

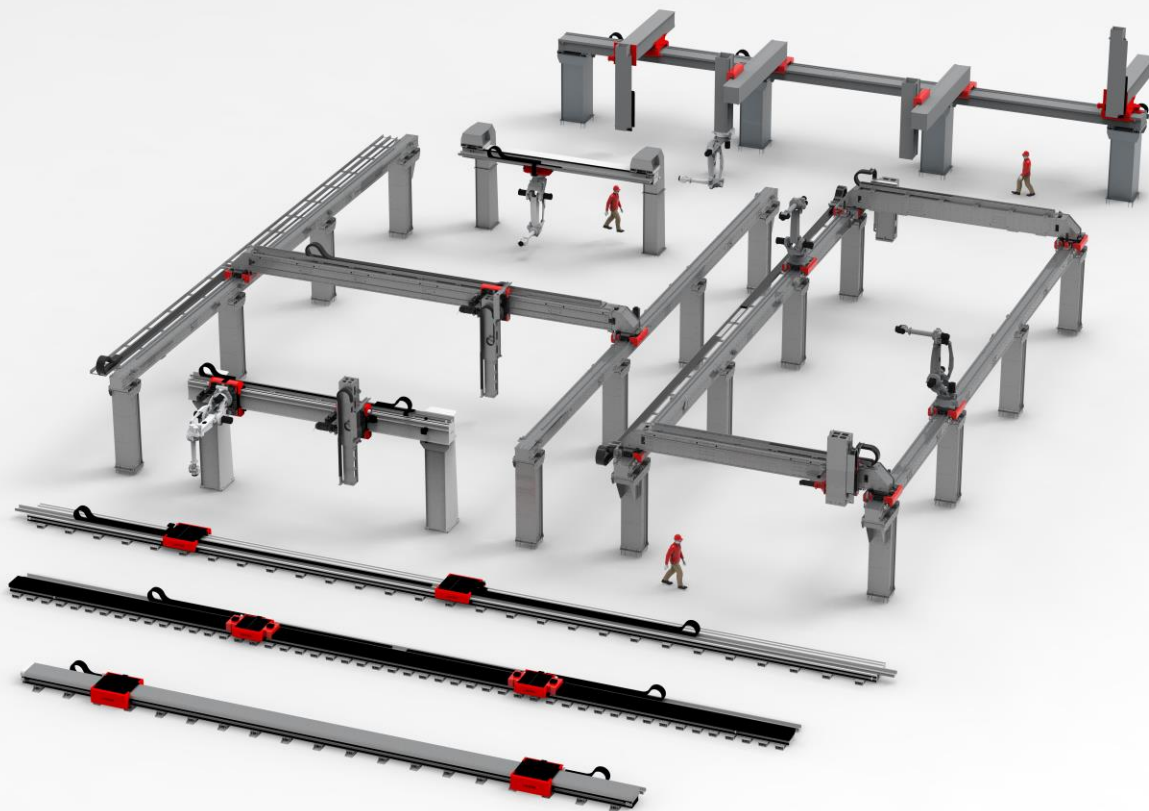
LUCAS

LUCAS Company Presentation



DEXIS

IBERICA



01

COMPANY

Who we are

What are our values

02

LUCAS PRODUCTS

Our linear axes and Cartesian robots

03

LUCAS INNOVATIONS

04

LUCAS SERVICES

THE COMPANY

01



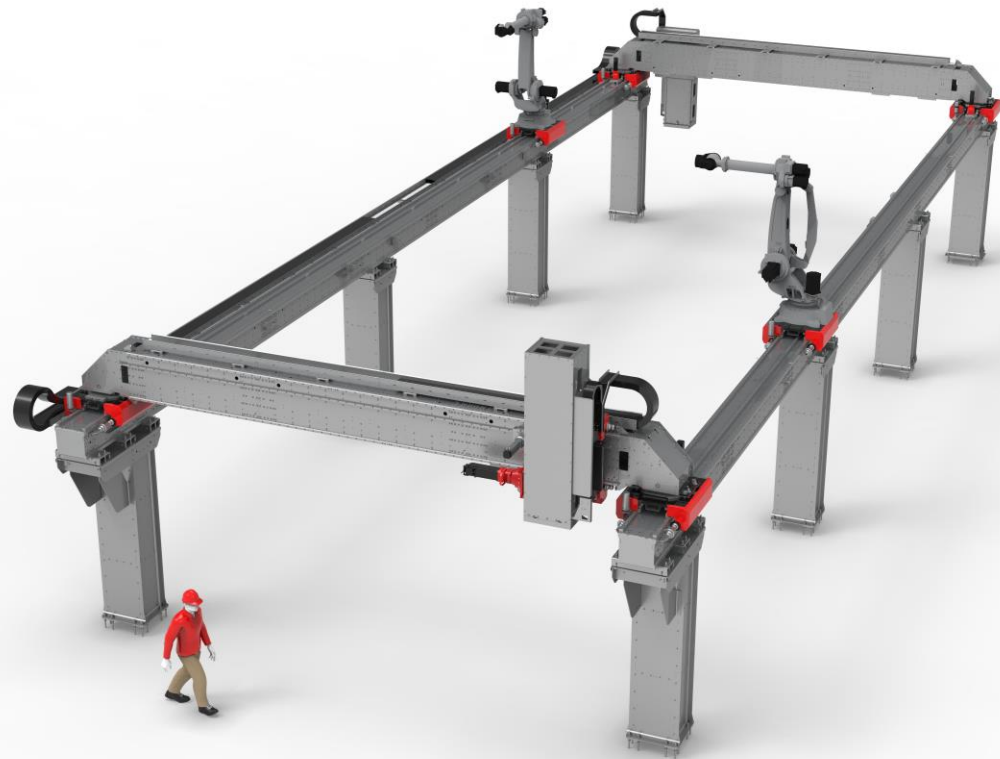
OUR DNA

Robots makers

For over 50 years!

Located in France in Bazas
south of Bordeaux

Turnover 20 million Euro



OUR HISTORY



A family company created in 1965

For more than 50 years, LUCAS has been designing, developing and manufacturing machines for big industrial companies.

THE YOUNG STRENGTHS AND THE EXPERIENCE

MANAGEMENT

Jean
Jacques Lucas

Christophe
Lérisson

OPERATIONS

Jonathan
Lucas

Sales
&
Marketing

Laurent
Doignon

Industrialization

Christophe
Laurent

R&D

Stéphane
Lucas

After Sales

And over 100 employees in more than 20 different activities

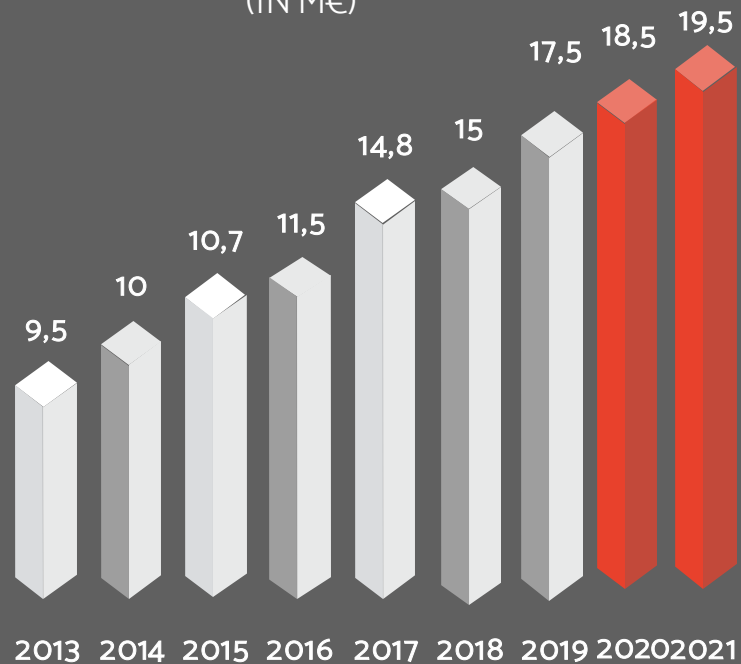
FROM CONCEPT TO INSTALLATION



TARGET 2021

21M€

TURNOVER
EVOLUTION
(IN M€)



A TRUSTED
STRUCTURE

LUCAS

THEY TRUSTED
US:

CONSTRUCTORS

■ **BOBST**

LECTRA

ABB

**FANUC
ROBOTICS**

SEEMi
We move it, for you!

KUKA

Panasonic

COMAU

fives
ultimate machines
ultimate factory

INTEGRATORS

CLEMESSY

ALEMA

Kremlin Resonance

SAVOYE

**DCM
Industrie**

Huguet
INGENIERIE
La performance nous rapproche

**EUROPE
TECHNOLOGIES**
GEBE2

HUBO

ACTEMIUM

SPIE

**COMMERCE
ROBOTIQUE**

VANDERLANDE

AR Techman
Automation & Robotique - www.Techman.fr

AXIOME

ROBOTECO & VITAL ARGON
SALVATURES SÉRIEUSEMENT CÉLÈSTES

lexell

SABO S.A.
industrial solutions

U

END USERS

**DASSAULT
SYSTÈMES**

AIRBUS

EADS

Rolls-Royce

MICHELIN
Les produits d'élite d'élite

POTTEZ

Hennessy

EUROCOPTER

Sodebo

CHANEL

L'ORÉAL

PSA PEUGEOT CITROËN

RENAULT

**CNI
INDUSTRIAL**

**PSA
GROUPE**

Air Liquide

**MAGNETI
MARELLI
LM**

**WIND
POWER**

a GE Renewable Energy business

LUCAS



OUR VISION

To remain a successful manufacturer of industrial machinery, we must integrate the constraints of Lean Manufacturing right from the product development phase.

SHEET METAL WORKING, MACHINING, PAINTING

A 3500m² hall for the processing units
consisting of::

- AMADA F1 6KW Laser Cutting Centre with 4000 x 2000 formats with automatic loading / unloading warehouse
- Bending Presses AMADA 220 T 4m et 50 T 2m
- Manual welding cells equipped with semi-automatic positioners
- CNC machining centres (MAZAK et MATEO)
- Complete robotized surface treatment and painting system (MICHAUD)



TECHNICAL DEVICES: ASSEMBLY, TESTING, CHECKING



ASSEMBLY UNIT

A 2800m² hall consisting of :

- Large-capacity overhead travelling cranes operating throughout the plant
- A laser tracker ensures precise adjustments and controls

Software :

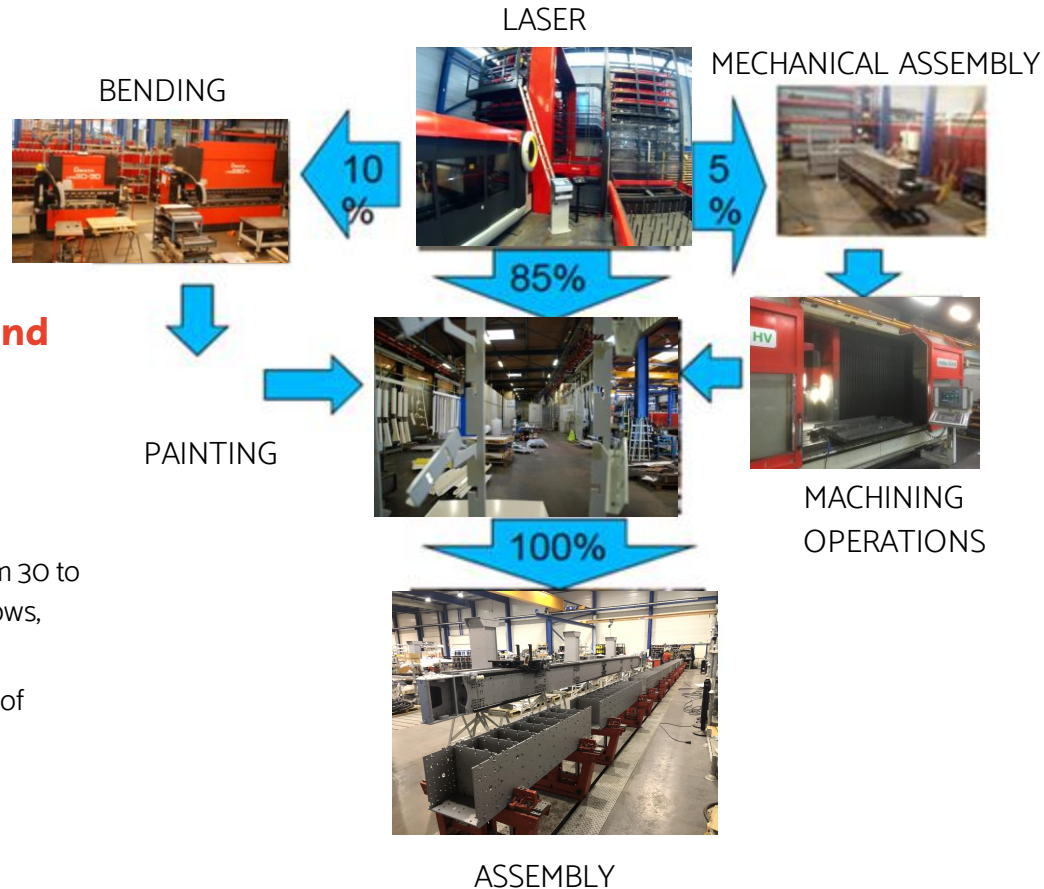
- ERP - Sylob 7
- CAO / FAO - Créo / Amada
- CAO - Catia



FACTORY OF THE FUTURE CHEZ LUCAS

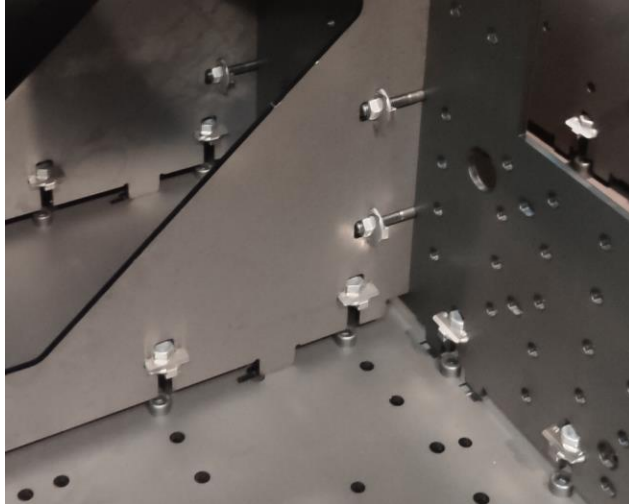
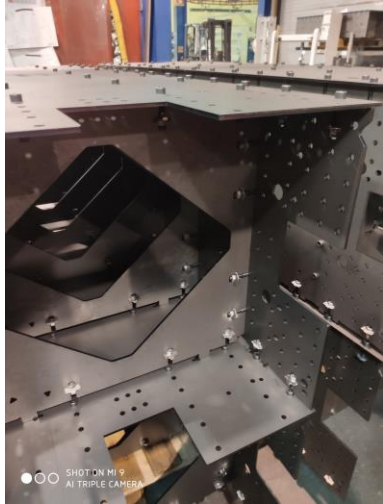
Fully automated, simple and flexible vertical in-house production in 2022

- The workforce rate will decrease from 30 to 15% thanks to the simplification of flows, automation and robotization.
- Laser / painting / assembly are 85% of production



IMPORTANT TECHNICAL DEVELOPMENT OBJECTIVES

- No welding
- Minimized bending
- Tolerance Machining $< \pm 0.05 \text{ mm}$ (i.e. 0.1 mm)
- No rework for drilling, tapping and milling



INNOVATION AND
ACCURACY

LUCAS

OUR GOAL THE BEST FINAL RESULT

LUCAS

THE CONDITIONS TO SUCCEED

- A motivated, effective and helpful team works in complete confidence
- The acceptance of production constraints by our designers
- The quick and easy realization of tests and prototypes
- Innovative ideas
- Objective cost monitoring and control



INVESTMENTS FOR THE FUTURE AND FOR THE FACTORY 4.0

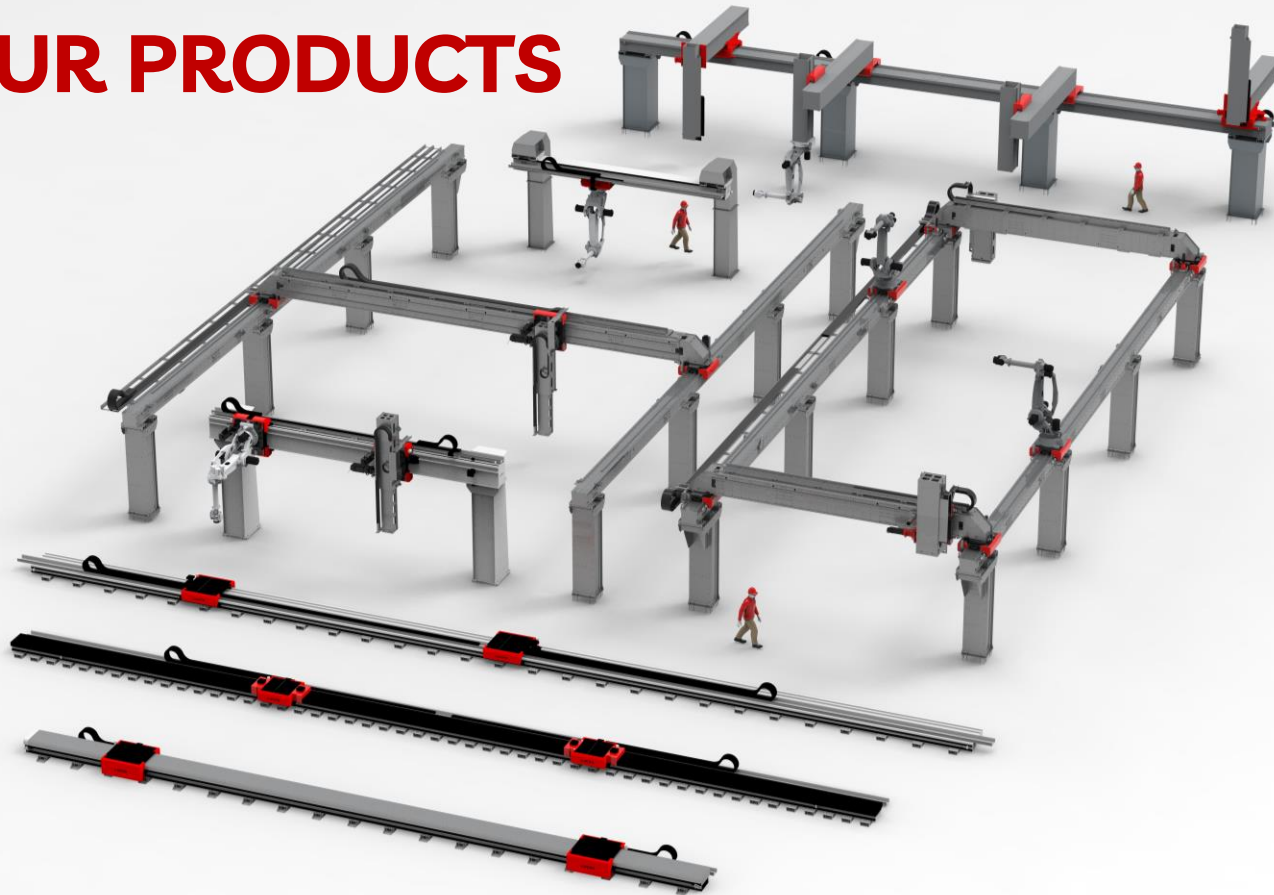
- **5% of turnover** in research, development and innovation
- Reorganisation of internal production flows (**Lean**)
- New integrated information management software with a **Sylob 9 CRM module**
- **Robotization** of spray cabin
- Automation of manufacturing methods and offers (**ON LINE configurator**)
- **Robotic** axis assembly bench
- Development of our **sales force** in France, Italy and Europe
- **Constant renewal** of our production equipment



**FUTURE AND
FACTORY 4.0**

LUCAS

OUR PRODUCTS

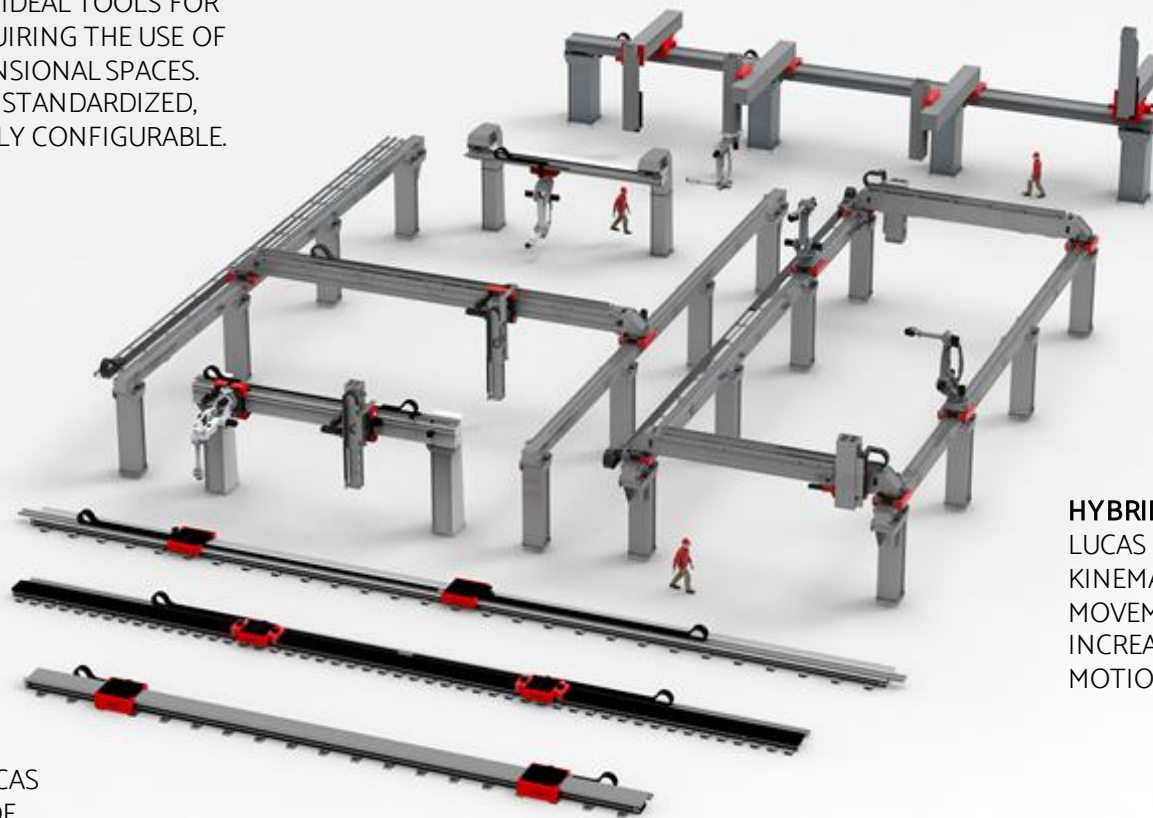


ROBOT 3-4 AXES

3-AXIS ROBOTS ARE IDEAL TOOLS FOR APPLICATIONS REQUIRING THE USE OF LARGE THREE-DIMENSIONAL SPACES. THESE ROBOTS ARE STANDARDIZED, MODULAR AND FULLY CONFIGURABLE.

ROBOTS CANTILEVERS

CANTILEVER ROBOTS ARE ECONOMICAL SOLUTIONS FOR APPLICATIONS THAT REQUIRE THE USE OF RESTRICTED THREE-DIMENSIONAL SPACES.



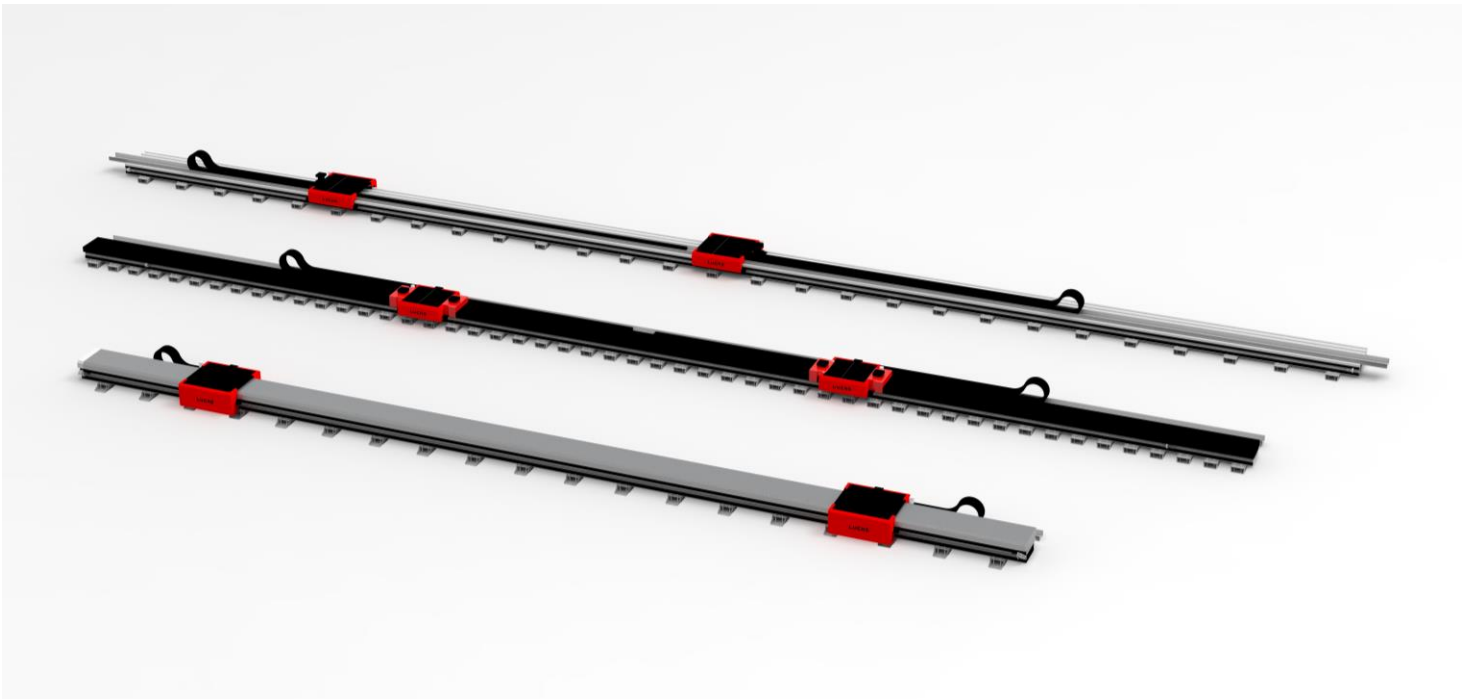
LUCAS LINEAR AXES

LINEAR AXES (Track) LUCAS INCREASE THE RANGE OF ANTHROPOMORPHIC ROBOTS FOR LONG DISTANCE OPERATIONS.

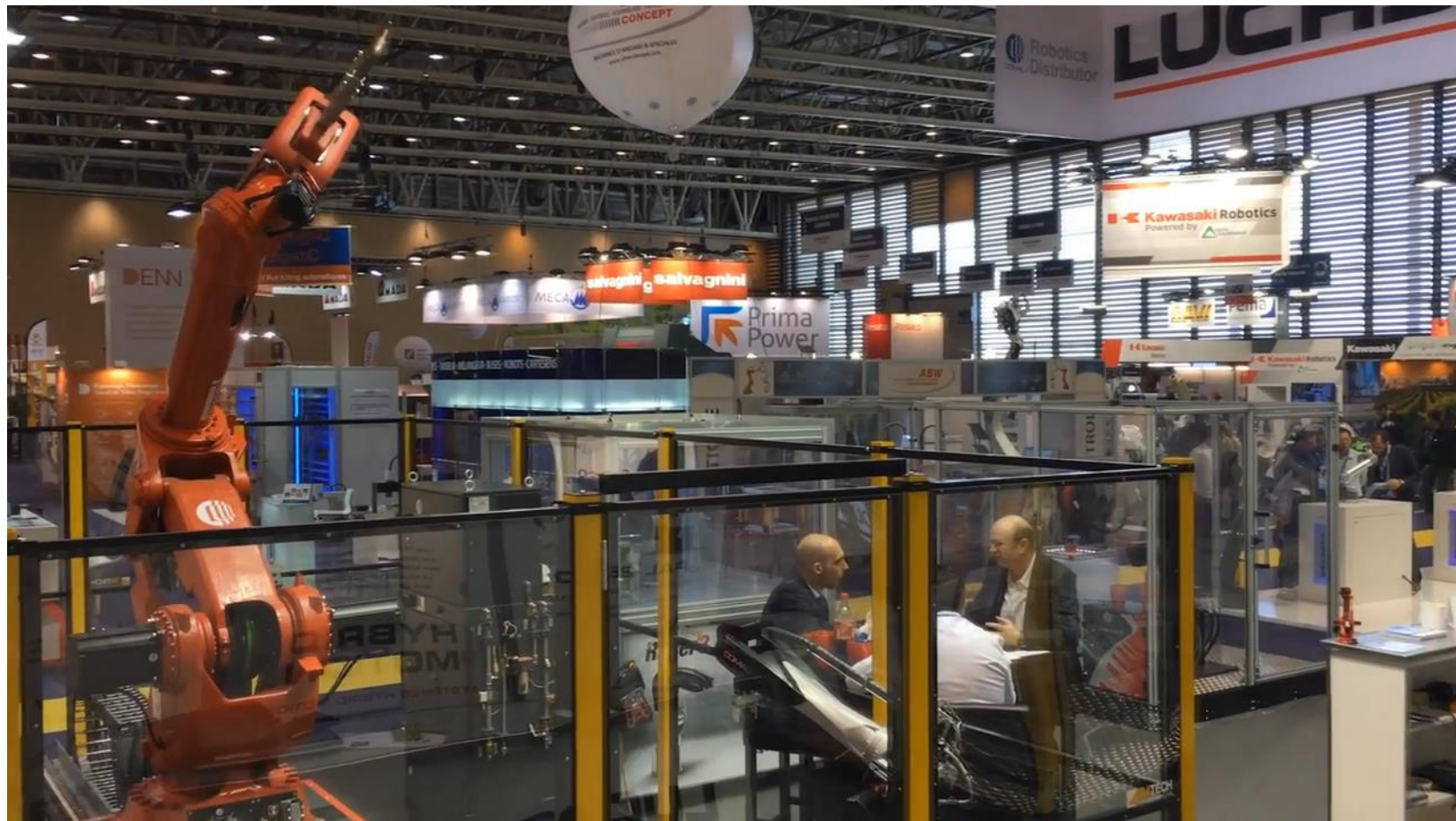
HYBRID MOTION

LUCAS ROBOTS COMBINE KINEMATICS TO ACHIEVE FAST MOVEMENTS WITH AN EVER-INCREASING RANGE OF MOTION.

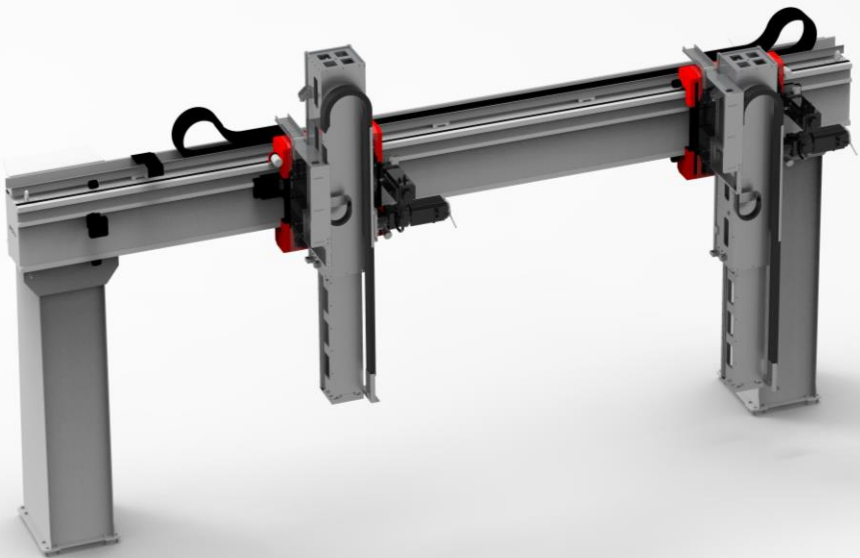
LINEAR AXES ON THE FLOOR



LINEAR AXIS ON THE FLOOR



CARTESIAN ROBOTS TWO AXIS



CARTESIAN ROBOTS 3 / 4 AXES

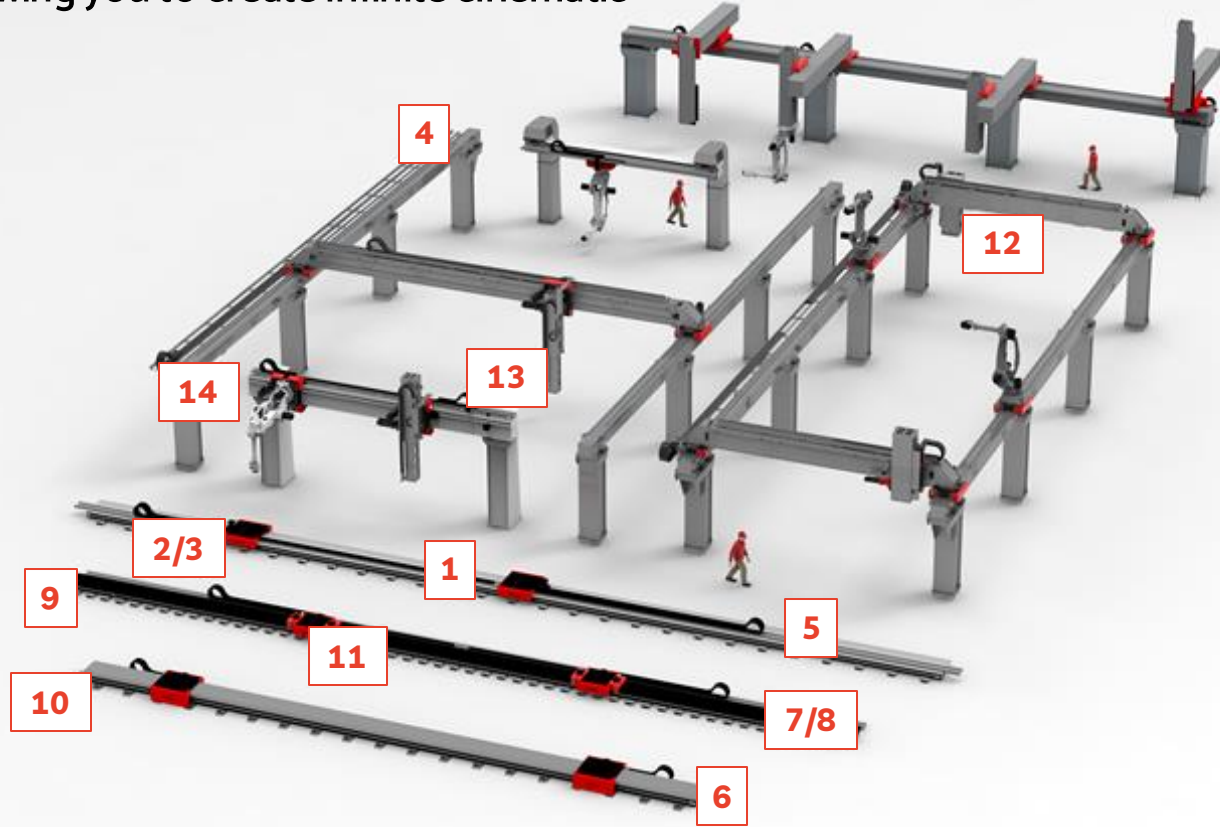




**LUCAS
INNOVATIONS**

03

The whole range is like a giant "Lego"
allowing you to create infinite cinematic



- 1 - Carriage
- 2 - Gearbox
- 3 - Lubrication
- 4 - Structure
- 5 - Cable Chain
- 6 - Base and adjustment foot
- 7 - Lateral adjustment base
- 8 - High Density Supports
- 9 - Protective bellows
- 10 - Crankcases / Protections
- 11 - Mechanical backlash
- 12 - Standard Z axis arm
- 13 - Telescopic Z-axis arm
- 14 - R (Z) rotation

TRACK V2 GEARBOXES

- Position of the gear units away from the loading area.
- Possibility of mounting the gear units on either side of the cart.

LUCAS
INNOVATIONS


LUCAS

TRACK V2 GREASING

- PLC system with mileage counter for predictive maintenance
- PLC system of automatic greasing from standard cartridges that allows an optimal lubrication according to the real use.

TRACK V2 CABLE CHAIN

- Possibility to mount the cable chain on the right, left, or in the middle of the slide



TRACK V 2.0

GUIDES e SLIDER PAD

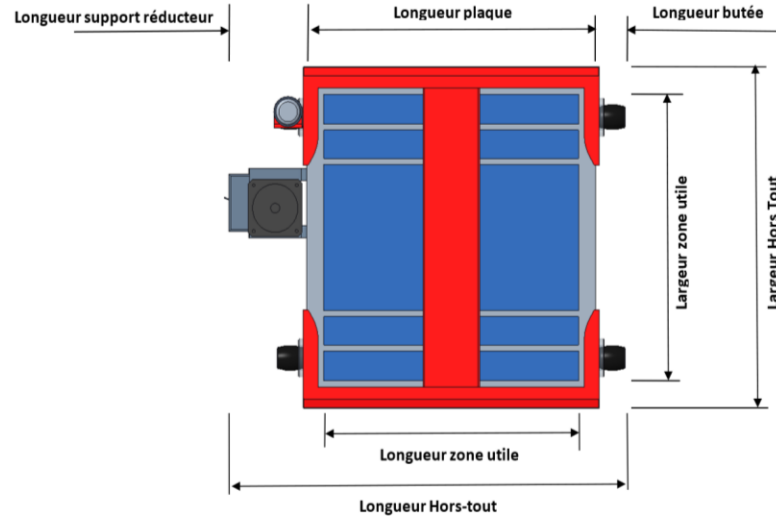
- New Skid blocks (LUCAS Patented) can be replaced VERY quickly without having to separate the Carriage

LUCAS
INNOVATIONS

LUCAS

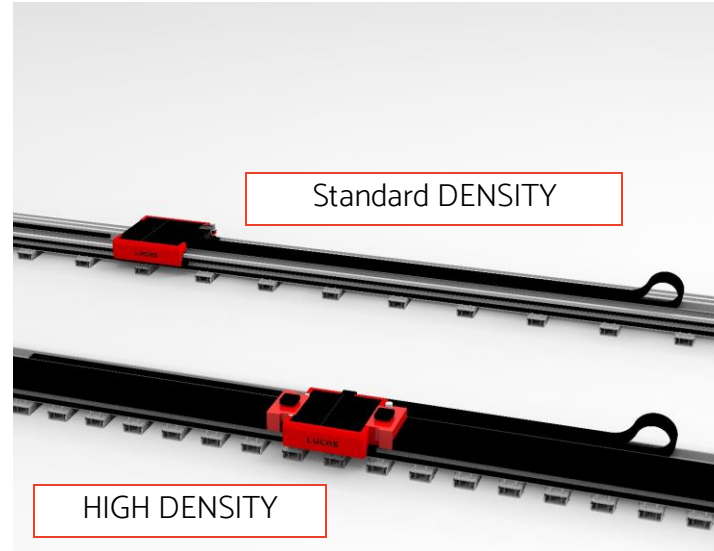
CARRIAGES

- Lucas carriages have been designed so that the integrator can maximize the use of their surface.
- All the functional elements that ensure translation are located under the trolley or "outboard", so they do not interact with the customer's process.
- Cable passage to the robot BELOW the trolley



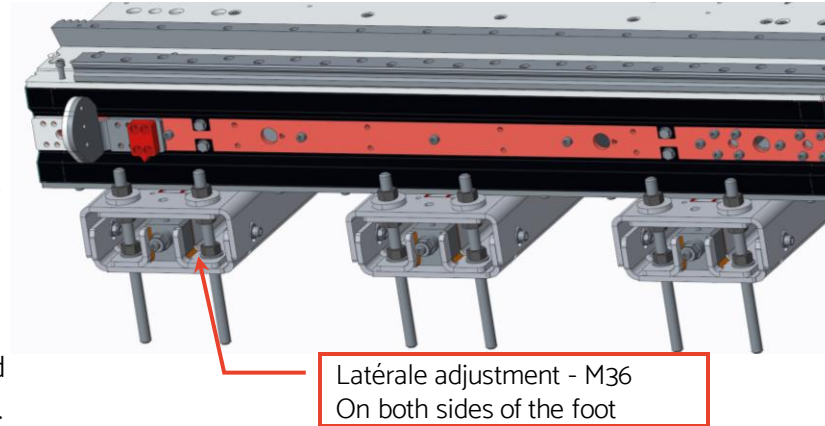
FOOT DENSITY

- For activities requiring high rigidity, it is possible to increase the number of foot or beam poles to limit the bending and torsion of the frames.
- Lucas Advance Design Service will help you make the best choice.



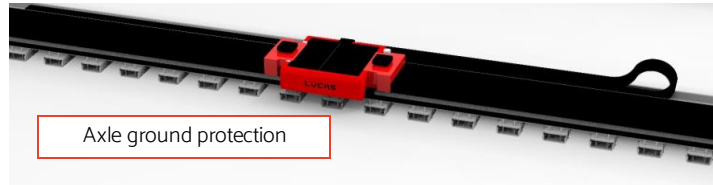
GROUND ATTACHMENT FEET WITH LATERAL ADJUSTMENT

- As standard, the straightness error in the direction of movement is set at the factory to a value not exceeding 0.1 mm/m, i.e. a possible deviation of 1 mm for an axis 10 meters long. If the application requires better straightness, we can provide a special foot with lateral adjustment function.
- This foot model replaces the standard foot and all elements related to floor fixing remain valid. However, the straightness is adjusted before the upper sole is fully tightened.

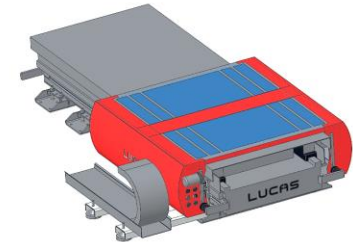


PROTECTIONS

- Possibility on all LUCAS axes to supply PVC or Kevlar bellows depending on the application.
- The LUCAS configurator automatically calculates the excess length generated by the addition of this accessory.
- The Lucas Advance Design Service will help you make the best choice.



Note: protected axes can also be used for aggressive environments..



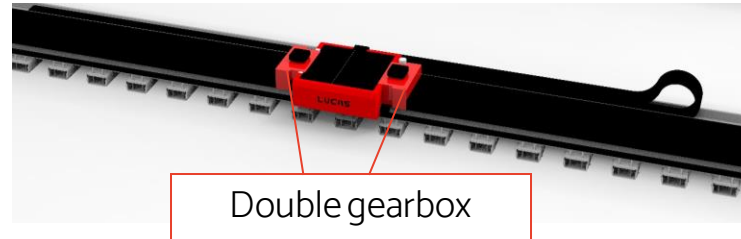
BACKLASHES

Electrical backlash System

- 2 standard gear units are positioned on the same carriage, the control rack then manages a dynamic preload to compensate with the two gear units the backlash of the pinion/rack assembly.

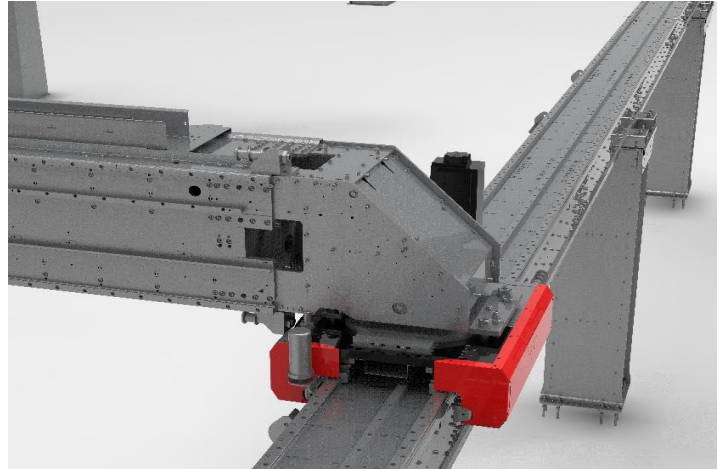
Mechanical backlash shooting System

- The use of a REDEX double pinion gearbox allows the rack and pinion assembly clearance to be absorbed by a defined preload.



THE PORTALS

- In the portals, there is an articulation between the X and Y axes to accept geometric defects related to the installation and to be insensitive to uncontrolled servo variations up to a maximum of 15 degrees.
- In the Lucas standard, the portals are driven by two motors on the X axis synchronized as Master / Slave



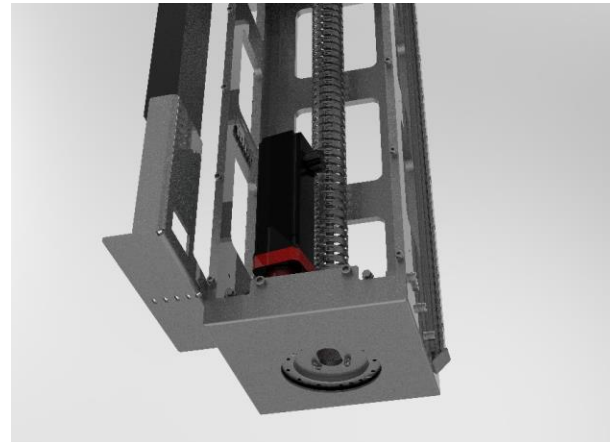
Z ARMS

Telescopic and tri-telescopic Z-arm

- LUCAS Z-arms are also available in a telescopic version for easy integration with limited ceiling heights. The transmissions are made with toothed belt up to mid range and switch to the heavy duty winch function (see configurator).

Flange Rotation (Axis 4)

- LUCAS Z-arms can be supplied with a rotating axis 4, which can be hollow to facilitate the passage of the customer's utilities (optional). The system compatible with all loads in the LUCAS range



ON LINE CONFIGURATOR ROBOT / PAYLOAD

Customer Request

LUCAS
Configurator

Technical Data

Less than 24 hours

Price

Delivery Time

The screenshot displays the LUCAS online configurator interface. At the top, it shows the product name: "LUCAS - AXES LINAIRE AU SOL - STANDARD - 1 ROBOT - L=3500 mm - ROBOT=COMAU - Racer3 - HPP/DH=0/0 - VMD/AMC=2/2 - Soufflet=Sans - BC=120 - Position chaîne=CC - PREREP=Standard - RIGIDITE=Standard". Below this, it lists the manufacturer: "LUCAS FRANCE" and the product type: "Axe linéaire motorisé au sol".

The main configuration area is divided into two columns. The left column lists various parameters and their values:

- Fabricants: COMAU, ABB, FANUC
- Choix du robot: Racer3
- Course utile: 2500 (range 0 to 100000 mm)
- Vitesse max de déplacement: 2 (range 0 to 2 m/s)
- Accélération max du chariot: 2 (range 0 to 2 m/s²)
- Hauteur sur chariot: 490 mm
- Hauteur de chaise: 250 mm

The right column shows a 3D model of the robot arm and a list of icons representing different components or options. Below the model, there is a search bar with the email "stephane.lucas@lucas-france.com" and a checkbox for "Accepter le contrat de licence". There are also buttons for "Télécharger", "Envoyer email", "Fiche tech. PDF", and "Demande d'offre". At the bottom, there is a link to "Afficher les économies de coûts".

LUCAS
INNOVATIONS

LUCAS

LUCAS SERVICES

A low-angle shot of a male technician in a red long-sleeved shirt and blue work pants standing on a silver metal ladder. He is working on a large, grey industrial machine with the 'LUCAS' logo prominently displayed on its upper section. The machine has various components, including a clear cylindrical container. The setting is a large industrial workshop with a high ceiling, blue structural beams, and bright overhead lights. The technician is focused on his task, and the machine's design is complex with many bolts and panels.

04

In LUCAS, The service is a TRADITION

The SERVICE has always been the strong point of the LUCAS' relationships with its customers.

Thanks to the quality of its service, Lucas has ensured the loyalty of all its long-standing customers, such as Bobst and Lectra.

Our speech is summarized in :

- Consulting
- Service

Lucas assists you from the consultation request to the end of your robot's life.



SERVICES LUCAS

CONSULTANCY AND ASSISTANCE

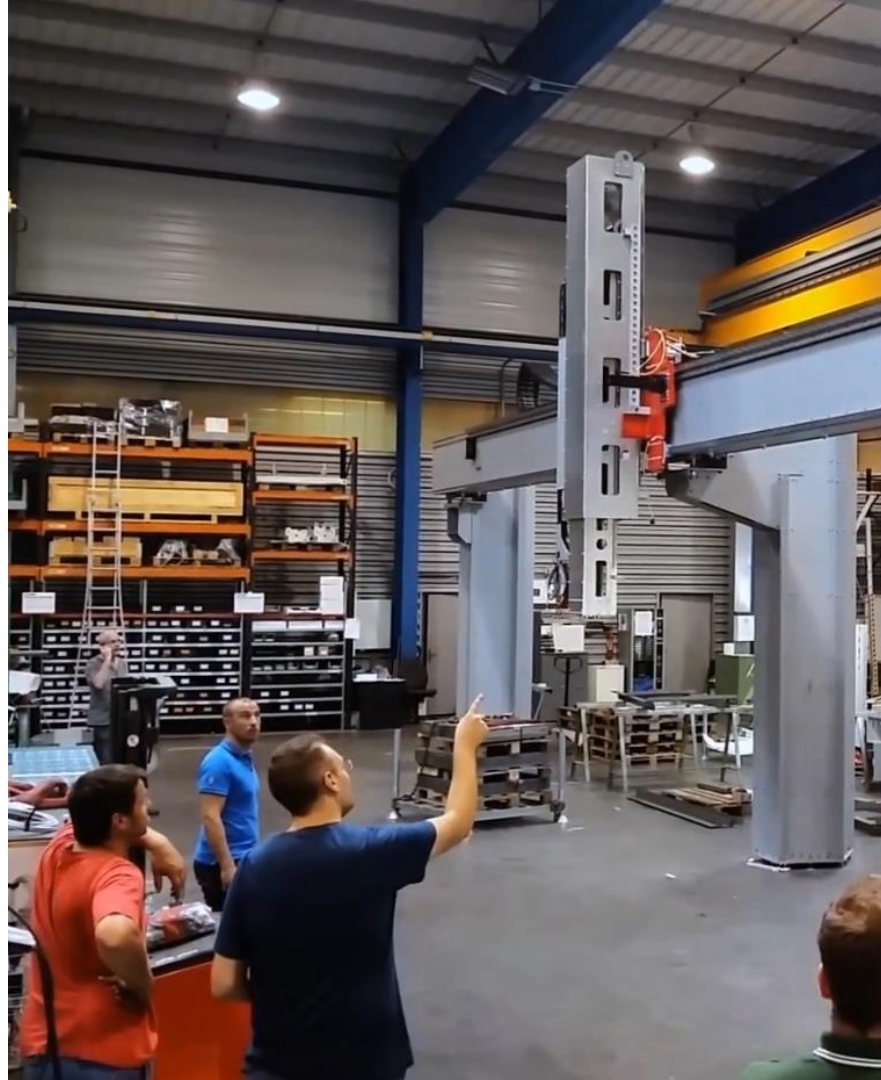
- Choice of robot
- Choosing the right solution: about grippers, positioners, linear axes
- Choice of equipment : welding generators, vision
- Implementations, optimizations, collision verification, etc..
- Simulations : Dynamic cycle study with cycle time calculatio



LUCAS SERVICES

STARTUP

- Mounting with Laser Tracker Performance
- Feasibility study with verification of correct operation
- Programming assistance (advice/analysis)
- Trajectories - cycle time optimization
- Programming "turnkey"
- Verify good integration (check that the cycle does not alter the life of the robot)



LUCAS SERVICES

LUCAS

PREVENTIVE MAINTENANCE

- Ensure a quality review according to Lucas recommendations and with the correct products
- Intervention report according to ISO standards with possible recommendations (predictive maintenance)
Using PLCs for control
the use of the sled with consequent targeted intervention in time
- Annual monitoring frequency in the form of renewable contracts



TROUBLESHOOTING & SPARE PARTS

- On-call diagnosis, online diagnosis by a specialist technician
- Warranty on original parts
- Emergency spare parts always available from Lucas
- **24h/24 Service Contracts**



LUCAS SERVICES

TRAINING AND LEARNING

- Training is the key to the success of the project
- From implementation to maintenance, LUCAS Robotics accompanies you and offers you appropriate training.

FORMATIONS	BASE	PROGRAMMATION AVANCÉE	BUS DE TERRAIN	MAINTENANCE ÉLECTRIQUE	MAINTENANCE MÉCANIQUE
OPÉRATEUR	✓				
TECH. DE MAINTENANCE	✓				
INTÉGRATEUR	✓	✓	✓		
AUTOMATICIEN	✓		✓		
ROBOTICIEN	✓	✓	✓		
TECH. MAINTENANCE ÉLEC.	✓			✓	
TECH. MAINTENANCE MÉCA.	✓				✓

A COMPLETE RANGE OF SERVICES

LUCAS SERVICES

SERVICE

1

. ASSISTANCE

- CHOIX DU ROBOT
- CHOIX DE LA PÉRI-ROBOTIQUE
- ASSISTANCE INTÉGRATEUR
- IMPLANTATION
- SIMULATION
- CONSTAT DE BONNE INTÉGRATION
- SERVICE EN LIGNE
- CONFIGURATEUR DE PRODUIT
- CONTRÔLE TRACKER LASER
- ASSISTANCE À LA PROGRAMMATION

SERVICE

2

. PIÈCES DÉTACHÉES

- GARANTIE PIÈCES D'ORIGINE
- DISPONIBLE EN LOCAL
- LIVRAISON SUR SITE PARTOUT EN FRANCE
- POSSIBILITÉ DE RÉPARATION SUR LE SITE DE LUCAS

SERVICE

3

. MAINTENANCE

- INSTALLATION
- MONTAGE
- MAINTENANCE PRÉVENTIVE
- MAINTENANCE CURATIVE
- RAPPORT D'INTERVENTION
- MISE EN ROUTE

SERVICE

4

. FORMATION

- OPÉRATEUR / UTILISATEUR
- MAINTENANCE ÉLECTRIQUE
- MAINTENANCE MÉCANIQUE
- FORMATION INTÉGRATEUR
 - Opérateur
 - Programmation :
 - Interface
 - Fonctions spéciales :
 - Soudage à l'arc
 - Soudage point
 - Safe
- COMAU ROBOT SIM PRO

SERVICES	CONTRAT ASSISTANCE	CONTRAT PIÈCES	CONTRAT MAINTENANCE	CONTRAT SERVICE PRO	CONTRAT FULL SERVICE
ASSISTANCE	▼				▼
PIÈCES DÉTACHÉES		▼		▼	▼
MAINTENANCE			▼	▼	▼



Thank You For Your Attention

LUCAS