DOBCO EQUIPMENT LTD

1-2430 Lucknow Drive, Mississauga, Ontario L5S 1V3.
Tel: 905-672-5557 Fax: 905-672-5559
Email: sales@dobcoeqp.com   www.dobcoeqp.com

Fixtured Fastening Systems
Quick Multiples

Fixtures

Modular designs provide easy customization of open-or closed-frame vertical, horizontal, and horizontal rotating Quick Multiple fixtures for DC electric and air spindles.

Features
- Pre-engineered modular designs provide quick quoting, configuration, and delivery
- Systems combine world-class portfolio of tools, controllers, handling devices, and fixtures to deliver superior ergonomics, reduced cycle times, more even clamp loads, and exceptional durability
- Fully configurable interface and handle options for optimal ergonomics
- Up to six DC electric or air spindles per system
- Multiple suspension and torque reaction options include: balancers, torque tubes, articulating arms, jib cranes, or pneumatic suspensions

Ingersoll-Rand®

DC Electric Fastening Systems
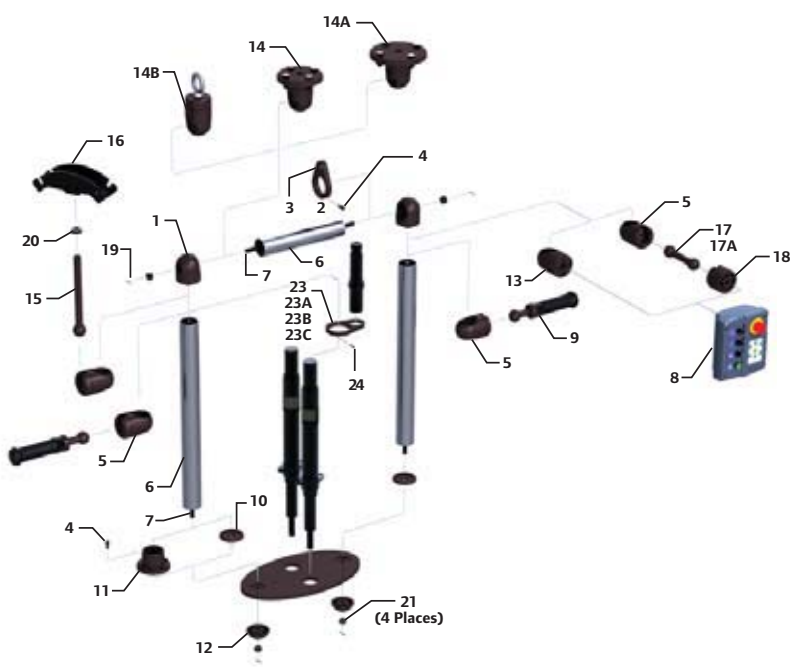
Item	Description	Part Number
QUICK MULTIPLE FIXTURES		
1	Tube elbow joint	QMM-712
2	Redundant eye assembly	QMM-A463
3	Redundant eye	QMM-463-2
4	Cap head screw (M6 x 1 x 6)	QMM-F1-638
5	Tube holder assembly	QMM-A30
6	Tube – standard 1 M	QMM-809-1M
7	Tie rod – standard 1 M	QMM-763-1M
8	Operator interface	(See page 38)
9	Handle	(See page 38)
10	Tube bracket vertical	QMMV-601
11	Tube bracket horizontal	QMM-601
12	Spherical washer	QMM-248
13	Interface mount assembly	QMML-A763
14	Suspension joint – 100 Nm	QMM-TA
14A	Suspension joint – 500 Nm	QMM-TAA
14B	Suspension joint – eye bolt	QMM-T
15	Ball end shaft	QMM-221-763
16	Cable tray	QMM-221
17	Ball to ball shaft – short	QMM-696-100
17A	Ball to ball shaft – long	QMM-696-200
18	Flat / tube holder assembly	QMM-A208
19	Cotter pin	QMM-15
20	Lock nut	QMM-582
21	Hex nut (M12 x 1.75)	QMM-H1-638
22	QMM warning label	QMM-99
22A	QMM branding label	QMM-301
23	POD mount bracket – tube	QMM-765-T
23A	POD mount bracket – QM9	QMM-765-9
23B	POD mount bracket – QM7	QMM-765-7
23C	POD mount bracket – QM5	QMM-765-5
24	Cap head screw (M3 x 0.5 x 16)	QMM-765-638
25	Retractable safety strap	QMM-298
26	Custom mounting plate	–

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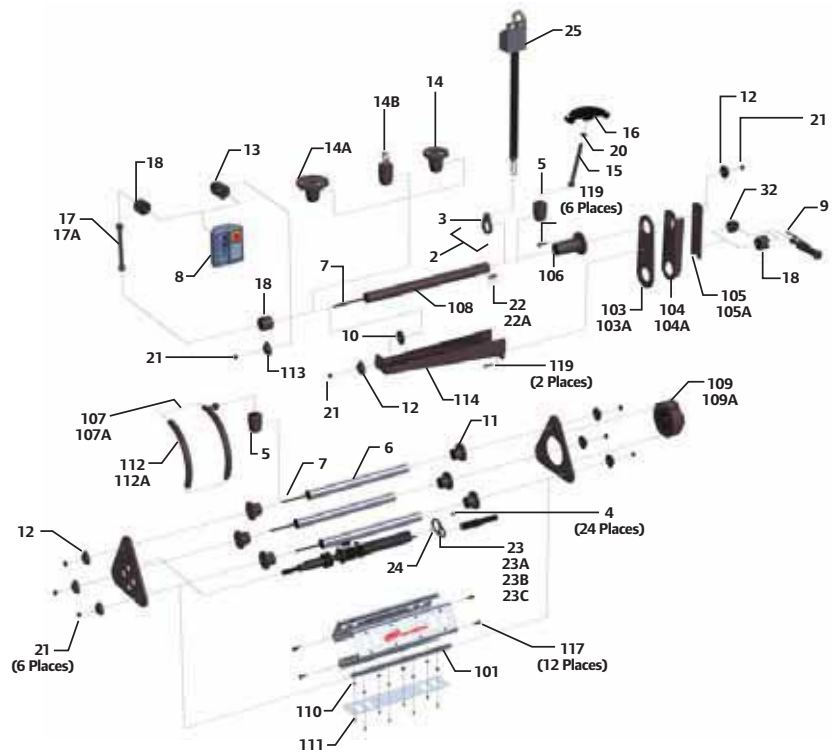Email: sales@dobcoeqp.com   www.dobcoeqp.com

Service and Accessories

Manuals:

■ 16607228

■ 16607103

Accessories:
QTA torque arms, see page 180
Torque tubes, see form #MHD55226
Balancers, see page 177
Light tower, IC-LIGHT-TOWER
Retractable safety strap, QMM-298
Palm button reset, IC-PALM-RESET

Item	Description	Part Number
QUICK MULTIPLE FIXTURES		
31	Eye bolt (M12 x 1.75)	QMM-34
32	Plate holder assembly	QMM-A293
101	Corner spacer – 1 meter	QMM-93-1M
103	Back plate – small	QMMR-28C
103A	Back plate – large	QMMR-28
104	Back plate rib – small	QMMR-767C
104A	Back plate rib – large	QMMR-767
105	Back plate – small	QMMR-756C
105A	Back plate – large	QMMR-756
106	Suspension tube bracket	QMM-602
107	Circular handle – small	QMMR-A48C
107A	Circular handle – large	QMMR-A48
108	Suspenion tube – 1 M	QMM-810-1M
109	Small bearing assembly	QMMR-A24C
109A	Large bearing assembly	QMMR-A24
110	Channel nut (M6)	QMMR-305
111	Button head screw (M6)	QMMR-638
112	Grip – circular handle – small	QMMR-144GC
112A	Grip – circular handle – large	QMMR-144G
113	Tube end cap	QMM-202
114	Suspension support	QMMR-766
116	Cap head screw (M8 x 1.25 x 25)	QMM-T6-638
117	Cap head screw (M10 x 1.5 x 25)	QMM-F8-638
119	Cap head screw (M10 x 1.5 x 35)	QMM-F10-638
231	Cap head screw (M8 x 1.25 x 20)	QMM-T63-638

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DC Electric Fixtured Fastening Systems
Multiples

Handle & Operator Interface

Modular designs provide optimal flexibility in selecting the exact operator interfaces that you need for your Fixtured Fastening Systems.

Features
- Designed to provide maximum flexibility: components can be panel, tube, or ball-joint mounted
- 18 handle configurations include options for trigger, slide switch, or pneumatic actuation with ball, flange or direct mount for optimal positioning
- Operator interface enclosures come standard with PCB, E-stop, whip cable, and configurable LED display that shows individual and master OK/NOK signals for up to six spindles, organized to match the bolt pattern. Four open positions provide space for selection from six interface options to enhance control and signaling

Service and Accessories

Kits:
Standard Interface, QMML-A424-KIT

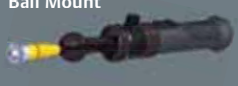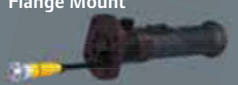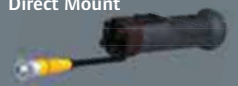| Interface Options:	Style 1 (Idec®)	Style 2 (Telemechanique®)
3-Position Switch	QMMC-75-1	QMMC-75-2
2-Position Switch	QMMC-76-1	QMMC-76-2
Push Button	QMMC-77-1	QMMC-77-2
Buzzer	QMMC-78-1	—
Red Pilot Light	QMMC-79-1	QMMC-79-2
Green Pilot Light	QMMC-80-1	QMMC-80-2
3-Position Key Switch	QMMC-81-1	QMMC-81-2

Manuals:
- 16607228
- 16607103

Accessories:
Handle extension cable, QMMC-46-2M QMMC-46-4M, QMMC-46-6M

Interface extension cables, QMMC-A240-10, QMMC-A240-20

Powerhead cable, QMMC-A240-2

Configuration	Dead Handle	Trigger Only	Pneumatic Pendant	Slide Switch Only	Slide Switch Type	Slide Switch + Trigger Aligned	Slide Switch + Trigger Rotated
Ball Mount	✔ QMMHB	✔ QMMHBT	✔ QMMH-A35	✔ QMMHBD QMMHBM	Detent Momentary	✔ QMMHBTDA QMMHBTMA	✔ QMMHBTDP QMMHBTMP
Flange Mount	✔ QMMHF	✔ QMMHFT	✔ QMMH-A36	✔ QMMHFD QMMHFM	Detent Momentary	✔ QMMHFTDA QMMHFTMA	✔ QMMHFTDP QMMHFTMP
Direct Mount	✔ QMMH	✔ QMMHT					

DC Electric Controllers

IC1D Controllers

IC1D

The Ingersoll Rand IC1D Insight controllers give you full closed-loop control in a compact package. With features like a 1/4 VGA color display and easy, intuitive, quick set-up programming, the IC1D provides unmatched performance.

IC1M Controllers

IC1M

The Ingersoll Rand IC1M Insight Controller is a basic single-spindle controller that works with all QE Tools and QM motors. It can be either rack- or cabinet-mounted as a single unit or in groups of up to 40 units for multiple spindle systems. Programming is accomplished via ICS Software over Ethernet, Parameter Transfer Key or direct computer connection.

Standard Features
· 1/4 VGA color display (IC1D)
· Full keypad and navigation keys (IC1D)
· One-line LED Display (IC1M)
· Ethernet connection
· RS232
· Eight I/O
· 1000 cycle storage (IC1D)
· 200 cycle storage (IC1M)
· Eight instant configurations
· 256 stored configurations
· Dual power mode 120-240 V AC
· Quick set-up feature
· Small footprint (mm) 152h x 191w x 238d

Optional Features
All units are available with the following options:
· 115 V AC power cord
· 220 V AC power cord
· 230 V AC EU pigtail power cord
· Cabinet mount / wall mount
· PFCS software package
· Plus software package
· 16 additional I/O
· Fieldbus cards

Languages Available
· Chinese
· English
· French
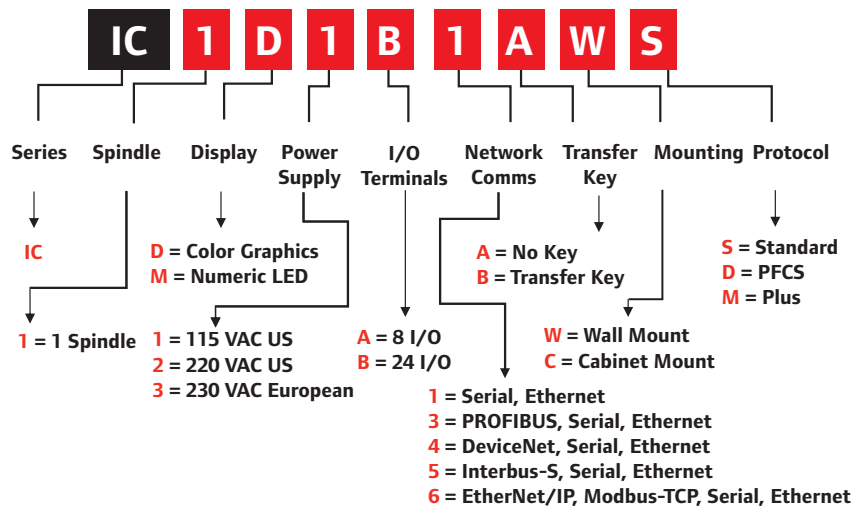· German
· Italian
· Russian
· Spanish

Service and Accessories
· Complete installation and repair service available
· Socket selector: IC-socket-4
· Light tower, see page 48
· Transfer key: 80150113
· Custom racks
· For additional accessories, see pages 47 – 48

Manuals:

04581732

IC Series DC Electric Controllers

IC 1 D 1 B 1 A W S

Series	Spindle	Display	Power Supply	I/O Terminals	Network Comms	Transfer Key	Mounting	Protocol

IC

1 = 1 Spindle

D = Color Graphics
M = Numeric LED

1 = 115 VAC US
2 = 220 VAC US
3 = 230 VAC European

A = 8 I/O
B = 24 I/O

A = No Key
B = Transfer Key

1 = Serial, Ethernet
3 = PROFIBUS, Serial, Ethernet
4 = DeviceNet, Serial, Ethernet
5 = Interbus-S, Serial, Ethernet
6 = EtherNet/IP, Modbus-TCP, Serial, Ethernet

W = Wall Mount
C = Cabinet Mount

S = Standard
D = PFCS
M = Plus

DC Electric Controllers

Insight **IC1D**isplay & **IC1M**odule

Measurement torque: Accuracy	±0.2% of torque full scale ±1 count of angle (degrees)
Measurement resolution	±0.025% of torque full scale
Torque transducer bridge excitation	±5V DC/GND
Torque transducer zero offset / drift compensation	±0.4% of full scale
Input signal sensitivity	2.0 mV/V
Calibration	Values read from spindle memory Automatic digital correction
Frequency response (torque filter)	Selectable 75 Hz, 150 Hz, 350 Hz, 500 Hz, 750 Hz
Keypad (IC-D only)	Membrane keypad containing 4 hot keys, 4 function keys, numerical keypad and directional keypad
Display	IC-D: 3.5-inch diagonal, 320px by 240px, 8-bit 65K backlit color (QVGA) flat panel display IC-M: 5- character, 7-segment numerical LED display
Parameter sets	256
Number of cycles stored in memory	IC-D: 1,000 IC-M: 200
Communication	Serial RS232, Ethernet, optional PROFIBUS, DeviceNet, Interbus-S, EtherNet / IP, Modbus - TCP
I/O	8 inputs / 8 outputs, with behavior assignable through ISC software: with optional I/O card, an additional 16 inputs and outputs are available
Indicators	Power ON lamp
Input voltage	Single-phase 120 volts, 50/60 Hz, 16 amps Single-phase 230 volts, 50/60 Hz, 8 amps
Ambient operating conditions	0 – 50° C, 20/90% non-condensing humidity
Enclosure	IP-52
System weight	5.6 kg (12.4 lb)
Dimensions (mm)	152 h x 191 w x 238d

Serial Port

Rotary Switches (CAN2 Address)

Optional Fieldbus

Termination Resistor Switch

Transfer Key Port

Powerhead Synchronization Bus

Optional Inputs / Outputs

Ethernet Port

Base Inputs / Outputs

24V DC

E-stop

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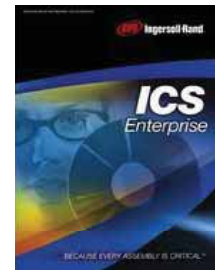Email: sales@dobcoeqp.com   www.dobcoeqp.com
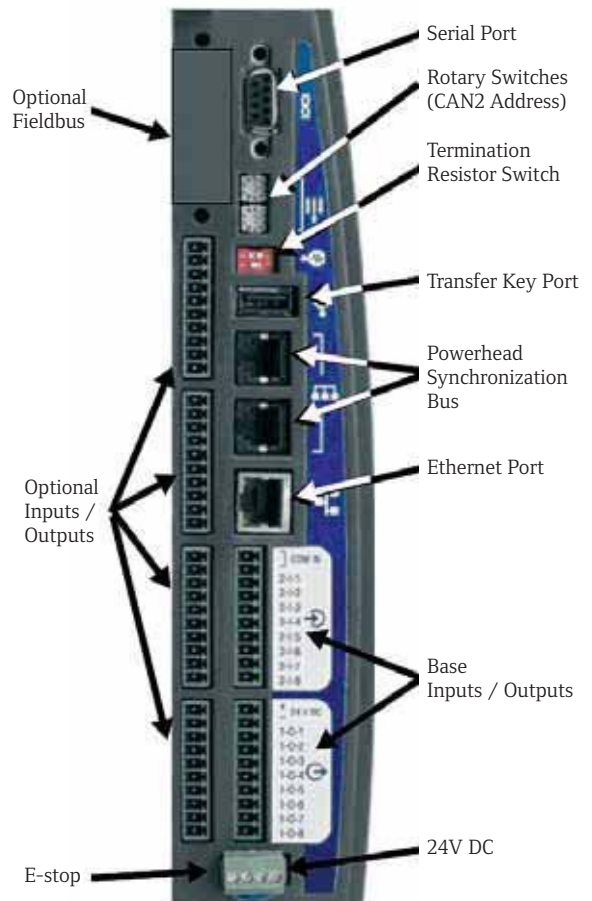
ICS Software

Paired with an Insight IC1D or IC1M controller and a computer, our groundbreaking ICS Software Suite makes it possible to more precisely control and monitor your fastening process. Optimizing your system is as simple as selecting one of four packages. Visibility of real-time data and controller status can be viewed from your desk top or other remote locations connected to your network. Additional specific information on each software package can be found on the following pages. Software is available in the following languages: Chinese, English, French, German, Italian, Russian and Spanish.

ICS Connect

ICS Connect gives operators the ability to access and program basic fastening strategies, as well as view cycle data with a single IC1D or IC1M controller via a one-to-one Ethernet connection. ICS Connect is supplied standard with all IC1D and IC1M controllers.

ICS Network

ICS Network enables programming of multiple IC1D and IC1M 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. Finally, ICS Network unlocks the patented TactAlert feature of the QE Series tools that provides the operator with tactile feedback of a tool fault or NOK signal through gentle mechanical oscillation in the grip surface, reducing reliance on visual or audible signals.

Description	Part Number	Licenses
	ICS-NETWORK-001	1
	ICS-NETWORK-002	2
	ICS-NETWORK-005	5
	ICS-NETWORK-010	10
	ICS-NETWORK-020	20
	ICS-NETWORK-050	50
	ICS-NETWORK-100	100
	ICS-NETWORK-500	500

ICS MultiSync

The ICS MultiSync package facilitates set-up and control of multiple spindle systems consisting of up to 100 spindles in groups of up to 40 spindles. This package also offers advanced multiple spindle fastening strategies such as fault back-out. Remote monitoring and data archiving are also standard features in this versatile package.

Description	Part Number	Licenses
	ICS-MULTISYNC-001	1
	ICS-MULTISYNC-002	2
	ICS-MULTISYNC-005	5
	ICS-MULTISYNC-010	10
	ICS-MULTISYNC-020	20
	ICS-MULTISYNC-050	50
	ICS-MULTISYNC-100	100

ICS Enterprise

ICS Enterprise offers advanced programming and management of a network of up to 500 IC1D or IC1M controllers using QE tools, QM spindles, or multiple spindle systems. This package includes all elements of ICS Connect, Network, and MultiSync, and also enables ODBC-compliant database archiving, searching, and statistics processing.

Description	Part Number	Licenses
	ICS-ENTERPRISE-001	1
	ICS-ENTERPRISE-002	2
	ICS-ENTERPRISE-005	5
	ICS-ENTERPRISE-010	10
	ICS-ENTERPRISE-020	20
	ICS-ENTERPRISE-050	50
	ICS-ENTERPRISE-100	100
	ICS-ENTERPRISE-500	500

Additional versions of software have been developed to meet specific customer requirements and protocols.