



TOM System for FIAM Pneumatic Tools

Products and Solutions for Assembly



| About ASG

We are personally committed to understanding and exceeding our customers' requirements. We are committed to continuously improving our products and processes.

We are dedicated to delivering products, services, and solutions on time and at a competitive value.

ASG, Division of Jergens, Inc. is an ISO 9001:2008 certified manufacturer, distributor and service center for products and solutions focused around threaded assembly. Since the 1970s, we have developed a first-class reputation unrivaled in the industry offering a wide range of world class products.

We offer a wide selection of ASG brand products including torque control, error-proofing and process control products, digital calibration equipment, X-PAQ™ precision fastening systems, production aides and assembly workstation accessories. ASG is proud to be a long-time U.S. Premier Distributor of HIOS® electric torque control screwdrivers and accessories, and the exclusive North American Master Distributor of Fiam® air tools.

ASG also offers a selection of value-added products and solutions including engineering and consulting services, financing, and extended protection and maintenance plans.

Industry Commitment

ASG is committed to the highest quality standards, ensuring that all processes and procedures are followed to produce the best products for our customers. We maintain ISO 9001:2008 certification for the manufacture, distribution, and service of assembly tools. Maintaining membership in key industry organizations in order to stay abreast of the most current industry trends and information is vital to serving our customers.



| About FIAM

Fiam is a leading European company and Italy's foremost designer and manufacturer of industrial air tools and systems. Since 1949, Fiam has been on the cutting-edge of perceiving and interpreting industry demands, transforming them into innovative premier quality assembly solutions for customers worldwide. Fiam's extensive product line is world renowned for unsurpassed reliability, productivity, and ergonomic designs. As a company, Fiam is ecologically responsible, designing and manufacturing products with an eye towards environmental conservation.

Fiam is based in Vicenza, Italy and operates a division located in Saint-Priest, France. A global distribution network serves thousands of customers worldwide who count on Fiam products to offer premier quality, productivity and the latest technology. Fiam's commitment to quality in products, service and the environment is evidenced by being certified both ISO 9001 and ISO 14001.



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| Section 1: About the TOM System

**The TOM System
is an innovative
and inexpensive
system.**

Tightening Operation Monitor

The TOM system is a “Poka Yoke,” process verification system, entirely designed and manufactured by Fiam. It verifies in real-time the tightening process status. It also guarantees reliability regardless of operator influence and allows skipping the post process quality check. The TOM system is an innovative, practical and inexpensive Poka Yoke (error-proofing) system. At the end of the tightening sequence, the operator is warned about the outcome thus can quickly move to the next assembly job.

- It informs the operator at the end of cycle and warns in case of error. Operator gets OK and NOK (Not OK) signals after each screw cycle
- It can stop the working cycle in case of error caused by the operator
- For use with Fiam air shut-off screwdrivers (including oil pulse wrenches) equipped with air pick-up signal (ported) and auto feed tightening systems
- The same unit can manage up to 8 tools (used by one operator) with different torque and speed settings. It also can enable one tool at a time according to the sequence program
- Easy to use: through a single program or a sequence program (up to 8 tools) with 99 tightenings each. The programs can be selected from an external PLC through the available I/O signals
- It detects screw removals, decreasing the count of the performed tightenings
- With the optional locking/unlocking unit, a time between cycles can be programmed to prevent rehits by disabling the screwdriver
- The TOM can easily be interfaced with line control devices
- A selected number of cycles can be programmed to signal maintenance intervals for the screwdriver or other devices in the production system
- Statistics on accept/reject cycles available for process evaluation
- Output to a printer after every cycle is standard
- A Fiam pressure transducer is required for each pneumatic screwdriver used, see the accessory section for selection

Standard Equipment

- TOM controller
- Power supply
- Cable adapters
- User and maintenance manual
- Eco-friendly packaging

| About the TOM System

Features

14 Inputs: 8 for program selection, 6 for remote functioning including switching off, program activation, tool stop, tool loosening, program reset

24 Outputs: For results, active program, screwdriver status and possible electro-valve activation, auxiliary output

Automatic Check of Tightening Time: Which can be adjusted by setting the cycle time thus discriminating the different OK results

Single Program: up to 99 tightenings

Sequence Program: up to 8 tools with 99 tightenings each

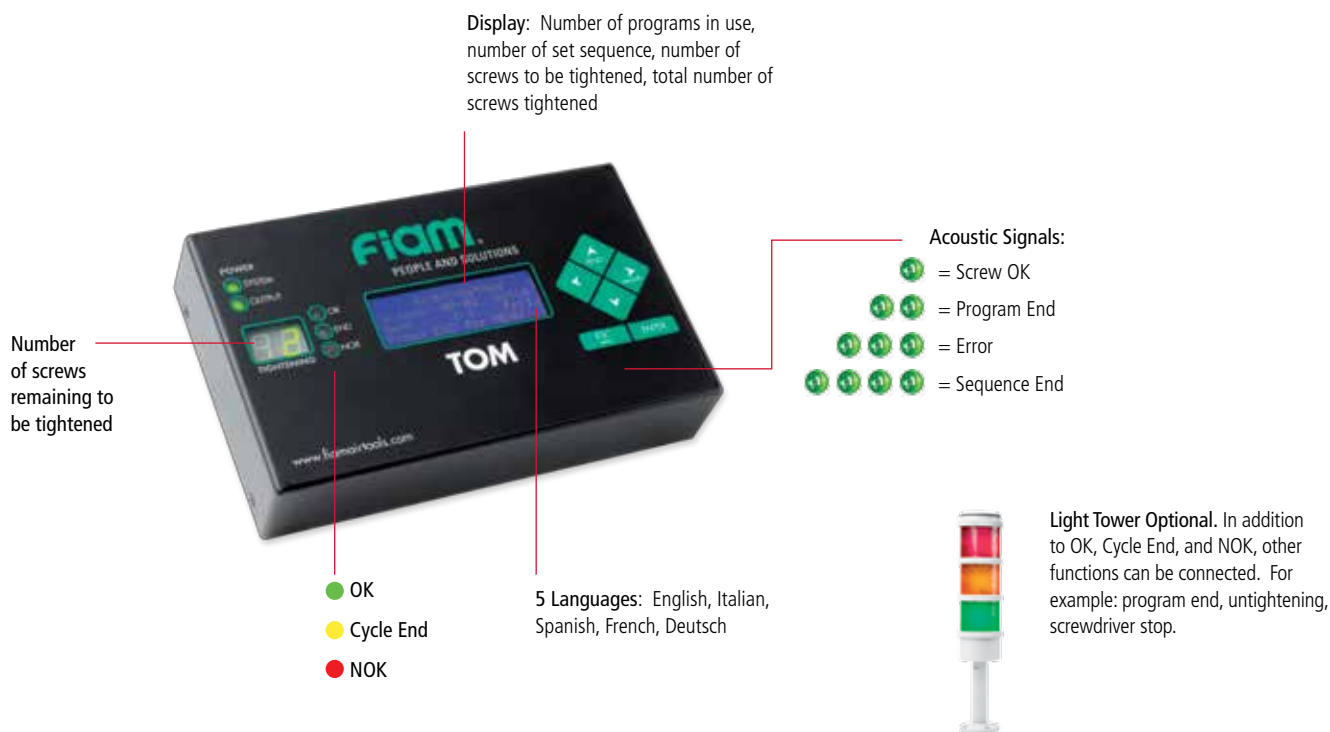
RS 232 Serial Port: To print the following results in sequence: Date/Hour, Number Active Output, Results, Tightening Time, Screw Number, Program Number, Sequence

Password Protected

Memory: Stores data for the previous 6,000,000 fasteners

Remote Functioning: Remote disable possible with the optional locking/unlocking units

Model	ASG Number	Description	Dimensions W x D x H (in.)	Electric Feed
TOM	6F0864	Monitoring Unit	8.19 x 5.04 x 1.65	24V, 110/230V, 50/60 Hz



| About the TOM System

Poka Yoke purpose is to eliminate product defects.

Poka Yoke Concept

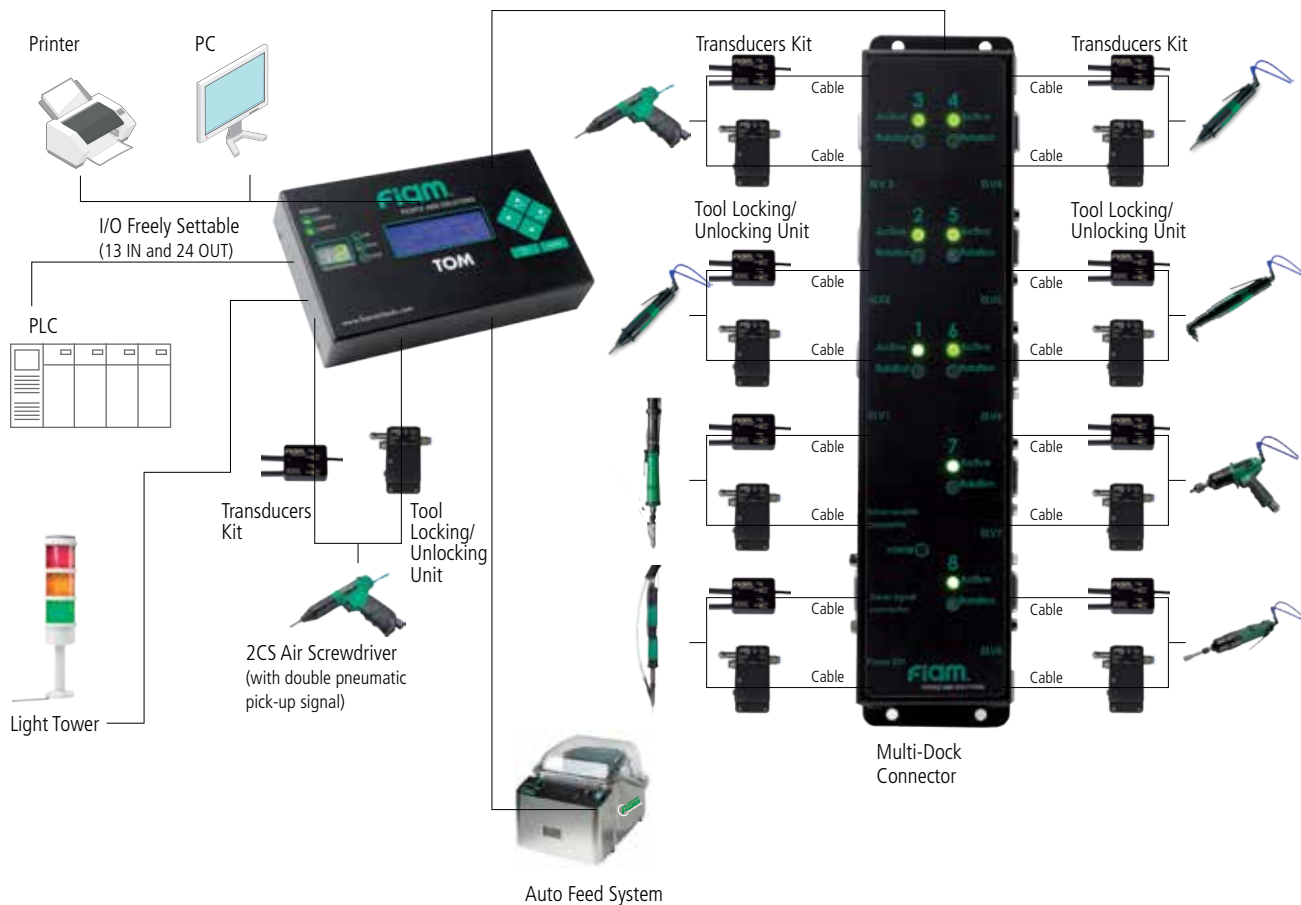
The Poka Yoke concept, widespread among our customers, is closely related to the principles of lean manufacturing.

Poka Yoke is a Japanese term that means “mistake-proofing.” A Poka Yoke is any mechanism in a lean manufacturing process that helps an operator avoid (yokeru) mistakes (poka). Its purpose is to eliminate product defects by preventing, correcting, or drawing attention to human errors as they occur.

The basic principle is to identify a mistake and take corrective action immediately. This reduces the need for post production inspection and possible product defects.

Multi-Dock Connector

TOM can be connected to air shut-off screwdrivers, straight, pistol, angle, inline lever, and inline push to start models equipped with a pneumatic pick-up signal. It is also suitable for oil pulse wrenches with an air shut-off system (IHE_A) as well as auto feed tightening systems featuring pneumatic screwdrivers with telescoping and forward bit stroke devices. Choose the screwdriver from over 100 models available.



Section 2: Product Specifications

Pneumatic Drivers with Pneumatic Pick-Up Signal

Model Number	Tightening Torque on Soft Joint		Free Speed	Starting System	Reversibility	Weight	Dimensions	Air Consumption	Accessories	Noise Level
	lbf.in	N.m	RPM	Type	Type	lb.	Ø x L x H (in.)	CFM	Drive	dBA
Screwdrivers										
15C2AL-2CS	3.54 - 17.7	0.4 - 2.0	2000			1.30	1.5x9.05	8.5	1/4" Hex	73
15C3AL-2CS	3.54 - 30.98	0.4 - 3.5	1400			1.32	1.5x9.05	12	1/4" Hex	73
15C4AL-2CS	3.54 - 39.83	0.4 - 4.5	950			1.32	1.5x9.05	12	1/4" Hex	73
15C5AL-2CS	3.54 - 44.25	0.4 - 5.0	650			1.32	1.5x9.05	12	1/4" Hex	73
15C2A-CS	3.54 - 17.7	0.4 - 2.0	2000			1.30	1.5x9.05	8.5	1/4" Hex	73
15C3A-CS	3.54 - 30.98	0.4 - 3.5	1400			1.32	1.5x9.05	12	1/4" Hex	73
15C4A-CS	3.54 - 39.83	0.4 - 4.5	950			1.32	1.5x9.05	12	1/4" Hex	73
15C5A-CS	3.54 - 44.25	0.4 - 5.0	650			1.32	1.5x9.05	12	1/4" Hex	73
26C4AL-2CS	3.54 - 35.4	0.4 - 4.0	2000			1.87	1.57x9.21	13	1/4" Hex	75
26C5AL-2CS	3.54 - 44.25	0.4 - 5.0	1350			1.87	1.57x9.21	13	1/4" Hex	75
26C8AL-2CS	30.98 - 70.8	3.5 - 8.0	1000			2.05	1.57x10.23	13	1/4" Hex	75
26C10AL-2CS	30.98 - 84.08	3.5 - 9.5	850			2.05	1.57x10.23	13	1/4" Hex	75
26C12AL-2CS	30.98 - 106.2	3.5 - 12.0	400			2.05	1.57x10.23	13	1/4" Hex	75
26C4A-CS	3.54 - 35.4	0.4 - 4.0	2000			1.87	1.57x9.25	13	1/4" Hex	75
26C5A-CS	3.54 - 44.25	0.4 - 5.0	1350			1.87	1.57x9.25	13	1/4" Hex	75
26C8A-CS	30.98 - 70.8	3.5 - 8.0	1000			2.05	1.57x10.31	13	1/4" Hex	75
26C10A-CS	30.98 - 84.08	3.5 - 9.5	850			2.05	1.57x10.31	13	1/4" Hex	75
26C12A-CS	30.98 - 106.2	3.5 - 12.0	400			2.05	1.57x10.31	13	1/4" Hex	75
CY9RAM-WP-2CS	61.95 - 141.6	7.0 - 16.0	700			3.67	1.81x13.58	21	1/4" Hex	80
CY11RAM-WP-2CS	61.95 - 212.4	7.0 - 24.0	450			3.67	1.81x13.58	21	1/4" Hex	80
15C2AP-2CS	5.31 - 19.47	0.6 - 2.2	2200			1.54	1.46x8.2x6.18	13	1/4" Hex	71
15C3AP-2CS	3.54 - 30.98	0.4 - 3.5	1400			1.58	1.46x8.2x6.18	13	1/4" Hex	71
15C4AP-2CS	3.54 - 39.83	0.4 - 4.5	950			1.58	1.46x8.2x6.18	13	1/4" Hex	71
15C5AP-2CS	3.54 - 44.25	0.4 - 5.0	650			1.58	1.46x8.2x6.18	13	1/4" Hex	71
15C2APA-2CS	5.31 - 19.47	0.6 - 2.2	2200			1.54	1.22x7x6.14	13	1/4" Hex	71
15C3APA-2CS	3.54 - 30.98	0.4 - 3.5	1400			1.58	1.22x7x6.14	13	1/4" Hex	71
15C4APA-2CS	3.54 - 39.83	0.4 - 4.5	950			1.58	1.22x7x6.14	13	1/4" Hex	71
15C5APA-2CS	3.54 - 44.25	0.4 - 5.0	650			1.58	1.22x7x6.14	13	1/4" Hex	71
15C2APA-2200-R-2CS	5.31 - 19.47	0.6 - 2.2	2200			1.65	1.46x7.32x6.10	13	1/4" Hex	71
15C3APA-1400-R-2CS	3.54 - 30.98	0.4 - 3.5	1400			1.69	1.46x7.32x6.10	13	1/4" Hex	71
15C4APA-950-R-2CS	3.54 - 39.83	0.4 - 4.5	950			1.69	1.46x7.32x6.10	13	1/4" Hex	71
15C5APA-650-R-2CS	3.54 - 44.25	0.4 - 5.0	650			1.69	1.46x7.32x6.10	13	1/4" Hex	71
15C2APA3I-2CS	5.31 - 19.47	0.6 - 2.2	2200			1.67	1.46x7.48x6.10	13	1/4" Hex	71
15C3APA3I-2CS	3.54 - 30.98	0.4 - 3.5	1400			1.72	1.46x7.48x6.10	13	1/4" Hex	71

Legend

							
Non-Reversible	Reversible	Inline Push to Start	Inline Lever Start	Pistol Grip Trigger Start	Forward Pistol Grip Trigger Start	30° Angle Lever Start	90° Angle Lever Start

Product Specifications

Pneumatic Drivers with Pneumatic Pick-Up Signal

Model Number	Tightening Torque on Soft Joint		Free Speed	Starting System	Reversibility	Weight	Dimensions	Air Consumption	Accessories	Noise Level
	lbf.in	N.m	RPM	Type	Type	lb.	Ø x L x H (in.)	CFM	Drive	dBA
15C4APA3I-2CS	3.54 - 39.83	0.4 - 4.5	950			1.72	1.46x7.48x6.10	13	1/4" Hex	71
15C5APA3I-2CS	3.54 - 44.25	0.4 - 5.0	650			1.72	1.46x7.48x6.10	13	1/4" Hex	71
26C4AP-2CS	3.54 - 35.4	0.4 - 4.0	2000			1.91	1.50x7.48x6.10	15	1/4" Hex	73
26C5AP-2CS	3.54 - 44.25	0.4 - 5.0	1300			1.91	1.50x7.48x6.10	15	1/4" Hex	73
26C8AP-2CS	30.98 - 70.8	3.5 - 8.0	1000			2.13	1.50x8.27x6.10	15	1/4" Hex	73
26C10AP-2CS	30.98 - 84.08	3.5 - 9.5	800			2.13	1.50x8.27x6.10	15	1/4" Hex	73
26C12AP-2CS	30.98 - 106.2	3.5 - 12.0	400			2.13	1.50x8.27x6.10	15	1/4" Hex	73
26C4APA-2CS	3.54 - 35.4	0.4 - 4.0	2000			2.09	1.54x7.68x6.30	15	1/4" Hex	73
26C5APA-2CS	3.54 - 44.25	0.4 - 5.0	1300			2.09	1.54x7.68x6.30	15	1/4" Hex	73
26C8APA-2CS	30.98 - 70.8	3.5 - 8.0	1000			2.31	1.54x8.27x6.30	15	1/4" Hex	73
26C10APA-2CS	30.98 - 84.08	3.5 - 9.5	800			2.31	1.54x8.27x6.30	15	1/4" Hex	73
26C12APA-2CS	30.98 - 106.2	3.5 - 12.0	400			2.31	1.54x8.27x6.30	15	1/4" Hex	73
26C4APA-2000-R-2CS	3.54 - 35.4	0.4 - 4.0	2000			2.05	1.50x8.15x6.10	15	1/4" Hex	73
26C5APA-1350-R-2CS	3.54 - 44.25	0.4 - 5.0	1300			2.05	1.50x8.15x6.10	15	1/4" Hex	73
26C8APA-1000-R-2CS	30.98 - 70.8	3.5 - 8.0	1000			2.33	1.50x9.21x6.10	15	1/4" Hex	73
26C10APA-800-R-2CS	30.98 - 84.08	3.5 - 9.5	800			2.33	1.50x9.21x6.10	15	1/4" Hex	73
26C12APA-400-R-2CS	30.98 - 106.2	3.5 - 12.0	400			2.33	1.50x9.21x6.10	15	1/4" Hex	73
26C4APA3I-2CS	3.54 - 35.4	0.4 - 4.0	2000			2.07	1.50x8.35x6.10	15	1/4" Hex	73
26C5APA3I-2CS	3.54 - 44.25	0.4 - 5.0	1300			2.07	1.50x8.35x6.10	15	1/4" Hex	73
26C8APA3I-2CS	30.98 - 70.8	3.5 - 8.0	1000			2.35	1.50x8.35x6.10	15	1/4" Hex	73
26C10APA3I-2CS	30.98 - 84.08	3.5 - 9.5	800			2.35	1.50x8.35x6.10	15	1/4" Hex	73
26C12APA3I-2CS	30.98 - 106.2	3.5 - 12.0	400			2.35	1.50x8.35x6.10	15	1/4" Hex	73
CY9PRAM-WP-2CS	61.25 - 141.6	7.0 - 16.0	700			3.85	1.81x10.43x6.90	21	1/4" Hex	80
CY11PRAM-WP-2CS	61.25 - 212.4	7.0 - 24.0	450			3.85	1.81x10.43x6.90	21	1/4" Hex	80
Angle Nutrunners										
15C2A30-2CS	7.08 - 17.7	0.8 - 2.0	2000			1.54	1.30x10.50x1.12	8.5	1/4" Square	73
15C3A30-2CS	7.08 - 26.55	0.8 - 3.0	1400			1.54	1.30x10.50x1.12	12	1/4" Square	73
15C4A30-2CS	7.08 - 35.4	0.8 - 4.0	950			1.54	1.30x10.50x1.12	12	1/4" Square	73
15C5A30-2CS	7.08 - 44.25	0.8 - 5.0	650			1.54	1.30x10.50x1.12	12	1/4" Square	73
15C2A90-CS	7.08 - 17.7	0.8 - 2.0	2000			1.54	1.26x10.90x1.50	8.5	1/4" Square	73
15C3A90-2CS	7.08 - 26.55	0.8 - 3.0	1400			1.54	1.26x10.90x1.50	12	1/4" Square	73
15C4A90-2CS	7.08 - 35.4	0.8 - 4.0	950			1.54	1.26x10.90x1.50	12	1/4" Square	73
15C5A90-2CS	7.08 - 44.25	0.8 - 5.0	650			1.54	1.26x10.90x1.50	12	1/4" Square	73
AD6RA1-2CS	22.13 - 53.1	2.5 - 6.0	1150			2.64	1.60x12.0x1.65	21	3/8" Square	77
AD9RA1-2CS	22.13 - 79.65	2.5 - 9.0	900			2.64	1.60x12.0x1.65	21	3/8" Square	77
AD14RA1-2CS	26.55 - 123.9	3.0 - 14.0	600			3.08	1.57x13.15x1.83	21	3/8" Square	77
AD26RA1-2CS	101.78 - 230.1	11.5 - 26.0	350			3.19	1.57x13.03x1.83	21	3/8" Square	77

Legend

							
Non-Reversible	Reversible	Inline Push to Start	Inline Lever Start	Pistol Grip Trigger Start	Forward Pistol Grip Trigger Start	30° Angle Lever Start	90° Angle Lever Start

Product Specifications

Pneumatic Drivers with Pneumatic Pick-Up Signal

Model Number	Tightening Torque on Soft Joint		Free Speed	Starting System	Reversibility	Weight	Dimensions	Air Consumption	Accessories	Noise Level
	lbf.in	N.m	RPM	Type	Type	lb.	Ø x L x H (in.)	CFM	Drive	dBA
AG40RA-2CS	159.3 - 354.0	18.0 - 40.0	400			4.51	1.60x16.5x2.0	27.5	3/8" Square	80
AG60RA-2CS	256.65 - 531.0	29.0 - 60.0	300			5.06	1.60x17.24x2.44	27.5	1/2" Square	80
Pulse Tools										
IHE18A-MR-2CS	88.5 - 159.3	10.0 - 18.0	4200			1.8	1.81x8.82	9	1/4" Hex	-
IHE25A-MR-2CS	132.6 - 221.3	15.0 - 25.0	6800			1.8	1.81x8.82	11	1/4" Hex	-
IHE35A-2CS	194.7 - 309.8	22.0 - 35.0	6200			1.9	1.81x9.09	14	3/8" Hex	-
IHE45A-2CS	274.4 - 416.0	31.0 - 47.0	5000			2.1	1.81x9.53	14	3/8" Hex	-
IHE25PA-MR-2CS	123.9 - 230.1	14.0 - 26.0	7200			2.0	1.81x6.70x6.61	12	1/4" Hex	-
IHE55PA-2CS	327.5 - 504.5	37.0 - 57.0	7200			3.0	2.10x7.64x7.60	16	3/8" Square	-
IHE90PA-2CS	566.40 - 796.5	64.0 - 90.0	5400			3.4	2.10x7.90x7.60	17.5	1/2" Square	-
IHE120PA-2CS	752.3 - 1062	85.0 - 120.0	5300			4.1	2.32x8.22x7.70	19.5	1/2" Square	-
IHE145PA-2CS	1062.0 - 1309.8	120.0 - 148.0	3600			5.0	2.52x8.50x8.03	26	1/2" Square	-
IHE210PA-2CS	1283.3 - 1858.5	145.0 - 210.0	3700			6.8	2.83x9.41x8.30	26	3/4" Square	-
IHE230-PA-2CS	1593.0 - 2035.5	180.0 - 230.0	2700			8.4	3.10x10.40x9.13	26	3/4" Square	-

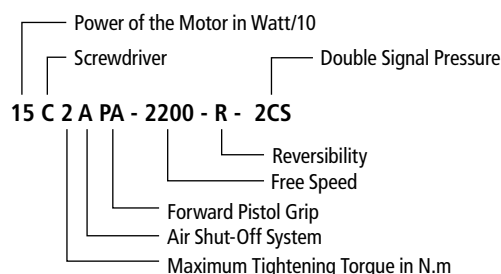
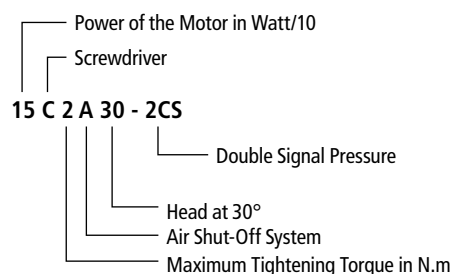
Legend

Non-Reversible	Reversible	Inline Push to Start	Inline Lever Start	Pistol Grip Trigger Start	Forward Pistol Grip Trigger Start	30° Angle Lever Start	90° Angle Lever Start

NOTE: The TOM system works with all Fiam nutrunner tools for automation that have auto shut-off clutches.

Model	Air Inlet	Recommended Hose Bore	
15C...	1/4" NPTF	Ø 5 mm	1/4"
26C...CY...AD...	1/4" NPTF	Ø 8 mm	5/16"
IHE18, 25, 35, 45, 55...AG...	1/4" NPTF	Ø 10 mm	3/8"
IHE90, 120, 145, 210, 230	1/4" NPTF	Ø 12 mm	1/2"

How to Read the Model Numbers



Legend

15 = Power of the Motor in Watt/10 · C = Screwdriver · 2 = Maximum Tightening Torque in N.m · A = Air Shut-Off System · P = Pistol Grip · PA = Forward Pistol Grip
30 = Head at 30° · 90 = Head at 90° · 2200 = Free Speed · R = Reversibility · 3I = 3 Inlets · 2CS = Double Signal Pressure · WP = Without Push

Section 3: TOM System Accessories

Transducer for TOM



- One transducer is required for each tool monitored by the TOM system
- Completely designed and manufactured by Fiam, it is a single box that receives two pneumatic signals (input) through two different colored hoses: black for starting signal and green for torque signal
- For ease of calibration, Fiam has designed and developed a smaller, light weight, user friendly pressure transducer. This new design is equipped with an LED indicator and a unique electric connecting cable to carry the electric signal to the TOM unit

ASG Number	Description
6F0866	Transducer for TOM

Tool Locking/Unlocking Device



- It permits TOM unit to enable/disable connected tool, including LED status
- Extremely quiet and equipped with device that conveys the exhaust away from the working area
- To be used with specific connecting cables (see below)

ASG Number	Description
6F0867	Unit for 15C/26C (including couplings for Ø 10mm hose bore)
6F0878	Unit for AD/AG/IHE/CY (including couplings for Ø 12mm hose bore)

Cables



- To connect TOM with locking/unlocking device when a single screwdriver is in use

ASG Number	Description
6F0876	TOM Cable/Stop Unit

- To connect multi-dock connector with locking/unlocking device when several screwdrivers are in use

ASG Number	Description
6F0870	Multi-Dock Connector Cable/ Locking/Unlocking Device

| TOM System Accessories

Light Tower



- 3 color light tower to be connected to TOM through supplied cable. It allows immediate, visual display of the tightening outcome

ASG Number	Description
6F0877	3 Color Light Tower

Multi-Dock Connector



- Connecting up to 8 tools (each tool has a dedicated program) that can operate individually depending on TOM programming. There are 2 LEDs for each screwdriver: one indicates the enabled screwdriver (to be used) and one indicates the tool is working
- Geared for additional feeding in case of need (feeder upon request)
- Supplied with adapter for connection with TOM and 2 connecting cables

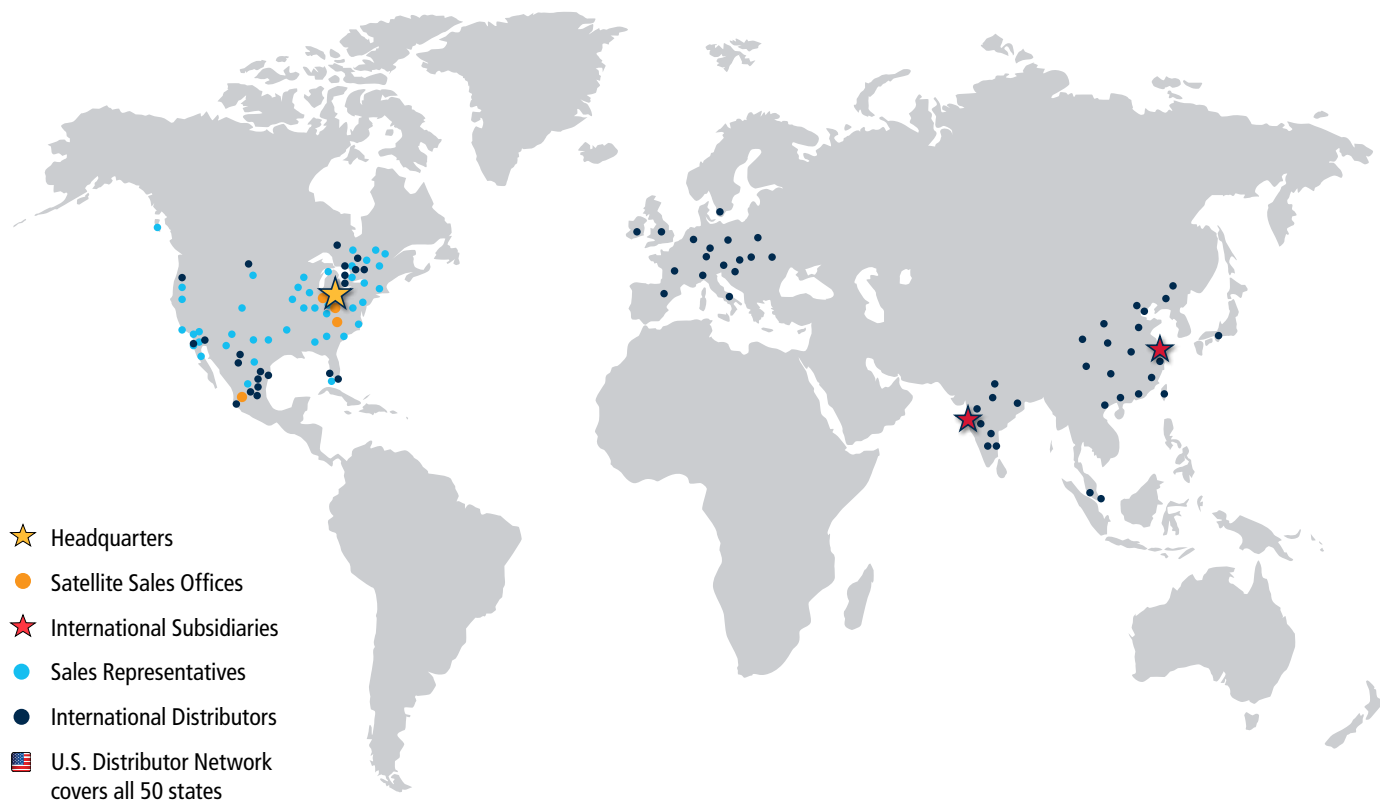
ASG Number	Description
6F0865	Multi-Dock Connector

Swiveling Bail Ring for Models AD, AG, 50C



- A practical accessory designed to always keep the tool perfectly balanced in a horizontal position. Swiveling allows a considerable reduction in fatigue during tightening operations

ASG Number	Description
6F0628	Swiveling Bail Ring for AD... Models
6F0627	Swiveling Bail Ring for AG... Models



Our footprint covers the globe!

Global Support

ASG employs a team of technical experts to provide support, repair, calibration and preventative maintenance services. We welcome the opportunity to provide assistance by telephone or online chat Monday through Friday, 8 a.m. to 5 p.m. (U.S. Eastern Time) excluding holidays.

ASG maintains subsidiaries in Shanghai, China and Mumbai, India, and a sales office in Guadalajara, Mexico to provide direct support to our international customers. We work together with our global Field Sales Representative and Distributor Network to help customers standardize their assembly equipment and processes around the world.

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