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THE PROFESSIONAL
JOURNAL FOR
CADKEY & DATACAD
USERS

VOLUME 4 NUMBER 10

DECEMBER 1995

HOT! HOT! HOT!

DataCAD 7 sizzles with spectacular new features

By Claudia Martin

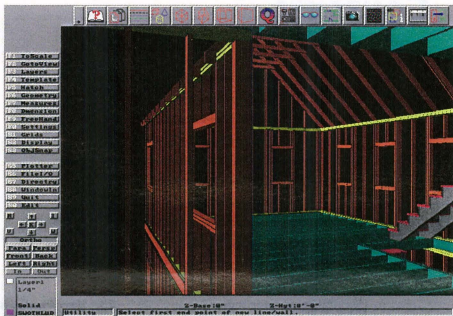
DataCAD 7 is on the street and it's loaded with spectacular new features and functionality. Best of all, unlike many of the software "upgrades" that come out these days, it has more than just "whistles and bells."

"It is, in fact," says Mark Madura, vice president of the Cadkey AEC Product Group, "a serious upgrade, uniquely customized for the special demands of architectural design and drafting." The discount \$99 upgrade price for registered users is being offered until March 31, 1996. New packages of DataCAD 7 retail for \$249.

Version 7 incorporates many functions and features DataCAD users have been asking for. Here's an overview of the major ones:

DWG Translator — The new bi-directional DWG translator is fast and accurate. It lets you do business with anyone who uses AutoCAD because it's compatible with virtually any DWG file. You can easily import an AutoCAD drawing and work with it as a DCS file or export a DataCAD file directly to AutoCAD, including version 12. Support for full batch translations saves time and effort.

This means you'll finally have the resources to bid on government contract or interface with any firm that runs AutoCAD without spending \$3,500+ for your own copy.



DataCAD 7 Utility Menu

Automated 3D Roof Framing — DataCAD 7 lets you create framing diagrams for standard roof styles, using typical stick framing (that's in addition to fully automated wall and floor framing). You can frame roof, fly, hip, jack and valley rafters. You also can model ridge boards, collar beams, purlins, ceiling

joists, rake edges, fascia, freeze boards, soffits, and sheathing. If you add the optional Estimator package, you can produce a bill of materials with cost estimate.

Multi-line Walls — With DataCAD 7, you can create cavity walls with multiple lines instead of two parallel lines, and no cleanup is

required. The multi-line wall drawing option lets you select 2-, 3- or 4-line walls and draw parallel lines at the same time. You even can add hatching to your 4-line walls. Speaking of lines, DataCAD 7 handles up to 50 line types (up from 20), plus there's support for 50 user-defined lines.

Multi-Scale Plotting — No more plotting different scale diagrams manually. DataCAD 7 lets you put several pieces of a drawing on a single sheet, then show them in different scales, all in a single drawing.

File Locking and Layer Freezing — If you run DataCAD on a network, you'll appreciate file locking. This feature keeps others from changing or working on your drawings and layer files until you want them to.

Miscellaneous Goodies — A PrintPlot Pro utility replaces DCP print. This utility launches automatically from within DataCAD and directly supports more than 1,500 printers. If you need DataCAD images for documentation, training manuals, tutorials and spec sheets, you now can capture a screen with a single keystroke and then convert it off-line to PCX, TGA or 2RN format. There is also a new tutorial manual, and 30 days of free installation support is included.

To order DataCAD 7, *Circle Times* #2, or Estimator, call 800/560-7564 or fax 716/873-0906.

New ASME spec helps designers say what they want

By Robert Bean P.E. & Robert C. Yule

The new ASME Y14.5M-1994 specification is a great improvement over its predecessor, ASME Y14.5M-1982. The changes are not radical in terms of actual dimensioning and tolerancing techniques. However, the general focus of the new specification is to comply almost entirely with ISO specifications. This is evidenced by the adaptation of the ISO datum reference symbology, the removal of the RFS modifier symbol, and the return of the symmetry symbol.

In addition, new modifiers enhance the designers' ability to communicate what they want in more realistic terms. New statistical tolerancing modifiers reflect the reality of manufacturing more precisely. Some new concepts are introduced with respect to composite positional and profile tolerancing. In general, all diagrams and explanations are vastly improved, as are all definitions of terms.

Background

In March 1994, the American Society of Mechanical Engineers (ASME) published and revised the frequently used stan-

dard on Geometric Dimensioning and Tolerancing (GD&T), renaming it Dimensioning and Tolerancing (ASME Y14.5M-1994). This standard is currently widely used by designers and draftsmen to convey unambiguous data on the mechanical specification of parts.

GD&T was initially developed for use in tight tolerance applications, for example, automotive, aerospace and military usage. It evolved into a thorough specification for defining dimensions and tolerances for any manufactured part. It is the "dictionary" that allows customers and suppliers to speak the same language when designing and manufacturing product. The words in this dictionary are words like: True Position, Flatness, Perpendicularity, and so on. Many of these words have modifiers and adjectives such as Maximum Material Condition or Regardless of Feature Size. This language of Mechanical Design is being used (and misused) with increasing frequency by almost all companies on a worldwide basis. ASME and ISO (the International Standards Organization) are working together to enhance each standard so they will become a worldwide "language" for transmission of design information. This article presents an overview of the changes in the ASME 14.5 standard.

CHANGES Datum Referencing

Basic Symbol

The ASME Y14.5M-1994 method of datum referencing is now identical to that of ISO — a square frame around the datum letter (rectangular for double letters) with a leader and a triangular shape at the end that rests on the surface being

tagged. Figure 1 shows the new ASME Datum Reference symbol with the correct proportions.

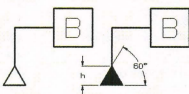


Figure 1: ASME Datum Reference Symbol Proportions

Control Frame

To add the Datum Reference symbol to a geometrical tolerance control frame, the basic reference symbol is attached directly to the bottom or top of the feature control frame (Figure 2a). An alternate method of adding a datum reference frame is to use dimension lines with a datum reference symbol (Figure 2b). When a circular datum reference is defined, it may be attached directly to the circle in the drawing and may use

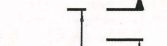
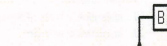


Figure 2a and 2b: ASME Datum Reference Attached To Feature Control Frame and "Gap" datum reference method

See ASME, page 22 ☞

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Please take a moment to answer the following questions:
 What is your company's primary activity?
 How many people are employed by your company?
 What platform do you use? DOS Windows
 Software used CADKEY DATACAD

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Technical Support	203/298-8888 x8060	Cadkey user group forum	news@cadkey.com

World Wide Web site <http://www.cadkey.com>
 General comments, requests webmaster@www.cadkey.com
 Typical e-mail address for staff member davies@cadkey.com

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CADKEY IN THE NEWS

■ Cadkey at AutoFact Expo

Cadkey Inc. demonstrated CADKEY for Windows in their booth at the AutoFact Show in Chicago, Ill., Nov. 14-16. More than 3,000 demonstration copies of CADKEY for Windows was distributed. According to Ken Erman, Cadkey's MEG, product manager, response to the product was extremely positive.

■ CADKEY for Windows Demo CD-ROM Available

A special CD-ROM with a demo version of CADKEY for Windows is available. For evaluation only, file saving and output capabilities have been eliminated. In addition, an assortment of marketing materials, such as slide shows, product information sheets, and a copy of Cadkey's home page is on the disk. Additional materials, such as tutorials and self-running demos will be added in the future.

Contact your local Cadkey dealer (listed in this issue) if you are interested in this CD.

■ New Book Provides 3D Techniques for CADKEY

"Doctor Walt's Keys to CADKEY," by Walt Silva, is a new book that helps readers learn to build complex, accurate 3D models in less than one hour. Starting with a comprehensive tour of both the DOS and Windows interfaces, the book covers all the basic tools needed to produce complex three-dimensional wireframe models. Step-by-step details progress through construction of three-dimensional objects, mechanical assemblies, and complex parts. Power tools like the XFORM functions are clearly illustrated.

Walt Silva is a BSME graduate of Stevens Institute of Technology and has spent 25 years developing engineering groups and systems. Doctor Walt's Keys to CADKEY is \$59.95. For more information, contact Cadkey at 800/394-2231 or fax 203/298-6590.

■ DRAFT-PAK Windows Versions

DRAFT-PAK CADKEY 7.5 supports CADKEY for Windows Release 2 and CADKEY 7 DOS. In addition, the new Windows version of the DRAFT-PAK Advanced Drafting Module (ADM) is shipping as an integral part of CADKEY Version 7. The ADM is a small subset (G&T, Symbol Libraries and Visual Library) of DRAFT-PAK Productivity software. The complete DRAFT-PAK Productivity software is bundled in CADKEY Professional.

■ Getting Cadkey Information On-line

Cadkey Bulletin Board: 203/298-6405
World Wide Web Home Page: <http://www.cadkey.com>
Internet NEWS Group: ALT.CAD.CADKEY@compuserve.com
Internet DataCAD DBUG Forum: Subscribe via e-mail to majordomo@world.std.com with subscribe_datacad-dbug as the body of the message.

CADKEY INC. PRICE LIST EFFECTIVE THROUGH DEC. 30

U.S. / Canada Master Price List (U.S. Dollars)

To order, contact your local authorized CADKEY/DataCAD dealer

Product Name	Suggested Retail Price
CADKEY 7 FOR WINDOWS	
CADKEY / Windows (3-1/2" or CD ROM) - SRP	\$ 795.00
CADKEY	
CADKEY Professional 7 (3-1/2")	\$ 1595.00
CADKEY 7 DOS (3-1/2")	\$ 795.00
CADKEY Light 7	\$ 99.95
Advanced Modeler (Windows/DOS)	\$ 495.00

SOFTWARE FOR EDUCATION

EduCAD America Program - DataCAD & CADKEY

Call for Program Details/Costs

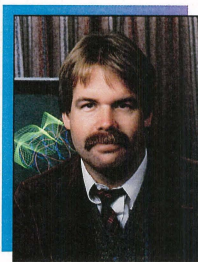
(Contact: Pete Mancini, Cadkey Education Dept.,

203-298-6420 or FAX 203-298-6590) Call for Quote

Product Name	Suggested Retail Price
CADKEY UPGRADE CONTRACTS - 12 (M.C.)	
CADKEY Professional (Upgrades for CADKEY and Analysis, Advanced Modeler)	\$ 350.00
CADKEY 7 DOS & WINDOWS	\$ 250.00

DataCAD & DataCAD UPGRADES

DataCAD 6 Professional (3-1/2" or CD ROM)	\$ 149.95
Upgrades from DataCAD 5	\$ 69.95
Estimator	\$ 99.00
TOUCH-UP Macro	\$ 49.95
BLOCKER Macro	\$ 49.95



In our ongoing effort to make CADKEY for Windows easier to use, easier to demonstrate, and more compatible with office automation systems, I am pleased to announce that we have created a CD that contains a variety of helpful tools, demonstration files, and ancillary products. The creation of this CD is a tribute to the creativity and responsiveness of Cadkey's development staff and marketing team. It contains the following items:

PRESIDENT'S PERSPECTIVE

BY LIVINGSTON DAVIES • PRESIDENT, CADKEY

Free CD ROM Available

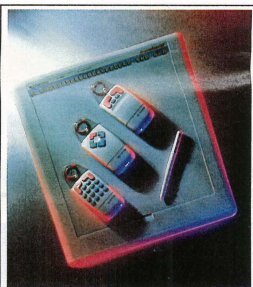
- Fully functional version of CADKEY for Windows with limited part files
- Shareware version of Graphics Workshop
- Cadkey World Wide Web site
- Cadkey Third-Party Application Catalogue
- Corporate Presentation in PowerPoint format
- Training Tools
- Photorealistic Images created using the new Advanced Modeler

This CD is available both directly from Cadkey Inc. and from authorized dealers. It can be used by people who desire to test CADKEY in their own application. Desktop publishers can use the high-quality solids rendered images without requiring

further authorization from Cadkey. And Dealers/VARS can give a complete demonstration of CADKEY for Windows using nothing more than what is contained on the CD.

Graphics workshop allows you to take any bit map image from CADKEY and view, rescale, or change the format to be compatible with your word processor, desktop publisher, or presentation system. This demo disk is a remarkable product in itself. It can enhance your productivity. In addition, it can be freely copied and passed on to your colleagues. "Word of mouth" referrals from satisfied clients have always been Cadkey's best publicity. Now it is easier than ever for you to share your productivity enhancements with your colleagues.

*Happy Holidays
and
Best Wishes
For a
Prosperous 1996
from the staff of
KEY SOLUTIONS
Journal.*



Shown here is CalComp's DrawingBoard III, the company's "improved" digitizer. An incorrect photo accompanied a review of the product in the September issue of KeySolutions.

Correction

A cutline accompanying a graphic in the November issue of KeySolutions incorrectly identified the source of the image on page 10. The 3D model of the target mirror structure was created using Mastercam, a mechanical design software.

KEYMAIL

Seeking CADKEY Work

I am a CAD contractor who works at temporary assignments as a CAD operator. I have experience with CADKEY 7.04 and AutoCAD 12. I work out of central Massachusetts and most of the work I find is in companies that use AutoCAD. I enjoy using CADKEY a lot more, but really don't know how to go about targeting companies that utilize CADKEY and could use my services. Any suggestions?

Ernest B. Johnston
508/481-8752

Puzzled Readers Please Note

A little correction. The name of our Internet DataCAD Forum is DBUG, not DEBUG, as printed in the

October Key Solutions on page 5. Normally, this wouldn't make a whit of difference, but as you know when dealing with Internet addresses, it makes a critical difference. If there are any puzzled readers who can't understand why they can't subscribe to the DataCAD Forum on the Internet, please let them know that the text of their e-mail message to majordomo@world.std.com should be written as follows with no "e" in debug and no period at the end of a sentence.

subscribe_datacad-dbug

Thanks for the help getting the word out.

Evan Shu
Editor/Publisher
Cheap Tricks and Cheapware

Cadkey-Compatible Hardware

As part of the KeySolutions year-end resource guide, presented here are lists of graphics boards, printers and plotters that are compatible with CADKEY.

Graphics Cards

Genetics VGA
Actix S3
Actix GraphicsEngine
Actix GraphicsEngine MCA
Actix GraphicsEngine Ultra
Actix ProSTAR VL
Actix ProSTAR 64 Lite
Ahead Wizard DELUXE
Ahead Wizard
Artist 8,10,10MC,10/16,12,12MC
Artist XJ8,10,12
ATI Graphics ProTurbo
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Methues 1008, (CK)
Methues UGA Series, (CK)
Pixelworks Clipper Graphics,
(CK)
Vermont Microsystems, (CK)
Verticom MM Series, (CK)
VESA compatible 16 color, (CK);
includes: vesaich.exe,
parvesa.exe, v7vesa.com,
vesa.exe, orchvesa.com
VESA compatible 256 color,
(CK)

Plotters

HPGL lower left origin
HPGL2 Plotter
HPGL2 Expanded Borders
HPGL2 Printer (Lower Tray)
DMPL 2.5 mills
DMPL 5 mills
CALCOMP electrostatic plotter
Oce Graphics/Benson BGL 100u
Oce Graphics/Benson BGL 25u
Roland Plotter
IP-MUTOH
Wide/Long Axis DMPL 2.5 mills
Wide/Long Axis DMPL 5 mills

HPGL center origin
HPGL2 Printer (Default Tray) Original 7.0
HPGL2 Printer (Upper Tray)
DMPL 1 mill
DMPL 4 mills
CALCOMP Pen plotter (PCI controller)
RS-274 code (gerber out)
Oce Graphics/Benson BGL 50u
Oce Graphics/Benson BGL 12.5u
American/Western GraphTec GPHL
Wide/Long Axis DMPL 1 mill
Wide/Long Axis DMPL 4 mills

Nth 150
Nth Double Edge
STB ExtraEm
STB Evolution
STB Horizon
STB MHP ET4000
STB NTO
STB Pegasus
STB PowerGraph
STB PowerGraph VL-24
STB PowerGraph X-24
STB WINDX
Spea FGA, TIGA
Spea HiLite, TIGA
Spea HiLite 1024, TIGA
Spea HiLite Pro, TIGA
Swan Super VEGA
Targa+ (use TMODE.EXE)
Targa+ (NTSC)
Targa+ (PAL)
Targa+ VEGA/MultiSynC

Printers

Epson MX
Epson FX
Epson LQ-2500
Okidata 193
NEC PS Pinwriter
NEC P7 Pinwriter
NEC PC-PR201
JDL 750/850
IBM ProPrinter
HP ThinkJet
HP PaintJet
HP DeskJet500
HP DeskJet500C Color
HP RTL B & W
PostScript
Canon CaPSL Raster
Canon BJ-10 Color
Canon BJC-800/820
Epson RX
Epson JX
Okidata 192
Okidata 294
NEC PS Pinwriter
NEC P7 Pinwriter
Fujitsu DL2600
JDL 750+ (C size)
Toshiba P351SX
HP LaserJet
HP PaintJet XL
HP DeskJet550c
HP DeskJet500C B & W
HP RTL Color
PostScript Encapsulated
Canon BJ-10
Canon BJC-800/820

CADKEY DataCAD

This issue of KeySolutions is devoted to lists of products, services and businesses that support CADKEY and DataCAD users. We hope the information will be a valuable reference guide to our readers during 1996.

Cadkey Dealers

COMPANY	CONTACT	ADDRESS	CITY	ST	ZIP	COUNTRY	PHONE
A & E Blueprint	Robbie Tendal	1020 22nd St.	SouthBirmingham	AL	35205	USA	(205)251-5200
Assembley Technology	Dick Gebhard	7529 North 23rd St.	Phoenix	AZ	85020	USA	(602)870-0010
Cimtronics Inc.	Wayne Pettit	225 West Chandler Blvd.	Chandler	AZ	85225	USA	(602)948-5757
3-D CADWare	Jim Neely	31159 Kahwea Road	Termeaula	CA	92591	USA	(909)676-3223
Albright Design Solutions	Dave Albright	18017 Skypark Circle	Irvine	CA	92714	USA	(714)851-0660
Allen Lew & W. Pathma	Allen Lew	1050 S St.	Fresno	CA	93721	USA	(209)486-8150
CAD Graphics	Mark Arnett	4096 West Muscat Ave	Fresno	CA	93706	USA	(209)275-8579
CAD/CAM Solutions	Steve Danford	2580 Azurite Circle	Newbury Park	CA	91320	USA	(805)498-0141
CAMTech Solutions		501 Alamar St.	Alhambra	CA	91801	USA	(818)300-0611
Consulting Svcs. Intrntrl	Bob Messamer	14621 Titus St.	Van Nuys	CA	91402	USA	(818)994-8881
Designix	Dae Kim	9285 Dowdy Drive	San Diego	CA	92126	USA	(619)271-0553
Haveen Micro Systems	Steve Kaplan	4606 Merridian Ave.	San Jose	CA	95124	USA	(408)269-0555
Nikken Design System	Roy Yoshima	2712 Fragancia Ave.	Hacienda Heights	CA	91745	USA	(818)968-2230
Novare	Paul Bresk	924 Anacapa St.	Santa Barbara	CA	93101	USA	(805)966-4525
Pacific Automation	Bill Campbell	306 NW El Morte Park	Escondido	CA	92026	USA	(619)749-6405
Sycon Technology	Glen Osborne	14800 Beach Blvd.	La Mirada	CA	90638	USA	(714)739-0981
Tangent Concepts Inc.	Walter Romanko	1320 Tofts Drive	San Jose	CA	95131	USA	(408)729-0473
U.S. Amada L.T.D.	Armit Patel	7025 Firestone Blvd	Buena Park	CA	90621	USA	(714)739-2111
MCAD Design Corp.	Sue Boland	12687 West Cedar Drive	Lakewood	CO	80228	USA	(303)969-8644
Datamat Progressive Sys.	Matt Ruben	9 Mott Ave.	Norwalk	CT	06850	USA	(203)885-8102
Designs Unlimited	Tom Traska	206 Sutton Drive	Windsor Locks	CT	06096	USA	(203)292-1517
Designs Unlimited	Tom Traska	206 Sutton Drive	Windsor	CT	06095	USA	(203)855-8102
Electronic Marketing	Joe Mellaur	1092 Johnson Road	Woodbridge	CT	06525	USA	(203)870-7101
MAC DAC	Dave Stanley	19 Pinney St.	Ellington	CT	06029	USA	(203)870-8182
Microvare	Kan Fisher	535 Connecticut Ave.	Norwalk	CT	06854	USA	(203)854-0161
Unitech Inc.	Scott Wilkman	120 College St.	Midtown	CT	06457	USA	(203)854-0161
Florida Technology	Dan White	PO Box 1805	Bushnell	FL	33513	USA	(904)793-6882
Gateway Computers	Amy Byrnes	10901-B Roosevelt Blvd.	St Petersburg	FL	33716	USA	(813)576-0569
Rex Lauer & Associates	Rex Lauer	PO Box 60735	Fort Myers	FL	33906	USA	(814)936-8534
Teletrol Inc.	Rafael Garcia	9822 N.E. 2nd Ave.	Miami Shores	FL	33153	USA	(305)756-1111
CAD One Inc.	Todd Lundberg	6733 Jones Hills Court	Carrollers	GA	30092	USA	(770)449-5186
Highjet Systems	James Haigler	25 Citicorp St.	Northcross	GA	30120	USA	(404)339-2255
Technographics	Tom Knesel	25 Grove Place	Suwanee	GA	30174	USA	(404)339-7115
Mechanical D & E	Demitri Exonohou	46 153 Malina Place	Kaneohe	HI	96744	USA	(808)236-0020
Mid-West Tech	Wyman Martinek	206 West 2nd St.	Madrid	IA	50156	USA	(515)795-3789
Custom Engineering	Larry May	S. 1105 Greensfery	Post Falls	ID	83854	USA	(208)773-4334
Eckman Technologies	Mel Eckman	304 East 3000 North	Rexburg	ID	83440	USA	(208)356-3023
CADTech Engineering	Dennis Baeskow	11514 Frederick Way	Huntley	IL	60142	USA	(708)669-0833
Brunswick Micro Systems	Greg Machurn	520 King St.	Frederton	IL	60142	Canada	(506)458-2820
	Erskin Smith	611 South Second St.	Wilmington	NC	28401	USA	(910)762-2812
CAD Vision	Bill Langdon	8 College St.	Asheville	NC	28801	USA	(704)252-0296
Design Automation	Ron Weavil	321 Bramer Drive	Raleigh	NC	27604	USA	(919)790-0000
Morning Star CNC App.	Tim Ledbetter	303 Hwy 740	Albemarle	NC	28001	USA	(704)983-6844
Southern Educational Sys.	Tom Davis	1605 Valley Star Court	Raleigh	NC	27614	USA	(803)276-3136
Compucare	Lenny Harrison	PO Box 578	Peterborough	NH	03458	USA	(603)924-7664
Tech Ed Concepts	Dick Amaroso	35 South Main St.	Concord	NH	03301	USA	(603)224-8324
CAD Value Corporation	Paul Zaman	60 Route 46	Fairfield	NJ	07004	USA	(201)255-4321
Cimquest Inc.	Mark Kanyon	501 Hoos Lane	Piscataway	USA	08854	USA	(908)499-0400
Logix Data Systems	Al Steiner	35 Chestnut Court	Basking Ridge	NJ	07920	USA	(908)647-8552
Shortess Rawson & Assoc.	Dan Rawson	144 N. 14th St.	Kenilworth	NJ	07033	USA	(908)276-2525
Versatech Design	Vincent Graziano	PO Box 1282	Jackson	NJ	08527	USA	(908)901-1324
Advanced Data Systems	Dan Lubold	2709 J Pan American	Albuquerque	NM	87107	USA	(505)345-1450
999 Design Group	Vito Mazarziello	2 Skyview Lane	Valatie	NY	12184	USA	(518)758-9046
AA Hi-Tech	Robert Garwood	630 Route 303	Blairstown	NY	10913	USA	(914)353-7772
ACC Systems Inc.	Sai Coppolino	One Robert Lane	Glen Head	NY	11545	USA	(516)874-0191
Action CAD/CAM	Richard Greenberg	1517 Kenmore Ave.	Buffalo	NY	14217	USA	(716)875-4336
ASAP	Bob Fernald	9 Meroko Lane	East Islip	NY	11730	USA	(516)581-1100
CADDimensions Inc.	Steve Dilaora	8 Adler Drive	East Syracuse	NY	13057	USA	(315)434-9787
CNC Systems	Lynda Defisher	369 Route 104	Ontario	NY	14519	USA	(716)265-0160
Adam Systems Inc.	Adrian Sivinski	184th St.	Ohmaha	OH	44705	USA	(402)596-0071
Design Software Intrntrl	Jim Caliguri	6660 Dixie Highway	Fairfield	OH	45014	USA	(513)874-3200
Fastech	Bob Walker	101 East Sandusky St.	Findlay	OH	45840	USA	(419)425-2233
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SAEC	Rick Schweet	9545 Kenwood Road	Cincinnati	OH	45242	USA	(513)793-4959
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CADWire	Wence Daks	825 Denison St.	Markham	Ontario	L3R 5E4	Canada	(905)305-0561
Cornerstone Technology	John Mateau	300 Canara Road East	Windsor	Ontario	N9G-1A3	Canada	519-250-8906
DAR Computer Maint.	Brad Turner	40 Vogel Road	Richmond	Ontario	L4B 3K6	Canada	(905)509-8706
H G Engineering	Haig Saadatian	400 Carlingview Drive	Etobicoke	Ontario	M9W 5X9	Canada	(416)674-8505
In House Solutions	Ed House	240 Holiday Inn Drive	Cambridge	Ontario	N3C 3X4	Canada	(519)658-1471
Klear Concept Data	John Punshon	465 Rogers St.	Peterborough	Ontario	K9H 1X1	Canada	(705)742-3354
Manufacturing Sys. Inc.	Alice Burt	1386 Manotick Station Rd.	Manotick	Ontario	K4M 1B2	Canada	(613)821-3632

DataCAD Resource Guide

Cadkey Dealers (cont.)

COMPANY	CONTACT	ADDRESS	CITY	ST	ZIP	COUNTRY	PHONE
Measurement Technology	Paul Potter	3017 St. Clair Ave.	Burlington	Ontario	L7N 3P5	Canada	(905)574-2379
CAD/Matic	Joe Wright	Route #2	Flora	Ontario	N06 1S0	Canada	(519)483-1033
Acuity Inc.	Ann McKassen	4390 SW Macadar Ave.	Portland	OR	97201	USA	(503)221-3139
CEO	Clark Helvey	19545 NW Von Neuman	Beaverton	OR	97005	USA	(503)690-4044
Erie CAD	Jack Ross	3341 Buffalo Road	Wesleyville	PA	16150	USA	(814)899-6437
Innovative Design Sys.	Alan Warren	100 East Shenango St.	Sharpville	PA	16150	USA	(412)862-1860
LAND CAD Services	Darryl Wagner	DTAA	Hegira	PA	17335	USA	(717)694-4044
Micro Control	Barry Bennett	301 Oxford Valley Road	Yardley	PA	19067	USA	(215)321-7474
Prim Engineering	Lynne Ewell	375 Horsham Road	Horsham	PA	19044	USA	(215)674-9696
Applied Inc.	Wald Hadid	6655 Cote De Neiges	Montreal	Quebec	H3S 2B4	Canada	(514)733-7800
Centres Canada	Jean-Marc Fillion	1450 City Councilours	Montreal	Quebec	H3A 2E5	Canada	(514)848-1110
Kemey	Peter Kemey	5710 Themins Blvd.	St. Laurent	Quebec	H4R 2K9	Canada	(514)745-0535
La SE Bit Inc.	Moe Benhabala	715 Cormier St.	Drummondville	Quebec	J2C 6P7	Canada	(819)474-4724
Architectural Intelligence	Stewart Brown	46 Huling Ave.	Memphis	TN	38103	USA	(901)529-8689
CADCO	Jerry Eggers	139 Ridgeland	Johnson City	TN	37601	USA	(615)826-9515
Precision Concepts	Joe Carr	5000 Linbar Drive	Nashville	TN	37211	USA	(615)833-7060
Baker Engineering	John Baker	PO Box 98180	Lubbock	TX	79498	USA	(806)762-5690
MLC	Ralph Weller	10777 NW Freeway	Houston	TX	77092	USA	(713)682-7490
MLC CAD Systems	Tom Brown	1333 Corporate Drive	Irving	TX	75038	USA	(214)618-2222
MLC CAD Systems	Mike Loesley	7101 Highway 71 West	Austin	TX	78735	USA	(512)288-8511
Scientific & Tech. Ed.	Bruce Buehler	6102 E. Mockingbird	Dallas	TX	75214	USA	(800)437-9242
ArchSoft	Bruce Kaplan	7003 Ballast Court	Springfield	VA	22015	USA	(703)544-2816
ArchCAD Solutions Inc.	John Kahney	365A South Linden Ave.	Waynesboro	VA	22860	USA	(703)949-7703
Triton Corp.	Mike Atalay	3004 Commerce Circle	Yorktown	VA	23693	USA	(804)591-9441
Kim Tech	Steve Kidd	5717 Wollochet Dr. NW	Gig Harbor	WA	98335	USA	(206)858-5233
Comvirx	Bede Kortegast	1001 SW Klicikat	Seattle	WA	98134	USA	(206)340-5995
Timwest Technical	Vic Galushko	12904 Purdy Drive NW	Gig Harbor	WA	98332	USA	(206)859-2421
Tash Business Services	Frank Franklin	PO Box 2317	Sumas	WA	98295-2317	USA	(604)856-0402
Tech Net	Joe Brower	8347 Medway Lane NE	Bainbridge Island	WA	98110	USA	(206)623-1403
Data Plus	Peter Tait	1207 Washington St.	Manitowic	WI	54220	USA	(414)594-7115
First Technologies	Bob Werner	PO Box 430	Big Bend	WI	53103	USA	(414)662-0330
Mattson Technologies	Cliff Mattson	West 239 N390	Waukesha	WI	53188	USA	(414)544-6300

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15000 Commerce
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Mt. Laurel, NJ 08054
609/235-1644

Logix Data Systems

Contact: Al Steiner
35 Chestnut Court
Basking Ridge, NJ 07920
908/847-8552

New York

999 Design Group
Contact: Vito
Mazzariello
2 Skyview Lane
Valatie, NY 12184
518/758-9046

CADIMENSIONS

Contact: Pete DiLaura
8 Adler Drive
East Syracuse, NY 13057
315/434-9787

North Carolina

CAD Vision
Contact: Bill Langdon
8 College St.
Asheville, NC 28801
704/252-0296

Count On Me

Contact: Lisa Davis
PO Box 19838
Raleigh, NC 27609
919/872-0327

Design Automation Inc.

Contact: Ron Weavil
3211 Bramer Drive
Raleigh, NC 27604
919/790-0000

Oklahoma

Architects Collective
Contact: Larry Kester
4200 E. Skelley Dr. Ste 750
Tulsa, OK 74135

DataCAD Educational Dealers

Electronic Marketing Company

1092 Johnson Road,
Woodbridge, CT 06525
Connecticut:
800/362-4394
Rhode Island:
800/362-4563

First Technologies

W247 S7275 Scolland Dr.
Big Bend, WI 53103
800/787-9717
Wisconsin

Mid-West Tech

206 West 2nd St.
Madrid, IA 50156
800/358-5702
Iowa, Minnesota, Nebraska,
North Dakota, South
Dakota

Northwest Technical Products

12904 Purdy Ave. NW
Gig Harbor, WA 98332
800/258-8893
Alaska, Idaho, Montana,
Oregon, Washington

S.T.E.P.

6102 E. Mockingbird
Lane, Suite 368
Dallas, TX 75214
800/437-9242
Oklahoma, Texas

819/492-2987

Marc F. Wilson
3333 Eastman Drive
Oklaoma City, OK 73112
405/842-5475

Oregon

CECO
Contact: Clark Helvey
19545 NW Von
Nueman Drive
Beaverton, OR 97006
503/690-4044

Pennsylvania

Innovative Design Sys.
Contact: Alan Warren
100 East Shenango St.
Sharpsville, PA 16150
412/962-1860
LND CAD Services
Contact: Daniel Wagner
RD1 Box 277AA
Hegins, PA 17738
717/682-3310

SCR Associates

Contact: Scott Rogers
800 Vinal St., Suite B313
Pittsburgh, PA 15212
412/322-5794

Tennessee

Architectural Intelligence
Contact: Stewart Brown
46 Huling Ave.
Memphis, TN 38103
901/529-8889

Texas

Hughes Enterprises
Contact: Don Hughes
784 South Mill
Lewisville, TX 75057
214/221-8979

Utah

CADDI Etc.
Contact: Ken Lambert

8349 S 3450 W
West Jordan, UT 84088
801/255-5453

Vermont

Wolfstein Architecture
Contact: Ed Wolfstein
100 Church St.
Burlington, VT 05401
802/864-8334

Virginia

ARCHSOFT
Contact: Bruce Kaplan
7003 Ballast Court
Burke, VA 22015
703/644-2816

Freehill Design Service

Contact: Joseph
Freehill
PO Box 8162
Virginia Beach, VA 23452
804/340-4507

Washington

Tech-Net Inc.
Contact: Joe Brouwer
3831 1st Ave. South
Seattle, WA 98134
206/623-1403

Wisconsin

Third Dimension Tech.
Contact: Bruce Nelson
209 West Third St.
Star Prairie, WI 54026
715/248-3222

Canada

CADDAPULT Ptners Inc.
Contact: Mark Taylor
513 8th Ave. S.W., Suite
305
Calgary, AB T2P 1G1
403/262-4288
Focus Systems
Contact: George Clark
2223 41st St. SE
Calgary, AB T2C 1C8
403/248-9611

CADD Concepts Inc.
Contact: Mark Garner
1088 Homer St.
Vancouver, BC
V6B 2W9
604/681-4686

Rudolf Karl Int'l.
Contact: Rudy Enns
310 Brock St.
Winnipeg, MB
R3H 0Y9
204/955-2828

CADMATIC Inc.
Contact: Joe Wright
RR #2
Elora, ON N0B 1S0
519/843-1033

Klear Concept Data
Contact: John Punshon
465 Rogers St.
Peterborough, ON
K9H 1X1
705/742-3354

Manf. Systems Research
Contact: Alice Bunt
1386 Manotick Station Rd
Manotick, ON
K4M 1B2
613/821-3632

Measurement Tech.
Contact: Paul Potter
3017 St Clair Ave.,
Suite 220
Burlington, ON
L7N 3P5
905/574-2379

APPLICAD Inc.

Contact: Walid Hadid
6655 Cote De Neiges
Montreal, PQ H3S 2B4
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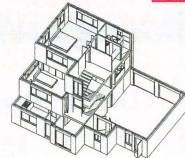
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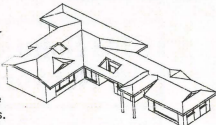
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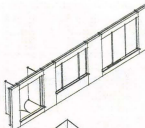
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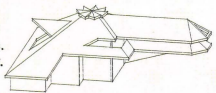
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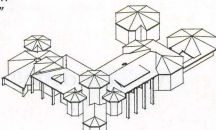
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Strategic Partners Program

By Dale Arsenault,
Cadkey Strategic Partners Manager

Cadkey's Strategic Partners Program actively supports developers of hardware and software products that work directly with DataCAD, CADKEY, CADKEY for Windows and/or any of the next generation of Cadkey Windows products and technologies. The program's goal is to create a "win-win" situation for the developers and CADKEY and DataCAD users.

First, the Strategic Partners Program provides many incentives and advantages to participating developers, not the least of which is easy and affordable links to CADKEY

through a variety of custom programming tools. These include CADKEY Dynamic Exchange (CDE) C programs, CADKEY Advanced Design Language (CADL), and CADKEY Lisp. Developers can develop C programs that run-time link to CADKEY as CDEs by using these Cadkey tools along with Microsoft Visual C++2.0 (or higher) and Microsoft NT 3.5 or Windows 95.

Cadkey also helps Strategic Partners promote their products to the existing large database of CADKEY and DataCAD users. The sales-enhancing methods include listings (with periodic updates) in the Cadkey Strategic Partners Resource Guide, the chance to be part of Cadkey's World Wide Web net-

work, inclusion in key mail campaigns, and the opportunity to include product literature with every copy of CADKEY or DataCAD. Cadkey also provides potential sales opportunities by offering access to this database of knowledgeable MEC and AEC companies. Cadkey continually communicates with its existing customer base regarding new programs as they become available.

The Strategic Partners Program helps users. It assures them of a supply of quality add-on products providing additional tools and functionality that make CADKEY and DataCAD even more powerful and provides mechanisms by which they can learn about the products. For example, this issue of Key

Solutions has a list of current Strategic Partners and a sampling of other third-party hardware and software. Be sure to check it out. Key Solutions is an excellent vehicle for advertising — targeted at and mailed directly to qualified CADKEY and DataCAD users.

As the Cadkey Strategic Partners Program manager, I am always interested in talking to new and potential partners who want to increase their sales or to develop a commercial product. If you already have or want to develop and sell an application for CADKEY or DataCAD, call me at Cadkey (800/394-2231 or e-mail dale@cadkey.com). I will be glad to answer all your questions and explain the program in detail.

Cadkey Third-Party Products

ANALYSIS

IMAGES-3D ANALYSIS

A fully integrated, menu-driven, modular finite element analysis software. Performs state-of-the-art static, modal, dynamic and heat transfer analysis. The program interfaces directly with CADKEY to accept nodal and element definition bi-directionally. Starts at \$795; DOS CADL.

Celestial Software

2150 Shattuck, Suite 1200
Berkeley, CA 94704
510/843-0977 fax 510/848-9849

MSC FEA Solutions

The MacNeal-Schwendler Corporation's several software programs provide a variety of high-end analysis solutions. They include MSC/NASTRAN and MSC/VISION for materials information

MacNeal-Schwendler Corp.
815 Colorado Blvd.
Los Angeles, CA 90041
800/642-7437 or 213/259-3830

BILL OF MATERIALS

Bill of Materials/Data Base Generator

Automatically creates BOMs by extracting group table data from CADKEY part files. Includes our own database manager. Produces notes, single or multi-level, or indented BOM structures. Supports on-line viewing, editing, modifying of text and database files. \$495; DOS CDE.

Baystate Technologies Inc.

33 Boston Post Road West, #420
Marlborough, MA 01752
508/229-2020 fax 508/229-2121

DATA MANAGEMENT

Visual PDM

Manufacturing personnel can have all the documentation important to your production process instantly. Visual PDM provides assured access to CAD/CAM documents, work instructions and other process plans, BOM, multimedia demos, and much more. Windows; DWG DXF. Insight Solutions
1000 E. Woodfield Drive, Suite 102

Schaumburg, IL 60173
800/873-2798 fax 708/706-6778 or CompuServe 73074.3445 28

DESIGN & DRAFTING SERVICES

Drafting and Manufacturing Services
Advanced 3D modeling, reverse engineering, CNC programming, A-E plotting, Computer-Aided Design
6900 SW 195th Avenue, #160
Aloha, OR 97007
503/591-5007 fax 503/642-4329

Kruse Scanning & CAD Conversion Services
Paper drawings, documents, aperture cards, microfilm and other media can be scanned into an image format and converted to a PRT or other vector format. Documents can be indexed into a Kruse Control database and delivered on CD-ROM.
Kruse Inc.
Patrick Kelly
104 Gallagherville Road

PO Box 468
Downtown, PA 19335-0245
610/269-9220 fax 610/269-1004

DESIGN & DRAFTING TOOLS

TubeCAD 5.7

A PC software system that automates the construction of complex tube layouts for design and inspection. TubeCAD performs 3D wireframe OD with forms, true unbending of the tube, true bend views, 2D OD outline and much more. DOS DXF; Stand-alone.
Advanced Tubular Technologies Inc.
2499 Lochaven Road West
Bloomfield, MI 48324
810/363-0952 fax 810/363-1689

Speed-Draft Plus

The Speed-Draft Plus tablet overlay allows you to instantly design with high-level features, fasteners, mechanical elements and detailing symbols. You can integrate your

See Cadkey Third-Party Products, page 15

You've seen the rest, now go with the best . . .

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Offer expires December 31, 1995

Cadkey Third-Party Products (cont.)

symbol libraries and macros. \$150; DOS Direct Link.

Applied Inc.
11866 Boul. Laurentien #3
Montreal, Quebec Canada H4K-1M7
514/335-4145 fax 514/336-7689

Draftsmen
Automatically translates scanned raster images into CADKEY CDL files; drawings are made of lines, arcs and circles. \$199 - \$1,895
DOS, SPARCstation & Windows CDL Files
Autometric Corp.
5651 Plymouth Road
Ann Arbor MI 48105
313/741-8700 fax 313/741-8806

PC/Mold CAD Database
PC/Mold 3.0 consists of more than 1,000 PTN files for the injection mold design industry, involved with plastics, injection molding and die casting.
D & L Progressive Components
1000 Rand Road
Wauconda IL 60084
708/487-1000 fax 708/487-1003

CADJET Drafting Package
Mechanical design and drafting program. Features include parametric screws, nuts, bolts, pins, welding symbols and much more.
\$495; DOS, CDE, Macros.
HLB Technology
PO Box 527
Blue Ridge VA 24064
703/977-6520 fax 703/977-6531

Can Spell? Spell Checker for Engineers
Complete spelling correction program. More than 100,000 words in main dictionary. Highlights misspelled words on screen. Text editor.
\$150; DOS, CDE, CADL
JES Engineering
7935 Calle Posada
Carlsbad, CA 92009
619/438-5510

Instant Access Toolbar
Instantly access any CADKEY or CADL function from the completely customizable icon toolbar. Includes utilities for creating ANSI Y14.5M geometric tolerancing, symbols, ANSYS/AE2.4 welding symbols, datum and balloons. Set and change attributes by example.
\$150; with spell checker \$295; DOS, CDE, CADL
JES Engineering
619/438-5510

Power Tools Bundle
Power Tools Bundle V.6-7.0 Rel 3.0 enhances creation of cast and injection molded part features with Draft, Fillets, Rounds and wall thickness. Fully Parametric Features. Designed for cast and plastic parts, injection and blow molding. Call DOS CADL, CDE
Paradigms
14235 Claessique Way
San Diego, CA 92129
619/484-8386 fax 619-484-8380 or Fred Bacher
72040.114@compuserve.com

GEORCE 6.0
Quickly and easily produces multi-view hidden line drawings. Autoscales and arranges views starting from 3D wireframes. Adds front and center lines, fills in title, data, etc.
Includes sectioning software. \$295, US Maintenance \$100; DOS CDL.
Pooled Design Quorum
2000 Bear Drive
53517 Lexington, DE 19808-3316
302/998-1716 fax 302/998-1716

Trans-Pak IV
A pattern development utility designed for ease of use, pattern displays, pattern rotation, selectable parting, X & Y point out, parametric input, full size plotting and more. DOS
SDS Inc.
640 West Ocean View Avenue
PO Box 8217
Norfolk, VA 23503
804/887-4771 fax 804/588-0026

Spaceball
A 3D input space controller device that interfaces to directly to CADKEY. Allows for enhanced 3D interactivity and viewing control.
DOS & Windows CDE
Spacetec IMC Corp., Panacea Blvd.
24 Orchard View Drive
Londonderry, NH 03053
603/437-6022 x640 fax 603/434-2461

Tom's Toolbox
A very useful utility package for CADKEY 7 which includes a customized Icon/Panel Interface; it features access to more than 200 CADKEY functions with one mouse click; Wish List, CADL Utilities, include attribute control utilities; and more. \$30; DOS CADL.
Tom Maccarriella
604 Jessamine Avenue
Collingswood, NJ 08107-1906
609/854-8038 tmaccc@tam.rutgers.edu

Dimension Guru
Automatic dimensioning for CADKEY. A CDE utility that automatically dimensions geometry. Simply select the geometry, Dimension Guru does the rest. \$99.95; DOS & Windows.
Intelec Inc.
120 College Street
Middletown, CT 06457
203/343-8460 fax 203/343-8462

DIES
COSSCAED - Extrusion Die Design
Extruded aluminum product geometry is drawn using CADKEY. CADKEY applies deflection allowances to generate die opening drawing (suitable for wire EDM tool path generation), provides die layout and shows bearing lengths necessary for metal flow control.
\$15,000; DOS CADL.
COSSCAED Inc.
1732 Breckenridge Road
Orwigsburg, PA 17961
717/966-1966 fax 717/966-2340

Danly-Dynamics Die Design Software
Unlimited combination of standard and proprietary Danly die sets and components including punches, springs and IEM products. Automatic BOM with catalog numbers and component description. \$495; DOS CADL, CDE, IGES.
E D Sales & Services, Inc.
1185 Tower Road
Schamburg, IL 60173
708/885-3636 fax 708/885-4383

DOCUMENT MANAGEMENT
AutoManager WorkFlow 4
AutoManager WorkFlow is a technical document management package that manages documents such as drawings, spreadsheets, scanned images, and their related data. Users can quickly retrieve and verify documents and manage the flow of information.
Windows
CYCO International
1908 Cliff Valley Way, Suite 2000
Atlanta, GA 30329
404/634-3392 fax 404/633-4604 or GO
CYCO@compuserve.com
CYCO Software BV de Ruyter
Andreas Vice President, DF
Handelskade 49 2298 BA Rijswijk
The Netherlands
9011-31-70-395-4179 fax 9011-31-70-319-1344

Kruze Control
Kruze Control allows engineers and users of engineering information to electronically manage, view, and retrieve CAD drawings, word documents, spreadsheets and digital images. Organize by project, date, department or other user definable categories. DOS & Windows CADKEY PRT, DXF, DWG
Krus Inc.
104 Kalgallshire Road
PO Box 232
Downington, VA 19335-0245
800/272-5659 fax 610/269-1004

INFO BUDDY
An integrated solution to the release and control of engineering documentation. Package includes; Revision Control, Access Control, Document Grouping & Linking, LAN Mail, Application Launching, Audit Trails and Document Control Hierarchy. Client \$1,895, Server \$4,995; Windows, Novell, UNIX, Stand-alone.
Pursell Technical Information Systems
24 Hop Brook Road
Brookfield, CT 06804-1327
203/775-1319 fax 203/775-1319

ELECTROMECHANICAL TOOLS
CAD/CAM
CAD/CAM offers CADKEY users the opportunity to circumvent the DXF process and use a filter which is designed to retain as much Gerber borne data as possible outside that format itself, and to move it directly into CADKEY in

CADL format. Windows 3.1, NT & 95, Stand-alone
Router Solutions Inc.
180 Newport Center Drive, Suite 240
Newport Beach, CA 92660
714/721-1017 fax 714/721-1019

FONTS
Aircraft Fonts
Precision and machineable fonts for CADKEY. More than 100 professional quality fonts designed for CADKEY and Cutting Edge. DOS.
Arcraft America
2826 College Street
Jacksonville, FL 32205
800/447-4186 fax 904/709-0202

CADJET E-Z FONTS
E-Z Fonts for CADKEY come in 17 different styles. Loads directly into CADKEY's menu ready to use. Each font comes with a CADKEY Font Manager Program and Drafting Symbol Library. \$49.95 each or \$299 for all 17 fonts: DOS, 386, Sun, SGI.
HLB Technology
PO Box 10
Blue Ridge, VA 24064
703/977-6520 fax 703/977-6531

KINEMATICS
Working Model
Working Model is a powerful tool for engineering analysis, animation and prototyping. It saves time and money in the design process by allowing you to create and analyze dynamic physical systems on the computer prior to building costly prototypes.
Windows DXF.
Knowledge Revolution
66 Bovee Road, Suite 200
San Mateo, CA 94402
800/766-6615 fax 415/574-7541 or
info@krv.com

MANUFACTURING
CADDInspector is the gateway to rapid prototyping. Reverse engineering software package suitable for applications in rapid prototyping, model making, mold making, soft gauging, 3D chart, art, games development and virtual reality. \$3,495; DOS, CDE.
Cutting Edge Technologies Inc.
4 Griffin Road North
Windsor, CT 06095
203/298-6433 fax 203/298-6430

RevEng
RevEng links CADKEY to 3D digitizers, CMMs, and Laser Scanners for reverse engineering and point cloud processing. Drastically improve productivity by interactively creating CAD models from physical parts or prototypes.
Demos & Windows CDE
Design Automation Inc.
3211 Bromer Drive
Raleigh, NC 27604
919/790-0000 fax 919/790-0100

Revpont 3D System
The Revpont system provides a real-time 3D modeling tool for the design professional. Complete with software, Revpont gives you the capability to acquire data from 3D objects the same way you have been using 2D drawings and digitizer tablets. DOS, PRT, IGES, DXF, DWG, STL.
SoftWorld International
133 Admiral Street
Bridgeport, CT 06601
203/287-7789 fax 203/287-8331

MANUFACTURING LIBRARIES
TOOL-CAD
A library of 3D wireframe tooling components (about 2,700) in CADKEY, PTN, format. The 3D wireframe has Smart Levels, which are level switches for converting 3D wireframe into 2D drawings. A relational database allows finding wanted parts easier. DOS & Windows.
All American Products Co.
1155 Valley Place
San Fernando, CA 91340
818/361-0059 x246 fax 818/898-2236

Tool Designer's Assistant
This library contains more than 3,600 3D CADKEY pattern files of industry standard tooling components. Any clamp, locator, rest, fixture, base, etc., can be quickly retrieved and inserted. Complete documentation with schematic

views of every part type, with dimensions. Suggested list \$95; DOS.
Carr Lane Manufacturing Co.
4200 Carr Lane Court
St. Louis, MO 63119
314/647-6200 fax 314/647-6736

NUMERICAL CONTROL
CUTTING EDGE
CUTTING EDGE, a CAM system for three-axis milling machine operations, is the first truly open architecture CAM program on the market (runs with or without CADKEY). Version 8 supports NURBS surface machining; automatic gage checking and much more. DOS, CDE.
Cutting Edge Technologies Inc.
4 Griffin Road North
Windsor, CT 06095
203/298-6433 fax 203/298-6490

ESPRIT-X
ESPRIT-X is a CAD/CAM system for the creation, management and distribution of Numerical Control part programs. It supports virtually all NC manufacturing processes including all Chip Making, Wire EDM and Fabrication manufacturing and lots more. DOS, CDE.

See Cadkey Products, page 16

I / VECTOR

Paper to CAD Easy as \$995.

- Preview the scanned image and select a drawing type. IVECTOR accepts RLC and Group 4 TIFF raster files for conversion.**
- Adjust the parameters for Line/Circle/Arc recognition; line styles, line widths, tolerances, hatching, and OCR text.**
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FAX Back Service
(301) 468-2018

Cadkey Third-Party Products (cont.)

UNIX & X-Windows CADL, IGES, DXF,
D.P. Technology Corp.
1150 Avenida Acazo
Camarillo, CA 93012
805/388-6000 fax 805/388-1005

Virtual Gibbs

Virtual Gibbs integrates technologies which achieve 3D real-time, cut-part rendering, and an interface of graphic realism never before seen on a PC-based CAM system. Users are able to see the tool actually removing the material from a solid piece of metal. DOS & Macintosh IGES, DXF.
Gibbs and Associates
5400 Tech Circle
Moorpark, CA 93021
805/523-0004 fax 805/523-0006

ACU.CARV

ACU.CARV is a full 3D CAM system that interfaces directly with CADKEY and FastSURF. Users can generate toolpaths from FastSURF surfaces directly without translation. ACU.CARV toolpaths use circular moves whenever possible, which reduces G-code file size. DOS CADL, MACROS, IGES.

ACU.CARV Wire

ACU.CARV Wire is an easy to use NC machining package that runs from directly inside of CADKEY. It has both 2 and 4 axis capabilities, including multiple gleeblasts, pump settings and power settings, automatic skin cuts and more. DOS CADL, MACROS, IGES.

ACU.TOOLS+

ACU.TOOLS+ is a general NC machining package that runs from directly inside CADKEY. ACU.TOOLS+ provides for 2 1/2 axis milling,

drilling, tapping and more. DOS CADL, MACROS, IGES.
Olmeted Engineering Co.
2320 Aero Park Court
Traverse City, MI 49684
616/946-3174 fax 616/946-7080

TorchPak

An inexpensive, user-oriented CAD/CAM system. DXF format is translated into machine code for flame, plasma or laser cutters. The cutter path generator extracts entity information, creates a path in the proper order, direction and kerf side for ext./int. paths. DOS, 386/486 DXF.

SDG Inc.

646 West Ocean View Avenue
PO Box 8217
Norfolk, VA 23503
804/687-4771 fax 804/588-0026

SURFCAM

If you're creating a design with CADKEY, SURFCAM will cut it. SURFCAM's bi-directional translators move designs to manufacturing with 100 percent data integrity. Powerful 2,3,4 and 5 axis systems for CNC mills, lathes, wire EDMs, lasers and much more. DOS & Windows.
Surfware Inc.
421 Park Avenue
San Fernando, CA 91340
818/361-5605 fax 818/361-1919

Mastercam

Mastercam allows you to quickly generate and verify toolpaths for all your designs. Accurately import and export your CADKEY files via CADL, IGES. Import, edit and create an unlimited number of surfaces. Perform

2 1/2 through 5 axis milling and more. DOS & WINDOWS CADL, IGES.
Mastercam/CNC Software Inc.
344 Marrow Road
Tolland, CT 06084
800/228-2877 fax 203/872-1565

MOLD ANALYSIS

C-Mold

The only mold simulation software to bring every molding phase and process to the PC. Easy-to-use modules allow users to quickly build or import models then simulate the filling, packing, cooling, residual stress, shrinkage and warping of the part. DOS, 486 IGES.

AC Technology North America
9525 Ormsby Way
Louisville, KY 40223
502/266-6727 fax 502/266-6654

SURE-SHOT

Moldability assessment software eliminates costly production delays by anticipating production difficulties. Determine likely processing window of injection times, melt temperature and mold temperature. SURE-SHOT produces an expert report and more. Windows. Stand-alone.
PTI Corp.
1512 Birch Drive
Elkhart, IN 46514
219/262-2345 fax 219/262-0662

MOLD DESIGN

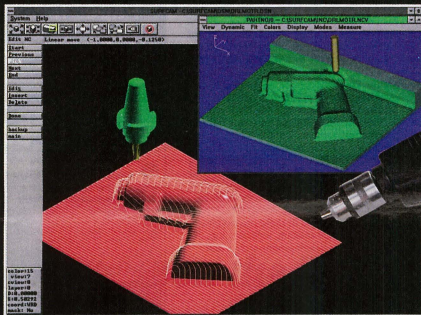
D-M-E Moldware Ultimate Mold Design System
The D-M-E Ultimate Mold Design System is an invaluable design and manufacturing tool that can shorten lead times and help you produce higher quality injection molds by automating the more tedious aspects of the mold design process. \$2,500.
D-M-E Co.
29111 Stephenson Highway
Madison Heights, MI 48071
313/388-6000 fax 313/344-5705

MOLDFLOW/CADKEY LINK Model Building for MOLDFLOW Analysis. Create 3D geometry models for use in Moldflow analysis of plastic flow simulation of injection molded parts. Application program within CADKEY produces files directly readable by Moldflow for analysis and more. Call current versions of CADKEY CADL & CDE

Software Ventures Inc.
Waters Edge Building - 5930
Lovers Lane
Kalamazoo, MI 49002
616/344-0708 fax 616/381-2965

DRAFT-PAK 2D Mold Designer Parametric Program for plastic injection mold designers. Generates more than 45 standard mold components and mold bases via an easy-to-use dialog box interface.

SURFCAM Takes You Faster Through the Curves



Courtesy of BLACK & DECKER INC.



CAM software integrates product design, modeling and multi-surface machining

MECHANICAL DESIGN

- Powerful modeling tools simplify free-form design.
- Photo-realistic shading helps you visualize your project.

NC MACHINING

- Integrated multi-surface machining quickly generates gouge-free toolpaths.
- Fast dynamic graphics even during toolpath generation.
- Easy one-step roughing and finishing.

TOOLPATH VERIFICATION

- Solid model display simulates material removal process.
- Eliminates time-consuming dry runs on your NC machine.

POST PROCESSING

- Includes support for 2,3,4 and 5 axis machine controllers.

COMPATIBLE

- Includes support for all major CAD/CAM file translators.
- Import solid models as surfaces for machining.

EASY TO USE

- Graphical interface with on-line help.
- Short learning curve cuts training costs and downtime.
- Easy multi-tasking under Windows® and Windows NT.



Dollar for dollar, SURFCAM offers the most features of any CAD/CAM system, and gives you a quick return on your investment. You pay for only what you need, with an easy upgrade path as your requirements grow.

Demo: \$20 MC, VISA, AmEx.

SURFCAM

SOFTWARE INCORPORATED
Call for the name of your local dealer
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Cadkey Third-Party Products (cont.)

Ejector/core/leader pins, sleeves, bushings, support pillars, fasteners, draft offset, detailing symbols, hole charts, A/B series bases, clearance lines, top and side view for most components. \$1,895; Windows
Baystate Technologies
 33 Boston Post Road West
 Marlborough, MA 01752
 508/229-2020 fax 508/229-2121

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Industrial Piping Components
 A collection of commonly used piping or components such as Tees, Elbows, Unions, Valves, Clamps, Hosebars, Plugs, Caps, Reducers, etc., in various required views. Program user may easily scale, rotate, mirror or further edit.
Graphics Unlimited
 3050 Shallowford Road, Suite 150
 Atlanta, GA 30341
 800/653-8599 fax 770/452-8797

PLOTTING
PrintAPlot 3.0.4
 PrintAPlot, the software that turns any laser, ink jet or dot matrix printer into a high-performance HPGL pen plotter; supports 1200+ printers, 256 pens/colors, variable line/pen weights, 25 paper sizes, setting sheets and much more. \$99 DOS; PrintAPlot Pro - \$199 DOS

RenderPrint
 Plot rendered images on any Printer. More than 1,450 Printers and Plotters, reduces file size for fast processing, print preview, batch printing, control contrast, automatic file conversion and more. Call for price.

Insight Development Corp.
 2240 Camino Ramon, Suite 205
 San Ramon, CA 94583
 510/244-2000 fax 510/244-2020

PRODUCTIVITY TOOLS
DIALWIN
 This CADKEY/Windows DialogBox Simulator allows you to minimize your customization efforts. DIALWIN creates missing dialog boxes automatically in CADKEY Win or a CADL program is compiled with the CADKEY Win CADL compiler. \$89 per seat; DOS & Windows CDE, CADL
AGS GmbH
 Mollenbachstr. 37 D-71229
 Leonberg Germany
 9011-49-152-42081 9011-49-7152-74166
 Martin Trostel trostel@qsii.de

DRAFT-PAK
 High productivity 2D/3D enhancement package that instantly creates high-level features, fasteners, mech. elements, sprockets, chains, gears, springs, etc. using powerful parametric programs. Also includes 3D-to-2D part compression and much more. \$595; DOS & WINDOWS CDE, CADL
Baystate Technologies Inc.
 33 Boston Post Road West, #420
 Marlborough, MA 01752
 508/229-2020 fax 508/229-2121

DRAFT-PAK Professional Tablet Overlay
 The only overlay with icons for the most common icons of Draft-Pak Productivity software and CADKEY. Contains 15 color-coded menu groupings with 376 specific command functions. Icons run a macro that executes multiple keystrokes. Productivity is dramatically increased. Automatic installation/user-programmable areas. \$195; DOS
Baystate Technologies Inc.
 33 Boston Post Road West, #420
 Marlborough, MA 01752
 508/229-2020 fax 508/229-2121

PARAMETRIC SOLUTION
 Parametric Solution (PS) offers an automated approach for creating parametric designs in CADKEY. PS supports CADKEY-dimensioned geometry and is dialog box driven. Use a parametric program over and over to save variations of the original design.
Computer Aided Technology Inc.
 3100 Dundee Road, Suite 202
 Northbrook, IL 60062-2460
 708/498-9600 fax 708/498-9726

CADJET Master Templates
 CADJET Master Templates provide users with more than 300 CADKEY commands that can be easily executed directly from any digitizer

tablet. Makes using CADKEY fast, easy and shortens work sessions by thousands of keystrokes. Comes in 2 sizes; 11x11, and 11x17. \$75 - \$125; DOS.

CADJET Productivity Tools Librarian
 Consolidates CADL and Pattern Files into a .Roloexec, type interface for easy recognition and retrieval. Works on single computers or on a network. Single user license: \$143, Site licenses available; DOS

Circle T
 Utility program that takes any CADKEY Text and draws it as an arc or circle. \$69.95 DOS

HLB Technology
 703 Box 527
 Blue Ridge, VA 24064
 703/977-6520 fax 703/977-6531

ParaPro
 ParaPro generates quick and easy parametric variations without programming. Apply parametric changes across multi-viewer projections, establish mathematical relationships among dimensions in a drawing, instantly create a family-of-parts and much more. DOS.
KT International Inc.
 20 Westbrook Street
 East Hartford CT 06108
 203/289-0728

MERITBAR
 A set of advanced tools using the latest CADKEY technology to provide users with an on-screen tablet interface. The package has a number of modeling and detailing utilities such as view rotation, creating sections, 3D dimensioning and much more. DOS CDE.
Merit Computer Solutions Ltd.
 Enterprise House Rassau Industrial Estate
 Ebbw Vale Gwent United Kingdom NP3 5SD
 441-49630193 fax 441-49635064 or chavda@merituk.demon.co.uk

Flex-It
 Flex-It is a powerful parametric application which provides the user with extended model-editing power. Features like Auto recognition of geometry and changes, auto recognition of repeating objects, choice of parameter representations and much more. DOS CDE.
Merit Computer Solutions Ltd.
 10, Haskahed Street
 PO Box 843
 Kfar-Shmariahu Israel 46910
 972-959523 fax 972-9540992 or CompuServe
 100274.1073

CADKEY Overlay
 Raster image processing for CADKEY. Integration of scanned raster data/images with CADKEY part files. Update old paper drawings without complete redrawing. Perform reverse engineering from photos, old prints or sketches. Outputs raster raster files and more. Current versions of CADKEY CADL & CDE.
VEA Communications
 E 9415 Trent Avenue
 Spokane, WA 99206
 509/928-5169 fax 509/928-4937

PROGRAMMING
AutoCAD
 Provides support for dialog boxes and a complete AutoCAD compatibility program also allows direct importing of an AutoCAD application to CADKEY with minimal alterations to existing code. Windows CDE

CADKEY LISP
 A CDE program within CADKEY which allows a developer or user of an AutoLISP program to run that program under CADKEY with minimal changes to the existing AutoLISP program. Windows CDE

Bitwise Solutions, Inc.
 5789 East 71st Street, Suite 209
 Indianapolis, IN 46220
 317/842-4376 fax 317/842-4377

TG-CAD Professional v5.0
 A CAD/CAM/CAE developer's kit in C/C++ consisting of the following: TG-CAD 2D v5.0 - A library of over 400 2D device independent geometric routines; TG-CAD 3D v5.0 - A library of over 400 3D device independent geometric routines; TG-CAD 3D v5.0 with source; \$995 without source DOS & Windows CADL
Disk Software, Inc.
 109 S. Murphy Road

Plano, TX 75094
 214/423-7288 fax 214/423-7288

QUALITY CONTROL
Point 3 Quality Control Software
 New - first product ever to link to CAD files to extract critical tolerance data for use in quality control plans, charts and histograms. Integrates a relational database. Uses forms modeled after industry standard control charts. Integrates "Viewer/Redliner PLUS," monitor mode and detection of out-of-control, trend and run conditions. SPC tools, Cause & Effect, Process Flow Charts, Print Template Designer, Monitor Mode. More than \$1,895; Windows
Baystate Technologies
 33 Boston Post Road West
 Marlborough, MA 01752
 508/229-2020 fax 508/229-2121

SHEET METAL
Dimen-Sheet
 Dimen-Sheet will ordinate dimension your flat sheet metal parts in seconds. Dimen-Sheet automatically dimensions each of the locations on your part. Punched holes are automatically recognized and dimensioned to their center point and there's much more.

ProFab
 ProFab is the first true knowledge-based system for sheet metal manufacturing applications. ProFab automates the task of programming your CNC punch press while keeping you in control of the process. Pattern layout, nesting and much more. DOS CADL, DXF

ProFold
 ProFold simplifies the unfolding process, allowing you to draw the part in your CAD system and quickly develop the correct flat pattern. ProFold automatically finds each flange and identifies the cutouts and punched holes associated with them and more. DOS.
Applied Production Inc.
 200 TechnCenter Drive, Suite 202
 Milford, OH 45150
 513/831-8900 fax 513/831-1236

qSHEET/qUNFOLD
 From a simplified single-sided, shorthand, input mode, output images are generated automatically, incorporating bond reliefs and corner setbacks. Output files facilitate correction of input geometry errors and document materials, finishes and more. qSHEET & qUNFOLD \$1,995; DOS CADL.

qUNFOLD LITE
 An adaptation of the full-featured qSHEET/qUNFOLD program designed for interactive operation within CADKEY for the lower budget user. LITE unfolds single and double-sided 3D files and folds single-sided flat files yielding true size, 3D files. \$95 - \$995; DOS CADL, CDE, Macro.

Consulting Services International
 14621 Titus Street, #204
 Van Nuys, CA 91402
 818/994-8881 fax 818/994-8881

JETCAM L II, and II Plus
 High-performance CNC programming system for punches, burners, lasers, water jets and combination punch/profile machines. Features component design with dimensioning, automatic tooling, automatic true shape and rectangular nesting with MP and more. DOS IGES, DXF
JETCAM America Inc.
 1200 Waterlore, OR 97489-0128
 503/896-0265 fax 503/896-0268

Metalman
 A stand-alone feature based parametric design application for creating sheet metal parts. Quick, simple mouse operations control virtual machine tools. Perform operations graphically on simulated stock to build solid models. \$895; Windows 3.1 & Windows NT DXF.
Metalman Corp.
 800 First Street NW, Suite 102
 Albuquerque, NM 87102
 800/346-5287 505/247-0208

STRUCTURAL STEEL
MetalWorks
 Structural Steel Library for CADKEY consisting of Beams, Tees, Channels, Angles, Tubing, Pipe, Bar Stock & Utilities. Features include: 2D/3D parametric shapes, library of sizes from AISC, design & detail specifications, rotation option and much more. DOS & WINDOWS CADL
Lindsay Design
 1717 Laurel Ave.
 Hanover Park, IL 60103
 708/213-2631 fax 708/213-2681

SURFACING
FastSURF
 FastSURF is a surfacing program which runs within CADKEY, Surf Mill, and the Advanced Modeler. Beyond just building surfaces, FastSURF supports: intersection, projection, verification, editing, rendering, SLA, IGES, CAM, advanced spinning and more. DOS, SGI, SUN CDE
FastSURF
 6 South Washington, Suite 14
 Sonora, CA 95370
 209/536-0591 fax 209/536-0592

DATA TRANSLATORS
IGES/CATPC
 IGES/CATPC is a direct translator that converts CATIA V4.0 data files (Export and Model files) into IGES 5.1 compatible files. IGES/CATPC is independent of CATIA and does not require a license of CATIA to execute. Converts 3D

See Cadkey Third-Party Products, page 19

DataCAD

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DataCAD 3rd-Party Products

Drawing Manager

A powerful macro for efficient drawing management. Reduce your drawing file size from 10-50 percent. Layer Manager creates default drawings with up to 999 layers and places drawing settings on one screen for easy editing and more. \$100 DOS.

Design/Program Associates
Route 1, Box 114C
Arlon, VA 22920
703/456-8686

Spittin' Image

For restoration or renovation projects, Spittin' Image is the ultimate tool to recreate those tough-to-copy details. Simply photograph the item and scan it into Spittin' Image with any popular desktop or hand held scanner, then trace over minute details. \$299 DOS
Arbor Image
230 Collingwood #250
Ann Arbor, MI 48103
313/741-8700
Fax 313/741-8806

Precision Fonts

Precision Fonts is a complete library of more than 271 high-resolution typeset-quality fonts. Each font comes in three variations: standard fill, full outline and QUICK sketch. Also contains a library of nine specially adapted hand-lettered fonts. \$49 DOS

Aerodraft America
2826 College Street
Jacksonville, FL 32205
904/393-4899

Detailer

Create your own smart DataCAD building components and edit them on the fly! Use your library of components to build details for DataCAD drawings, then let Detailer do the rest. Detailer includes three component libraries: lumber, CMU and custom line types. \$75 DOS

The Plot Thickeners

Enhance your DataCAD plotting menu with macro tools for daily plotting tasks. Features: Paper Size, create up to 13 customized settings; Autoscale, set the scale that will fit your drawing. Other features include: Replot, Auto Layout and Laser-Plot. \$49.95 DOS

ARCHsoft
7003 Ballast Court
Burke, VA 22015
703/644-2816
Fax 703/644-0032

Hatch Manager

Add color and texture to your DataCAD drawings. Hatch Manager offers hatch patterns in multiple line weights and multiple colors. You can customize DataCAD's hatch patterns into your own new hatch patterns. \$100 DOS

Design/Program Associates
Route 1, Box 114C
Arlon, VA 22920
703/456-8686

AUTO-TEMPLATE 50

Conveniently transfer DataCAD TEMPLATE files and their associated SYMBOL files as a collection of related files. AUTO-TEMPLATE is a stand-alone program designed to locate all the related files, store them on transferable media, then re-install on disk. \$50 DOS

Cadkey Third-Party Products (cont.)

CATIA geometry to IGES entities. DOS IGES
CompuLink Inc.
Hans Fink Director of Sales and Marketing
19022 West 10 Mile Road
Southfield MI 48075
810/356-8565 fax 810/356-0091 or compulink@mcimail.com

VIEWERS/REDLINERS

CADView
CADView is the only viewer with total support for CADKEY 4, 5 & 6 part and pattern files. Complete control over drawing layouts, views, levels and display scale. Prints, plots, faxes and exports CADKEY data to other Microsoft Windows applications. \$195 IBM PC compatible, MS Windows Direct
Information Technology International Corp.
85 Juniper Lane
South Windsor CT 06074
800/229-2238 fax 203/644-3069

VIEW IT

VIEW IT V.7.0 Rel 1.3 provides true X, Y, Z world axis view rotation, user-defined origin and axis, pan, zoom, autoscale, redraw and view center. Built-in picture it rendering. Call DOS CADL, CDE Paradesign
Fred Bacher, president
14235 Classique Way
San Diego CA 92129
619/484-8386 fax 619/484-8386

VIEWER/REDLINER

The Picture Viewer allows you to view CADKEY part files (.prt) in the Windows environment. The displayed CAD files cannot be edited, but may be manipulated. The Redline feature allows a user to mark up, a drawing without having to alter the CAD file. \$295 Windows Direct

VIEWER/REDLINER PLUS

View and redline notations in CAD (vector) or

raster files without having to install or learn CAD software and without changing the original part files. Runs in Windows. Users can copy and paste data to other applications for more efficient communications. \$395; Windows Variety.
Baystate Technologies Inc.
33 Boston Post Road West, #420
Marlborough, MA 01752
508/229-2020 fax 508/229-2121

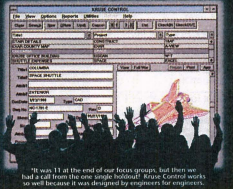
The CADKEY/DataCAD Resource Guide

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DataCAD Third-Party Products (cont.)

DHW50

Create and insert casement and double hung windows easily in DataCAD elevation drawings with DHW50. Set or modify any dimension of the casement, sill sash, lintel muntins, and sub sill. Create sills of brick or concrete in ogee or square style. \$45 DOS

The Plot 50

Do you need to plot DataCAD drawings with different layers plotted at different scales? PLOT50 creates multiple scale plots. Plot floor plans on the same sheet with details. PLOT50's preview feature displays the drawing exactly as it will be plotted. \$65 DOS
Hitch & Associates
3309 Childers St.
Raleigh, NC 27612
919/782-4373

Organic CADD Art Library

Add people, animals and landscapes to your drawings for client presentations! The Organic CADD

Line Art Library has two types of 2D template symbols to use with 3D models in DataCAD. Most images are non-perspective specific and can be scaled and much more. \$100 DOS

NEO Graphic
Route 664, PO Box 347
Earlsville, VA 22936
804/977-4490

ROOF Builder 2

No matter how complex, Roof Builder calculates and draws both 3D roofs and walls in plan view. Each roof plane or surface can have up to 36 vertices. Trace your roof boundaries over a 2D roof and wall outline. Roof Builder then calculates to settings. \$49 DOS
People Software
160 S.E. Piper Drive
Beavert, OR 97102
800/647-3366

SET-LINE

SET-LINE enhances your line-editing operations in DataCAD and

allows you to draw specialized lines in English or metric units. You'll get four macros: LineSETS, Multi-Line, Mirc and CleanUp. \$50 DOS
Sets, LTD
114 Commonwealth Ave.
Boston, MA 02116
617/267-8980

TracTrix

Raster-to-Vector conversion system automatically converts line drawings and graphics directly from your scanner into DXF for importing into DataCAD. TracTrix also outputs DRW, HPGL and EPS format. \$130 DOS & WINDOWS
Trix Systems
68 Smith St.
Chelmsford, MA
508/256-4443

DC-SPRINT

DC-SPRINT is a single macro integrating 11 time saving functions: Stickyback allows easy cut and paste between drawings; Bundle allows saving of multi-layer sym-

bols; Roundoff automatically rounds off non-associative dimension text and much more. \$95 DOS

Unique Software
12 Chapel St.
Freeport, ME 04052
207/865-0107

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Enhance your DataCAD plotting menu with macro tools for daily plotting tasks. Features include: Paper Size: create up to 13 customized settings; Autoscale: set the scale that will fit your drawing and much more. \$49.95 DOS

Unique Software
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Freeport, ME 04052
207/865-0107

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A monthly newsletter for DataCAD users, packed with quick tips and techniques for getting the most from both DataCAD and computers. Automatically comes with Cheapware, the incredible quarterly listing

of user shareware items. Yearly Subscription \$30 (US), \$35(Canada), \$45(International)

Shu Associates
Mr. Evan Shu
120 Trenton Street
Melrose, MA 02176-3174
617/662-0020 fax 617/662-0020,

BOOKS, TAPES AND VIDEOS

A Textbook For DataCAD
Barnhill - ISBN 0-9645358-0-0
WCB Enterprise
208/356-1873

Mastering DataCAD Tutorial
(Included with DataCAD 5 & 6)
Buehrens
Cadkey Inc.
203/298-8888 Fax 203/298-6590

DataCAD For Architects & Designers
Buehrens - ISBN 0-07-008914-0
McGraw-Hill Publishing Co.
609/426-5000

DataCAD Tutorial Videos

Professor Geoffrey Langdon
This set of DataCAD tutorial videos covers all key topics, including many advanced features. Sessions include: Production Drawings, Advanced Productivity Techniques, Real 3D Modeling, DataCAD for those who know AutoCAD and more. DOS.

Getting Started with Real 3D
Geoffrey Langdon
508/927-6796

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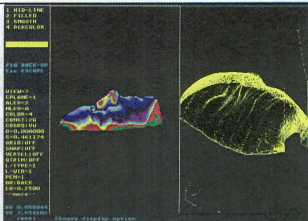
We'd like to know what's on your mind. Why not fax or mail us any questions you'd like to have answered or topics you'd like to read more about?

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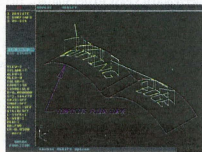


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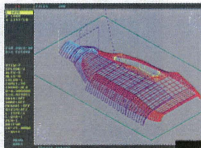
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- 100% CADKEY data base compatibility
- 100% CADKEY human interface
- a complete CDE & CADL environment
- general NURBS surface machining
- CADKEY IGES capabilities



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CUTTING EDGE SURFACES offers ease of use unparalleled in the CAD/CAM world, an outstanding customization environment, general surface machining, and the ability to bring surfaces from any CAD system that supports IGES.

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Available through Delmar Publishers, Inc., 800/347 7707
Using CADKEY & Its Applications (for Versions 5 & 6) ISBN 0-8273-5607-1
Using CADKEY Light ISBN 0-8273-4735-9

Textbooks

Available through Cadkey Inc. 800/394-2231 Fax. 203/298-6590
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Doctor Walt's Keys to CADKEY \$59.95

Available through McGraw-Hill Publishing Co., 800/722 4726
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Learning CADKEY (Version 4 and CADKEY Light) ISBN 0-07-044791-8

Available through Richard Irwin Inc., 800/323 4560
CADKEY Companion ISBN 0-256-11714-2

Available through Glencoe, Tel. 800/334 7344
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for Engineering Graphics
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dimension lines aligned with the datum label as shown in Figure 3.

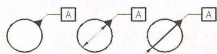


Figure 3: ASME Circular Datum Reference Methods

Projected Tolerance Zone

The method for indicating a Projected Tolerance Zone has changed significantly in the ASME Y14.5M-1994 specification. The separate control frame for the projected tolerance is gone. The projected "P" modifier is now placed in the geometric tolerance control frame after the tolerance value modifier.

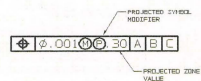


Figure 4: New Projected Tolerance Zone Designation

The projected zone value can be shown by two methods, either in the control frame after the "P" modifier (Figure 4) or, as in Figure 5, which was the same in the ANSI Y14.5M-1982 specification.

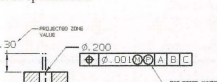


Figure 5: Second Method For Projected Tolerance Zone Designation

Free State Modifier

The Free State Modifier symbol is new. It ensures that when the part is being inspected, it is not restrained. The symbol is used in the same manner as the MMC modifier shown in Figure 6.

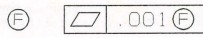


Figure 6: Free State Modifier Symbol used in a flatness control

Tangent Plane Symbol

The new Tangent Plane Modifier symbol is used when it is desired to control a feature surface established by contact points on the surface. The symbol shown in Figure 7 is used in the same manner as the MMC and LMC modifiers as shown in Figure 5.

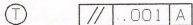
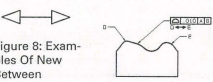


Figure 7: Tangent Plane Modifier Symbol

Between Symbol

The new Between symbol is used to indicate that a tolerance applies to a limited segment between indicated extremes. Figure 8 shows an example. In ANSI Y14.5M-1982, this situation was handled with a note below the control frame.



Statistical Tolerancing Symbol

The concept represented by the new Statistical symbol is a significant change to the

previous standard. When used in geometrical control frames, it is applied in the same manner as the other modifiers (Figure 9). The ASME Y14.5M-1994 standard requires that the note shown in Figure 9 be placed on the drawing. Figures 10 and 11 show other examples of statistical tolerancing. Note that there needs to be two different notes available, as shown in the figures.

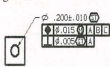


Figure 9: Statistical Dimension And Geometric Tolerance Example



Figure 10: Statistical Tolerance Example

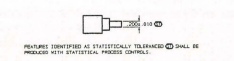


Figure 11: Statistical And Mathematical Tolerance Example



Figure 12: Spherical Diameter Symbol Applied To A Control Frame

Spherical Diameter

The Spherical Diameter symbol is not new to ASME Y14.5M-1994. However, the concept of applying it in a geometrical control frame is. Figure 12 shows an example.

Datum Target Symbol

The basic Datum Target symbol is the same as ANSI Y14.5M-1982. However, a better method of indicating the diameter of the target zone is introduced. Figure 13 shows the concept, which can be used if the value is too big to fit in the target symbol.



Figure 13: Datum Target Diameter Zone Representation

Regardless of Feature Size Symbol

This symbol is removed from use in ASME Y14.5M-1994, but there is an interim relaxation of this allowed (REF 2.8 (b)).

Composite Positional Tolerance

This is another major change in ASME Y14.5M-1994. The new standard greatly clarifies the use of Composite Positional Tolerance and introduces the concept of multiple datum references in the second control frame call out.



Figure 14: Methods of Multiple Datum References in Second Control Frame

Composite Profile Tolerance

This is a new concept in ASME Y14.5M-1994. Figure 15 shows an example of this new call out.

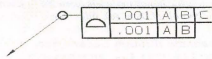


Figure 15: Composite Profile Tolerance

Coplanar Surfaces

There is a clarification of Coplanar Surfaces in ASME Y14.5M-1994. The introduction of the concept is illustrated in Figure 16.

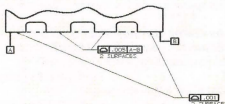


Figure 16: Coplanar Surfaces

Boundary Control For Non-Cylindrical Surfaces

This new concept for ASME Y14.5M-1994 allows positional tolerances to be combined with profile tolerances (Figure 17).

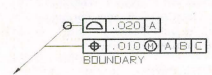


Figure 17: Boundary Concept Applied To Non Circular Features

Symmetry Symbol

This symbol (Figure 18) existed in a previous version of the standard and is reintroduced in ASME Y14.5M-1994

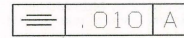


Figure 18: Symmetry Symbol

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SM4 2 draw unit for right side	\$330.00	

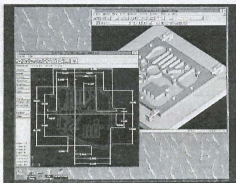
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SOFTWARE

SURFCAM Adds Dimensions

SURFCAM Version 6 from Surfcam Inc. introduces several new features. Part dimensioning is allowed with user control of font, size and color. Both True Type and stroke fonts are available for dimensioning and machining. When a drawing is created, dimensions are dynamically corrected. Users can change NURBS surfaces from a grid of nodes with degree control, planer cut along the flow lines of surfaces, and automatically machine surfaces made consistent with flaws (such as gaps or overlaps between patches) without the tool gouging at the flaw. **SURFCAM Version 6** adds toolpath verification to eliminate time-consuming drawing drays.

Contact Surfware Inc. at 818/361-5605 or fax 818/361-1919.



A screen from Surfcam Version 6

Plot Files to Hand-Drawn Sketches (slide)

Insight Development is shipping **Spiggle 2.0**, the line enhancement and hand-sketch simulation software that transforms HPGL and HPGL/2 plot files into hand-drawn art. Spiggle adds variable line customization to any CAD or drawing application. Spiggle reads each file and allows the user to vary the width and/or color of each of up to 255 lines (pens) and to apply an unlimited number of "hand-drawn" styles to each line. Spiggle drawings can be sent to any Windows system printer, copied to the Windows Clipboard or exported in either a Windows WMF metafile or BMP bitmap for import or other applications. The suggested retail price is \$99.

Contact MicroWarehouse at 800/367-7080, software resellers, or Insight directly at 800/825-4113.

VIEWPORT+

ViewPort+ is a high-performance EDMs (electronic document management system) suitable for companies that have multiple in-house CAD systems and want a universal drawing viewer to display 100 percent accurate vector and/or raster data.

ASME from Page 22

Dimensioning and Tolerancing with CAD Models

There is a statement at the beginning of Section 2.1 of ASME 14.5M-1994 that states:

"CAUTION: If CAD/CAM database models are used and they do not include tolerances, then tolerances must be expressed outside of the database, to reflect design requirements."

This indicates an increasing awareness of the possibility of embedding all the geometric tolerancing information in the model rather than on the drawing. If this information is not embedded in the model, it is still required to annotate the model and specify the tolerances outside of the CAD database. As CAD software evolves from drafting functions to high-level design with both surface and solid models, more complete specifications for dimensions and tolerances will be stored in the CAD file as intelligent data. Accessibility of this data will break down barriers between customer and supplier and enhance communication between all departments within corporations. With U.S. companies working with suppliers on a global basis, the common use of a single language for engineering will enhance consistency and productivity worldwide.

Robert Bean, president of Baystate Technologies Inc. and a registered Professional Engineer in Massachusetts, has been working in the Mechanical Design and software development field since 1982. Baystate Technologies Inc. makes products that work with CAD systems to enhance design and drafting productivity. Baystate's newest product, POINT 3, is a quality communications product that allows CAD data to be used for inspection and quality control. Robert Bean can be reached at bob_bean@baystate.ccnail.comuserver.com.

Robert Yule is a senior mechanical designer in the aerospace industry, working since 1982 on commercial, military and space programs. He has been involved in standards implementation with respect to CAD for over 10 years. Robert Yule can be reached at rry@cwsl.igs.net.

ViewPort works with CAD drawings generated from Mainframe, Unix and DOS applications and drawings scanned into electronic format. ViewPort has red lining and marking functions. Other features include long (up to 60 characters) DOS file names, text file viewing (Word documents, etc.) and large format and color plotting.

Contact CADMAN Corp. at 805/371-0424 or fax 805/496-2866.

HARDWARE

Ergonomic Monitor Lift

Calstone Inc. introduced its new ergonomic Monitor Lift, which allows proper height positioning of standard and oversized screens. The unique lifting mechanism with removable hand crank easily adjusts screens with weights up to 130 pounds from 4 3/4 inches to 11 1/2 inches. Easy adjustment of the monitor helps alleviate repetitive motion injuries that affect the neck, shoulders and back.

Contact Calstone Inc. at 416/298-9137 or fax 416/298-9458.

Personal Laser Printer Under \$500

Hewlett-Packard Co. has introduced its newest personal laser printer, the HP LaserJet 3L. Designed for fast, high-volume

printing in small businesses, the printer features resolution of 600/600 dots per inch, 26 True Type scalable typefaces, and speed of four to six pages per minute. The 100-page input and output trays accommodate a wide range of media, such as postcards and envelopes. The printer has a 4,000-page monthly duty cycle.

Contact Hewlett-Packard on the World Wide Web at <http://www.hp.com> or calling 800/752-0900.

ENGINEERING/MANUFACTURING

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FEMAP v4.4 extends the functions of FEMAP, a software that provides finite element analysis users (FEA) with affordable pre- and post-processing for a variety of Finite Element Solvers.

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Contact Engineering Software Products, Inc. at 610/594-2454 or fax 610/594-7379.

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