

3000-Series Exacta® 2



***The 3000-Series
redefines your
remote assembly
and auditing!***



**Sturtevant
Richmont®**

Torque Measurement Systems

The **3000-Series Exacta® 2** system allows you to organize your torque tasks, prioritize them, guide the operator in performing them and collect the data - all with a single tool! Better still, the system software downloads the specifications to the tool, then later records and saves the data!

It's a System - Torque Wrench and Software Working Together!

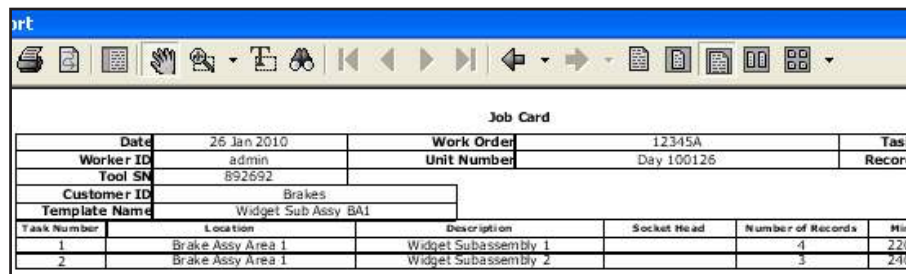
The 3000-Series system incorporates a specially-designed **Exacta® 2** digital torque wrench that communicates with and is controlled by proprietary software. The data export capabilities of the system facilitate integration with your plant's quality software. This eliminates inefficiencies associated with information and data handling, and allows you to focus on joint quality!

The software manages three databases.

- The Task database holds information pertinent to each single task, such as: unit of measure, min torque, max torque, number of fasteners, mode of operation and related specifications.
- The Tools database contains information on the **3000-Series Exacta® 2** wrenches you have, such as capacity and serial number of each.
- The Users database contains the data on your operators, such as employee number, name, and what operations they are permitted to perform with the software and tool.

These databases are combined to create Job Templates. Job templates are combinations of tasks that are assigned to a tool and user when a job is created. They speed job creation for future uses of the same task sequence.

To create a job, you simply open a window, select the tool from the Tools Database and the appropriate Job Template. Enter the information pertinent to what is to be worked on and the work order number to be used. Save it and you are done. Now it's in a list that the operator will use when beginning the work order!



| Job Card | | | | | |
|---------------|---------------------|----------------------|-------------|-------------------|-----|
| Date | 26 Jan 2010 | Work Order | 12345A | Task | |
| Worker ID | admin | Unit Number | Day 100126 | Record | |
| Tool SN | 892692 | | | | |
| Customer ID | Brakes | | | | |
| Template Name | Widget Sub Assy BA1 | | | | |
| Task Number | Location | Description | Socket Head | Number of Records | Min |
| 1 | Brake Assy Area 1 | Widget Subassembly 1 | | 4 | 220 |
| 2 | Brake Assy Area 1 | Widget Subassembly 2 | | 3 | 240 |

The operator then logs in, selects the work order from the list, prints the Job Card that contains all of the information, downloads the matching information to the tool (1 Button!), logs out and goes to work!

Visual Support at Each Step; Making the Operator's Life Easy!

Each job is a series of sequential tasks to be performed with the wrench; torque three nuts here, four there, and so forth. This information is on the Job Card that was printed at download.

The tool display augments and supports this at every step!

At the start of the job, the lower right-hand corner of the display shows the operator he is at "Task 01 Nut 01". The main part of the display shows the target torque (mid-spec value), the unit of measure and the mode of operation.

As the operator begins applying torque to the first fastener, the display changes to provide current information on the status of the torque application. The current torque shows as it is applied, and when the operator gets close to the torque specification, an LED emits a bright yellow-orange light that backlights the display and appears in a prominent lens on the back of the wrench. Warning - you're getting close!

When the torque specification is achieved, the light turns bright green. All the operator needs to do is stop applying force - "Green is Good!"

The tool displays the torque for a couple of seconds longer in case the operator wishes to review it, then stores the value and indexes to the next fastener - "Task 01 Nut 02"!

In the event of an error, the tool informs the operator by illuminating a bright red backlight and activating a "BAD" icon on the bottom of the display. This gives the operator the opportunity to correct the error immediately, and to record the new correct torque before moving on!



Green is good!



This Inform/Record/Index cycle repeats until all of the fasteners in the first task are complete. The operator can then move to “Task 02 Nut 01”. There is never a question about what is to be done or where the operator is in the job - the current status is in hand and on display!

When all of the individual tasks in the work order are complete, the data is uploaded to the computer. The operator plugs the serial cable into the tool, logs on to the software, clicks on one button (Finish a Job) and at the screen that follows, uses one more button to upload the data. The software stores the data and can clear the tool memory so it's ready for the next job. At every step the operator has been guided through the tasks with the information immediately needed!

Audible Prompts

Supplementing the visual information are audible prompts from a beeper. You'll always know when the torque is right!

User-Friendly Job Data Management

The data on every fastener torqued by every tool and every operator on every assembly is in the database. Preformatted reports can be viewed or printed for every completed job, or the data can be exported for analysis and reporting by spreadsheets or quality software.

Since the data is in the database these functions can be performed immediately upon upload from the tool or reserved for later, as best fits your needs.

Three Modes of Operation - Track, Peak and Residual

Assembly and auditing are both accommodated with these three modes! The residual mode improves torque audit consistency for most hard and many medium joints.

Extremely Accurate

The 3000-Series **Exacta® 2** is accurate to +/- 1% of Indicated Value from 20% to 100% of rated capacity in Track and Peak modes. The Residual mode assists the user in determining retained torque on a joint. The actual accuracy percentage is contingent upon joint condition and user technique.

Multiple Units of Measure

English and Standard International units of measure are on each tool. The exact units vary by tool capacity.

The 3000-Series Exacta® 2 Uses the S/R Interchangeable Head System

The S/R line of Interchangeable Heads provides exceptional strength and rigidity of connection through our unique dovetail connection. Virtually all of these heads are made from a single piece of alloy steel, which assures durability and strength. With over 100 heads of 1 7/16" Common Centerline Length to choose from, the versatility of your 3000-Series **Exacta® 2** is greatly multiplied! Note: 250 and 600 foot-pound capacity tools use the S/R slide pin ratchet.



**Meets or exceeds
the requirements of
ASME B107.28.**

**The 3000-Series
Exacta® 2 Comes with
a FREE Certificate of
Calibration from our
ISO 17025 Accredited
Calibration Laboratory!**



Extended Battery Life

The 3000-Series **Exacta® 2** uses four (4) AA NiMH batteries of 2200 mAh capacity. These batteries (sold separately with 15-minute charger in NAFTA countries only) provide ample operating time between charges. Backup batteries (NAFTA countries only) are available with 2500 mAh capacity.

Dimensional / Physical Information

| Model Capacity | Lever Length | Overall Length | Weight |
|----------------|------------------|------------------|---------------------|
| 25 ft. lbs. | 12.5" / 317 mm | 16.1" / 409 mm | 2.8 lbs. / 1.27 kg |
| 75 ft. lbs. | 15.8" / 401mm | 19.4" / 493 mm | 3.0 lbs. / 1.36 kg |
| 150 ft. lbs. | 17.8" / 452 mm | 21.5" / 546 mm | 3.1 lbs. / 1.40 kg |
| 250 ft. lbs. | 21.0" / 533 mm | 25.2" / 640 mm | 4.1 lbs. / 1.86 kg |
| 400 ft. lbs. | 36.5" / 927.1 mm | 35.9" / 911.8 mm | 7.7 lbs. / 3.49 kg |
| 600 ft. lbs. | 55.1" / 1399 mm | 59.7" / 1516 mm | 13.0 lbs. / 5.90 kg |

Ordering Information

| Part No. | Model | Description |
|----------|------------------------|--|
| 10550 | 3000-Series Exacta 25 | 25 ft.lb, 33.8 Nm cap., 3/8" SD Int. Head inc., batteries not inc.* |
| 10551 | 3000-Series Exacta 75 | 75 ft.lb, 101.5 Nm cap., 3/8" SD Int. Head inc., batteries not inc.* |
| 10552 | 3000-Series Exacta 150 | 150 ft.lb, 203.3 Nm cap., 1/2" SD Int. Head inc., batteries not inc.* |
| 10553 | 3000-Series Exacta 250 | 250 ft.lb, 338.9 Nm cap., 1/2" Ratcheting Sq. Dr., batteries not inc.* |
| 10554 | 3000-Series Exacta 600 | 600 ft.lb, 813 Nm cap., 3/4" Ratcheting Sq. Dr., batteries not inc.* |
| 10555 | 3000-Series Exacta 400 | 400 ft.lb, 543 Nm cap., Dovetail, batteries not inc.* ** |
| 21259* | Charger & 4 AA NiMH | 4 AA NiMH 2200 mAh batteries & charger, NAFTA only |
| 816261 | 4 AA NiMH | Batteries 2500 mAh NiMH batteries, spare |

** Wrenches calibrated for use with heads having 3 7/8" Common Centerline.



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Interchangeable Heads

Why Our Interchangeable Head System is the World's Best

Virtually all interchangeable heads on these pages are made as a single piece from alloy steel. This construction method provides strength and durability rarely attained by the more common cut and weld method. In addition, to achieve constant torque values when changing heads, exact lever length must be maintained. S/R heads share a precise distance from end of wrench to center of fastener. This is referred to as a Common Centerline and is very difficult to maintain when using the welded construction method.

The unique dovetail design used to join head and wrench provides exceptionally strong connection and allows complete interchange-ability. Competing manufacturers find it necessary to increase the size of the mating connection at higher torque values, creating duplication of wrenches and heads while losing interchangeability.



SQUARE DRIVE (SD)

SQUARE DRIVE (SD)

1 1/8" Common Centerline

SQUARE DRIVE

| Part Number | Model | Drive Size | Max.Torque (in. lbs.) |
|-------------|---------|------------|-----------------------|
| 819057 | SD-1/4 | 1/4" | 250 |
| 819058 | SD-3/8 | 3/8" | 1250 |
| 819059 | SD-1/2 | 1/2" | 2500 |
| 819119 | SD-3/4* | 3/4" | 4800 |

* 3/8" Common Centerline

SQUARE DRIVE RATCHET(SDRT)

1 1/8" Common Centerline

RATCHET SQ. DR.

| Part Number | Model | Drive Size | Max.Torque (in. lbs.) |
|-------------|-----------|------------|-----------------------|
| 809504 | SDRT-1/4 | 1/4" | 250 |
| 809505 | SDRT-3/8 | 3/8" | 1250 |
| 809506 | SDRT-1/2 | 1/2" | 2500 |
| 809507 | SDRT-3/4* | 3/4" | 4800 |

* 3/8" Common Centerline



SQUARE DRIVE RATCHET (SDRT)

RATCHET RENEWAL KITS for ratcheting wrenches and SDRT Heads

1/4" Ratchet Renewal Kit P/N 816998

3/8" Ratchet Renewal Kit P/N 816958

1/2" Ratchet Renewal Kit P/N 816956

3/4" Ratchet Renewal Kit P/N 816999

OPEN END (OE)

1 1/8" Common Centerline

OPEN END - ENGLISH

| Part Number | Model | Hex Size | Max.Torque (in. lbs.) |
|-------------|-----------|----------|-----------------------|
| 819000 | OE-1/4 | 1/4" | 100 |
| 819001 | OE-3/16 | 3/16" | 150 |
| 819002 | OE-3/8 | 3/8" | 200 |
| 819003 | OE-7/16 | 7/16" | 300 |
| 819004 | OE-1/2 | 1/2" | 350 |
| 819005 | OE-9/16 | 9/16" | 400 |
| 819006 | OE-5/8 | 5/8" | 600 |
| 819007 | OE-11/16 | 11/16" | 800 |
| 819008 | OE-3/4 | 3/4" | 1000 |
| 819009 | OE-13/16 | 13/16" | 1250 |
| 819010 | OE-7/8 | 7/8" | 1500 |
| 819011 | OE-15/16 | 15/16" | 1750 |
| 819012 | OE-1 | 1" | 2000 |
| 819013 | OE-1 1/16 | 1 1/16" | 2250 |
| 819014 | OE-1 1/8 | 1 1/8" | 2500 |
| 819015 | OE-1 3/8 | 1 3/8" | 2750 |
| 819016 | OE-1 1/4 | 1 1/4" | 3000 |

OPEN END - METRIC

| Part Number | Model | Hex Size | Max.Torque (Nm) |
|-------------|---------|----------|-----------------|
| 809291 | OE-7mm | 7mm | 11 |
| 809292 | OE-8mm | 8mm | 16 |
| 809293 | OE-9mm | 9mm | 22 |
| 819943 | OE-10mm | 10mm | 22 |
| 819944 | OE-11mm | 11mm | 34 |
| 809226 | OE-12mm | 12mm | 39 |
| 819945 | OE-13mm | 13mm | 39 |
| 819946 | OE-14mm | 14mm | 45 |
| 809227 | OE-15mm | 15mm | 67 |
| 819947 | OE-16mm | 16mm | 67 |
| 819948 | OE-17mm | 17mm | 90 |
| 809228 | OE-18mm | 18mm | 90 |
| 819949 | OE-19mm | 19mm | 113 |
| 819950 | OE-21mm | 21mm | 141 |
| 819951 | OE-22mm | 22mm | 169 |
| 819952 | OE-24mm | 24mm | 197 |
| 809229 | OE-27mm | 27mm | 254 |
| 819956 | OE-30mm | 30mm | 310 |
| 853043 | OE-31mm | 31mm | 328 |
| 819958 | OE-32mm | 32mm | 338 |



OPEN END (OE)

FLARE NUT (FN)

1 1/8" Common Centerline

| FLARE NUT - ENGLISH | | | |
|---------------------|-----------|----------|-----------------------|
| Part Number | Model | Hex Size | Max.Torque (in. lbs.) |
| 819025 | FN-1/4 | 1/4" | 100 |
| 819026 | FN-3/16 | 3/16" | 150 |
| 819027 | FN-3/8 | 3/8" | 200 |
| 819028 | FN-7/16 | 7/16" | 250 |
| 819029 | FN-1/2 | 1/2" | 300 |
| 819030 | FN-9/16 | 9/16" | 350 |
| 819031 | FN-5/8 | 5/8" | 400 |
| 819032 | FN-11/16 | 11/16" | 475 |
| 819033 | FN-3/4 | 3/4" | 600 |
| 819034 | FN-13/16 | 13/16" | 700 |
| 819035 | FN-7/8 | 7/8" | 800 |
| 819036 | FN-15/16 | 15/16" | 900 |
| 819037 | FN-1 | 1" | 1000 |
| 819038 | FN-1 1/16 | 1 1/16" | 1050 |
| 819039 | FN-1 1/8 | 1 1/8" | 1100 |
| 819040 | FN-1 3/8 | 1 3/8" | 1150 |
| 819041 | FN-1 1/4 | 1 1/4" | 1200 |

| FLARE NUT - METRIC | | | |
|--------------------|----------|----------|-----------------|
| Part Number | Model | Hex Size | Max.Torque (Nm) |
| 809243 | FN-8mm | 8mm | 16 |
| 809217 | FN-9mm | 9mm | 19 |
| 809218 | FN-10mm | 10mm | 22 |
| 809221 | FN-11mm | 11mm | 28 |
| 809241 | FN-12mm | 12mm | 30 |
| 809000 | FN-12mm* | 12mm | 30 |
| 809219 | FN-13mm | 13mm | 33 |
| 809220 | FN-14mm | 14mm | 40 |
| 809001 | FN-14mm* | 14mm | 40 |
| 809222 | FN-15mm | 15mm | 45 |
| 809238 | FN-16mm | 16mm | 50 |
| 809223 | FN-17mm | 17mm | 54 |
| 809239 | FN-18mm | 18mm | 61 |
| 809224 | FN-19mm | 19mm | 68 |
| 809240 | FN-21mm | 21mm | 80 |
| 809242 | FN-22mm | 22mm | 90 |
| 809225 | FN-24mm | 24mm | 105 |
| 809244 | FN-27mm | 27mm | 118 |

* 6 pt hex



FLARE NUT (FN)

BOX HEAD (BH)

1 1/8" Common Centerline

| BOX HEAD - ENGLISH | | | |
|--------------------|-----------|----------|-----------------------|
| Part Number | Model | Hex Size | Max.Torque (in. lbs.) |
| 819060 | BH-1/4 | 1/4" | 250 |
| 819061 | BH-3/16 | 3/16" | 350 |
| 819062 | BH-3/8 | 3/8" | 450 |
| 819063 | BH-7/16 | 7/16" | 650 |
| 819064 | BH-1/2 | 1/2" | 850 |
| 819065 | BH-9/16 | 9/16" | 1050 |
| 819066 | BH-5/8 | 5/8" | 1250 |
| 819067 | BH-11/16 | 11/16" | 1450 |
| 819068 | BH-3/4 | 3/4" | 1800 |
| 819069 | BH-13/16 | 13/16" | 2100 |
| 819070 | BH-7/8 | 7/8" | 2400 |
| 819071 | BH-15/16 | 15/16" | 2700 |
| 819072 | BH-1 | 1" | 3000 |
| 819073 | BH-1 1/16 | 1 1/16" | 3150 |
| 819074 | BH-1 1/8 | 1 1/8" | 3300 |
| 819085 | BH-1 3/8 | 1 3/8" | 3450 |
| 819075 | BH-1 1/4 | 1 1/4" | 3600 |

| BOX HEAD - METRIC | | | |
|-------------------|---------|----------|-----------------|
| Part Number | Model | Hex Size | Max.Torque (Nm) |
| 809301 | BH-7mm | 7mm | 28 |
| 809302 | BH-8mm | 8mm | 39 |
| 809303 | BH-9mm | 9mm | 50 |
| 809230 | BH-10mm | 10mm | 50 |
| 809231 | BH-11mm | 11mm | 73 |
| 809304 | BH-12mm | 12mm | 96 |
| 809232 | BH-13mm | 13mm | 96 |
| 809233 | BH-14mm | 14mm | 119 |
| 809234 | BH-15mm | 15mm | 141 |
| 809305 | BH-16mm | 16mm | 141 |
| 809235 | BH-17mm | 17mm | 163 |
| 809306 | BH-18mm | 18mm | 163 |
| 809236 | BH-19mm | 19mm | 203 |
| 809307 | BH-21mm | 21mm | 237 |
| 809308 | BH-22mm | 22mm | 271 |
| 809237 | BH-24mm | 24mm | 305 |
| 809352 | BH-27mm | 27mm | 355 |



BOX HEAD (BH)

HEX DRIVE (HD)

1 1/8" Common Centerline

| HEX DRIVE - ENGLISH | | | |
|---------------------|---------|----------|-----------------------|
| Part Number | Model | Hex Size | Max.Torque (in. lbs.) |
| 853030 | HD-5/64 | 5/64" | 20 |
| 819687 | HD-3/32 | 3/32" | 30 |
| 853031 | HD-7/64 | 7/64" | 40 |
| 819689 | HD-1/8 | 1/8" | 70 |
| 853032 | HD-9/64 | 9/64" | 70 |
| 819691 | HD-5/32 | 5/32" | 135 |
| 819692 | HD-3/16 | 3/16" | 235 |
| 819693 | HD-7/32 | 7/32" | 340 |
| 819694 | HD-1/4 | 1/4" | 450 |
| 819695 | HD-5/16 | 5/16" | 850 |
| 819696 | HD-3/8 | 3/8" | 850 |
| 819697 | HD-7/16 | 7/16" | 1450 |
| 819699 | HD-9/16 | 9/16" | 1450 |
| 819700 | HD-5/8 | 5/8" | 2100 |
| 819701 | HD-3/4 | 3/4" | 2400 |
| 819702 | HD-7/8 | 7/8" | 2700 |

| HEX DRIVE - METRIC | | | |
|--------------------|---------|----------|-----------------|
| Part Number | Model | Hex Size | Max.Torque (Nm) |
| 809315 | HD-4mm | 4mm | 15 |
| 809316 | HD-5mm | 5mm | 27 |
| 809317 | HD-6mm | 6mm | 38 |
| 809328 | HD-8mm | 8mm | 96 |
| 809330 | HD-10mm | 10mm | 141 |
| 809332 | HD-12mm | 12mm | 164 |
| 809334 | HD-14mm | 14mm | 164 |
| 809339 | HD-19mm | 19mm | 270 |



HEX DRIVE (HD)



Interchangeable Heads



RATCHETING OPEN END (ROE)



RATCHETING FLARE NUT (RFN)

RATCHETING OPEN END (ROE)

1 $\frac{1}{8}$ " Common Centerline

Slight disengagement from the fastener allows operator to rapidly rotate wrench.

RATCHETING OPEN END - ENGLISH

| Part Number | Model | Hex Size | Max. Torque (in. lbs.) |
|-------------|------------------------|--------------------|------------------------|
| 819200 | ROE- $\frac{1}{4}$ " | $\frac{1}{4}$ " | 60 |
| 819202 | ROE- $\frac{3}{8}$ " | $\frac{3}{8}$ " | 120 |
| 819203 | ROE- $\frac{7}{16}$ " | $\frac{7}{16}$ " | 180 |
| 819204 | ROE- $\frac{1}{2}$ " | $\frac{1}{2}$ " | 210 |
| 819205 | ROE- $\frac{9}{16}$ " | $\frac{9}{16}$ " | 240 |
| 819206 | ROE- $\frac{5}{8}$ " | $\frac{5}{8}$ " | 360 |
| 819208 | ROE- $\frac{3}{4}$ " | $\frac{3}{4}$ " | 600 |
| 819209 | ROE- $\frac{13}{16}$ " | $\frac{13}{16}$ " | 750 |
| 819210 | ROE- $\frac{7}{8}$ " | $\frac{7}{8}$ " | 900 |
| 819211 | ROE- $\frac{15}{16}$ " | $\frac{15}{16}$ " | 1050 |
| 819212 | ROE-1" | 1" | 1200 |
| 819213 | ROE-1 $\frac{1}{16}$ " | 1 $\frac{1}{16}$ " | 1350 |
| 819214 | ROE-1 $\frac{1}{8}$ " | 1 $\frac{1}{8}$ " | 1500 |
| 819215 | ROE-1 $\frac{1}{4}$ " | 1 $\frac{1}{4}$ " | 1650 |

RATCHETING OPEN END - METRIC

| Part Number | Model | Hex Size | Max. Torque (Nm) |
|-------------|----------|----------|------------------|
| 819217 | ROE-7mm | 7 mm | 7 |
| 819218 | ROE-8mm | 8 mm | 10 |
| 819219 | ROE-9mm | 9 mm | 13 |
| 819220 | ROE-10mm | 10 mm | 13 |
| 819221 | ROE-11mm | 11 mm | 20 |
| 819222 | ROE-12mm | 12 mm | 23 |
| 819223 | ROE-13mm | 13 mm | 23 |
| 819224 | ROE-14mm | 14 mm | 27 |
| 819225 | ROE-15mm | 15 mm | 40 |
| 819226 | ROE-16mm | 16 mm | 40 |
| 819227 | ROE-17mm | 17 mm | 54 |
| 819228 | ROE-18mm | 18 mm | 54 |
| 819229 | ROE-19mm | 19 mm | 68 |
| 819231 | ROE-22mm | 22 mm | 101 |
| 819232 | ROE-24mm | 24 mm | 118 |
| 819233 | ROE-27mm | 27 mm | 152 |
| 819238 | ROE-32mm | 32 mm | 203 |

RATCHETING FLARE NUT (RFN)

1 $\frac{1}{8}$ " Common Centerline

Single-direction ratchet for use with hydraulic or pneumatic fittings.

| Part Number | Model | Hex Size | Max. Torque (Nm) |
|-------------|----------|----------|------------------|
| 819086 | RFN-10mm | 10 mm | 25 |
| 819087 | RFN-11mm | 11 mm | 25 |



SPECIAL TOE-IN ADJUSTMENT TOOL
A/F 21 mm to be used with Sturtevant
Richmont SLTC 7501 hardwired switch
wrench developed for Volkswagen

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