TRIMOS

A-Line

Portable Measuring Arms

Swiss Measuring Instruments

1.

PRESENTATION

Trimos A-line portable articulated measuring arms assure an extremely easy and accurate 3D measurement. The A-line arms certified according to ISO10360-2 or ISO10360-12 standard allow quality control, inspection, verification of small and large size parts. Thanks to an extremely stable carbon structure, all models are light and easy to operate. You can choose between the A3, A5, A6 and AT models according to your application.

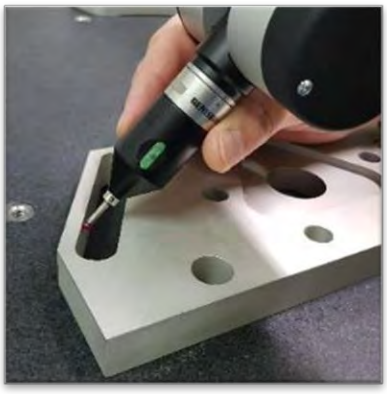
- Measuring ranges from 1300 mm to 9000 mm
- Extremely easy to use
- Exist in 6 or 7 axis configurations
- Electromagnetic brake locking system
- Wireless with Bluetooth and battery
- Compatibility with Renishaw autojoint
- Certified to ISO 10360-2 or ISO 10360-12

Models and Measuring ranges

	1,3 m	1,8 m	1,8 m	2,5 m	3,2 m	4 m	5 m	7 m	9 m
	A3	A3							
		A5	A5	A5	A5	A5	A5	A5	A5
		A6	A6	A6	A6	A6	A6	A6	A6

Key Points

Strong and stable mechanical balancing system



Increase your measuring sensitivity with buttons on the probe

Electromagnetic brake for a safe resting position

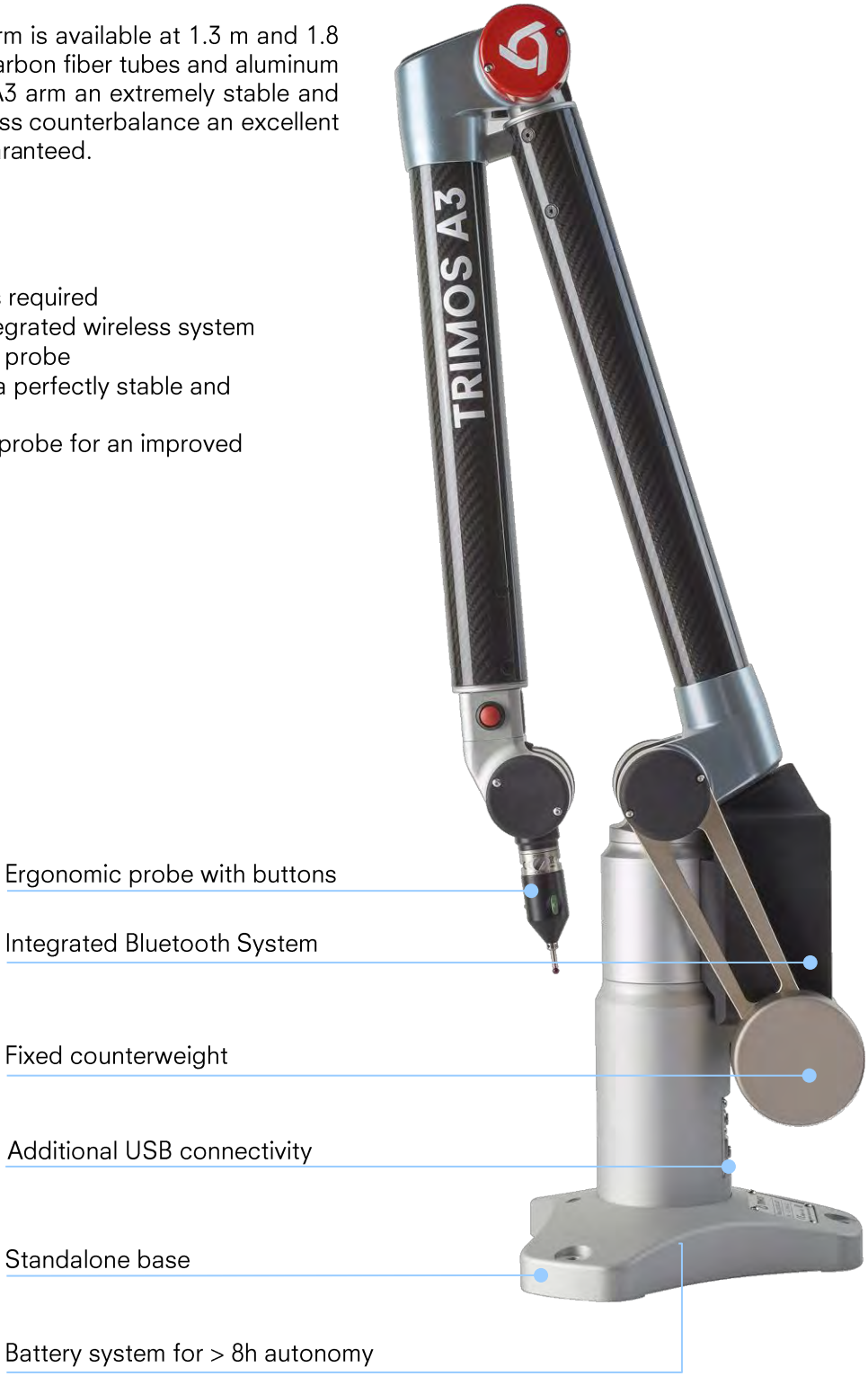
2.

MEASURING ARM A3

The A3 is the standalone range of the Trimos A-line portable measuring arms. Its particularity is its small size enabling you to take it anywhere without any arrangement.

The 6-axis configuration arm is available at 1.3 m and 1.8 m measuring range. The carbon fiber tubes and aluminum mount base allow to the A3 arm an extremely stable and light structure. With its mass counterbalance an excellent handling experience is guaranteed.

- The most precise range
- Portability extreme
- No special arrangements required
- Autonomy due to the integrated wireless system
- Fixed or interchangeable probe
- Fixed counterweight for a perfectly stable and durable balance
- Buttons mounted on the probe for an improved measuring sensitivity



3.

MEASURING ARM A5

If you need to inspect a big and heavy part, don't move it, take the A5 arms on it and get your measurements done quickly with great flexibility.

The A5 models are the 6 axis arms configurations offering the largest range of the market, from 1.8 m to 9.0 m measuring range.
Its design is made to be adaptable in every environment and compatible with a huge variety of fixtures.

Its lateral mechanical spring loaded system provides a tireless balance of the arm while offering a comfortable handling exempted of any traction.

- Electromagnetic braking system for a safe resting position
- Mounting base in option
- Comfortable rotative handling
- Interchangeable connector by default
- Inexhaustible balance due to the lateral springs system

4.

MEASURING ARM A6

The A6 is the 7 axis arm used in combination with Laser Scanner ScanSurf for point cloud inspection or reverse-engineering.

Its design is the same as the A5 and offers the same measuring ranges.
However, the probe is a pistol handled with integrated buttons for a more comfortable scanning process.

- 7-axis arm
- Ergonomic pistol hand
- Interchangeable autojoint probe connection
- Probe and scan simoultaneously
- Ethernet connection

5.

SOFTWARE

Aberlink or PolyWorks Inspector softwares are used with the Trimos A-line arms. Aberlink can be used with your A3, A5 and A6 standard arms, Polyworks is used with the 7-axis arms for scanning applications.

ABERLINK
Innovative Metrology

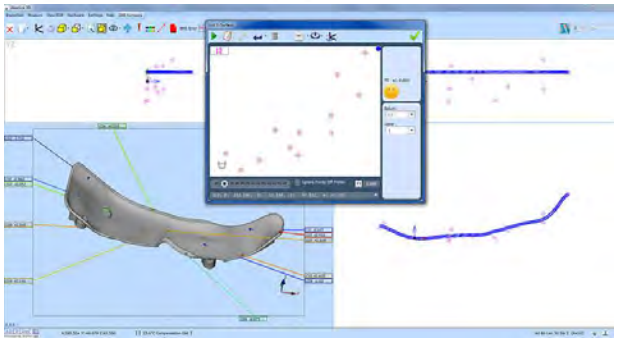
The philosophy for Aberlink is to make measurement easy. It is mostly used for the workshop.

Designed around a graphical interface, Aberlink 3D can work in 2D or 3D, on manual or CNC CMMs and is equally at home when used with either touch, scanning or vision systems.

- Aberlink 3D
Industry standard 2D and 3D measurement software

- CAD Comparison
Aberlink 3D software module – compare points to CAD model

- CAD Programming
Aberlink 3D software module – generate programmes



PolyWorks Inspector

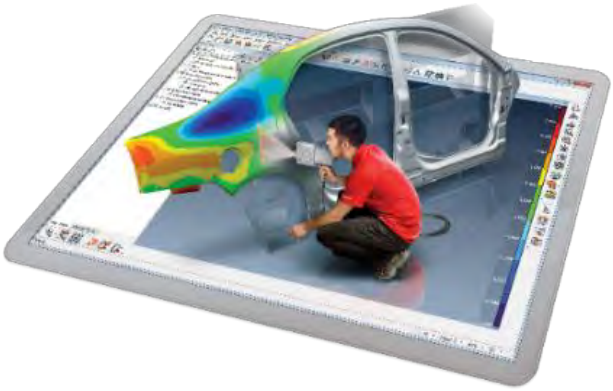
PolyWorksIInspector™ is a universal 3D dimensional analysis and quality control software solution to control tool or part dimensions, diagnose and prevent manufacturing and assembly issues, guide assembly building through real-time measurements, and oversee the quality of assembled products by using portable metrology devices and CNC CMMs.

- Review inspection results efficiently
Control views
First-article inspection
Statistical Process Control

- Always get the alignment right
Surface and cross section best-fit
Measurement object best-fit
Multiple device position alignment

- Measure all required dimensions
Universal data handling
Deviation analysis using color maps
Feature-based dimensioning

- Automate quality control tasks
Multipiece data management
Play Inspection tool
Macro scripting



6.

SCANSURF SCANNER

The new Trimos ScanSurf is our latest solution for scanning measurements and reverse engineering. The perfect companion of your Trimos 7 axes A6 articulated arm.

Light & compact:
The ScanSurf scanner is optimized to be mounted on a Trimos Articulated Arm reducing at most the bulk and the weight on the holding axis. The result is an extremely powerful instrument in your hands and you just don't feel it!

Accurate
Thanks to new software solutions for the sensors calibration, the ScanSurf scanner is the most accurate solution for scanning measurements and reverse engineering.

Scanning quality
High performance scanning proven by our partners in data acquisition software, even under not optimal environmental conditions.

Always ready
With the ScanSurf Scanner there's no need to apply any change from probe to scanner and vice versa. In fact, the probe is mounted on an additional autojoint connector to be always ready for tactile measurements when needed.

Large selection
The scanner is available in RED or BLUE light, with sizes from 25 to 100 mm line length at middle range. A great selection to work on any surface and covers any kind of application.

- Compatibility with the A6 models
- Light and compact
- Additional autojoint connection
- Pointer laser
- Accurate
- Large selection of line width
- Compatibility with PolyWorks|Inspector™ & PolyWorks|Modelor™

ScanSurf		
Line length	mm	25 / 50 / 100
Connection		Autojoint
Connectivity		Ethernet
Measuring Arm compatibility		A6
Laser class		2M
Max. points acquisition rate	pt/s	384'000
Max. Points per line (PPL)		1280
Frequency	Hz	Up to 300
Resolution at mid range	µm	25 mm line: 20 µm / 50 mm line: 39 µm / 100 mm line: 78 µm
Weight	Kg	0,4

7.

TECHNICAL DATA

A3	Weight [Kg]	Measuring range [m]	Axes	Accuracy [mm]	
A3-1300	9,5	1,3	6	0,016*1	-
A3-1800	10,4	1,8	6	0,020*1	-

A5	Weight [Kg]	Measuring range [m]	Axes	Accuracy [mm]	
A5-1800	8,4	1,8	6	0,023*1	-
A5-2500	8,9	2,5	6	0,030*1	-
A5-3200	9,3	3,2	6	0,042*1	-
A5-4000	10	4,0	6	0,057*1	-
A5-5000	12,5	5,0	6	0,065*2	-
A5-7000	14	7,0	6	0,080*2	-
A5-9000	16,5	9,0	6	0,150*2	-

A6	Weight [Kg]	Measuring range [m]	Axes	Accuracy [mm]	
A6-1800	8,9	1,8	7	0,031*1	-
A6-2500	9,4	2,5	7	0,040*1	-
A6-3200	9,8	3,2	7	0,052*1	-
A6-4000	10,5	4,0	7	0,069*1	-
A6-5000	13,5	5,0	7	0,075*2	-
A6-7000	15	7,0	7	0,090*2	-
A6-9000	17,5	9,0	7	0,170*2	-

A6 & ScanSurf	Weight [Kg]	Measuring range [m]	Axes	Accuracy [mm]	Accuracy [mm] with scan ScanSurf		
					25*3	50*3	100 *3
A6-1800	8,9	1,8	7	0,031*1	0,037	0,066	0,104
A6-2500	9,4	2,5	7	0,040*1	0,043	0,069	0,106
A6-3200	9,8	3,2	7	0,052*1	0,052	0,075	0,110
A6-4000	10,5	4,0	7	0,069*1	0,062	0,082	0,115
A6-5000	13,5	5,0	7	0,075*2	0,079	0,096	0,125
A6-7000	15	7,0	7	0,090*2	0,094	0,108	0,135
A6-9000	17,5	9,0	7	0,170*2	0,180	0,180	0,197

*Values reported are expressed with 2 σ error. The values are indicative, for Blue and Red line models, and depend on surface quality and properties, surface diffusivity properties and ambient light conditions

A-Line Arm	
Operational Temperature	+5 ÷ +40 °C
Relative humidity	90% without condensation
Marks of conformity	CE
Power requirement	110 – 220 V / 50 – 60 Hz
Ingress protection	IP 54
Connectivity	Bluetooth & USB
Autonomy on batteries	> 8 h
Certification	ISO 10360-12 up to 3.2 m ISO 10360-2 above

*1 **E_{Uni}**: Maximum permissible longitudinal error of measurement, Unidirectional

*2 **MPE_p**: Maximum permissible Error, probing – ISO 10360-2

*3 Scanner model (line length)

8.

ACCESSORIES

Hard Probe

The mechanical probe is the standard touch probe, available with different sphere diameter. Points can be taken touching the part and pushing the button on board the probe body. The smallest usable probe diameter is 1mm to guarantee the point accuracy, the maximum length suggested is 100mm.

Floating Probe

It is a rigid mechanical probe suspended on a spring driven by an aluminum ring that triggers the probe with a simple touch. The integrated force control avoids to apply uncontrolled load on the part, improving accuracy and repeatability. The control ring is isolated from the probe stylus to avoid thermal impact from the hands of the user.

Touch Trigger Probe

The touch trigger probe acquires points applying the minimum force on the measured part. Is a very precise, quick and comfortable in use, acquires points only touching the surface, without triggering buttons.

Battery

Additional batteries are available to increase the autonomy of your arm with 8 hours. You gain flexibility, you will not have to care about moving your arm near a power supply.

Laser Fork

The laser fork is the perfect equipment for quick and accurate inspection of pipes without direct contact. Pipes from 2 mm to 180 mm of diameter can be measured with our 30, 50-, 80-, 150- and 200-mm forks.

Mobil Tripods

Stable and practical, it is the ideal accessory to move easily and quickly all A-line arms. Due to its heavy construction, it will be the ideal accessory to warranty the best stability and the best accuracy of your arm.

Portable Tripods

It will be your most flexible partner. If you need to change the building, put in on a table or climb some stairs, its light weight dedicates it to that.

Magnetic Base

This magnetic base will allow your arm to produce the highest quality precision. Only a minimum effort will need to install it with your machine.

Stylus

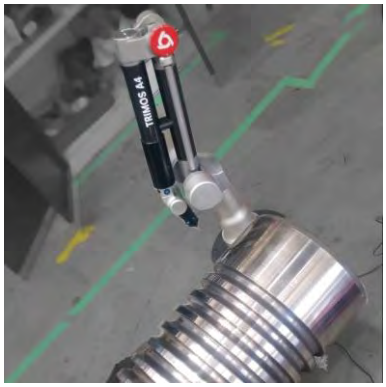
All M4 stylus can be mounted on the A-Line range with a min. ball Ø 0.5mm.

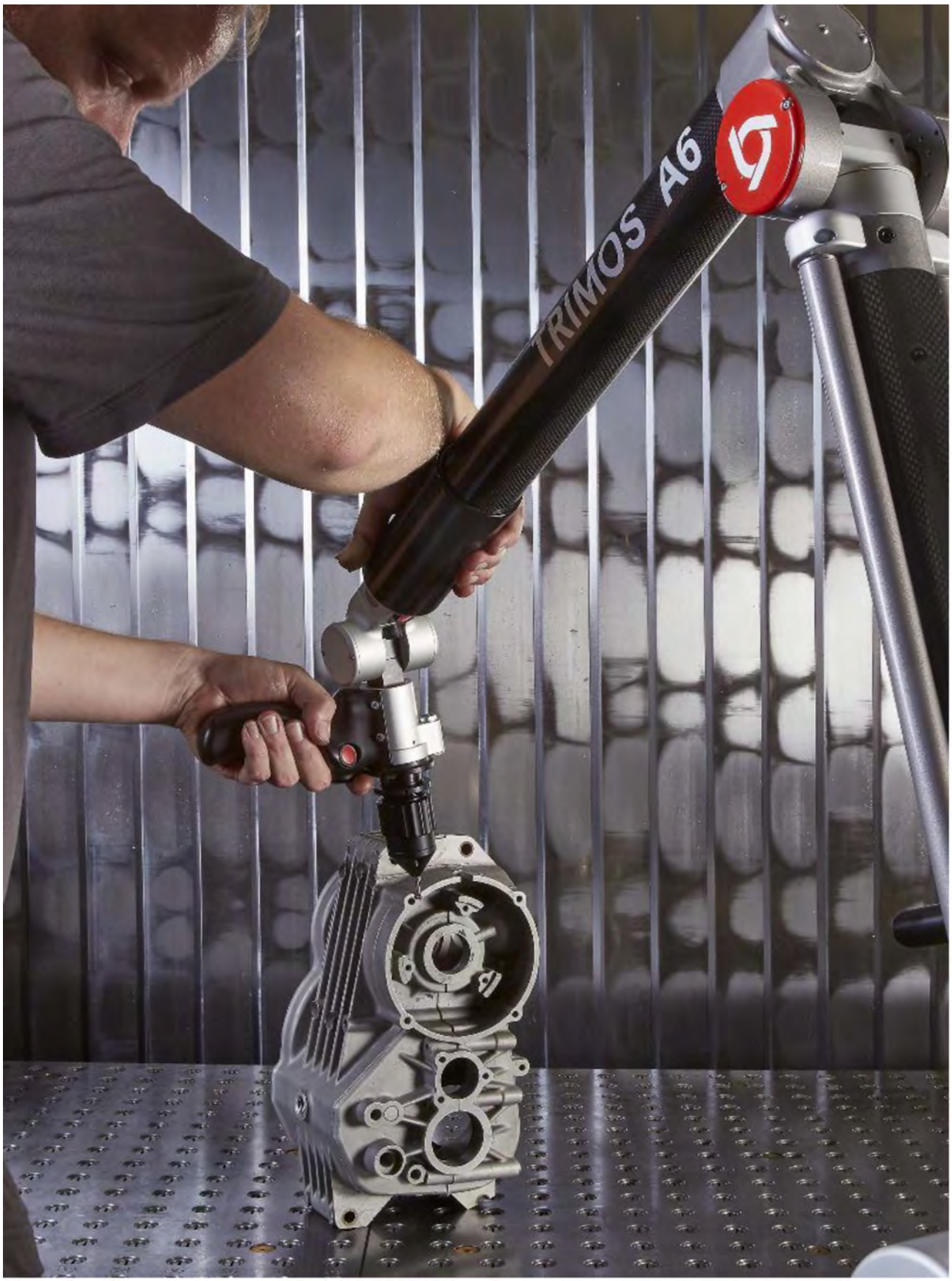
Laser Scanners

For a complex-profile contour scanning different Laser Scanners can be combined with our A6 7 axes arms.

9.

APPLICATIONS





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