

# Control System – DC Tools

## Fastening Control System for QE & QM Series Electric Tools



Paired with an Insight IC12D or IC12M controller and a PC computer, our groundbreaking ICS Software Suite makes it possible to more precisely control and monitor your fastening process.

### ICS Connect

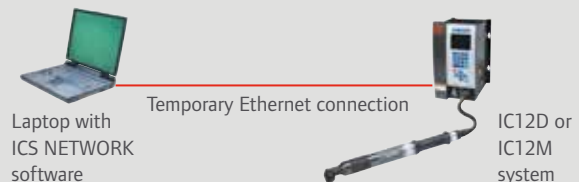
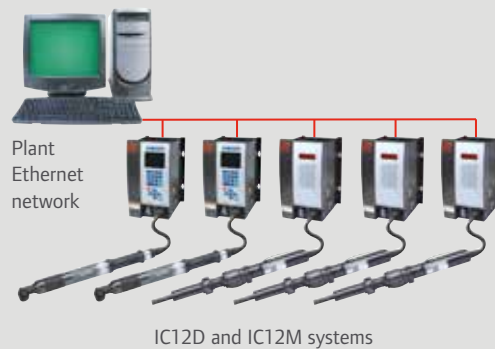
ICS Connect provides operators the ability to access and program basic fastening strategies as well as view cycle data with a single IC12D or IC12M controller via a one-to-one Ethernet connection. ICS Connect is supplied standard with all IC12D and IC12M controllers.

### ICS Network

ICS Network enables programming of multiple IC12D and IC12M controllers connected through a local area network (LAN) or direct connection. This option also allows operators to program advanced fastening strategies including yield and prevailing torque control.

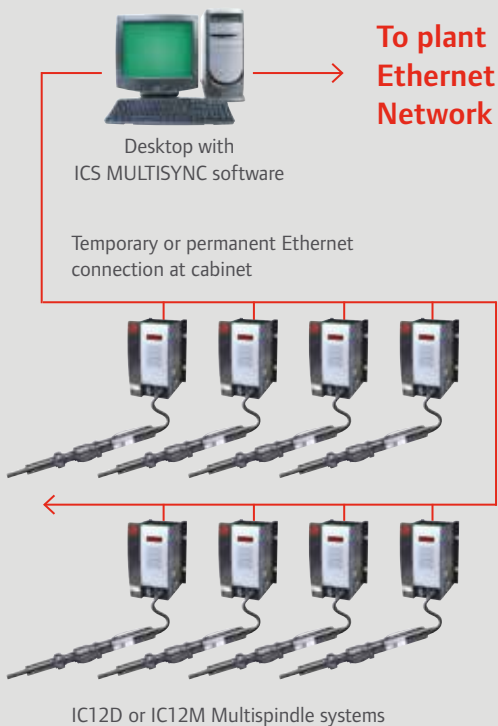


System requirements:  
PC computer with  
Windows 2000 or XP,  
RJ45 connection,  
1024 x 768 screen or above.



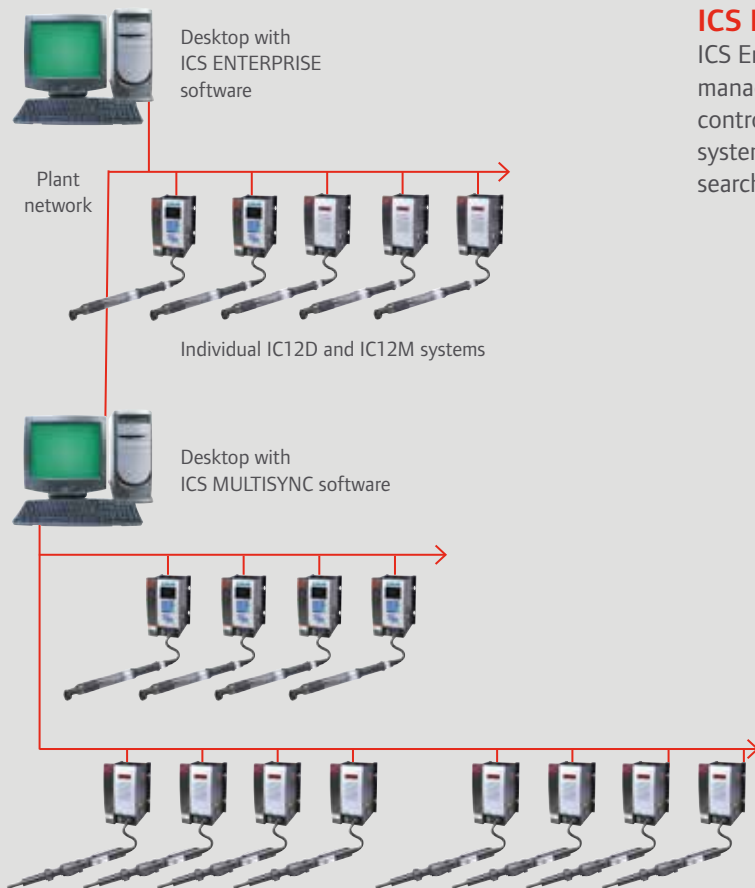
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### ICS MultiSync

The ICS MultiSync package facilitates set-up and control of multispindle systems consisting of up to 100 spindles in groups of up to 40 spindles. This package also offers advanced multispindle fastening strategies, remote monitoring, and data archiving.



### ICS Enterprise

ICS Enterprise offers advanced programming and management of a network of up to 500 IC12D or IC12M controllers using QE tools, QM spindles, or multispindle systems. Also enables ODBC-compliant database archiving, searching, and statistics processing.

# Insight Software Feature Matrix

|  | Insight IC12M          | Insight IC12D   | Via ICS Connect  | Via ICS Network  | Via ICS MultiSync               | Via ICS Enterprise     |
|--|------------------------|---|--|--|---------------------------------|------------------------|
| <b>SOFTWARE PROGRAMMING</b>                    |                        |   |  |  |                                 |                        |
| Max. Number of Configs.                        | 256                    | 256   | Unlimited  | Unlimited  | Unlimited                       | Unlimited              |
| Max. Number of Steps                           | 32 per config.         | 32 per config.  | 1  | 32 per config.   | 32 per config.                  | 32 per config.         |
| Prog. Params. Editable                         |                        | •   | •  | •  | •                               | •                      |
| Gang Count                                     |                        | •   | •  | •  | •                               | •                      |
| Autoincrement                                  |                        | •   | •  | •  | •                               | •                      |
| Quick Setup                                    |                        | •   | •  | •  | •                               | •                      |
| Advanced Setup                                 |                        |   |  | •  | •                               | •                      |
| Config. Name                                   |                        | Display only  | •  | •  | •                               | •                      |
| CW/CCW Tightening                              |                        | •   | •  | •  | •                               | •                      |
| Tubenut Operation                              |                        | •   | •  | •  | •                               | •                      |
| Adjustable Acceleration                        |                        |   |  | •  | •                               | •                      |
| Optional EOR for Each Step                     |                        |   |  | •  | •                               | •                      |
| Synchronizing Spindles                         |                        |   |  |  | •                               | •                      |
| Copy Protection                                |                        |   | •  | •  | •                               | •                      |
| <b>DATA ARCHIVING</b>                          |                        |   |  |  |                                 |                        |
| No. of Stored EOR Records                      | 200                    | 1000  | Unlimited (manual)   | Unlimited (manual)   | Unlimited (auto.) ODBC          | Unlimited (auto.) ODBC |
| Databases data can be transferred to           |                        |   |  |  | •                               | •                      |
| Back-up data to server                         |                        |   |  |  | •                               | •                      |
| <b>POWERHEAD</b>                               |                        |   |  |  |                                 |                        |
| Powerhead Operation                            |                        |   |  |  | •                               | •                      |
| Max. No. of Spindles in Powerhead              |                        |   |  |  | 40                              | 40                     |
| Max. No. of Groups                             |                        |   |  |  | 8                               | 8                      |
| Fault Backout                                  |                        |   |  |  | •                               | •                      |
| Fault Backout Options                          |                        |   |  |  | None, spindle, group, powerhead |                        |
| Final Fault Backout                            |                        |   |  |  | •                               | •                      |
| Final Fault Backout Options                    |                        |   |  |  | None, spindle, group, powerhead |                        |
| Synchronization Method                         |                        |   |  |  | Via CANBUS                      |                        |
| <b>SOFTWARE GENERAL</b>                        |                        |   |  |  |                                 |                        |
| Date/Time Set                                  |                        | •   | •  | •  | •                               | •                      |
| System Name                                    |                        |   | •  | •  | •                               | •                      |
| Display Software versions                      |                        | •   | •  | •  | •                               | •                      |
| Language Selection                             |                        | •   | Only ICS Language  | Only ICS Language  | Only ICS Language               | Only ICS Language      |
| NTP Function                                   |                        | •   | •  | •  | •                               | •                      |
| E.O.R. Onscreen Filter                         |                        |   | •  | •  | •                               | •                      |
| E.O.R. Viewable Onscreen                       | Primary value only     | •   | •  | •  | •                               | •                      |
| Load New Software via Ethernet                 | •                      | •   | •  | •  | •                               | •                      |
| <b>TOOL PROGRAMMING</b>                        |                        |   |  |  |                                 |                        |
| TR Adjust                                      |                        | •   | •  | •  | •                               | •                      |
| ASC Adjust                                     |                        | •   | •  | •  | •                               | •                      |
| TR and ASC Reset                               |                        | •   | •  | •  | •                               | •                      |
| Auto Calibration Function                      |                        |   | X with ETA   | X with ETA direct connect only   |                                 |                        |
| Torque Units Selection                         |                        | •   | •  | •  | •                               | •                      |
| Start Mode Selection                           |                        | •   | •  | •  | •                               | •                      |
| Tool Operation Selection                       |                        | •   | •  | •  | •                               | •                      |
| Special Fn Switch Programming                  |                        | •   | •  | •  | •                               | •                      |
| Configuration Mode Selection                   |                        | •   | •  | •  | •                               | •                      |
| PM Alarms                                      |                        |   |  | •  | •                               | •                      |
| View Memory Chip Data                          |                        |   | •  | •  | •                               | •                      |
| <b>PASSWORDS</b>                               |                        |   |  |  |                                 |                        |
| Number of Passwords                            | 0                      | 1   | Unlimited  | Unlimited  | Unlimited                       | Unlimited              |
| Auto Timer Lockout                             |                        |   | •  |  |                                 |                        |
| Adjustable Lockout Timer                       |                        |   | •  |  |                                 |                        |
| <b>STATISTICS</b>                              |                        |   |  |  |                                 |                        |
| Sample and Population Stats                    |                        |   | •  | •  | •                               | •                      |
| Stats Values Calculated                        |                        | Cp, Cpk, Mean, SD, Capability, CAM, Max. value, Min. value % No. Rejects, % No Pass, No. Rej Hi, No. Rej Lo, Mean Shift, Range, No. for sigma |  | Cp, Cpk, Mean, SD, Capability, CAM, Max value, Min Value % No. Rejects, % No Pass, No. Rej Hi, No Rej Lo, Mean Shift, Range, No.for sigma, Target. |                                 |                        |
| Stats Alarms                                   |                        |   |  | •  | •                               | •                      |
| Stats Alarms Output                            | •                      | •   |  |  |                                 |                        |
| Max. Sample Stats Size                         | 200                    | 1000  | 1000   | 1000   | 1000                            | 1000                   |
| Powerhead Stats                                |                        | •   |  |  | •                               | •                      |
| Mean Range Charts                              |                        |   |  | •  | •                               | •                      |
| Histograms                                     |                        |   |  | •  | •                               | •                      |
| Pareto Chart                                   |                        |   |  | •  | •                               | •                      |
| Stats Email Alarms                             |                        |   |  |  | •                               | •                      |
| Stats can be calculated from user defined data |                        |   |  | •  | •                               | •                      |
| <b>TIGHTENING CURVES</b>                       |                        |   |  |  |                                 |                        |
| Curve Types                                    |                        |   | Torque vs. Angle, Torque vs. Time, Current vs. Time, Current vs. Angle |  |                                 |                        |
| Max. No. of Curves Stored on Cont.             | Last Reject Last Cycle | Last Reject Last Cycle  |  |  |                                 |                        |
| Display Curves On Screen                       |                        |   |  | •  | •                               | •                      |
| <b>TIGHTENING CURVES</b>                       |                        |   |  |  |                                 |                        |

|   | Insight IC12M                  | Insight IC12D         | Via ICS Connect  | Via ICS Network          | Via ICS MultiSync                                | Via ICS Enterprise  |
|---|--------------------------------|-----------------------|--|--------------------------|--|---|
| Print Tightening Curves                 |                                |                       |  | •                        | •  | •   |
| Print Tightening Curve Data             |                                |                       |  | •                        | •  | •   |
| Full View                               |                                |                       |  | •                        | •  | •   |
| Zoom Function                           |                                |                       |  | •                        | •  | •   |
| No. of Curves that can be Overlaid      |                                |                       |  | 1                        | 10   | 10  |
| Archive Curves                          |                                |                       |  |                          | •  | •   |
| Parameter Values Shown on Curve         |                                |                       |  | •                        | •  | •   |
| <b>TIGHTENING STRATEGIES</b>            |                                |                       |  |                          |  |   |
| Torque Control                          |                                | •                     | •  | •                        | •  | •   |
| Torque Control with Y. Override         |                                |                       |  | •                        | •  | •   |
| Angle Control                           |                                | •                     | •  | •                        | •  | •   |
| Angle Control with Y. Override          |                                |                       |  | •                        | •  | •   |
| Yield Control                           |                                |                       |  | •                        | •  | •   |
| Prevailing Torque                       |                                |                       |  | •                        | •  | •   |
| Drag Torque                             |                                |                       |  | •                        | •  | •   |
| Backout                                 |                                |                       |  | •                        | •  | •   |
| Fault Backout                           |                                |                       |  |                          | •  | •   |
| Final Fault Backout                     |                                |                       |  |                          | •  | •   |
| Retorque                                |                                |                       |  | •                        | •  | •   |
| Wait                                    |                                |                       |  | •                        | •  | •   |
| Jog                                     |                                |                       |  | •                        | •  | •   |
| Bypass                                  |                                |                       |  |                          | •  | •   |
| <b>COMMUNICATIONS</b>                   |                                |                       |  |                          |  |   |
| Serial E.O.R. Data Out                  |                                | •                     | •  | •                        | •  | •   |
| Serial Custom E.O.R. Data               |                                |                       | •  | •                        | •  | •   |
| Host Data Out                           |                                | •                     | •  | •                        | •  | •   |
| PFCS                                    |                                |                       |  |                          |  |   |
| Barcode Passive                         |                                |                       |  | •                        | •  | •   |
| Barcode Active                          |                                |                       |  | •                        | •  | •   |
| Barcode setup onscreen                  |                                |                       |  | •                        | •  | •   |
| Field Bus setup onscreen                |                                |                       |  | •                        | •  | •   |
| Ethernet Programming                    |                                |                       | •  | •                        | •  | •   |
| <b>DIAGNOSTICS</b>                      |                                |                       |  |                          |  |   |
| Error Codes                             | •                              |                       |  |                          |  |   |
| Text Errors                             |                                | •                     | •  | •                        | •  | •   |
| System Test                             |                                | •                     | •  | •                        | •  | •   |
| Store System Test Results               |                                |                       | •  | •                        | •  | •   |
| View Input Statuses                     |                                | •                     | •  | •                        | •  | •   |
| Set Output Statuses                     |                                | •                     | •  | Only if connected 1 to 1 | •  |   |
| View Outputs                            |                                |                       | •  | •                        | •  | •   |
| Assignable Inputs                       |                                |                       | •  | •                        | •  | •   |
| Assignable Outputs                      |                                |                       | •  | •                        | •  | •   |
| Event Log                               |                                |                       | •  | •                        | •  | •   |
| View Event Log                          |                                |                       | •  | •                        | •  | •   |
| Tool Test                               |                                | •                     | •  | Only if connected 1 to 1 | •  |   |
| Lamp Test                               |                                | •                     | •  | Only if connected 1 to 1 | •  |   |
| <b>HELP</b>                             |                                |                       |  |                          |  |   |
| HelpOn Screen Help Menu                 |                                |                       | •  | •                        | •  | •   |
| Wizard Text                             |                                | •                     |  |                          |  |   |
| <b>PRINTED REPORTS</b>                  |                                |                       |  |                          |  |   |
| No. of Reports                          | 0                              | 0                     | 5  | 6                        | 9  | 11  |
| Report Types                            |                                |                       | Cycle Log, Stats, Parameter Dump, Diagnostics, Event log |                          |  |   |
|   |                                |                       |  | +Tightening, Curve       | +Tightening, Curve Histogram, Pareto, Mean/Range | +Tightening, Curve Histogram, Pareto, Mean/Range, VIN, Custom |
| Parallel Output                         |                                |                       | •  | •                        | •  | •   |
| Export to File                          |                                |                       | •  | •                        | •  | •   |
| <b>HARDWARE</b>                         |                                |                       |  |                          |  |   |
| Screen Size                             | 14 mm high x 5 character       | 9.6 cm (9/16 in) diag |  |                          |  |   |
| Screen Type                             | Red LED                        | 1/4 VGA Color LCD     | XVGA or better   | XVGA or better           | XVGA or better                                   | XVGA or better  |
| Keypad                                  |                                | •                     | •  | •                        | •  | •   |
| Keypad Type                             |                                | 25 key Membrane       | PC Keyboard  | PC Keyboard              | PC Keyboard                                      | PC Keyboard   |
| Status Lights                           |                                | On Screen             |  |                          |  |   |
| Power On Indication                     | •                              | •                     |  |                          |  |   |
| GFI                                     | •                              | •                     |  |                          |  |   |
| Mounting Design                         | Wall or Cabinet mounting plate |                       |  |                          |  |   |
| Field Bus                               | X (optional)                   | X (optional)          |  |                          |  |   |
| No. of I/O                              | Base 8, Max 24                 | Base 8, Max 24        |  |                          |  |   |
| Type of I/O                             | Opto                           | Opto                  |  |                          |  |   |
| Serial Port                             | X (1)                          | X (1)                 |  |                          |  |   |
| Ethernet                                | •                              | •                     |  |                          |  |   |
| Max. Number of Spindles                 | 1                              | 1                     | 1  | 500                      | 100  | 500   |
| Method of Identifying Physical Location | Rotary dial switch             | Rotary dial switch    |  |                          |  |   |
| CCT Breaker Switch                      | •                              | •                     |  |                          |  |   |
| <b>WEIGHT</b>                           |                                |                       |  |                          |  |   |
| Weight                                  | 5.6 kg (12.4 lb)               | 5.6 kg (12.4 lb)      |  |                          |  |   |