

DENTAL CAD/CAM

GN-I *NOW Debut!*



"Dental CAD/CAM GN-I" is a computer assisted next-generation dental laboratory system that will bring a radical revolution to the conventional method of prosthetic preparation. Based on the fundamental study of Next-generation Oral Device Engineering System Project (presented by Nikon Corporation, Hitachi Seikoh Co., Ltd. and GC Corporation). During the period 1993 to 1997, Nikon developed the measuring device and layout designing software whilst GC developed the processing machine, prosthetic material, special-purpose bite and model materials. This system performs measurement, design and processing using the indirect method after taking impressions and study models of dentition with missing teeth.

Next-generation Oral Device Engineering System Project is a research project entrusted to Technology Research Association of Medical and Welfare Apparatus by New Energy and Industrial Technology Development Organization (NEDO), which was financed by Agency of Industrial Science and Technology, Ministry of International Trade and Industry in Japan.



#11, #21 restored with high compression composite resin block



#44, #45 restored with ceramic



#36 restored with titanium



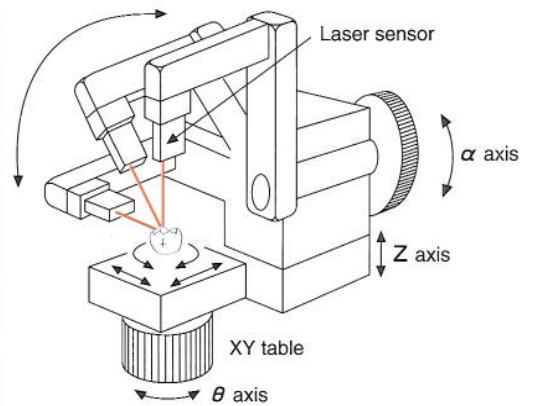
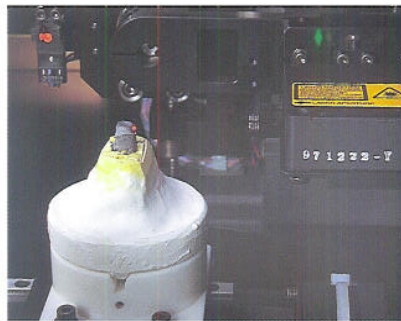
Dental CAD/CAM system DENTAL CAD/CAM GN-I

System containing:
GN-I Measuring machine, GN-I Software,
GN-I Milling machine

The system does not contain a personal computer.
The system is produced on an indent basis with a delivery time of approximately twenty six weeks.

Precise measurement of undercut area by adoption of five axis measurement

"GN-I measuring machine" was designed for use in the laboratory using a laser sensor to determine the inner and outer contour of the restoration. By adopting a five axis measuring- model rotation (θ) and 180 degree rotation of the laser sensor (α) as well as length, width and height (x, y, z), the shape of undercut area can be replicated precisely. Measuring pitch is selective from 0.1, 0.3 and 0.5mm. Ordinal measurement is performed in 0.3mm pitch, and the minimum pitch is selected automatically for a margin in which accurate information is required. You can obtain precise data in a short time.

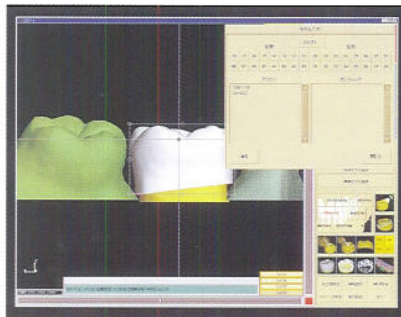


Five axis measurement- model rotation (θ) and 180 degree rotation of the laser sensor (α) as well as length, width and height (x, y, z)

The margins are set automatically. These can be easily adjusted using the computer mouse if any marginal areas are unclear.

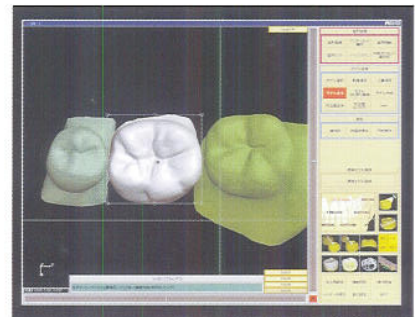
Productive software function allowing free design

The restorative prosthesis is designed by enlargement, reduction and adjustment of one of the selected computer stored reference designs. The prosthetic design function is undertaken easily using a conventional mouse. If you input data you can adapt the software to store and create your own database. The software also makes it possible to copy the exact size shape and contour of the same tooth in the opposing arch to obtain a duplicate restoration.



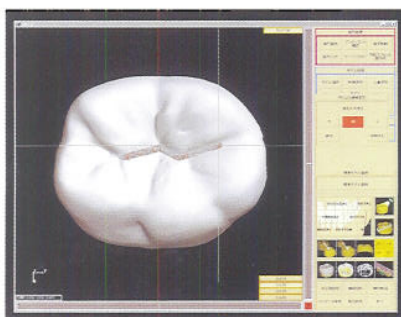
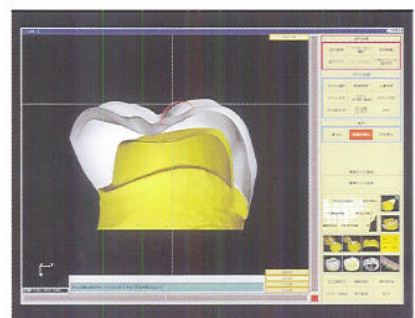
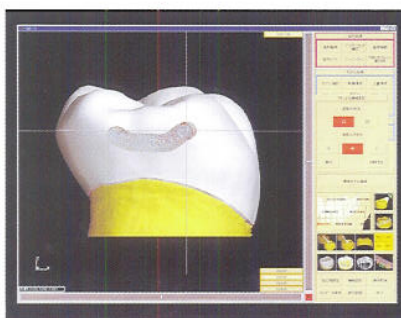
The restoration can be easily viewed from any position by clicking on the appropriate design view button Example occlusal surface, distal, mesial, lingual and buccal.

Selecting the shading mode can highlight a curve with mesh, or make a model translucent as well as shadowed real image.



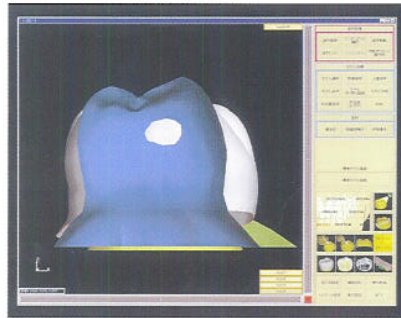
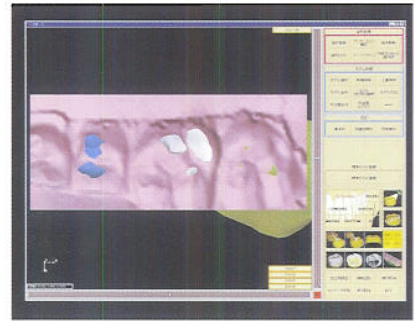
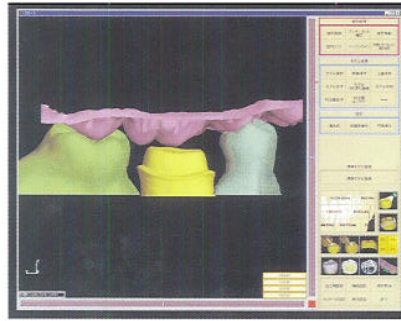
Prosthesis design and adjustment of shape and size is very similar to conventional laboratory waxing up

Design activities such as additional contouring of the proximal surface and adjustment of fissures are possible easily by selecting the size of the reference point (circle) and appointing the range. You can check the thickness simply because you can identify the sectional profile of a designed material.



Easy adjustment of contact

Occlusal surface contact and proximal tooth contact are established by overlapping measuring data obtained from special-purpose CAD silicone and proximal tooth measuring data respectively. The contact area on the abutment tooth is highlighted by masking the non contact areas with a different color.



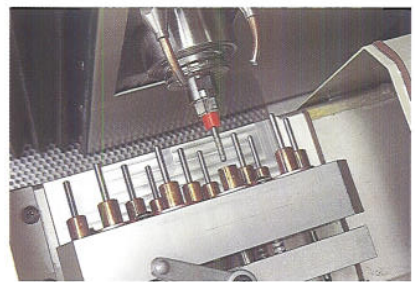
Cement space to provide precision adaptability

Sufficient space for the luting can be programmed into computer design before commencing the milling procedure. Set the starting position and cement thickness required in proportion to the cement space and margin line, for high-precision prosthetic material bonding.



Automatic tool replacing function with superior working efficiency

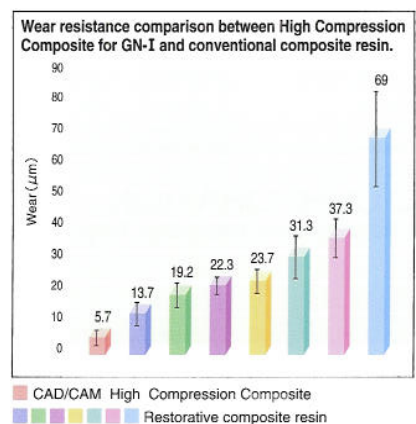
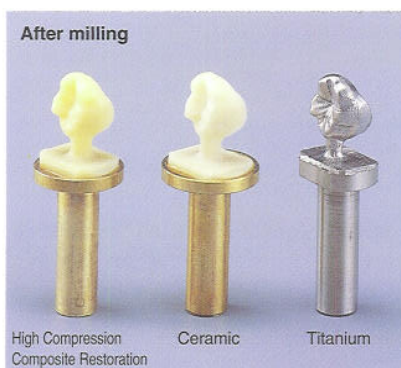
Each milling tool is selected and changed automatically based on design. Even during production, you can independently design and preparing further restorations to be produced once the current job has been completed.

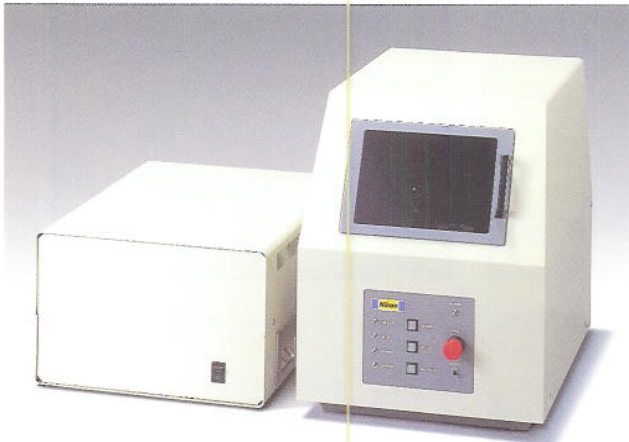


There are special GN-I milling machine burs for ceramic or composite restorations and five different milling burs for titanium preparation. These are contained in two separate holders with a duplicate set of burs holder.

Three different restorative materials to suit your particular design and functional requirements

Three different restorative materials are supplied for "GN-I". High Compression prefabricated composite resin and ceramic blocks providing superior flexural strength and wear and abrasion resistance. The third material is lightweight, strong, flexible, easy to polish titanium.





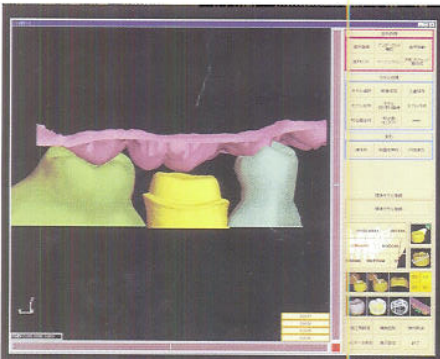
GN-I Measuring machine

(Measuring unit) outer diameter: 400×552×500mm, Weight: 42kg, Power: AC100V 50/60Hz, Object to measure: sectional and removable plaster model, bite impression of occlusal surface of antagonistic tooth, Measuring method: triangle measurement with laser light, Measuring accuracy: ±20μm, Measuring pitch: 0.1, 0.3, 0.5mm, Measuring time: three minutes per one tooth (in the case of measuring pitch:0.3mm), Measuring area: 90(x)×60(y)×25(z)mm (Power supply unit) : Outer diameter: 400×550×252mm, Weight: 38kg



GN-I Milling machine

Outer diameter: 610×610×1600mm, Weight: 200kg, Power: AC100V 50/60Hz, Material to process: GN-I high compression composite resin, GN-I ceramic block, GN-I titanium block, Axis transfer: 40(x)×30(y)×30(z)mm, 360 degree (A), Spindle rotation speed: Max 50,000rpm, Automatic tool replacement, Tool length compensation, Tool life management function,



GN-I Software

Prosthetic material can be designed for : inlays, crowns and copings.

Main functions: reference model registration, margin line extraction, proximal tooth contact setting, antagonistic tooth contact setting, cement space setting, shape adjustment, preparation of data for processing, data save.

PC configuration required: CPU: Pentium II, 266MHz, Hard disk capacity: 4GB, memory: 128MB, 3D graphic accelerator compliant to Open GL, Video memory: 8MB or more, Monitor: 1280×1024 resolution, LAN port, RS232-C port, CD-ROM drive, FD drive, OS : Windows NT4.0,

*Windows and Pentium II are the register trademarks of Microsoft corporation and Intel corporation.

*Specification and appearance of the product may be modified without notice.

GC CORPORATION

76-1 Hasunuma-cho, Itabashi-ku, Tokyo 174-8585, Japan Phone:03-3558-5181 Fax:09-3966-1470
<http://www.gcdental.co.jp/>

Prior to use, carefully read the instructions for use included in the package.



スターターセット

GN-I コンポジットブロック

色調7色=A1, A2, A3, A3.5, A4, B2, B3/サイズ3種=S(10.2×8.7×17mm) M(13×10×17mm) L(17×13.5×20mm)
包装=スターターセット1函 Mサイズ20個(A2:5個, A3:10個, A3.5:5個)/10個セット1函(単一包装)

医療用具承認番号 21100BZZ00533000号



10個セット



GN-I セラミックブロック

色調7色=A1, A2, A3, A3.5, A4, B2, B3/サイズ2種=S(10.2×8.7×17mm) M(13×10×17mm)
包装=スターターセット1函/Mサイズ20個(A2:5個, A3:10個, A3.5:5個)/10個セット1函(単一包装)

医療用具許可番号 23BZ0035号



GN-I チタンブロック

(JIS規格第2種純チタン)

サイズ2種=クラウンM(15×9×13mm)/クラウンL(18×13×13.5mm)
包装=1函10個

医療用具承認番号 21100BZZ00232000号



CAD/CAM用超硬石こう

GN-I CADストーン

色調=ブラック
包装=500g×6袋

医療用具許可番号 22BZ0075号



咬合採得用ビニルシリコーン印象材

GN-I CADシリコーン

色調=ブラック
包装=1函カートリッジ83g(48ml)2本, ミキシングチップⅡL6本

医療用具許可番号 23BZ0035号



歯科用接着性セメント(高粘度タイプ)

リンクマックスHV

セラミック、コンポジット、チタンなど各種CAD/CAM用ブロックで製作した修復物の接着に使用します。高粘度タイプのペーストですが、操作時の圧接によりフローが発生するため精密な適合が得られます。

色調=1色 ユニバーサル

包装=CBセット(CAD/CAMコンポジットブロック用セット) Aペースト3.3g(1.5ml)1本, Bペースト3.3g(1.5ml)1本, セルフエッチングプライマーA液3.0ml/B液1.5ml各1本, コンポジットプライマー-3.0ml1本, チップホルダー1本, マイクロチップアプリケーター(50個入り)2袋(2色), 採取皿(No.1)1個, 練和紙(#22)1冊

医療用具承認番号 21100BZZ00561000号



コンポジットプライマー

硬化したコンポジットレジンや硬質レジンにコンポジットレジン接着させるための光重合型プライマーです。GN-Iコンポジットブロックで作製した修復物のプライミングに使用します。

包装=1本3.0ml

医療用具承認番号 21100BZZ00677000号



セラミックプライマー

セラミック製修復物をコンポジットで歯質に接着する際に用いるプライマーです。

包装1セット=A液2ml/B液2ml各1本

医療用具承認番号 21100BZZ00676000号



メタルプライマーⅡ

金属とレジン接着するためのプライマーです。チタン製補綴物の接着に効果的です。

包装1函=液5ml1本, 筆(No.7)1本

医療用具承認番号 20700EZZ00632000号

ご使用に際しては、必ず製品添付の使用説明書をお読みください。

※製品の仕様および外観は、改良のためお断りなく変更することがあります。

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フリーダイヤル ☎0120-416480

受付時間9:00am~4:00pm(土曜日、日曜日、祭日を除く)

※アフターサービスについては、最寄りの営業所へお願いします。

営業所
●北海道(011)729-2130 ●名古屋(052)703-3231
●東北(022)283-1751 ●大阪(06)6771-4682
●東京(03)3813-5751 ●広島(082)255-1771
●横浜(045)212-5751 ●九州(092)441-1286

GC homepage URL
<http://www.gcdental.co.jp/>

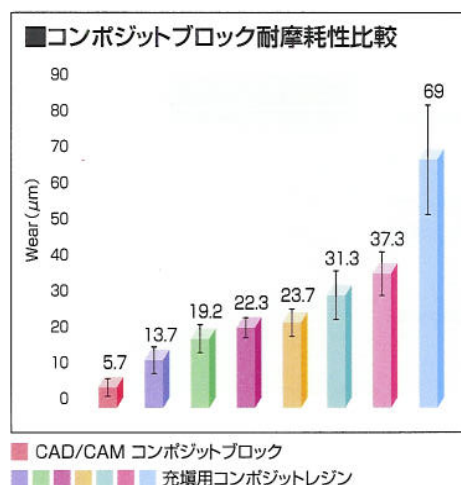
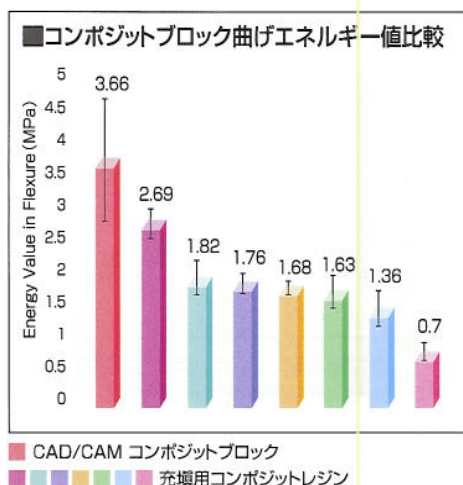
CAD/CAMだから可能になった ニューマテリアル—— コンポジット以上のスーパーコンポジットです

GN-Iコンポジットブロックは、CAD/CAM用修復材料として初めてのコンポジット材料です。MFRタイプのコンポジットレジンを高圧・高温重合してありますから充填用コンポジットレジンに見られるような重合不足や気泡の混入などがなく、従来は考えられなかった高い安定した物性が得られます。



特長

- ビタシェード7色で審美性に溢れた修復が可能です。
- 従来のセラミック材に比べ、クラックやチッピングが少なくなっています。
- 対合歯をほとんど摩耗させることがありません。
- 従来の臼歯充填用コンポジットレジンより耐摩耗性に優れています。
- 圧縮強度、曲げ強度とも優れています。
- 高いエネルギー値を有するタフな材料です。



NIKON CORPORATION

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Nikon

株式会社 ニコン

本社 100 東京都千代田区丸の内3丁目2番3号(富士ビル) 電話(03)3214-5311 (案内台)

99-1-25

Professor François Duret
Château de Tarailhan
11560 Fleury d'Aude
France

Dear Dr. Duret,

Thank you very much for your recent letter . It has been already three month or so since we met you in Yokohama. I hoped you had a nice new year's day.

I will enclose some slides made for computer presentation. The file name is "CADCAMGN-1.ppt". It is recorded on CD enclosed.

If you have any questions on these slides, please feel free to ask me or Mr. Hirota, GC corporation.

Sincerely yours,



Makoto Ogino
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System Development Headquarters
NIKON CORPORATION
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ogino@nikongw.nikon.co.jp