ❑ Swiss railways, Bienne
  - ❑ Tramway of Poznan / homologation PKP (Poland)
  - ❑ REFER in Lisbonne (Portugal)
  - ❑ Tramway of Cuiaba (Brazil)
  - ❑ South Korea
  - ❑ Approved by NRIC (Bulgaria)

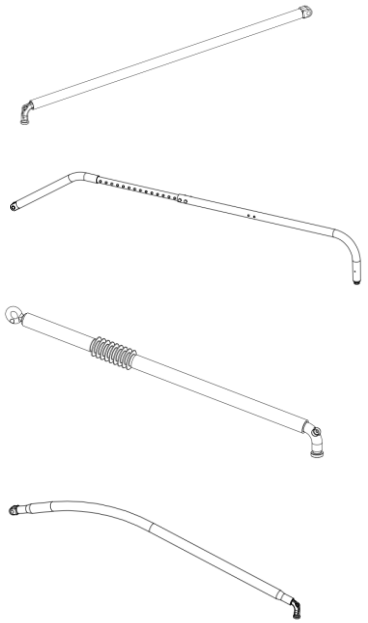
CANTILEVER AND STEADY ARMS



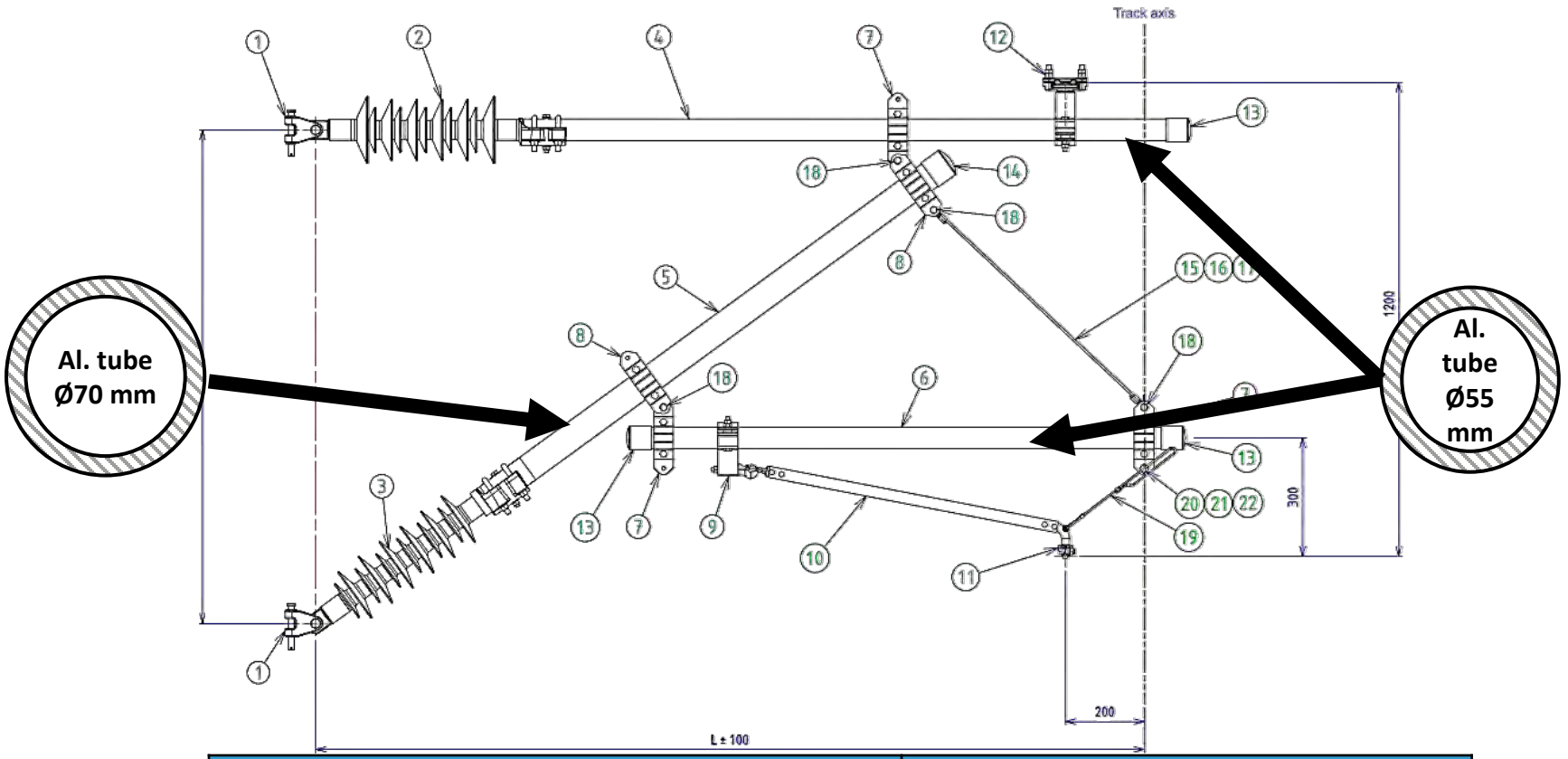


SINGLE TRACK
DOUBLE TRACK
MID-POINT ARRANGEMENT
NORMAL/CURVED

ALUMINIUM
GALVANIZED STEEL

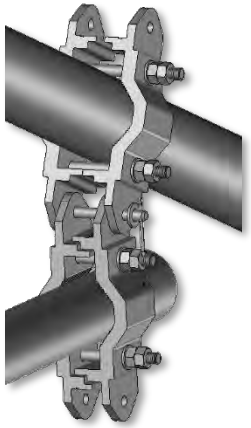


MODULAR CANTILEVER SYSTEM (ALUMINIUM)

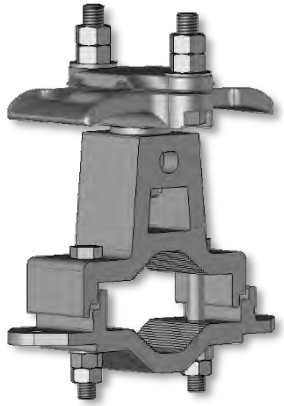


Technical particular	Value
Stay tube outside diameter	Ø55 mm
Bracket tube outside diameter	Ø70 mm
Registration arm outside diameter	Ø55 mm
Tube and fastening clamps material	Extruded aluminium alloy – 6063 T6
Fasteners	M10 stainless steel A4

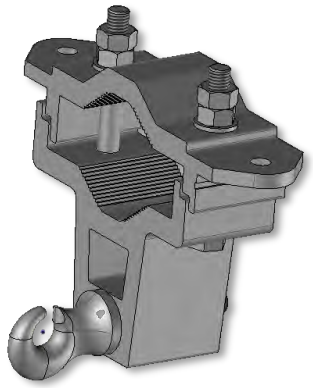
MODULAR CANTILEVER SYSTEM (ALUMINIUM)



Articulated fitting for tubes Ø55 & Ø70 mm	
Part No.	JG3870 + JG3871
Material	Extruded aluminium alloy - 6063 T6

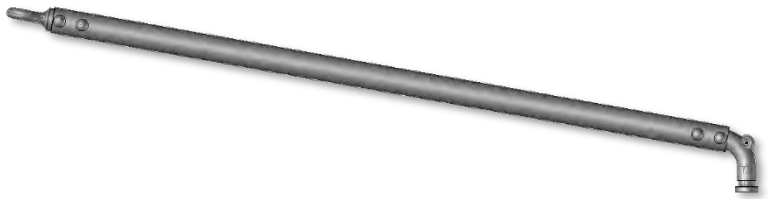


Messenger wire support assembly for tube Ø55 mm	
Part No.	JG3877/201
Clamp material	Extruded aluminium alloy - 6063 T6
MW clamp material	Copper-Aluminium alloy

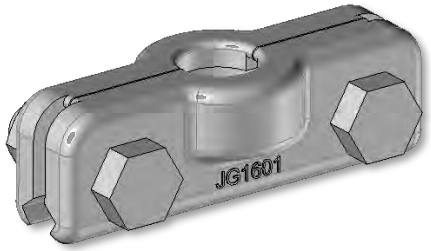


Pull-off fitting assembly for tube Ø55 mm	
Part No.	JG3875
Clamp material	Extruded aluminium alloy - 6063 T6
Hook material	Stainless steel A4

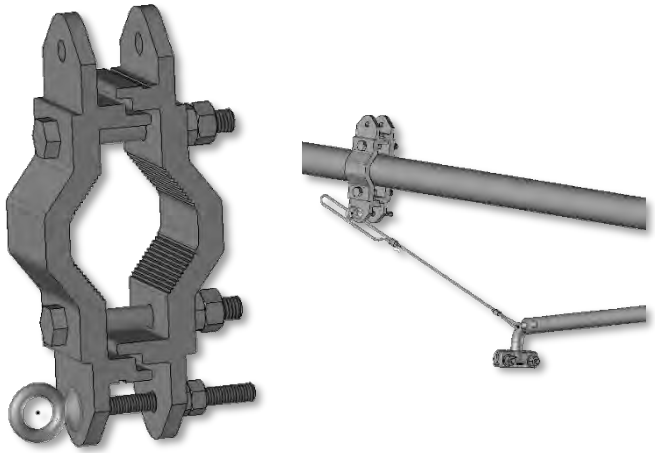
MODULAR CANTILEVER SYSTEM (ALUMINIUM)



Straight steady arm – L = 0,785 m	
Part No.	JG3907/785
Material	Galvanized steel

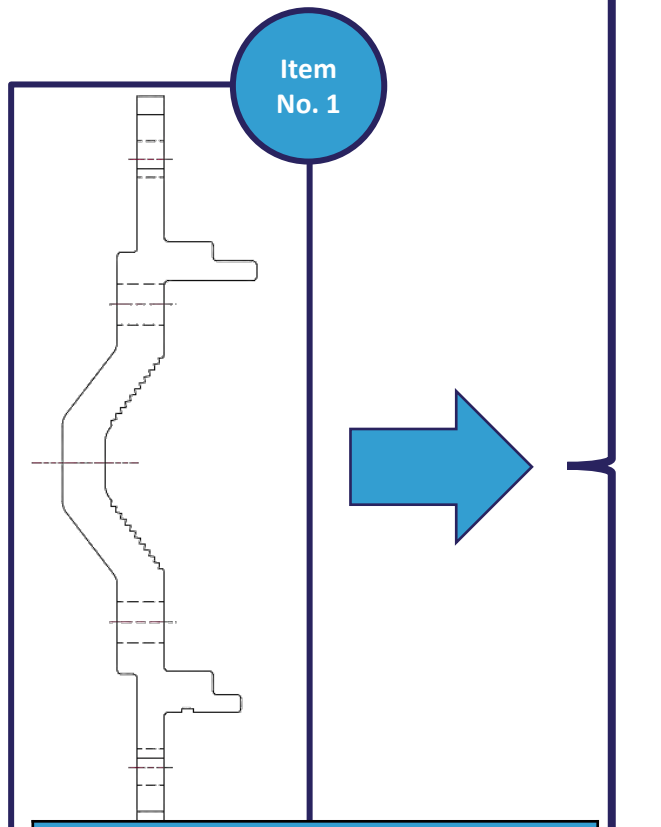


Contact Wire bolted clamp	
Part No.	JG1608
Material	Copper-aluminium alloy

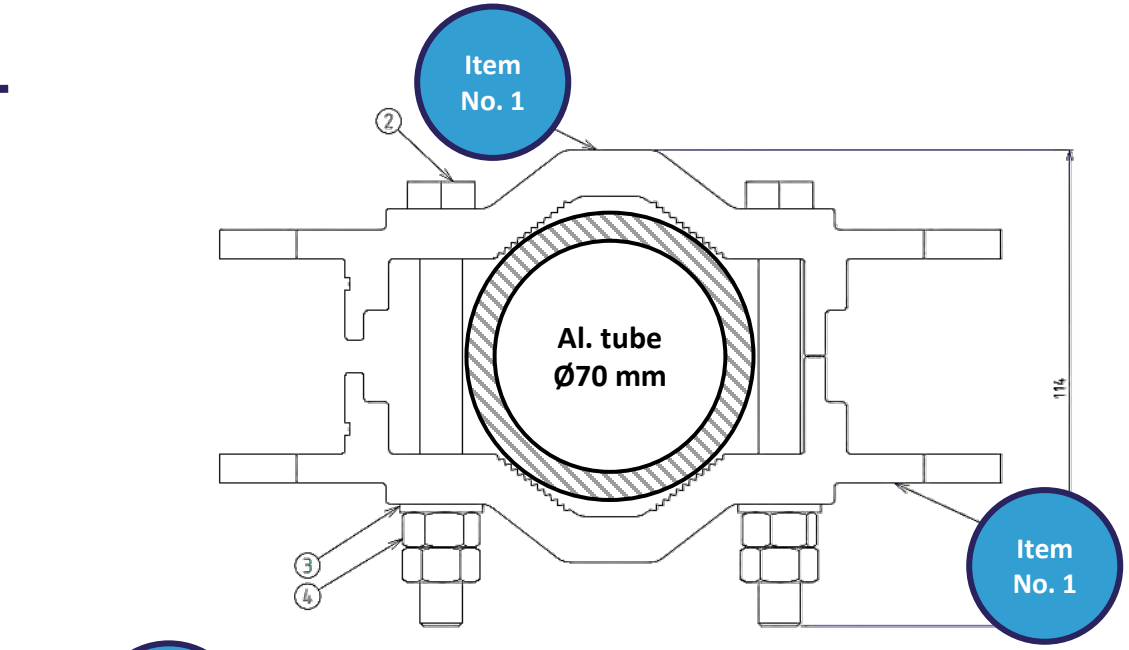


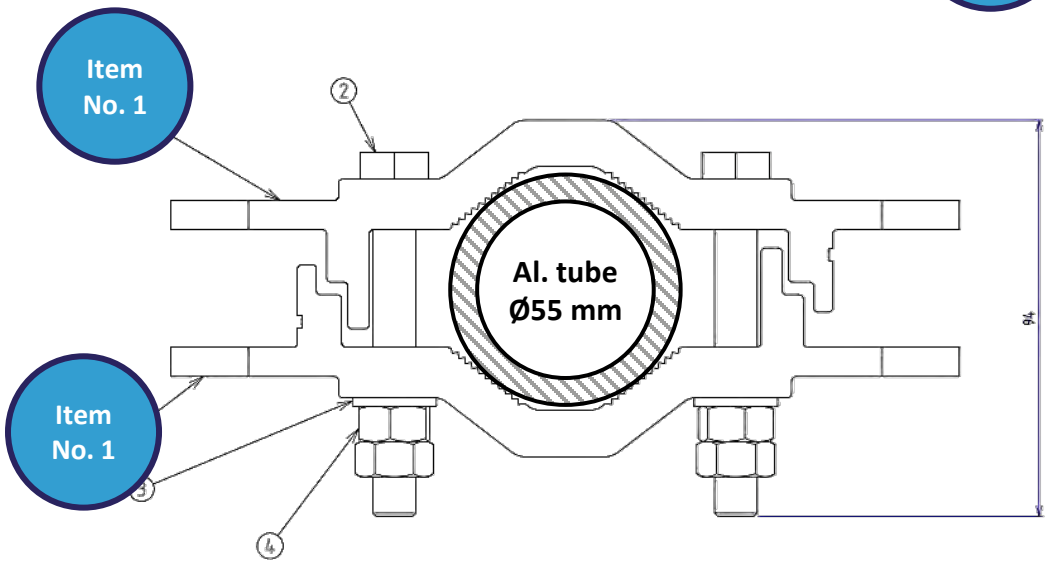
Anti-wind fitting assembly	
Part No.	JG3905
Clamp material	Extruded Aluminium – 6063 T6
Ring material	Stainless steel A4

MODULAR CANTILEVER SYSTEM (ALUMINIUM)

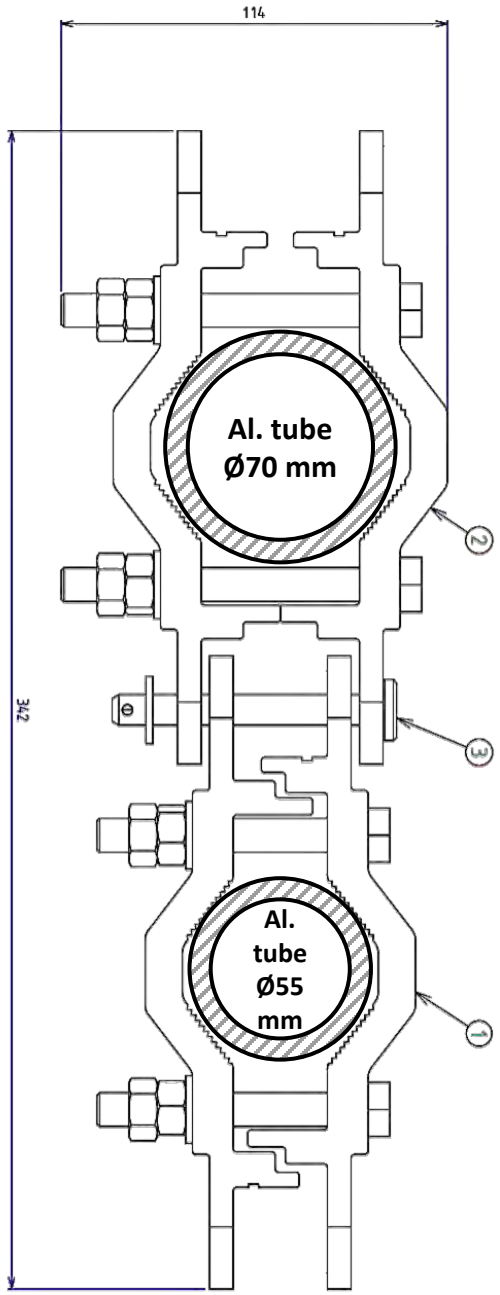


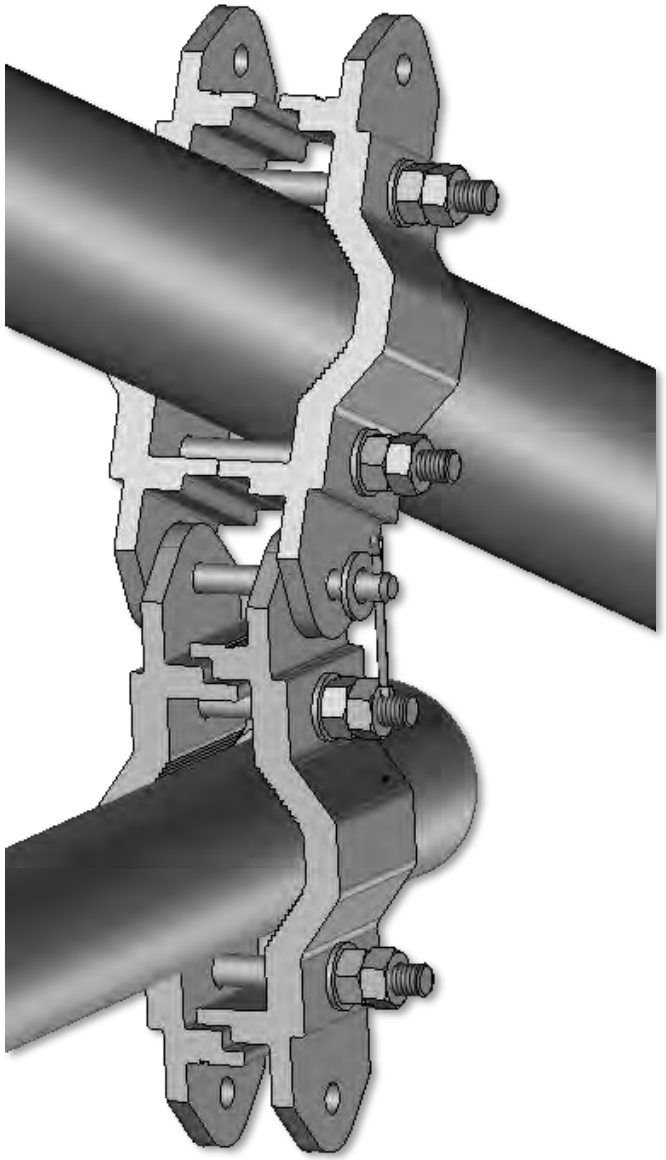
Articulated fitting	
Part No.	JG3869
Material	Extruded aluminium alloy - 6063 T6



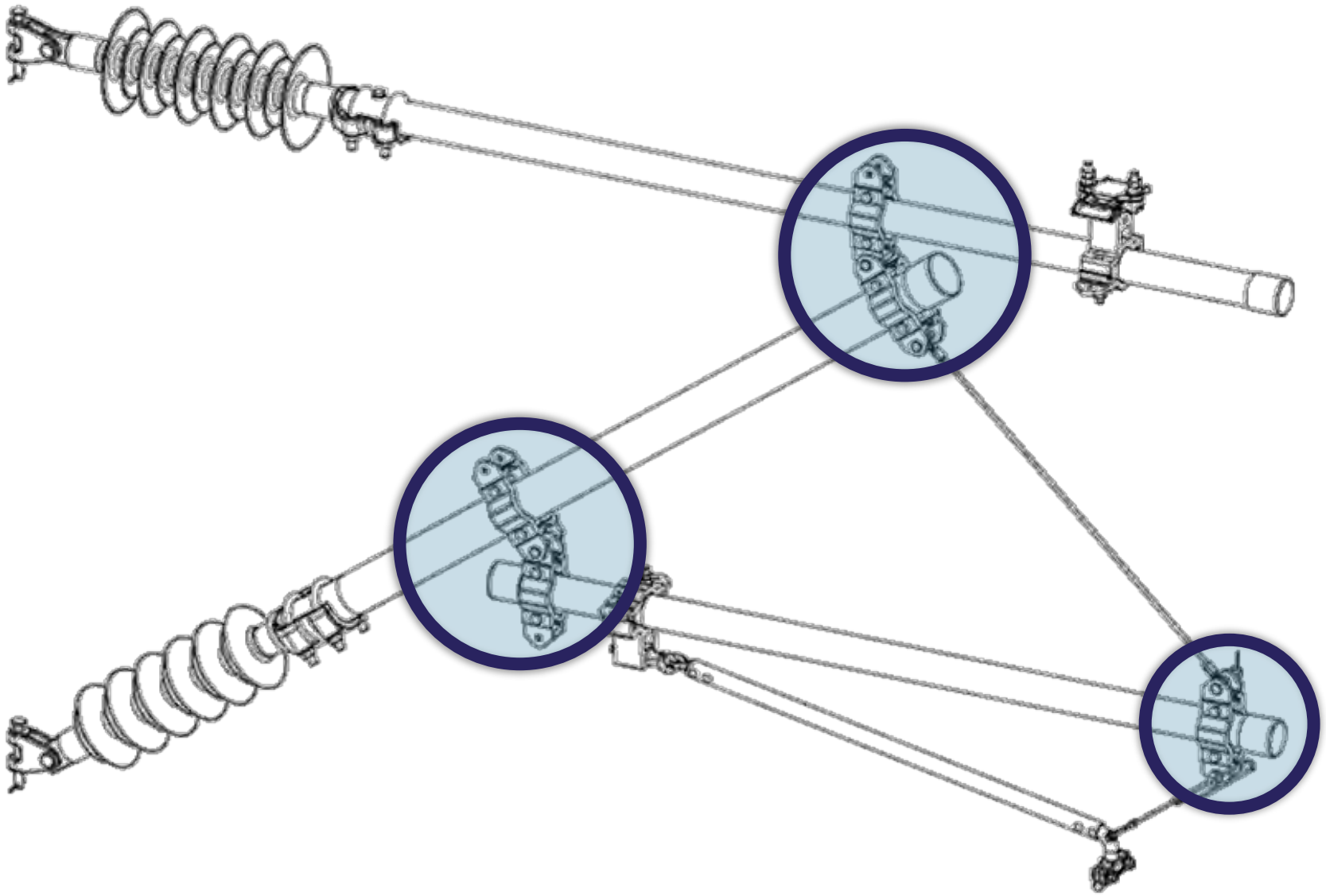


MODULAR CANTILEVER SYSTEM (ALUMINIUM)

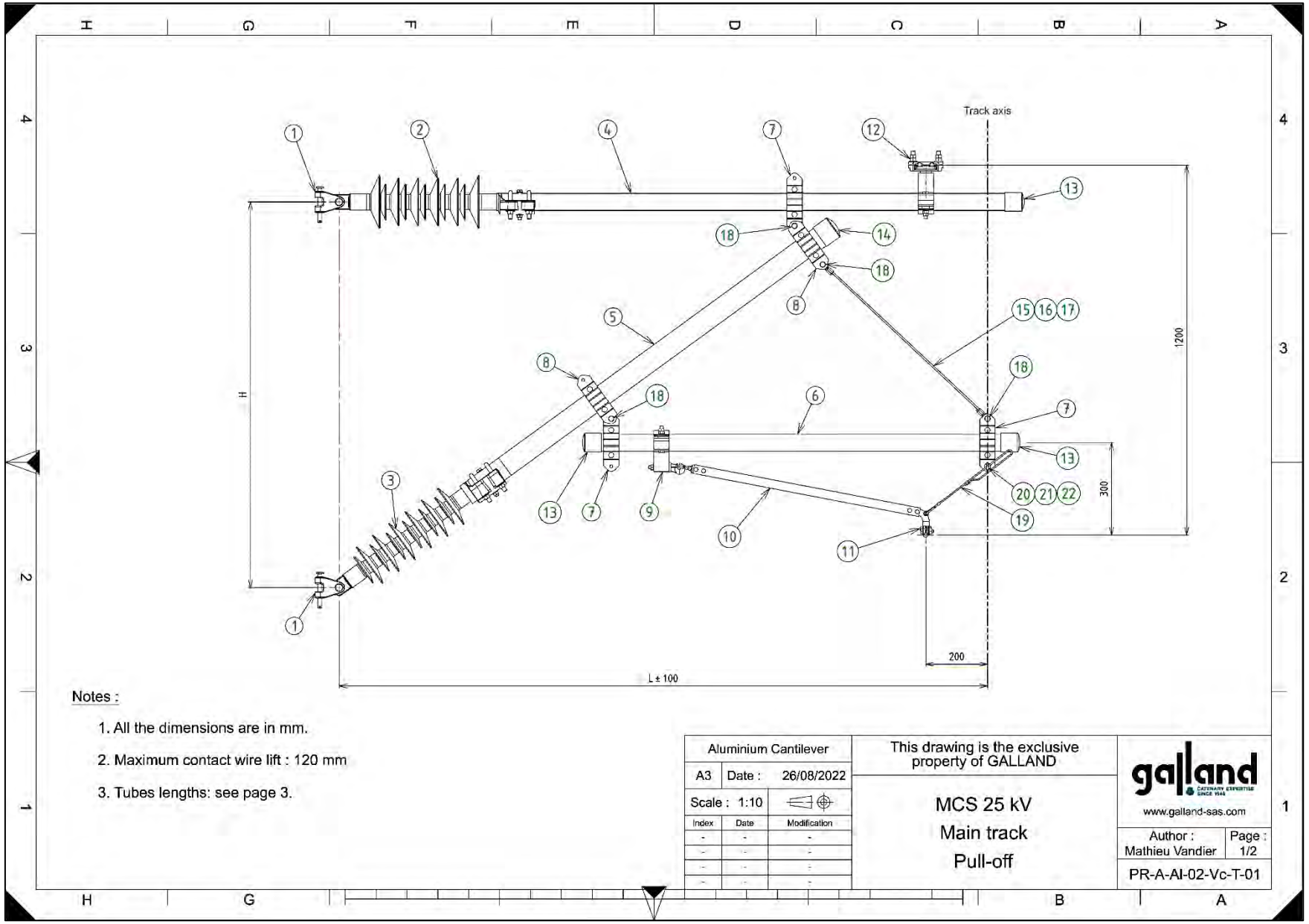




MODULAR CANTILEVER SYSTEM (ALUMINIUM)



MODULAR CANTILEVER SYSTEM (ALUMINIUM)



Notes :

1. All the dimensions are in mm.
2. Maximum contact wire lift : 120 mm
3. Tubes lengths: see page 3.

Aluminium Cantilever		
A3	Date :	26/08/2022
Scale : 1:10		
Index	Date	Modification
-	-	-
-	-	-
-	-	-
-	-	-

This drawing is the exclusive property of GALLAND

MCS 25 kV
Main track
Pull-off

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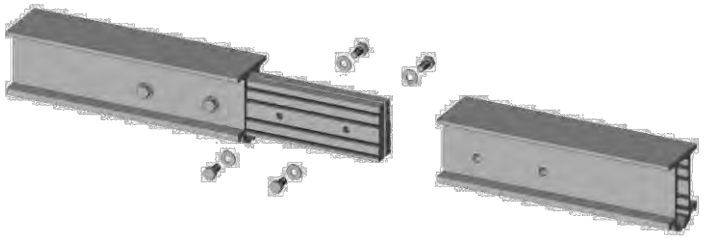
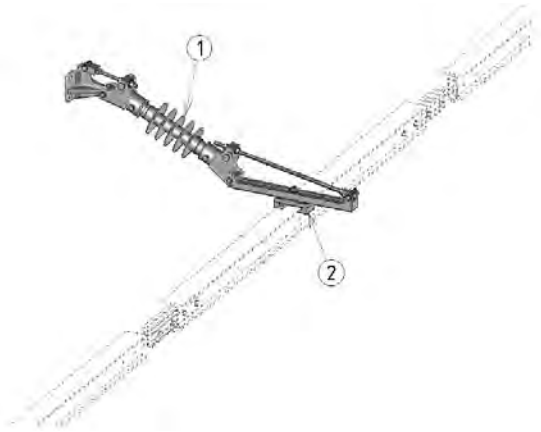
Author : Mathieu Vandier | Page : 1/2

PR-A-Al-02-Vc-T-01

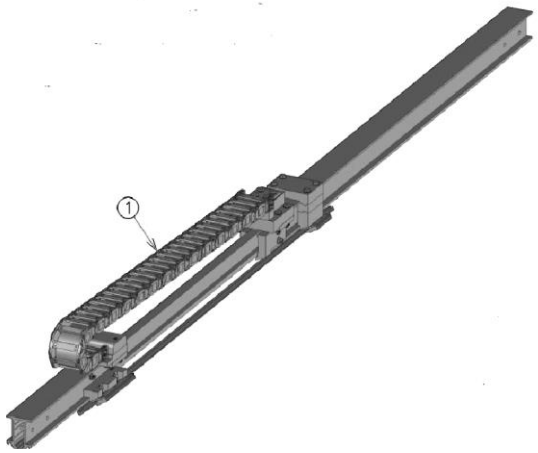
RIGID OVERHEAD CATENARY



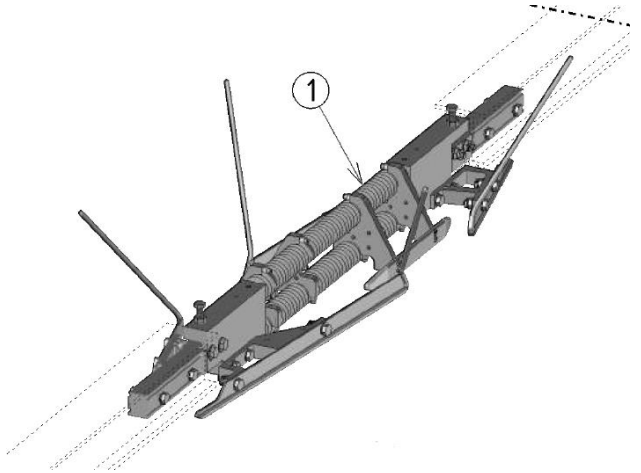
ALUMINIUM PROFILE



INSULATED SUPPORT BRACKET



EXPANSION JOINT



SECTION INSULATOR ROC

THANKS !

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