

Commercial Proposal for Comprehensive Service Solution: Spare Parts, Calibration, Repair, and Remote Diagnostics for Metal Analyzers

Service support for XRF, LIBS, and OES analyzer owners in Russia, Kazakhstan, Belarus, Ukraine, and CIS countries

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Supplier Company: Metal-Asia.pw — Direct industrial equipment shipments and service support from China

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1. Service Maintenance Challenges in the CIS and Our Solutions

1.1. Critical Problems Facing Analyzer Owners in Russia, Kazakhstan, and Belarus

Owners of portable XRF, LIBS, and stationary OES spectrometers in CIS countries face a systemic service maintenance crisis caused by the departure of Western manufacturers and sanctions restrictions:

Problem	Scale of Problem	Consequences for Enterprise	Metal-Asia Solution
Closure of authorized service centers Bruker, Olympus, Hitachi in RF	90% of SCs ceased operations or emigrated	No warranty or post-warranty maintenance	Own service center in China with Russian-speaking engineers
Inability to import original spare parts	Embargo on supplies to RF, KZ	Equipment downtime from 2 to 6 months	Direct contracts with Chinese factories, legal

Problem	Scale of Problem	Consequences for Enterprise	Metal-Asia Solution
			shipments through third countries
Lack of CRM calibration standards	Inability to verify	Results have no legal force	Own CRM production, accreditation
Unqualified "artisan" repair	70% of "repairs" lead to breakdown	Detector damage worth 7000-10000 USD	Certified engineers with > 8 years experience
Outdated software without security updates	Vulnerabilities, incompatibility	Operational failures, data loss	Licensed software with regular updates
Lack of new personnel training	Operator errors	Inaccurate results, emergency modes	Online courses + on-site training

1.2. Target Service Clients

Category	Equipment	Maintenance Frequency Required
Metallurgical combines	5-20 analyzers	Monthly
Pipe plants	3-10 analyzers	Quarterly
Scrap metal collection points	1-3 analyzers	As needed
Geological exploration expeditions	2-5 analyzers	Before/after season
Jewelry workshops	1-2 analyzers	Annual calibration
Environmental laboratories	1-3 analyzers	Quarterly
Oil and gas enterprises	3-8 analyzers	Quarterly

2. Spare Parts for Analyzers

2.1. SDD Detectors (Silicon Drift Detector)

The SDD detector is the key and most expensive component of an XRF analyzer. Its resolution directly determines analysis quality.

Detector Model	Compatibility	Resolution, eV	Area, mm²	Price, USD	Delivery Time
Bruker Graphene SDD 20 mm ²	S1 TITAN 500/500S/800	< 140-155	20	4,500-6,500	7-14 days
Bruker Graphene SDD Large	S1 TITAN 800 Premium	< 135	30	5,500-7,500	10-14 days

Detector Model	Compatibility	Resolution, eV	Area, mm ²	Price, USD	Delivery Time
Hitachi Vortex SDD	X-MET 8000 series	< 140-170	20/25	3,800-5,200	7-14 days
Evident (Olympus) SDD	Vanta series	< 135-185	20/25	4,200-5,800	7-14 days
Thermo Scientific SDD	Niton XL2/XL3	< 140-190	15/20	4,000-5,500	10-14 days
SciAps SDD	X-550/X-505	< 135-140	20/25	3,500-4,800	7-10 days
Chinese SDD Analog (USTC)	Universal	< 160-180	15/20	1,800-2,800	3-5 days

2.2. X-ray Tubes

Tube Model	Compatibility	Anode	Voltage, kV	Current, μ A	Price, USD	Timeline
Bruker Mini-X 50kV Ag	S1 TITAN 500	Ag	50	200	1,800-2,400	7-14 days
Bruker Mini-X 50kV Rh	S1 TITAN 500S/800	Rh	50	200	2,200-2,800	7-14 days
Bruker Mini-X 50kV W	S1 TITAN/CTX	W	50	200	2,000-2,600	7-14 days
Hitachi XRT 50kV	X-MET 8000	Rh/W	50	200	1,900-2,500	7-14 days
Oxford Instruments XRT	Vanta, X-MET	Rh/W	50	200	2,100-2,700	10-14 days
Moxtek TUB00050	Universal	W	50	200	800-1,400	3-7 days
Chinese XRT (AmpTek)	Universal	Ag/Rh/W	50	200	600-1,200	3-5 days

2.3. Batteries and Chargers

Item	Compatibility	Capacity, mAh	Price, USD	Timeline
Li-ion Battery Bruker	S1 TITAN series	6,800	240-320	In stock
Li-ion Battery Hitachi	X-MET 8000	6,200	220-280	In stock
Li-ion Battery Evident	Vanta series	6,800	260-340	In stock

Item	Compatibility	Capacity, mAh	Price, USD	Timeline
Li-ion Battery Thermo	Niton XL2/XL3	5,600	200-260	In stock
Li-ion Battery SciAps	Z-Series, X-Series	6,400	180-240	In stock
Universal Charger 110-220V	All models	—	80-140	In stock
Car Adapter 12V	All models	—	45-80	In stock

2.4. Screens and Displays

Item	Compatibility	Diagonal, inch	Price, USD	Timeline
TFT Display Bruker	S1 TITAN 500/500S	3.5	260-380	7-10 days
TFT Display Bruker Premium	S1 TITAN 800	3.5 touchscreen	320-450	7-10 days
Display Hitachi	X-MET 8000	4.3	280-400	7-10 days
Display Evident	Vanta	5.0	340-480	10-14 days
Protective Glass (set of 3)	Universal	—	25-45	In stock

2.5. Control Boards and Electronics

Item	Compatibility	Price, USD	Timeline
Main Board Bruker	S1 TITAN	800-1,400	10-14 days
High Voltage Power Board	Universal XRF	450-850	7-10 days
Signal Amplifier Board	Universal SDD	350-650	7-10 days
Interface Board (USB/Wi-Fi/BT)	Universal	200-400	7-10 days
Power/Trigger Button	Universal	30-60	In stock

2.6. OES Spectrometer Optical Components

Item	Compatibility	Price, USD	Timeline
CCD Detector ClearSpectrum	Q4 TASMAN, Q2 ION	8,500-12,000	14-21 days
Diffraction Grating 2400 lines/mm	Q4 TASMAN	4,500-6,200	21-30 days
Diffraction Grating 3600 lines/mm	Q4 TASMAN 130	5,500-6,800	21-30 days
Spark Stand Window (quartz)	Q4 TASMAN, Q2 ION	180-320	In stock
Spark Stand Window (sapphire)	Q4 TASMAN Premium	350-550	3-5 days
Tungsten Electrodes (50 pcs.)	Q4 TASMAN, Q2 ION	120-180	In stock
ArgonShield System (kit)	Q4 TASMAN, Q4 POLO	850-1,400	7-10 days

3. Calibration and Setup

3.1. Types of Calibration Work

Service	Description	Timeline	Price, USD
Primary Factory Calibration	On CRM for declared matrices	3-5 days	Included in delivery
Alloy Database Addition	Loading GOST, ASTM, DIN, JIS	1-2 days	200-400
Matrix Addition (OES)	Fe, Al, Cu, Ni, Ti, Mg, Pb, Zn, etc.	2-3 days	1,200-2,000
Custom Calibration	For specific customer production matrix	5-7 days	800-1,500
Precious Metals Calibration	Au, Ag, Pt, Pd, Rh — jewelry alloys	3-4 days	1,800-2,800
Geo Calibration	Geological standards, ores	3-4 days	2,200-3,200
RoHS Calibration	Cd, Pb, Hg, Cr, Br for ecology	2-3 days	1,200-1,900
Soil Calibration	Heavy metals in soils	2-3 days	1,500-2,200
Catalytic Calibration	Pt, Pd, Rh in catalytic converters	2-3 days	1,600-2,400
Software Update	To current version	1 day	100-400
Interface Localization	Menu and report translation	1-2 days	150-300
Device Verification	With certificate issuance	3-5 days	400-1,000

4. Analyzer Repair

4.1. List of Repair Services

Service	Description	Repair Warranty	Price from, USD
Fault Diagnosis	Full hardware and software diagnostics	—	100
SDD Detector Replacement	With calibration and certificate	6 months	4,000-9,500
X-ray Tube Replacement	With power and focus adjustment	6 months	2,500-4,500
Control Board Repair	Component repair or replacement	3 months	600-1,800
Display/Screen Replacement	With touchscreen calibration	3 months	400-800
Battery Compartment Replacement	Power circuit repair	3 months	200-450
High Voltage Block Repair	Capacitor, diode replacement	6 months	500-1,200

Service	Description	Repair Warranty	Price from, USD
OES Optical Path Cleaning	Complete disassembly, cleaning, adjustment	6 months	800-1,200
CCD Detector Replacement (OES)	With full recalibration	6 months	9,500-12,500
Diffraction Grating Replacement (OES)	With adjustment and calibration	6 months	5,500-8,500
Case Resealing	IP54/IP65 restoration	3 months	200-400
Complete Overhaul	Replacement of all worn units	12 months	3,500-8,500

4.2. On-site Repair

Service	Description	Price, USD
Engineer Dispatch to Client	Diagnosis + minor on-site repair	1,500/day + transport
On-site Detector Replacement	Full replacement with calibration	2,500 + detector + transport
On-site Tube Replacement	Tube replacement with adjustment	1,800 + tube + transport
Emergency Dispatch (within 72h)	Priority dispatch	+ 50% to cost

5. Remote Diagnostics

5.1. Remote Support Capabilities

Remote diagnostics is the optimal way to quickly resolve most problems without engineer dispatch.

Service	Description	Timeline	Price
Device Connection	Via Wi-Fi, USB, TeamViewer, AnyDesk	Same day	Free
Spectrum Diagnosis	Spectrogram analysis, anomaly detection	1-2 hours	Free
Operator Consultation	Training, error analysis, operation tips	On request	Free
Remote Calibration	Calibration curve correction, CRM loading	2-3 hours	200-300
Alloy Database Update	Loading new steel/alloy grades	1 hour	100-150
Software Update	Patch installation, new versions	1-2 hours	100-200
Report Generation	Protocol preparation assistance, template setup	On request	Free
LIMS Integration Setup	API and connector assistance	2-4 hours	200-400

Service	Description	Timeline	Price
Performance Analysis	Measurement mode optimization	1-2 hours	Free
Post-crash Recovery	Software and database recovery	1-3 hours	150-250

5.2. Remote Diagnostics Technical Requirements

Requirement	Specification
Connection	Wi-Fi 802.11 b/g/n or USB connection to PC with internet
Bandwidth	From 1 Mbps
Software	TeamViewer, AnyDesk, or built-in Bruker Remote
Access	Administrator permission on device
Operating Hours	Mon-Fri, 09:00-18:00 Beijing Time (02:00-11:00 MSK)
Communication Language	Russian, English, Chinese

6. Service Packages and Subscription Maintenance

6.1. Comparative Package Table

Service	Silver	Gold	Platinum
Annual Cost	1,200 USD	2,400 USD	4,800 USD
Spare Parts for Analyzers			
Spare Parts Discount	10%	20%	30%
Urgent Spare Parts Delivery	10-14 days	7-10 days	3-5 days
Calibration			
Remote Calibration	1 time/year	2 times/year	4 times/year
Alloy Database Updates	1 time/year	2 times/year	On request
Repair			
Engineer Dispatch to CIS	1 time/year	2 times/year	4 times/year
Repair Warranty	3 months	6 months	12 months
On-site Repair Discount	10%	20%	Included
Remote Diagnostics			
Connection	Unlimited	Unlimited	Unlimited
Consultations	Unlimited	Unlimited	Unlimited
Response Time	24 hours	12 hours	4 hours

Service	Silver	Gold	Platinum
Additional			
Queue Priority	Standard	Elevated	Maximum
Dedicated Manager	No	Yes	Yes
Quarterly Audit	No	Yes	Yes
Annual Operations Report	No	Yes	Yes
Online Personnel Training	2 hours	4 hours	8 hours
Emergency Spare Parts Reserve	No	No	Yes (warehouse in China)

6.2. Individual Service Contracts

For large enterprises with a fleet of 5+ analyzers, individual service contracts are developed with fixed total cost of ownership (TCO).

Parameter	Condition
Minimum Fleet	5 analyzers
Fixed Annual Cost	From 8,000 USD
Includes	All spare parts, all dispatches, unlimited remote support
Not Included	Consumables (argon OES, abrasives)
Contract Term	12/24/36 months
Bonus	For 36-month contract — 1 month free

7. Technical Nomenclature of Spare Parts

7.1. XRF Spare Parts Summary Table

Category	Item	Price from, USD	Price to, USD	Delivery Time
Detectors	Graphene SDD 20 mm ²	3,500	7,500	7-14 days
Detectors	Chinese SDD analog	1,800	2,800	3-5 days
X-ray Tubes	Original Bruker/Hitachi	1,800	2,800	7-14 days
X-ray Tubes	Moxtek/AmpTek	600	1,400	3-7 days
Batteries	Original Li-ion	180	360	In stock
Batteries	Compatible Li-ion	120	200	In stock
Displays	Original TFT	260	480	7-14 days
Control Boards	Main boards	600	1,800	7-14 days

Category	Item	Price from, USD	Price to, USD	Delivery Time
Control Boards	High voltage	350	850	7-10 days
OES Optics	CCD Detectors	8,500	12,000	14-21 days
OES Optics	Diffraction Gratings	4,500	6,800	21-30 days
OES Optics	Spark Stand Windows	180	550	In stock
OES Consumables	W Electrodes (50 pcs.)	120	180	In stock
OES Consumables	ArgonShield Systems	850	1,400	7-10 days

8. Spare Parts Delivery Terms and Timelines

8.1. Delivery Methods

Method	Timeline	Cost, USD
Courier Delivery (DHL/FedEx)	3-7 days	80-250
Express Auto	7-14 days	50-120
Standard Auto	14-21 days	30-80
Air Mail	10-18 days	60-150

8.2. Payment Terms

Option	Terms
100% Prepayment	3% discount
100% Post-payment	Only for clients with > 12 months history
50/50	Standard

9. Customs Clearance for Spare Parts

HS Code	Name	Duty	VAT
9027 90 500 0	Parts and accessories for spectrometers	0-5%	20%
8507 60 000 0	Lithium-ion accumulators	5-10%	20%
8540 11 000 0	X-ray tubes	0%	20%
8473 30 000 0	Parts for information processing machines	0%	20%
8539 90 000 0	Other electric lamps and tubes	5%	20%

10. Contact Information

For all questions regarding spare parts, calibration, repair, and remote diagnostics for metal analyzers, please contact us at our website www.metal-asia.pw:

Customer Relations Department:

- **WhatsApp:** +86 132 50100874
- **Telegram:** @China_metal_supply
- **Email:** zakaz@metal-asia.pw
- **Official Website:** www.metal-asia.pw

Sales and Technical Support Department Working Hours: Monday — Friday: 9:00 AM to 6:00 PM
Beijing Time (MSK+5, ALM+2)

Service Department (Remote Diagnostics): 24/7 (emergency cases — by arrangement)

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