V-20B configured with PS 10×6B Stage

PROFILE PROJECTOR
V-20B

Large effective screen diameter of 500 mm. Permits mounting of a large stage and includes a built-in digital counter and digital protractor.

Parfocal projection lenses

All projection lenses have the same parfocal distance and feature long working distances. The built-in half mirror eliminates the need to adjust illumination each time the magnification is changed.

Maximum sample weight

Combined with the PS 10×6B stage, samples as heavy as 20 kg can be loaded.

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Combined with the PS 10×6B stage, samples as heavy as 20 kg can be loaded.

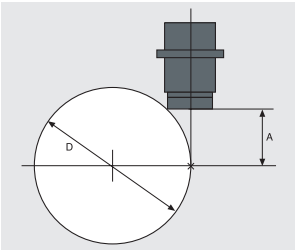
Stage Adapter S

For V-20B only

Used to mount a stage other than the PS 10×6B, PS 8×6B Stage to the V-20B profile projector.

PROJECTION LENSES

Five lenses are available, each featuring a different magnification, working distance, and field of view (FOV) diameter.



A= working distance
D= maximum diameter of a measurable cylindrical sample

(mm)

Magnification	FOV diameter	Half mirror	A	D
5×	100	Built-in; fixed	73	149
10×	50	Built-in; switchable	79	215
20×	25	Built-in; switchable	85	313
50×	10	Built-in; switchable	50.5	130
100×	5	Built-in; switchable	50.5	130

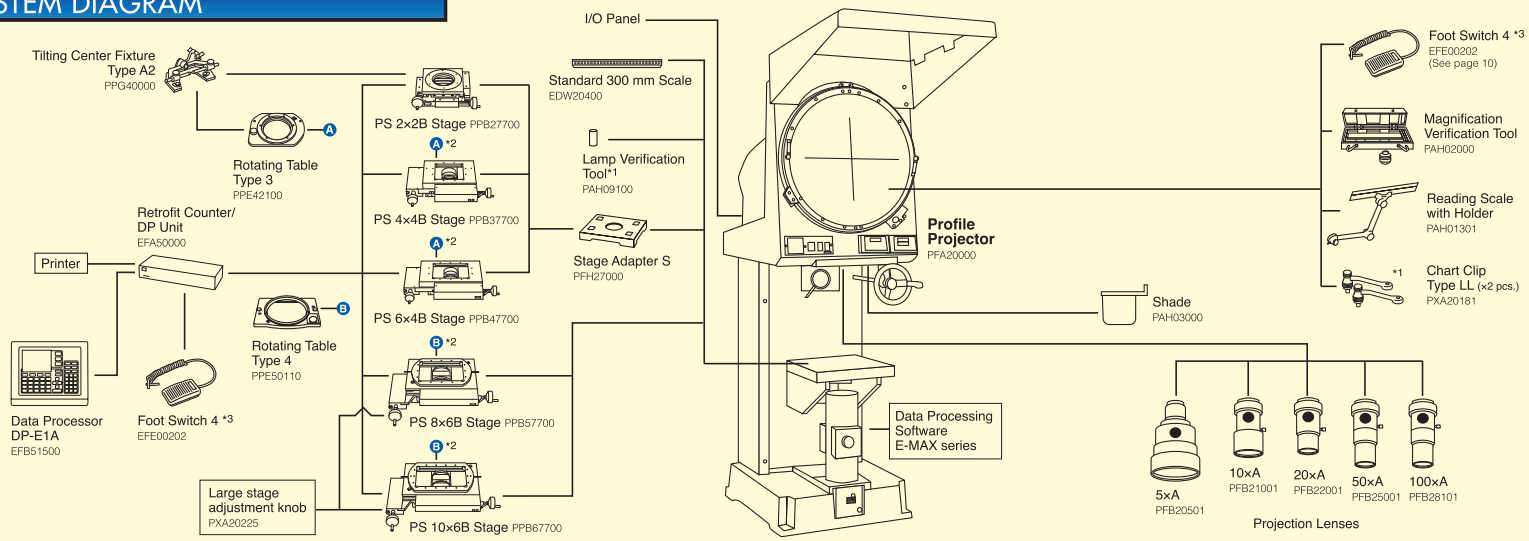
*Part of the FOV is vignetted when 5× or 10× projection lens are used under diascopic illumination

SPECIFICATIONS

Type	Vertical optical axis
Image	Inverted and reversed
Screen	ø500 mm with protractor screen
Projection lens	5×, 10×, 20×, 50×, 100×
	3-lens turret mount (screw type)
Magnification accuracy	Diascopic: 0.1 %
	Reflected: 0.15 %
Stages	PS 10×6B, PS 8×6B directly mountable
	PS 6×4B, PS 4×4B, PS 2×2B mountable
	via adapter
Illumination	Diascopic and reflected
	(both 24 V-150 W halogen lamp)
Maximum sample height	150 mm
Power source	AC 100-120 V (CSA), 220-240 V (CEE),
	240 V (SAA)
Dimensions(W×D×H)	570×1200×1900 mm
Weight	Approx. 260 kg
Accuracy	3.0 + *L* / 50 µm
	After calibration; weight capacity on stage
	not exceeding 1 kg
	3.5 + *L* / 50 µm
	With rotating stage after calibration
	*PS 2x2B will have this accuracy because
	of built-in rotating table

**L*: Length in mm

SYSTEM DIAGRAM



*1: Standard accessory *2: Alphabets above the stages represent accessories that can be mounted.
*3: To use the Foot Switch and [Reset/Send] buttons simultaneously, the "MM cable (PXA20224)" is required.

PROFILE PROJECTOR

V-12B Series

Benchtop projector with a wide measuring stroke up to 250×150 mm (cross travel). Models with a built-in digital counter and/or protractor are available.

V-12BDC configured with PS 10×6B Stage

	Built-in digital protractor	Built-in digital counter
V-12BDC	●	●
V-12BD	●	–

Deluxe (D): built-in digital protractor
Counter (C): built-in X-Y digital counter

Large stage mountable

Focus is achieved by moving the objective head up and down, allowing stages with longer cross travel to be mounted. When the PS 10×6B Stage is used, the projector can measure areas as wide as 250×150 mm.

Adjustable base feet

Less affected by irregularities in the installation surface and external vibrations because the base is 2 mm away from the installation surface and the base feet are adjustable.

Increased maximum sample height

Samples as tall as 100 mm can be loaded because the rigidness of the projector is increased by its CAE design.

Built-in digital counter and protractor

V-12BDC come with a digital XY counter, while V-12BDC and V-12BD have a built-in digital protractor for greater ease of use.

Erect images

Projection images are erect and unreversed for easy measurements, and their quality is as sharp as inverted images.

Switchable vertical/oblique illumination

Easier edge detection achieved with the switchable built-in reflection illuminator.

4-step zooming condenser lens with diascopic illumination

Delivers the right amount of light to suit the magnification of the projection lens. (DIA condenser needed for 200x magnification)

DIA Condenser Lens

Necessary when using 200× projection lens and diascopic illumination.
*Cannot be removed when using PS 2x2B stage

PROJECTION LENSES

Three lenses can be mounted on the rotary turret at one time. All lenses boast high resolution and minimal distortion, with long working distances.

(mm)

Magnification	FOV diameter	Half mirror	A	D
5×	61	Built-in; fixed	60	127
10×	30	Built-in; switchable	74	215
20×	15	Built-in; switchable	74	244
25×	12	Built-in; switchable	62	178
50×	6	Built-in; switchable	61	173
100×	3	Built-in; switchable	49	123
200×	1.5	Built-in; switchable	24	49

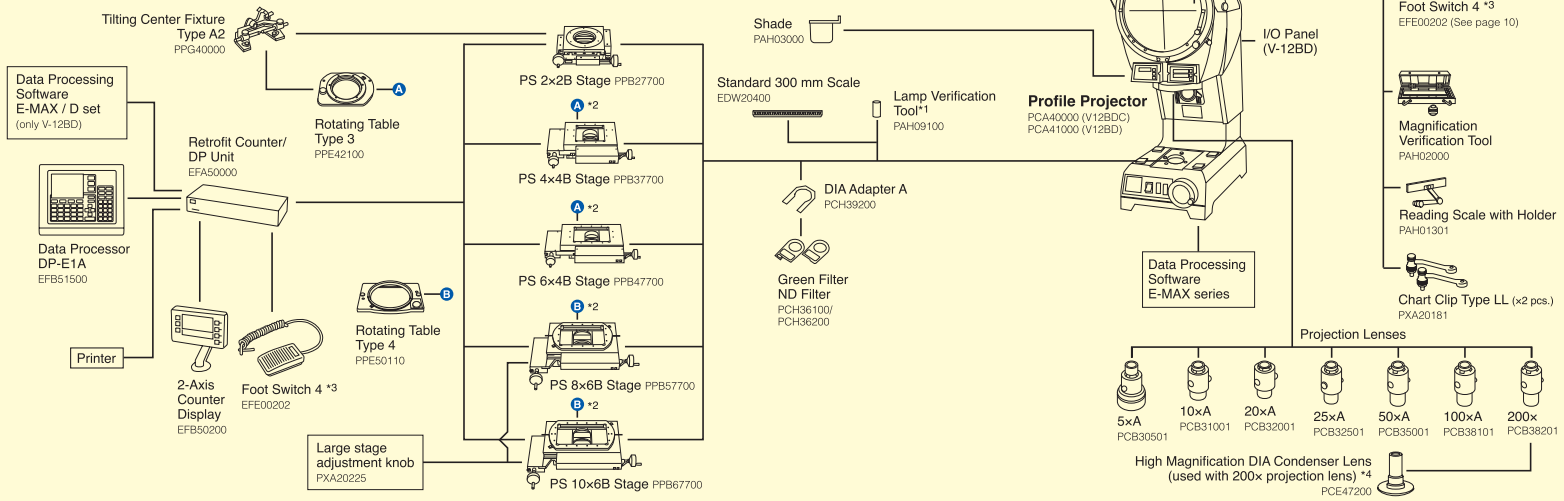
*Part of the FOV is vignetted when 5× or 10× projection lens are used under diascopic illumination

SPECIFICATIONS

Type	Vertical optical axis bench type
Image	Erect and unreversed
Screen	ø305 mm with etched center crossline
	V-12BDC/V-12BD: 360°rotatable screen
	with knob for digital protractor
Projection lens	5×, 10×, 20×, 25×, 50×, 100×, 200×
	3-lens turret mount; clamping type
Magnification accuracy	Oblique reflected/diascopic: 0.1 %
	Vertical reflected: 0.15 %
Stages	PS 10×6B, PS 8×6B, PS 6×4B, PS 4×4B,
	PS 2x2B directly mountable
Illumination	Diascopic and reflected
	(both 24 V-150 W halogen lamp)
Maximum sample height	100 mm
	(70 mm: with PS 10×6B, PS 8×6B Stage)
Power source	AC 100/120V (50/60 Hz),
	AC 220/230/240V (50/60 Hz)
Dimensions(W×D×H)	410×650×938-1038 mm
Weight	Approx. 80 kg
Accuracy	3.0 + *L* / 50 µm
	After calibration; weight capacity on stage
	not exceeding 1 kg
	3.5 + *L* / 50 µm
	With rotating stage after calibration
	*PS 2x2B will have this accuracy because
	of built-in rotating table

L: Length in mm

SYSTEM DIAGRAM



*1: Standard accessory *2: Alphabets above the stages represent accessories that can be mounted.
*3: To use the Foot Switch and [Reset/Send] buttons simultaneously, the "MM cable (PXA20224)" is required.
*Not required when using retrofit counter with V-12BDC

*4 Cannot be used with PS2x2B stage