



Hand-held Alloy Analyzer (TrueX 800)

◆ Main Features

- Small, light and easy to carry.
- High-speed processing chip, advanced algorithm and high-responsive software, resulting in even faster analysis.
- High-performance X-ray Tube, Ultra-high Resolution Detector combined with Digital Multi-channel Processing Technology, yielding super-high detection resolution.
- Indicator lights flash on both sides for safety purposes during measurement, i.e., the built-in double beam technology will automatically sense whether there is a sample at the measurement window.
- Industrial resistive touch screen, superior to capacitor screen in back-light and clearer against sunlight in the field. At the same time, people don't need to take off gloves when they are operating machine in some particular environment.
- TrueX utilizes anti-slip, abrasion resistance and streamlined design, which is light and easy to carry. It also integrates the new high speed digital multi-channel technology, the new library grade base identification system and the super-FP algorithm. These features allow it to measure elements faster, with higher accuracy and greater repeatability.
- Intelligent battery management exerts a real-time monitoring of the residual capacity of battery and backup battery through MSBUS bus.
- Automatic switch to standby mode when not used and recovery after the machine is picked up, which saves power and extends working time; moreover, TrueX has a gravity sensing system which shuts down instrument automatically when it accidentally falls down, another safety consideration; TrueX will also give out alarm when ambient temperature or humidity exceeds the scope of application.
- TrueX adjusts air pressure factor automatically based on altitude it has detected. This function increases excitation effect of light elements by 40% and that of rare earth elements by 30%.
- TrueX is supportive to battery hot plug, hence battery can be replaced without powering off the machine.
- On TrueX, users can customize the reports by adding their company logos, addresses, test results, spectrum and others (such as product description, origin of products and batch number).
- TrueX is built with double beam technology which can automatically sense whether there is a sample at the measurement window. This is also a safety and protection feature. The brightness of the display of TrueX is automatically regulated according to environment brightness.
- TrueX can be configured and maintained in a remote way via Internet.
- TrueX can build a three dimensional element content distribution graph allowing for a fast estimate of mineral reserves or the extent of geological disaster with the built-in GPS for latitude and longitude reading combined with a 3rd party GIS analysis software.
- TrueX's new algorithm optimizes the spectral resolution, so lower detection limits can be achieved, which are comparable with even large-scale lab instruments.
- TrueX Ultra-short optical™ path design can significantly improve light element excitation effects, without the fall/fill condition.
- TrueX has a built-in environmental sensing system covering conditions such as temperature, dust humidity and others.

◆ Application Features

- **Excellent Performance**

TrueX shows element symbols in both English and Chinese. With high precision, high testing speed and comparable results to even that of laboratory equipment, TrueX displays alloy grade and elements percentage content (up to three decimals) and ppm content in an apparent way.

- **One-touch operation**

TrueX test lasts only a few seconds and identification of alloy grades takes only 1 or 2 seconds. This facilitates operation by non-technical users.

- **Nondestructive testing (NDT)**

TrueX test does not damage or have any adverse effect on the use of samples. No damage is foreseen in the entire test process.

- **Drawell analysis software**

Drawell analysis software is a professional analysis software which enables the users to easily configure passwords, customize analysis reports attached with company LOGO and implement remote control of machine; users can edit alloy grade library, add their own grade number or define their own company's alloy brands; the software also allows automatic calibration of instrument and diagnosis of problems in a remote way; the software can be updated via Internet.

- **Scrap metal recycling and sorting**

Scrap metal recycling, reuse, and on-site analysis and sorting. TrueX offers a rapid and reliable identification of the scrap metals when scrap metals are transacted between buyers and sellers. TrueX delivers quantitative element analysis of iron alloy, copper alloy, aluminum alloy, copper-iron alloy, lead-tin alloy, mixed alloys, etc, and rapid identification and sorting of these alloys on the site.

- **Application fields, safety and standards**

TrueX is suitable for alloy material identification (PMI) for incoming inspection; material inventory management; re-inspection of construction materials in petrochemical construction, metal smelting, pressure vessel, power plant, petrochemical industry, fine chemical, pharmaceutical, aerospace and other industries to avoid serious safety accidents resulting from mixed or unqualified materials. TrueX is in compliance with ANTM standard, China National Standard (GB), UNS, electric industry standard (DL), API, JIS, GMP, TSG, Mechanical Industry standard (JB), etc.

- **Quality Control, Quality Assurance (QC/QA) and Error-proofing (PKKA - YOKE)**

In metal processing and manufacturing industry, quality control and quality assurance (QC/QA) and error proofing (PKKA - YOKE) of materials (raw materials), semi-finished products and finished products is indispensable. Use of mixed or unqualified materials will bring losses to the company. This is true to companies ranging from small metal processing plants to large aircraft manufacturers.

- **Data Processing and Enterprise Resource Planning (ERP)**

Data can be transferred via USB, WIFI and Bluetooth and stored in excel, pdf or other formats. Users can customize the reports by adding their company logos, addresses, test results, spectrum and others (such as product description, origin of goods and batch number); i-cloud data storage service is optional. Data can transport to Enterprise Resource Planning (ERP) system.

◆ Application fields

- Nondestructive, rapid and accurate analysis of alloy elements and alloy grade identification on the site
- Metal identification /scrap metal sorting
- QA/QC management in metal production, processing, casting, etc
- Medicine and biological medicine
- Identification of positive materials, oil refining and petrochemical industry
- Thermal power plant, hydroelectric power station, nuclear power plant
- Accurate element analysis of raw material and PMI identification so as to meet production needs and ensure security of equipment and materials used in the process.

◆ Elements to be Analyzed and Test Modes

TrueX 800 elements analyzed	
	Scope of elements in standard test mode can be extended if there is such a need.
TrueX 800	can analyze Ti, V, Cr, Mn, Fe, Co, Ni, Cu, Zn, W, Zr, Nb, Mo, Ag, Cd, Sn, Sb, Pb, Bi, Au and LE, total 21 elements.

◆ Instrument specification

- The ARM architecture Cortex-A8 1 GHZ
- System Processor: The Android 4.2 operating system/80MHZ ADC digital pulse processor/4096 MCA channel , 32GB memory
- Display: Industrial resistive touch screen with screen size of 4.3"
- Data storage: Built-in 32gb memory, 300,000 spectral data and spectrum can be stored
- Operating Temperature: -20°C~+50°C
- Operating Humidity: ≤90%Limit of
- Library of extensible and customizable alloys
- Ability to make measurements on pipes, flat surfaces, surface integrals and welds
- Method of analysis: the x-ray energy dispersive method for analysis of fluorescence
- Simultaneously detect elements: simultaneously detect dozens of elements
- Processor and RAM:

CPU: 1GB

RAM: 1GB

- The standard configuration: 32G
 - Range content: ppm ~ 99.99%
- 15 seconds reading time
- GPS, WIFI: integrated into the system
 - Battery: lithium battery, which can be loaded with a maximum capacity of our 6800Ah can operate continuously for 8 hours; Equipped with high voltage (110V-220V) adapter, can work under current alternative
 - Sensor resolution: solid, liquid, powder
 - Sensor resolution: low resolution can be 139eV

- Excitation source: 40KV / 100mA-Ag window miniature tube anode X of light and high voltage source
- Collimator and filter: sights of 4.0 or 2.0 of diameter, automatic switch of 8 filter. 12 kinds of groups, plus mode consisting of world, can satisfy different types of tests of samples
- Display: touchscreen TFT - LCD, resolution of 640 * 480.
- Protection against water, dust and shock
- Test window: 12mm.
- Charging system gas: Helium charging system of ordinary pressure.
- Security: standalone password manager mode.
- Data transmission: digital multi-channel technology, the transmission of data SPI, a quick scan, count rate, waterproof miniature USB, which can be connected to the desktop computer.

◆ Alloy family

- Iron-based alloy series (stainless steel, chromium/molybdenum alloy steel, low alloy steel, tool steel, seamless steel)
 - Nickel-based alloy series (nickel alloy, nickel/cobalt alloy)
 - Cobalt-based alloy series
 - Titanium-based alloy series
 - Copper-based alloy Series (bronze, brass, copper and nickel alloy, etc.)
 - High temperature alloys (molybdenum tungsten alloy)
 - Aluminum-based alloy
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- Super-FP algorithm is capable of detecting accurate metal element content and identify material without switching mode !
 - TrueX hand-held alloy analyzer (XRF) is a powerful weapon in material identification (PMI) in production of high temperature and high pressure boiler, container, pipe, etc; metal identification in iron and steel metallurgy, nonferrous metals, aerospace, weapons, submarine vessels, etc; metal material identification in engineering installation and construction projects in areas of the petrochemical refining, fine chemical, pharmaceutical, power plant, aerospace, etc to ensure equipment and material acceptance meet the project specified requirements; scrap metal recycling industry.
 - TrueX is applicable to quality control, material classification, alloy identification, accident investigation, etc, which tackles the fundamental difficult problem of raw material analysis. As an innovation of many modern technologies, it is a great helping hand in these applications. Users can personalize the analyzing system according to their own needs.
 - TrueX's built-in alloy library contains 380 kinds of alloys, as well as other special alloys for mold, electric power, petrochemical and other industries, which simplifies the conversion of alloys from one country to another. Besides, it has two built-in libraries that the users can define by themselves to extend alloy brands. Therefore, it can extend to as many as 600 alloy brands and test more than 1,000 kinds of alloy materials.

◆ Technical parameters and specifications

Weight	1.6Kg (with battery) .
Dimensions	254 x 79 x 280 mm (L x W x H) .
Excitation source	50KV/200μA maximum pipe pressure pipe flow can be adjusted freely, Agtarget (standard),Au,W,Rh target(optional).
Detector	BOOST Si-PIN detector
Range of detection	Elements between Mg and U.
Display system	Industrial resistive touch screen with screen size of 4.3". Proprietary operating system software and sound waves. Multiple languages including English and Chinese.And it automatically adjusts display brightness according to the environment brightness.
Data processing	32GB memory USB, bluetooth, WIFI, or liked to the Internet; instrument can be configured and repaired remotely. Data can be exported via EXCEL or PDF. Users can customize the reports by adding their company logos, addresses, test results, spectrum and others (such as product description, origin and batch number).
Heat dissipation	Equipped with a dedicated T-shaped radiator to dissipate the heat; no need to wait for cooling of detector time again.
Safety	Built-in double beam technology can automatically sense whether there is a sample at the measurement window. This is also a safety and protection feature. Waterproof, dust-proof and shockproof suitcase Drawell Safety Band ;
Power supply system	Intelligent battery management through MSBUS bus, real-time monitoring of the residual capacity of battery and backup battery. The battery complies with air transport regulations of dangerous goods. A single battery can last 8 hours.

◆ Real-test Values of 316 samples

Reading	Mode	Cr%	Mn%	Mo%	Ni%
No1	ALLOYS	16.56	1.22	2.03	10.18
No2	ALLOYS	16.66	1.29	2.01	10.15
No3	ALLOYS	16.61	1.20	2.05	10.05
No4	ALLOYS	16.62	1.19	2.00	10.03
No5	ALLOYS	16.68	1.18	2.05	10.15
No6	ALLOYS	16.67	1.22	1.99	10.10
No7	ALLOYS	16.62	1.25	2.04	10.16
No8	ALLOYS	16.5	1.16	2.03	10.20
No9	ALLOYS	16.7	1.19	2.01	10.17
No1	ALLOYS	16.63	1.20	2.03	10.08
Standard value		16.68	1.22	2.03	10.11

◆ **After service**

1. Quality warranty:

Drawell commits that TrueX handheld spectrometer is fabricated with fine grade materials and top notch workmanship. It is brand new, never used, and in full compliance with the quality provision of this Contract. TrueX warranty is 12 months starting from the date of final acceptance of the goods/commissioning of machine.

2. Technical training:

Operating Manual of TrueX Handheld Spectrometers
Maintenance Manual of TrueX Handheld Spectrometers

3. After-sale service

Over the years, Drawell has sold XRF instruments to many global users. In order to provide better technical support and service, it shall be committed to.

1. services including

- a) Drawell shall provide after-sales service to all products it has sold worldwide.
- b) Drawell shall provide a one-year warranty for the spectrometer it has sold worldwide.
- c) Drawell shall provide one-year warranty for X-ray Tube (X-ray tube) and Detector (Detector).
- d) Drawell shall provide one-year renewal warranty for the replaced components in case there is any replacement of them during repair of machine.

2. The following physical damage is not covered by warranty.

- a) instrument is impacted by great force that the internal impact sensor changes from white to red;
- b) Detector is broken
- c) PDA is broken;
- d) Instrument body is broken;
- e) Loss of accessories
- f) Loss of components
- g) Water coming into instrument

3. In case the instrument is not able to operate, the customer can call after-sales service for help; we offer 3 types of repairs:

- a) Internet repair: if the customers are in foreign countries or remote areas, we can offer them first the INTERNET repair service.
- b) Phone repair: customers called over the phone to explain explicitly the problem and our technical staff will instruct them to solve the problem.
- c) On-site repair: in case the phone repair fails, our technical personnel will go to the site to repair the instrument within 72 hours after the problem is reported;

4. Out-of-warranty service: upon expiry of the warranty period, all customers are still entitled to out-of-warranty service during the working life of the instrument.

5. Privilege in out-of-warranty service: customers shall have the privilege to get a preferential prices on the components when they maintain their instrument during the out-of-warranty period as long as they maintained it beforehand.

