TV200 Vibration Pen

Applications

Used in quick check of vibration on the workshop machines, rotating rod, gear, electrical item, for milling machine and also for preventive maintenance of mechanical malfunction in factory.

Technical Specifications

Range	: 0.1mm/s – 199.9mm/s (velocity RMS)
Frequency range	: 10Hz – 1KHz
Accuracy	: ± 5% ± 2

Ref. No : TM19 B001
Model : TV 200

TV 110 Vibration Tester

Descriptions

The TV110 vibration tester is specifically designed for on site preventative maintenance in your plant or workshop. It measures overall vibration level and provides a frequency analysis of rotating machinery, and to assess the results of repair work. For more in-depth analysis of a problem the frequency spectrogram is available.

Features

- Large memory of 100 results and 10 frequency spectrograms
- Hand-held accelerometer probe with a removable magnetic base
- Built-in printer

Technical Specifications

Accelerations	: 0.1 to 200 m/s² (Peak)
Velocity	: 0.01 to 20.0 m/s (RMS)
Displacement	: 0.001to 2.0 mm (Peak to peak)
Frequency Range	
Acceleration	: 10Hz to 500 Hz, 10 Hz to 1KHz, 10Hz to 10KHz
Velocity	: 10Hz to 500 Hz, 10 Hz to 1KHz
Displacement	: 10Hz to 500 Hz

Ref. No : TM19 B002
Model : TV 110

TV300 Vibration Tester

Features

- 3 display modes : Common mode -display any one of aceleration, velocity or displacement
  Special mode -display acceleration, velocity and displacement simultaneously
  Spectrum mode -display Spectrum charts
- Limit & Alarm function
- RS232 to portable printer or to computer for data analysis
- Data memory 25 x62 data set and 25 spectral charts

Technical Specifications

Transducer	: piezoelectric acceleration
Range	
Acceleration	: 0.01 m/s² - 392m/s² (Peak)
Velocity	: 0.001 cm/s-80cm/s (RMS)
Displacement	: 0.001mm-18.1mm (Peak – peak)
Frequency range	
Acceleration	: 10-200Hz, 10Hz-500 Hz, 10 Hz-1 KHz, 10Hz-10 KHz
Velocity	: 10Hz-1KHz
Displacement	: 10Hz-500Hz
Accuracy	: ≤± 5%

Ref. No : TM19 B003
Model : TV 300

TV 300 Dataview software for PC

Dot Matrix Microprinter TA 220 Series

Features

- Serial or parallel
- 20KB print buffer
- 43 print control commands
- 448 internal resident characters and 32 user-defined characters

Ref. No : TM19 B004
Model : TA 220

Visco Basic Plus

Visco Basic Plus

- The equipment determines relative viscosity and absolute viscosity.
- Possibility to change the data units from IS to CGS.
- Viscosity data: Dynamic viscosity cP or mPa.s.
- Possibility of calibration by the user.
- Progressive decrease in speed every time the rotation is brought to a stop, avoiding sudden shakes in the spindle.
- Sound alarm if the equipment is working under 15% of the selected full scale.
- The viscometer has 18 fixed speeds, from 0.3 to 100 r.p.m.
- Safety protection against sudden rises in the power supply.
- Direct reading in cP (mPa.s) for the VISCO BASIC Plus L and VISCO BASIC Plus R models
- Direct reading in Poise (or Pa.s) for the VISCO BASIC Plus H model.
- Precision: 1% of full scale.
- Resolution: Using LCP (Low Viscosity Adapter):0.01
  <10,000 CP:0.1
  ≥10,000 CP:1
- Repeatability: 0.2%

Ref. No	Model	Measuring range	Speeds in r.p.m
FL20 B001	VISCO BASIC Plus L	20 -2,000,000 cP	0.3-100
FL20 B002	VISCO BASIC Plus R	100-13,000,000 cP	0.3-100
FL20 B003	VISCO BASIC Plus H	3.2 -1,060,000 Poise	0.3-100

The equipment is supplied complete with standard spindles, base, protector, base foot and mechanized whorl.

Visco Star Plus / Elite Plus

- Data on screen:
  - Speed selected : r.p.m.
  - Spindle selected : S.P.
  - Viscosity reading : cP(mPa.s)or cSt
  - Percentage of full scale : %
  - Sample temperature : ºC or ºF
  - Shear rate (with special spindles) : SR
  - Shear stress (with special spindles) : SS
  - Density (to be entered by user) : g/cm3
- Determination of relative viscosity and absolute viscosity
- Up to 10 working memories can be stored
- The data recorded in CGS can be converted to IS
- Temperature determinated by PT100 probe
- Viscosity reading: dynamic viscosity (cP or mPa.s.) or kinematic viscosity (cSt).
- Datalogger function of the obtained results when an experiment is performed. The equipement is supplied with a software which can dump the data obtained to a file in Excel format (.xls) for subsequent processing.
- Determination of shear rate and shear stress with coaxial spindles.
- The viscometer and the PT100 can be calibrated by the user.
- Auto range function to determine the maximum viscosity with each spindle/speed combination.
- Progressive decrease in speed every time the rotation is brought to a stop, avoiding sudden shakes in the spindle.
- Sound alarm if the equipment is working under 15% of the selected full scale.
- The viscometer is equipped with 19 pre-sets speeds, from 0.3 to 200 r.p.m.
- Safety protection against sudden rises in the power supply.
- The viscometer can be PC-controlled. FUNGIVISC software also allows the option of programming the viscometer for simple curves, ramps, and muti-step curves. The data obtained is analysed in over 12 graphic representations. (VISCO Elite Plus).
- Direct reading in cP (mPa.s) or cSt for the VISCO Star/Elite Plus L and VISCO Star/Elite Plus R models
- Direct reading in Poise or Stokes for the VISCO Star/Elite Plus H model.
- Accuracy : ±1% of the full scale.
- Resolution (VISCO Star Plus): Using LCP (low Viscosity Adapter):0.01
  <10,000 CP:0.1
  ≥10,000 CP:1
- Resolution (VISCO Elite Plus) : VISCO ELITE L: 0.01 at 10 cP or mPa.s depending on the range
  VISCO ELITE R: 0.1 at 100 cP or mPa.s depending on the range
  VISCO ELITE H: 0.1 at 10 Poise depending on the range
- Repeatability : 0.2%
- Temperature ranges : 0.0ºC to + 100.0ºC
- Resolution : 0.1ºC
- Accuracy : ±0.5ºC
- Outputs : RS232, plotter.

Ref. No	Model	Measuring range	Speeds in r.p.m.
FL20 B004	VISCO Star Plus L	15-2,000,000 cP	0.3-200
FL20 B005	VISCO Star Plus R	100-13,000,000 cP	0.3-200
FL20 B006	VISCO Star Plus H	2-1,060,000 P	0.3-200
FL20 B007	VISCO Elite Plus L	15-2,000,000 cP	0.3-200
FL20 B008	VISCO Elite Plus R	100-13,000,000 cP	0.3-200
FL20 B009	VISCO Elite Plus H	2-1,060,000 P	0.3-200

The equipment is supplied complete in a transport case with spindles, spindle holder, protector, base stand and mechanical nut. Datalogger software is also provided for downloading the data from the viscometer to the PC.

Fungvisc

Ref. No : FL20 AS01
Model : Fungvisc Software

The FUNGIVISC software has three basic functions: control of performance of the experiment, storage of the results obtained in a data base and consultation and analysis of the tests performed.

Performing the experiment:

Begin control and open the registers in a data base.
Electronic control of viscometer, start and stop
Control viscosity sampling
Display results on a chart in real time

Data storage:

Obtain and store results of the experiment.
Verify results obtained.
Organise the data base with additional information

Data consultation:

Clear presentation of data
Multiple selection options for consultation
Over 12 different charts can be obtained
Obtain different types of list, and consultation from other applications.

Accessories

LCP: Low viscosity adapter. Performs accurate, reproducible measurements of viscosity starting at 1 cP. Sample volume from 16 to 18 ml. Includes circulation jacket which provides thermostatization of the sample between -10ºC and + 100ºC. Supplied with special spindle.

Ref. No : FL20 A001
Model : LCP

LCP/B: Low viscosity adapter without circulation jacket. Performs accurate, reproducible measurements of viscosity starting at 1 cP. Sample volume : from 16 to 18 ml. Supplied with special spindle.

Ref. No : FL20 A002
Model : LCP/B

APM: Adapter for small samples. Performs extremely accurate measurement of viscosity and determinations of shearing percentage. Includes circulation jacket which provide thermostatization of the sample between -10ºC and + 100ºC. Sample volume: from 8 – 13ml.

Ref. No : FL20 A003
Model : APM

VISCOSITY

Viscometer

APM/B: Adapter for small samples without circulation jacket. Performs extremely accurate measurement of viscosity and determinations of shearing percentage. Sample volume: from 8 to 13ml.

Ref. No : FL20 A004
Model : APM/B

HELDAL: Unit with helicoidal motion. Specially recommended for materials which do not flow easily such as cream, paste, gel, etc. Supplied with a coupling unit and 6 "T" needle spindles.

Ref. No : FL20 A005
Model : Heldal

Standard spindles for VISCO Elite L

Standard spindles for VISCO Elite R and H
* The R1 spindle is supplied as an accessory

THERMOVISC : Different circulators to thermostizate the samples are available.

STANDARD SILICONE OILS : For calibration of any rotational viscometer. Standard oils with different viscosities are available.

ELECTROTEMP : Temperature control unit. Sample volume: from 8 to 13ml. Thermostatization of the sample by Peltier cells. Temperature range from +15ºC to +150ºC.

Falling Ball Viscometer - DIN 53015, ISO 12058

Ref. No : FL20 B010
Model : Visco Ball

The falling-ball viscometer VISCO BALL is based on the Hoppler measurement system. It measures the time taken by a solid sphere to travel the reference distance through an inclined tube filled with the sample. The test results are given as dynamic viscosity in the internationally standardised absolute units of milipascal seconds (mPa.s). The VISCO BALL measures accurately the viscosity of Newtonian liquids and gases (with a special glass ball). By means of a thermostat, the temperature in the jacket can be maintained constant in order to obtain accurate results.

Applications

The VISCO BALL viscometer is mainly used for low viscosity substances such as used in:
- Mineral oil industry (oils, liquid hydrocarbons)
- Food industry (sugar solution, honey, beer, milk, gelatine, fruit juice)
- Chemical industry (polymer solutions, solvents, resin solutions, latex dispersions, adhesive solutions)
- Cosmetic/Pharmaceutical industry (raw materials, glycerine, emulsions, suspensions, solutions, extracts)
- Petroleum industry (light crude, machine oil, crude petroleum)
- Fuels (petrol, diesel oil, paraffin)
- Paper industry (emulsions, pigment dispersion, paper additives)
- Paints and varnishes (printing inks, varnishes, water lacquers, inks)
- Detergents (liquid washing agents, washing-up liquids, tenside solutions)

Features

- High accuracy through improved visibility of falling ball.
- Easy to operate
- Minimised test time due to accurate return run of the ball
- No external influences of the sample as it is hermetically sealed in a tube during the measurement
· Different measuring range depending on ball diameters.

Technical Specifications

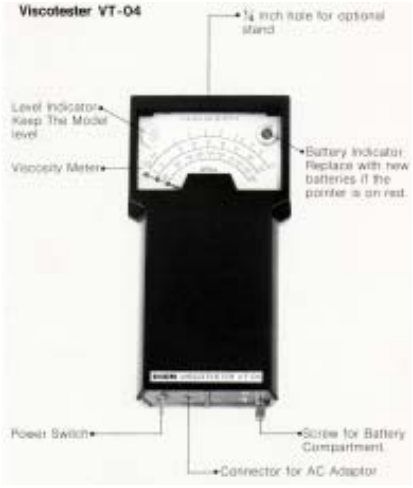
Viscosity range	: 0.5 – 10^5 mPa.s
Temperature range	: -20°C up to + 120°C
Reproducibility	: Better than 0.5%
Comparability	: Better than 1%
Materials	: Balls 1,2 and G, Borosilicate glass Balls 3 and 4, Nickel iron alloy Balls 5 and 6, Stainless steel

Measuring range

Ball nº	Measurement range (mPa.s)
1	0,6 to 10
2	7 to 130
3	30 to 700
4	200 to 4,800
5	1,500 to 45,000
6	> 7,500

Note : For non-Newtonian liquids and pastes as well as pseudoplastic or thixotropic substances we recommend rotational viscometer: VISCO BASIC, VISCO STAR plus and VISCO ELITE. In order to thermostatizate the sample we recommend Thermovisc series.

Viscotester Model VT-03 (Low viscosity) /VT-04 (High viscosity)



This product is designed for a wide range of viscosity measurements. It is suitable for checking industrial substances such as heavy oil, paint, and adhesives. It can be used for quality control in manufacturing processes of foodstuffs and other products. When inspecting construction vehicles and other machinery, the unit can serve to measure not only the viscosity of hydraulic oil but also of light spindle oil, gear oil, etc. The unit employs the rotating cylinder principle. A rotor turning at constant speed is inserted into the liquid to be measured. The resistance to rotor movement caused by the viscosity (torque) is measured using a special mechanism to obtain direct readings in millipascal-seconds (mPa•s) or decipascal-seconds (dPa•s).

Features

- Compact size, can be operated with one hand
- Battery powered design allows use anywhere
- Quick startup shows reading immediately after turn-on
- Direct readings in millipascal-seconds or decipascal-seconds (SI units)
- Stand and AC adapter available as options

Ref. No	Model
R020 B011	VT-03F
R020 B012	VT-04F

VISCOSITY

Viscometer

Optional Stand VA-04

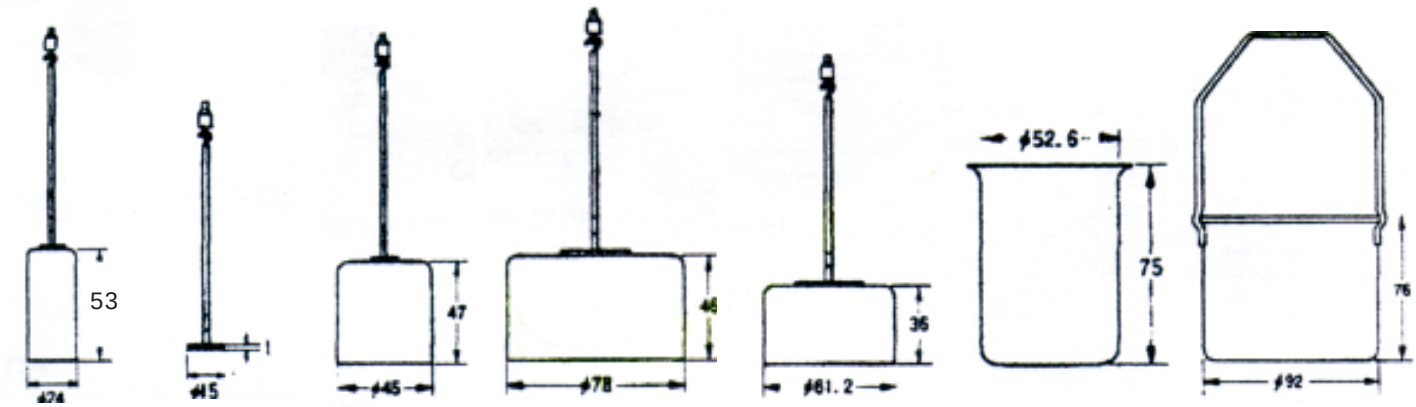
Technical Specifications (VT-03F)

Measurement range	No. 4 rotor : 2 to 33 mPa•s		
	No. 5 rotor : 15 to 150 mPa•s		
	No. 3 rotor : 50 to 300 mPa•s		
Sample fluid capacity	Approx. 460ml (with Cup A or Cup B)		
Measurement accuracy	Within ±5% of scale maximum (using supplied cup A or Cup B) Scale calibrated according to JIS Z 8809:2000 viscosity calibration standard		
Rotor Speed	62.5 rpm		
Power requirements	6V DC (four IEC R6P batteries) or AC adapter VA-05 Current consumption at maximum torque approx.100 mA		
Dimensions	98 (W) x181 (D) x40 (H)mm (without protruding parts)		
Weight	Approx. 570g (without batteries)		
Supplied accessories	No.3 rotor (dia. 45 x 47 x 160 mm)	SUS304	1
	No.4 rotor (dia. 78 x 46 x 159 mm)	A1050(alumite)	1
	No.5 rotor (dia. 61.2 x 36 x 149 mm)	A1050(alumite)	1
	Cup A (dia. 92 x 76 mm)	A1050(alumite)	1
	Cup B (dia. 92 x 76 mm)	A1050(alumite)	1
	IEC R6P (size AA) battery		4
	Instruction manual		1
	Inspection certificate		1
Optional accessory	AC adapter VA-05, Stand VA-04		

Technical Specifications (VT-04F)

Measurement range	No. 3 rotor : 0.3 to 13 dPa•s (with No.3 cup)		
	No. 1 rotor : 3 to 150 dPa•s (with JIS 300ml beaker)		
	No. 2 rotor : 100 to 4000 dPa•s (with JIS 300ml beaker)		
Sample fluid capacity	No.1 and No.2 rotor (with JIS 300ml beaker) approx. 300ml		
	No.3 rotor (with No.3 cup) approx. 170ml		
	Clearance between rotor end and cup bottom : about 15mm		
Measurement accuracy	±10% of indicated value		
Reproducibility	±5% (calibrated with silicon oil)		
Rotor Speed	62.5 rpm		
Power requirements	6V DC (four IEC R6P batteries) or AC adapter VA-05 Current consumption at maximum torque approx. 300 mA		
Dimensions	98 (W) x181 (D) x40 (H)mm (without protruding parts)		
Weight	Approx. 570g (without batteries)		
Supplied accessories	No.1 rotor (dia. 24 x 53 x 166 mm)	SUS304	1
	No.2 rotor (dia. 15 x 1 x 113 mm)	SUS304	1
	No.3 rotor (dia. 45 x 47 x 160 mm)	SUS304	1
	No.3 Cup (dia. 52.6 x 75 mm)	SUS304	1
	Rotor extension (900 mm.300 x 3)	SUS304	1
	IEC R6P (size AA) battery		4
	Instruction manual		1
	Inspection certificate		1
Optional accessory	AC adapter VA-05, Stand VA-04		

Accessories (Rotors and Cups) - unit : mm



No. 1 Rotor	No. 2 Rotor	No. 3 Rotor	No. 4 Rotor	No. 5 Rotor	No. 3 Cup	Cup A, B
*1	*1	*1	*2	*2	*1	*2, *3

*1 Material : Stainless steel
*2 Material : Aluminate
*3 Cup B has a 30mm diameter hole at the bottom. Use Cup B to measure viscosity by directly dipping Rotor in the fluid

Sample amount for measurement

Ref. No	R020 B011	R020 B012
Model	**VT-03F**	**VT-04F**
Cup A	approx. 460ml	-
No.3 Cup	-	approx. 170ml
Commercially available 300ml beaker	-	approx. 350ml

CGS Unit and SI Unit

P (poise), cP(centi poise)
Pa•s (pascal-seconds),
dPa•s (decipascal-seconds)
mPa•s (millipascal-seconds)

$1cP=\frac{1}{1,000}$ Pa•s=1mPa•s

$1P=\frac{1}{10}$ Pa•s=1dPa•s

The example of measurement by Viscotester

Product Name	Temperature	Viscosity
Ketchup	24 °C	18 dPa•s
Mayonnaise	23 °C	80 dPa•s
Condensed Milk	21.5°C	20 dPa•s
Honey	21 °C	13 dPa•s
Strawberry Jam	23 °C	60 dPa•s
Sweet Corn Soup stock	22 °C	22 dPa•s
Chocolate Paste	21 °C	380 dPa•s
Toothpaste	20.5°C	300 dPa•s
Pomade	21 °C	450 dPa•s
Shoe polish cream	20 °C	120 dPa•s
Castor Oil	20 °C	7 dPa•s
Enamel	19.5°C	45 dPa•s
Water	20 °C	0.01 dPa•s

(Those measurement value are only products of Japanese make)

Viscosity Cup- EN DIN ISO 2431

866-22

Measures the viscosity of paints, lacquers and other liquids. Volume: 100ml

Technical Specifications

Viscosity Cup type DIN EN ISO made of anodized aluminium	Ref. No	Model
With orifice 2mm	SX20 C001	866-22
With orifice 3mm flow rate: 30-120 sec.	SX20 C002	866-23
With orifice 4mm flow rate: 30-120 sec.	SX20 C003	866-24
With orifice 5mm flow rate: 25-100sec.	SX20 C004	866-25
With orifice 6mm flow rate: 25-100sec.	SX20 C005	866-26
With orifice 8mm	SX20 C006	866-28
Test Certificate	SX20 C007	866-10

Viscosity Cup type DIN EN ISO made of stainless steel is available upon request.

Viscosity Cups - ASTM D 1200 (Ford)

869-01

Viscosity cup for measuring the flow time, made of anodized aluminum, orifices of stainless steel. Volume: 100ml

Technical Specifications

Viscosity Cup type FB 10	Ref. No	Model
With fixed orifice No.1 (1,90mm)	SX20 C008	869-01
With fixed orifice No.2 (2,53mm)	SX20 C009	869-02
With fixed orifice No.3 (3,40mm)	SX20 C010	869-03
With fixed orifice No.4 (4,12mm)	SX20 C011	869-04
With fixed orifice No.5 (5,20mm)	SX20 C012	869-05
Test Certificate	SX20 C013	869-10

Viscosity Cups- DIN 53211

862-32

For measuring the viscosity (flow time in seconds) of paints, lacquer and other liquids. All dimensions of the viscosity cup acc, to DIN 53211. Volume: 100ml

Technical Specifications

Viscosity Cup Type DE 10 made of anodized aluminium	Ref. No	Model
With fixed orifice 2mm	SX20 C014	862-32
With fixed orifice 3mm	SX20 C015	862-33
With fixed orifice 4mm	SX20 C016	862-34
With fixed orifice 5mm	SX20 C017	862-35
With fixed orifice 6mm	SX20 C018	862-36
With fixed orifice 8mm	SX20 C019	862-38

Viscosity Cup Immersion Type-DIN 53211

864-02

A useful spot-check sampler made of aluminum. The handle and orifice are made of stainless steel. The inner dimensions are acc, to DIN, also available to ISO or ASTM. Volume: 100ml.

Technical Specifications

Viscosity Cup Immersion Type (DIN 53211)	Ref. No	Model
Type TA 2 with orifice 2mm	SX20 C020	864-02
Type TA 3 with orifice 3mm	SX20 C021	864-03
Type TA 4 with orifice 4mm	SX20 C022	864-04
Type TA 5 with orifice 5mm	SX20 C023	864-05
Type TA 6 with orifice 6mm	SX20 C024	864-06
Type TA 8 with orifice 8mm	SX20 C025	864-08

Viscosity Cup Immersion Type ISO 2431

868-22

Technical Specifications

Viscosity Cup Immersion	Ref. No	Model
Type (ISO 2431)		
Type TI 1 with orifice 2mm	SX20 C026	868-22
Type TI 2 with orifice 3mm	SX20 C027	868-23
Type TI 3 with orifice 4mm	SX20 C028	868-24
Type TI 4 with orifice 5mm	SX20 C029	868-25
Type TI 5 with orifice 6mm	SX20 C030	868-26
Type TI 6 with orifice 8mm	SX20 C031	868-28

Viscosity Cup (Zahn Cup)- ASTM 4212-88

865-01

Handy viscosity cup made of stainless steel. Designed for measuring the viscosity of paints, lacquers and other liquids. It is very suitable for example for spray-guns. Flow rates: 10-80 sec. Volume: 44ml

Technical Specifications

Viscosity Cup (Zhn-Cup)	Ref. No	Model
Type ZC 1 (with hole 1,98mm)	SX20 C032	865-11
Type ZC 2 (with hole 2,74mm)	SX20 C033	865-12
Type ZC 3 (with hole 3,76mm)	SX20 C034	865-13
Type ZC 4 (with hole 4,27mm)	SX20 C035	865-14
Type ZC 5 (with hole 5,28mm)	SX20 C036	865-15

Tripod Stand Type S 40

883-01

It can be leveled by three legs. With build in spirit level, convenient to all types of viscosity cups. Height : 260mm

Technical Specifications

Tripod Stand Type S 40	Ref. No	Model
A – Ring: Aluminum, legs: stainless steel	SX20 C037	883-01
B – Ring and legs: stainless steel	SX20 C038	883-02

Weighing Scale

Digital Weighing Scale

Features

- Rechargeable battery, AC source
- Auto zero tracking, tare, memory
- Back-light display

Technical Specifications

Ref. No	Model	Cap	Division
AC21 B001	UWA-A-102	1.2 Kg	0.2 g
AC21 B002	UWA-A-003	3 Kg	0.5 g
AC21 B003	UWA-A-006	6 Kg	1 g
AC21 B004	UWA-A-012	12 Kg	2 g
AC21 B005	UWA-A-015	15 Kg	2 g
AC21 B006	UWA-A-030	30 Kg	5 g
AC21 B007	UWA-B-102	1.2 Kg	0.2 g
AC21 B008	UWA-B-003	3 Kg	0.5 g
AC21 B009	UWA-B-006	6 Kg	1 g
AC21 B010	UWA-B-012	12 Kg	2 g
AC21 B011	UWA-B-015	15 Kg	2 g
AC21 B012	UWA-B-030	30 Kg	5 g

Pan size : 285 mm x 240 mm

Digital Counting Scale

Features

- Rechargeable battery, AC source
- Auto zero tracking, tare, quantity set alarm, memory

Technical Specifications

Ref. No	Model	Cap	Division
AC21 C001	UCA-A-102	1.2 Kg	0.2 g
AC21 C002	UCA-A-003	3 Kg	0.5 g
AC21 C003	UCA-A-006	6 Kg	1 g
AC21 C004	UCA-A-012	12 Kg	2 g
AC21 C005	UCA-A-015	15 Kg	2 g
AC21 C006	UCA-A-030	30 Kg	5 g
AC21 C007	UCA-B-102	1.2 Kg	0.2 g
AC21 C008	UCA-B-003	3 Kg	0.5 g
AC21 C009	UCA-B-006	6 Kg	1 g
AC21 C010	UCA-B-012	12 Kg	2 g
AC21 C011	UCA-B-015	15 Kg	2 g
AC21 C012	UCA-B-030	30 Kg	5 g

Pan size : 285 mm x 240 mm

Bench / Floor Scale

Bench / Floor Scale

Features

- Overload Protection
- Stainless steel platform cover
- Power on zero tracking, re-zero, auto calibration and auto power saving function
- Simple counting function
- Built-in rechargeable battery and power adaptor

Technical Specifications

Ref. No	Model	Capcacity	Division	Platform Size
UW21 D001	OFW-B30	30 Kg	0.005 Kg	330×450mm
UW21 D002	OFW-F60	60 Kg	0.01 Kg	425×525mm
UW21 D003	OFW-F150	150 Kg	0.02 Kg	425×525mm
UW21 D004	OFW-F300	300 Kg	0.05 Kg	425×525mm

Precision Balance

Technical Specifications

Ref. No	Model	Weighing Capacity	Readability
MT21 E001	PB303-S	310 g	0.001 g
MT21 E002	PB602-S	610 g	0.01 g
MT21 E003	PB3002-S	3100 g	0.01 g
MT21 E004	PB3001-S	3100 g	0.1 g
MT21 E005	PB8001-S	8100 g	0.1 g

Analytical Balance

Technical Specifications

	AX Series		AY Series	
Model	AX 120	AX 200	AY 120	AY 220
Capacity	120g	200 g	120 g	220 g
Minimum display	0.1 mg	0.1 mg	0.1 mg	0.1 mg
Built-in calibration weight	Motor-driven		Not equipped	
Pan size (dia)	80 mm	80mm	80mm	80mm
Motor-Cal (Touch key with built in weight)	*	*		
Touch-key calibration with external weight	*	*	*	*
Windows™ Direct	*	*	*	*
Built-in RS-232C interface	*	*	*	*
Piece counting	*	*	*	*

Ref. No	Model
SZ21 F001	AX 120
SZ21 F002	AX 200
SZ21 F003	AY 120
SZ21 F004	AY 220

Halogen Moisture Analyzer

Ref. No : MT21 G001
Model : HB 43

Features

- For standardized sample determination
- Proven halogen drying
- Easy operation
- Clear user guidance
- Ruggedly made for the production environment

The backlit graphical display is easy to read even in dark surroundings.

Technical Specifications

Sample quantity (typical) : 2 - 20 g
Determination time (approximate): 2 - 10 min
Measurement range : 0.5 - 99.5%
Resolution : 0.01%

Digital Crane Scale

HB33 (300kg-2.5t)

HC33 (3-10t)

Remote Controller
(Patent No.75712)

High safety, accuracy, stability, durability & productivity

Features

- Low battery power and charging indication
- Auto zero and tare function
- Super bright red led display
- Function key : on/off, lock, change, zero
- Housing : Rugged, heavy duty design , cast aluminum alloyed
- Optional: remote controller

Technical Specifications

Ref. No	Model	Capacity	Graduation
NA21 H001	HB-33-300kg	300kg	100g
NA21 H002	HB-33-600kg	600kg	200g
NA21 H003	HB-33-1t	1t	500g
NA21 H004	HB-33-1.5t	1.5t	500g
NA21 H005	HB-33-2t	2t	1kg
NA21 H006	HB-33-2.5t	2.5t	1kg
NA21 H007	HC-33-3t	3t	1kg
NA21 H008	HC-33-5t	5t	2kg
NA21 H009	HC-33-7.5t	7.5t	5kg
NA21 H010	HC-33-10t	10t	5kg

Welding Inspection

Bridge Cam

Angle of preparation, 0-60°, Excess weld metal (capping size). Depth of undercut and pitting, Fillet weld throat size and length, Misalignment (high-low)

Ref. No : GA22 B001
Model : Bridge Cam

Hi-Lo

Internal misalignment of pipe, Fit-up gap, Bevel on end preparation, Crown height, Pipe wall thickness, Fillet weld size

Ref. No : GA22 B002
Model : Hi-Lo

Single Purpose Hi-Lo

Internal misalignment of pipe, Rootweld spacing

Ref. No : GA22 B003
Model : Single Purpose Hi-Lo

V-wac

Depth of undercut, Crown height, Porosity of weld

Ref. No : GA22 B004
Model : V-wac

Adjustable Fillet Weld

Fillet weld size, Weld throat thickness, Unequal weld leg length.

Ref. No : GA22 B005
Model : Adjustable Fillet Weld

Fillet Weld

Concave or convex weld size 3 ~ 25mm

Ref. No : GA22 B006
Model : Fillet Weld

Pocket Fillet Weld

Weld throat, Allowable convexity and leg length

Ref. No : GA22 B007
Model : Pocket Fillet Weld

Skew-T Fillet Weld

Fillet or groove welds in skewed members or members at 90°. A calculator is included to provide handy compilation relationships between leg length, throats, skew angles and inspection dimensions.

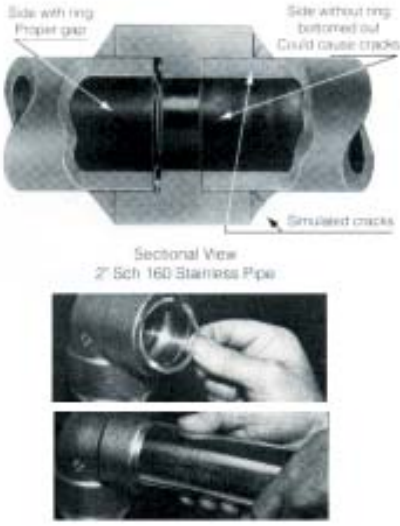
Ref. No : GA22 B008
Model : Skew-T Fillet Weld

Dial/Pit Depth Gauge

Is used where high accuracy is required in determining depth of pits, gouges, undercut, crown height, etc.

Ref. No : GA22 B009
Model : Dial/Pit Depth Gauge

Gap-A-Let Socket Weld Contraction Rings



Gap-A-Let is a split ring that is engineered and designed to give you a pre-measured 1/16" (1.6mm) minimum gap for socket welds. Made from a certified stainless steel, Gap-A-Let resists corrosion from chemicals, radioactive materials, and water.

Advantages :

- Cut fit up time by 90%
- Eliminate cracked welds resulting from improperly gapped joints
- Meets US military and commercial construction code standards.

Technical Specifications

Ref. No	**Model** (Gap-A-Let size)	**Ring outside diameter**
GA22 C001	1/4 NPS	.600
GA22 C002	3/8 NPS	.730
GA22 C003	1/2 NPS	.880
GA22 C004	3/4 NPS	1.110
GA22 C005	1 NPS	1.385
GA22 C006	1 1/4 NPS	1.780
GA22 C007	1 1/2 NPS	2.020
GA22 C008	2 NPS	2.580
GA22 C009	2 1/2 NPS	3.010
GA22 C010	3 NPS	3.885
GA22 C011	3 1/2 NPS	4.150
GA22 C012	4 NPS	5.110
GA22 C013	5 NPS	5.880

* All dimensions are in inches.