

Cyclone

Scanning system



Contact scanning with indexer on Cyclone Series 2 scanning machine



Cyclone longbed option



Laser scanning on Cyclone Series 2



Cyclone scanning machine indexer

Cyclone table riser option



Cyclone

Scanning system

Machine specification – Contact scanning system

Axis travel:	600mm x 500mm x 400mm (23.6 x 19.7 x 15.7 in) nominal
Maximum workpiece weight:	200kg (441 lb)
Repeatability:	5µm (0.0002 in)
Axis resolution:	1µm (0.00004 in)
Scanning speed:	Up to 3 metres per minute (9.83 feet per minute)
Rapid speed:	6 metres per minute (29.66 feet per minute)
Scanning rate:	400 points per second
Scale type:	Renishaw RG24
Probe type:	Renishaw 3-axis SP620 analogue scanning probe
Probe range:	±1.0mm
Probe rate:	1.2 N/mm nominal
Stylus supplied **:	M4, 100mm (3.94 in) ceramic x Ø6mm (0.24 in) ruby ball tip
Working range (Z axis)	391 ±5mm with a 100mm stylus
Crash protection:	Detachable magnetic stylus holder
Controller:	Custom controller with optical PC interface
Software:	Renishaw Tracecut
Part program output:	See Input / Output reference section
Weight:	162kg (357 lb)
Colour:	Royalite grey and black
Table:	Composite granite tile with grid of M8 holes
Operating temperature:	+10°C to +38°C (+50°F to +100°F)
Storage temperature:	-10°C to +50°C (+14°F to +122°F)
Humidity operating range:	20 to 80%
Machine supply requirements:	
Electrical power supply -	90–265V ac, 47–60Hz
Air supply -	5.5 to 10 bar (80 to 145 psi) (0.55 to 1.0 MPa)
Power consumption:	80 Watts
Air consumption:	40 litres per minute (1.4cfm)
Noise ***:	52dB(A) at 1.6 metres from floor and 1 metre from the front of the machine
Optional accessories:	Scanning styli kit Anti-vibration feet Additional clamp kits

**** Stylus kit also available.**

***** Sound pressure level measured whilst the machine was traversing rapidly and scanning.**

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Machine specification – Laser + Contact scanning system

Axis travel:	analogue:	600mm x 500mm x 370mm (23.6 x 19.7 x 14.6 in)
	optical:	600mm x 500mm x 260mm (23.6 x 19.7 x 10.2 in)
Maximum workpiece weight:		200kg (441 lb)
Repeatability:		5µm (0.0002 in)
Axis resolution:		1µm (0.00004 in)
Scanning speed:		Up to 3 metres per minute (9.83 feet per minute)
Rapid speed:		6 metres per minute (29.66 feet per minute)
Scanning rate:		400 points per second
Scale type:		Renishaw RG24
Probe rate:	analogue:	1.2 N/mm nominal
Probe mount:		Renishaw Multiwire Autojoint
Probe type:	analogue:	Renishaw 3-axis SP600M analogue scanning probe
Probe type:	optical:	Wolf & Beck OTM3-10/20 optical scanning probe
Probe range:	optical:	±5.0mm
Probe standoff:	optical:	45.0mm
Spot size:	optical:	100µm at focus 150µm at end of range
Laser type:	optical:	Class II visible
Laser interface:	optical:	Special W&B with automatic probe switch-through
Stylus supplied**:	analogue:	M4, 100mm (3.94 in) ceramic x Ø6mm (0.24 in) ruby ball tip
Working range (Z axis) analogue:		361 ±5mm with a 100mm stylus
Working range (Z axis) optical:		225 ±5mm
Crash protection:		Detachable magnetic stylus holder (SP600M only)
Controller:		Custom controller with optical PC interface
Software:		Renishaw Tracecut
Part program output:		See Input / Output reference section
Weight:		162kg (357 lb)
Colour:		Royalite grey and black
Table:		Composite granite tile with grid of M8 holes
Operating temperature:		+10°C to +38°C (+50°F to +100°F)
Storage temperature:		0°C to +50°C (+14°F to +122°F)
Humidity operating range:		20 to 80%
Machine supply requirements:		
Electrical power supply -		90–265V ac, 47–60Hz
Air supply -		5.5 to 10 bar (80 to 145 psi) (0.55 to 1.0 MPa)
Power consumption:		80 Watts
Air consumption:		40 litres per minute (1.4cfm)
Noise***:		52dB(A) at 1.6 metres from floor and 1 metre from the front of the machine
Optional accessories:		Scanning styli kit Anti-vibration feet Additional clamp kits

** Stylus kit also available.

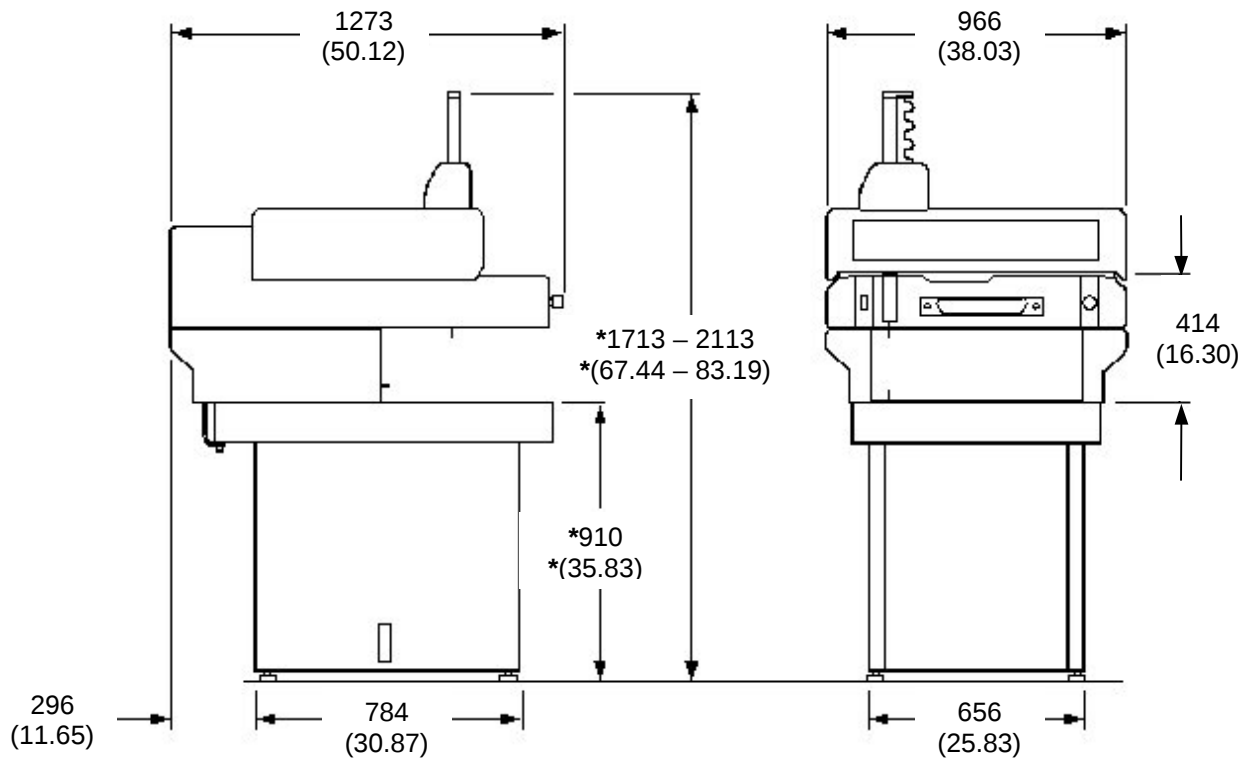
*** Sound pressure level measured whilst the machine was traversing rapidly and scanning.

Cyclone

Scanning system

Technical data

Dimensions mm (in)



* (+66 [2.60] for Antivibration mounts)

Machine dimensions

The dimensions of CYCLONE scanning machines are as shown above.

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Cyclone part numbers

A-1328-0002-01	Cyclone Series 2 + (Laser (W&B) + SP600M)
A-1328-0003-01	Cyclone Series 2 (SP620)
A-1328-0005-01	Cyclone Series 2 + (Laser interface pre-installed + SP600M)
A-1328-0006-01	Cyclone Series 2 (SP600M)

Note:

A-1328-0002-01 includes: A-1375-0055-01 etched datum ball
 M-1375-0061-03 Wolf & Beck laser scanning probe
 M-1375 0062-01 Wolf & Beck laser scanning interface

A-1328-0005-01 includes: A-1375-0055-01 etched datum ball
 M-1375 0062-01 Wolf & Beck laser scanning interface

Retrofit kit part numbers

All existing and new Cyclone machines are capable of being upgraded with a laser system – the upgrade kit depends on the specification of the existing machine.

A-1399-0040-01	Upgrade from existing Cyclone to Cyclone Series 2 (from system with RG2 readheads)
A-1399-0041-01	Upgrade from existing Cyclone to Cyclone Series 2 (from system with RG23 readheads)
A-1399-0042-01	Upgrade from existing Cyclone to Cyclone Series 2 + laser probe (from system with RG2 readheads)
A-1399-0043-01	Upgrade from existing Cyclone to Cyclone Series 2 + laser probe (from system with RG23 readheads)
A-1399-0044-01	Laser upgrade to an existing Cyclone Series 2

Note:

A-1399-0040/41/42/43/44 will all require Tracecut software version 23 or later.

Software part numbers

A-2074-0700	Tracecut
A-2074-0181	Tracecut extra processing seat
A-2074-0703	Tracecut upgrade
A-2074-0182	Tracecut upgrade extra processing seat
A-2074-0187	Tracecut Surfacing module

Note:

The Tracecut Surfacing module will be included on all Tracecut CDs post version 23, but will require a software protection device A-2074-0187 after the evaluation period has expired. The package will include the CD and software protection device.

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Cyclone accessories

Longbed

The longbed option is available in two configurations:

- A-1328-1100 As a replacement stand and a longbed assembly
- A-1328-1150 As a replacement stand only.
(Customer to supply table)



Table riser

Used to extend the Z range of the Cyclone by 280mm whilst still retaining the 400mm stroke

- A-1328-1155-01

Riser unit
which extends
the working
space by
280mm



Indexer (Automatic)

The automatic indexer option is available

- A-1307-3017



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Stylus kit

The stylus kit comprises of a range of scanning styli from 0.5mm – 8.0mm diameter.

- A-1307-0701



Clamp kit

A clamp kit suitable for use

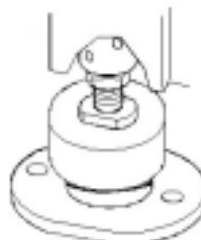
- M-1307-0619



Anti-vibration mounts

Anti-vibration mounts can be used when using a Cyclone in a noisy environment

- A-1307-0064



Tracecut software

- A-2074-0700 Tracecut software
- A-2074-0181 Extra processing seat
- A-2074-0703 Tracecut upgrade
- A-2074-0182 Extra processing seat upgrade
- A-2074-0187 Tracecut Surfacing module
- M-2074-0210 Tracecut evaluation system

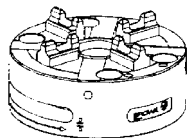


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Indexer (Manual)

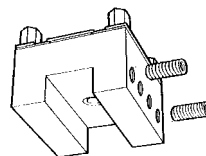
Erowa kits for Cyclone



Part No. 015105

Quickchuck 100

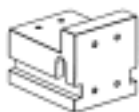
Can be mounted on the square block horizontally or vertically.
Provides 4 x 90° indexing with Erowa standard holders.
Lever operation



Part No. 010793

Uniholder

Workpiece holder manufactured in brass. Easily remachined to suit job. Other designs available.



Part No. 019424

Square block for QC100

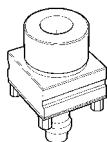
Precision ground angle block for QC100. Can also be utilized on milling operations.



Part No. 010742

Spigot F/M

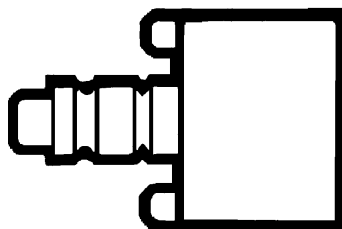
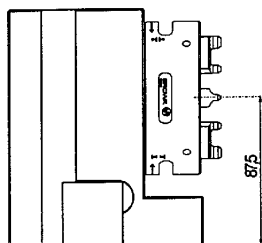
Attachment to Uniholder for clamping holders into QC100.



Part No. 008617

Gauging pin

Master gauge for alignment of QC100 on angle block. Provides system setting datum.



4 x 90°

Technical data

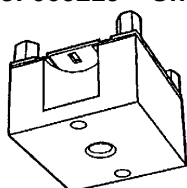
System sizes	50 and 100
Repeatability	0.002mm
Indexation	4 x 90°
Clamping power	10,000 N
Operation	Lever

Setup

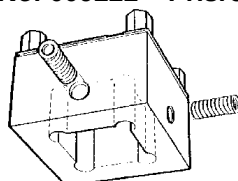
- Mount quickchuck onto angle block
- Use gauging pins to align chuck parallel to base
- Use gauging pins to determine datum positions

Options – Standard holders

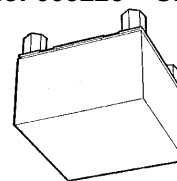
Part No. 009219 Uniplate



Part No. 009222 Prisround



Part No. 009226 Uniblack



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Machine tool postprocessors compatible with TRACECUT V.23 software

Agie wire eroder	Heidenhain TNC410
Anilam1100	Heidenhain TNC415
Anilam 1400	Heidenhain TNC425
Anilam Crusader GX (KM)	Heidenhain TNC426
Anilam Crusader GXM	Heidenhain TNC430
Bosch CC120	Kitamura+ Fanuc 15 controller
Boston Digital	Kuhlmann – FDIN
BritishOlivetti with CN5D controller	Lang LDIN
Cadim M1	Maho 532
Charmilles Robofil Wire EDM	Matsuura IZ1
Cincinnati 2100	Mazak Fusion
Cincinnati Milacron 850SX	Mazatrol M+
Contour 3	Mazatrol M+ (high speed & accuracy)
Control Techniques FNC	Mazatrol M32
Deckel Dialog 4	Mazatrol M32 (high speed)
Deckel Dialog 11	Milltronics Centurion V
Deckel Dialog112	Mitsubishi Meldas M3
Fadal CNC88	Mitsubishi Meldas M300
Fagor 8020 MS	Mitsubishi Meldas M300-V
Fagor 8025 MS	Mitsubishi Meldas M310
Fagor 8030 MS	Mitsubishi Meldas M50
Fagor 8050	Mitsubishi Meldas M520M
Fanuc 0MC	Mori Seiki Fanuc 16 High speed
Fanuc 10	Num 460
Fanuc11M	Num 750
Fanuc15M	Num 760
Fanuc16M	Num Form
Fanuc16M High speed	Num Mill
Fanuc 16/18 (Mori Seiki)	Okuma OSP
Fanuc 18M	Okuma OSP 5020M
Fanuc wire eroder	Philips CNC5000
Fidia	Picomax 100CNC
General Electric Mark Century 2000	Picomax 80CNC
Grundig CNC Pilot 1250	Roland
Haas	Selca 3045
Hauser Grinding Machine	Selca S1200E
Heidenhain Numeric Millplus	Siemens Sinumerik 810M
Heidenhain TNC151	Siemens Sinumerik 820M
Heidenhain TNC155	Siemens Sinumerik 840M
Heidenhain TNC234	Siemens Sinumerik 840D
Heidenhain TNC2500	Siemens Sinumerik 880M
Heidenhain TNC355	Yasnac i80M
Heidenhain TNC360	Yasnac i80M High speed
Heidenhain TNC370	Yasnac MX3
Heidenhain TNC407	

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CAD postprocessors compatible with TRACECUT V.23 software

Ascii data
Ascii data APT
Cimagrafi Version 4 Data
Cimagrafi Version 5 Data
Cimatron Data
Duct5 Picture Data
Duct5 Pixel Data
DXF
DXF (Point format – No Arcs)

IGES Point Data
NC Graphics TABCYL (Non Spline)
NC Graphics TABCYL (Spline)
Pro/Engineer IBL Format
STL Binary
Surfcam Data
Unigraphics
VDA Point data