# OPERATION MANUAL FOR SQUARE DRIVE & LOW PROFILE HYDRAULIC TORQUE WRENCHES

## NOTICE

Hydraulic Torque Wrenches are designed for installing and removing large bolts having minimal wrench clearance at offshore platforms, power plants, steel erection sites & other locations requiring precise high torque during bolt makeup and maximum torque for bolt breakdown.
Camly Pte Ltd is not responsible for customer modification of tools for applications on which Camly was not consulted.

## WARNING

**IMPORTANT SAFETY INFORMATION ENCLOSED.**
**READ THIS MANUAL BEFORE OPERATING TOOL.**
**IT IS THE RESPONSIBILITY OF THE EMPLOYER TO PLACE THE INFORMATION IN THIS MANUAL INTO THE HANDS OF THE OPERATOR.**
**FAILURE TO OBSERVE THE FOLLOWING WARNINGS COULD RESULT IN INJURY.**

### PLACING TOOL IN SERVICE

- Always operate, inspect and maintain this tool in accordance with American National Standards Safety Code for Hydraulic Rams and Jacks (ANSI B30.1)
- This tool will function using an air or electric powered hydraulic pump. Adhere to the pump safety requirements and follow instructions when connecting the pump to the tool.
- • Use only equipment rated for the same pressure and torque.
- • Use only a hydraulic pump capable of generating 700 bar maximum pressure with this tool.
- • Use only twin line hydraulic hose rated for 700 bar pressure with this tool.
- • Do not interchange the male and female swivel inlets on the tool or the connections on one end of the hose. Reversing the inlets will reverse the power stroke cycle and may damage the tool.
- • Do not use damaged, frayed or deteriorated hoses and fittings. Make certain there are no cracks, splits or leaks in the hoses.
- Use the quick connect system to attach the hoses to the tool and pump. Make certain the spring-loaded retaining rings are fully engaged to prevent the connectors from disengaging under pressure.
- When connecting hoses that have not been preloaded with hydraulic oil, make certain the pump reservoir is not drained of oil during start-up.
- Do not remove any labels. Replace any damaged labels.
USING THE TOOL
- Do not handle pressurized hoses. Escaping oil under pressure can penetrate the skin, causing serious injury. If oil is injected under the skin, see a doctor immediately.
- Never pressurize uncoupled couplers. Only use hydraulic equipment in a coupled system.
- Always wear eye protection when operating or performing maintenance on this tool.
- Always wear head and hand protection and protective clothing when operating this tool.

## FAILURE TO OBSERVE THE FOLLOWING WARNINGS COULD RESULT IN INJURY

### USING THE TOOL

- Keep hands, loose clothing and long hair away from the reaction arm and working area during operation. Do not attempt to support the tool with your hands during operation.
- This tool will exert a strong reaction force. Use proper mechanical support and correct reaction arm positioning to control these forces. Do not position the reaction arm so that it tilts the tool off the axis of the bolt and never use the swivel inlets as a reaction stop.
- Avoid sharp bends and kinks that will cause severe back-up pressure in hoses and lead to premature hose failure.
- Use accessories recommended by manufacturer.
- Use only impact sockets and accessories. Do not use hand (chrome) sockets or accessories.
- Use only sockets and accesssories that correctly fit the bolt or nut and function without tilting the tool off the axis of the bolt.
- This tool is not designed for working in explosive atmospheres
- This tool is not insulated against electric shock. When using this tool with a pump having an electrical power source or circuits, follow the pump instructions for proper grounding.
- Use only impact sockets and accessories that are appropriately rated for the output of the tool.
- Always use retaining pin and ring to engage the socket to the square drive.
- Inspect sockets for signs of over use before utilizing with tool.
- Do not use overly worn impact sockets and accessories.

## OPERATION MANUAL TO BE RETURN TO CAMLY PTE LTD AFTER RENTAL

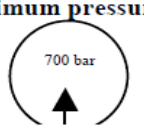
# OPERATION MANUAL FOR SQUARE DRIVE & LOW PROFILE HYDRAULIC TORQUE WRENCHES

The Torque Reaction Arm must be positioned against a positive stop. Do not use the Arm as a dead handle. Take all precautions to make certain the operator's hand cannot be pinched between the Arm and a solid object.

Do not carry the tool by the hose.

Keep body stance balanced and firm. Do not overreach when operating this tool.

Operate at 700 bar maximum pressure.




Always turn off the pump and disconnect the power before installing, removing, or adjusting any accessory on this tool, or before performing any maintenance on this tool.


Do not use damaged, frayed or deteriorated hydraulic hoses and fittings.

Always wear eye protection when operating or performing maintenance on this tool.

Always wear ear protection when operating this tool.

**OPERATION MANUAL TO BE RETURN TO CAMLY PTE LTD AFTER RENTAL**

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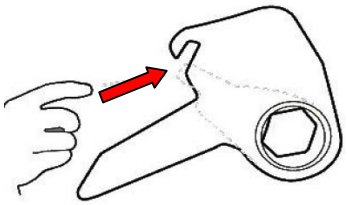
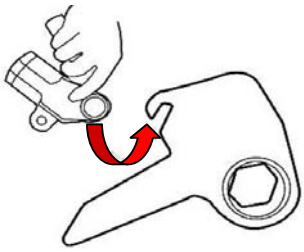
# LOW PROFILE SERIES HYDRAULIC TORQUE WRENCH SETUP PROCEDURE

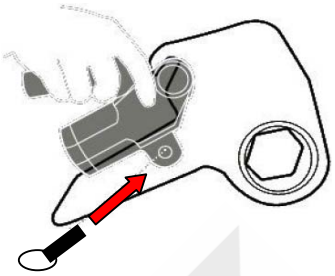
**1) Connect the cylinder to the ratchet link.**



A) Push the ratchet mechanism all the way in.

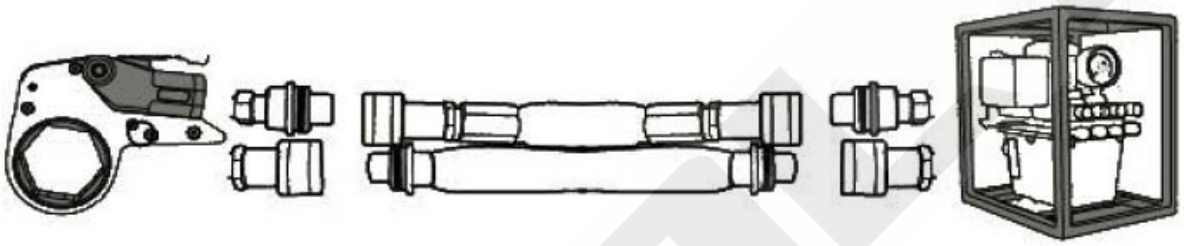


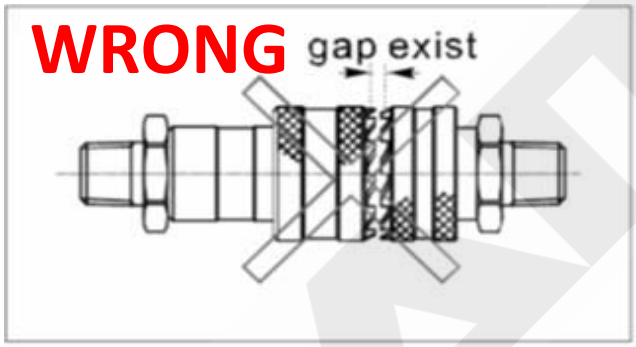
B) Hook powerhead to link.

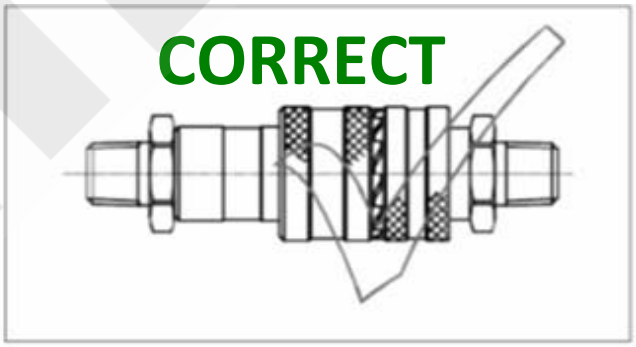


C) Secure tool with link pin.

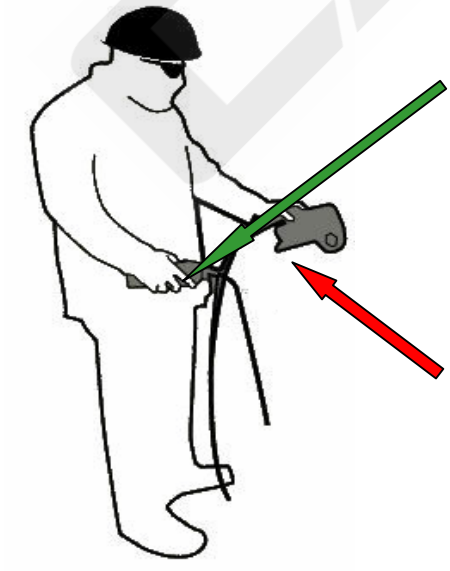
**2) Connect hose to the corresponding couplers on the pump and tool. Make sure your hoses are free of any defects.**





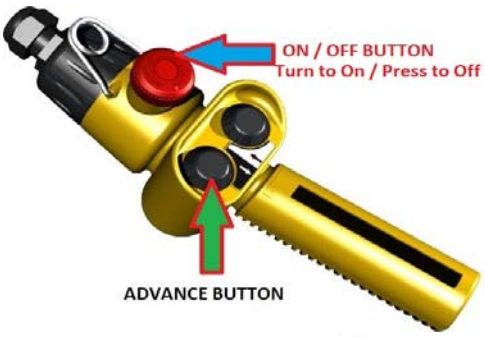




**3) Cycle the tool.**



A) On the Pump then Press Advance Button
Hear click sound , release Advance Button and press again to hear 2nd click sound

B) Vision check on the Low Profile Hex and ensure it turns.

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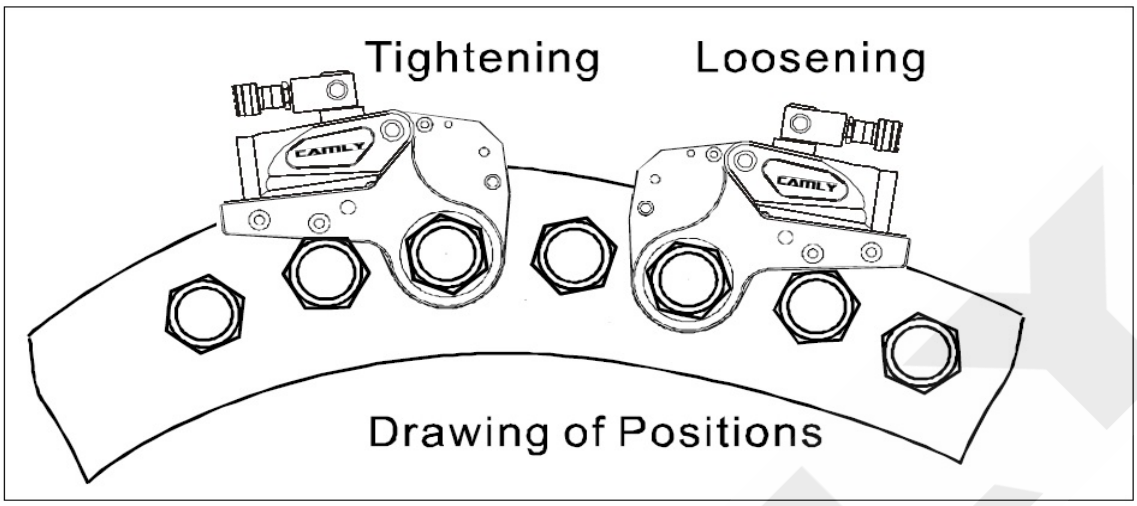
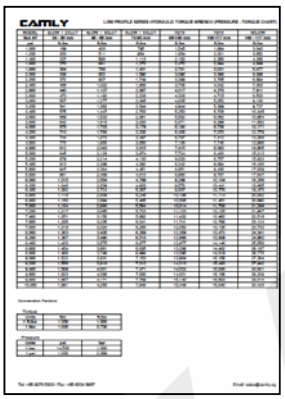
# LOW PROFILE SERIES HYDRAULIC TORQUE WRENCH SETUP PROCEDURE

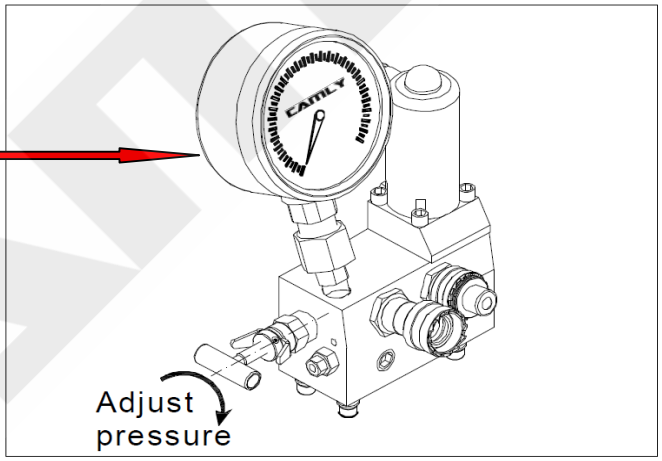
**4) Remember tool position for tightening and loosening**
**** NEVER PLACE HANDS NEAR ACTION OR REACTION POINTS**




**5) Use the pressure/torque conversion chart to set the pump pressure for the torque value you need.**
NOTE: Only use the chart that corresponds to the tool you are using.

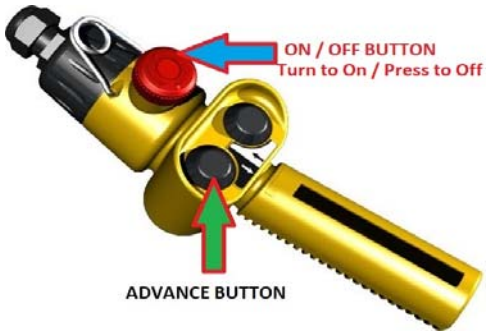
**6) Turn the T-handle to set the pump pressure**






**7) LOCKED-ON after final cycle.** (This allow the hydraulic torque wrench to be removed easily)

| | |
|---|---|
| Step 1 | ON the pump then Press and hold advance button on remote control ( Do not release ) |
| Step 2 | Press down and hold on the anti locking lever ( Do not release ) |
| Step 3 | Release advance button on remote control 1st , then follow by releasing the anti locking lever |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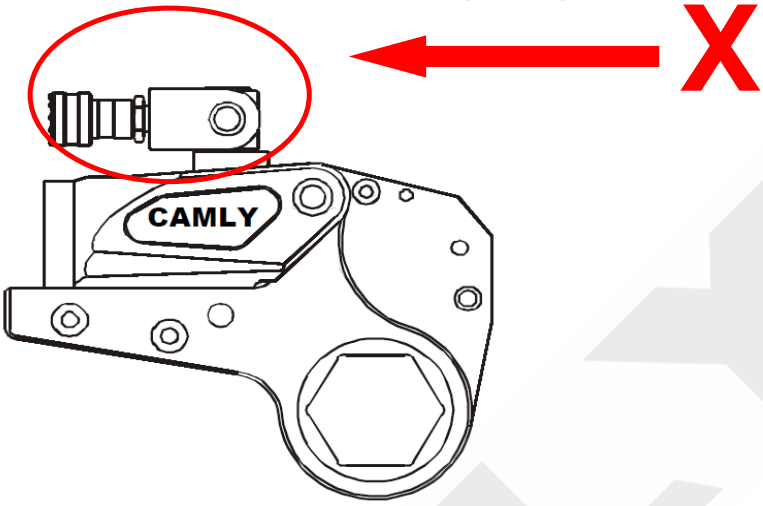
# LOW PROFILE SERIES HYDRAULIC TORQUE WRENCH SETUP PROCEDURE

**8a) Handling / Carrying - DO NOT carry the wrench on the swivel manifold. The swivel manifold will BREAK.**

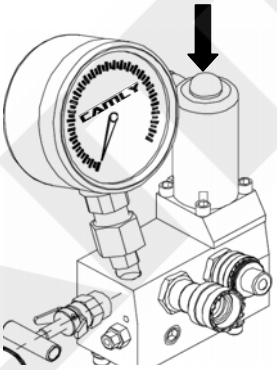
**8b) Handling / Carrying - DO NOT turn swivel manifold. When Pump is in operation or switch ON.**



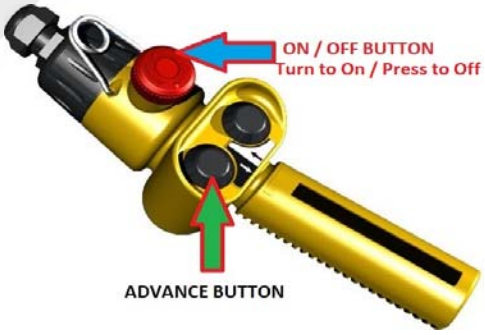

**9) De-pressurise system before removing of Hydraulic Torque Wrench and Hoses from Pump**

When pump is OFF, remaining pressure have to be depressurise.


**<u>From PUMP</u>** **OR**
Press down solenoid valve




**<u>From Remote</u>**
Press OFF Button then Advance Button




**** Ensure ZERO Pressure before you dismantle the system.**

**WARNING:**
NEVER PLACE HANDS NEAR ACTION OR REACTION POINTS.
ALWAYS WEAR HARD HAT, SAFETY GLOVES, GOGGLES, STEELTOE BOOTS AND EARPLUGS

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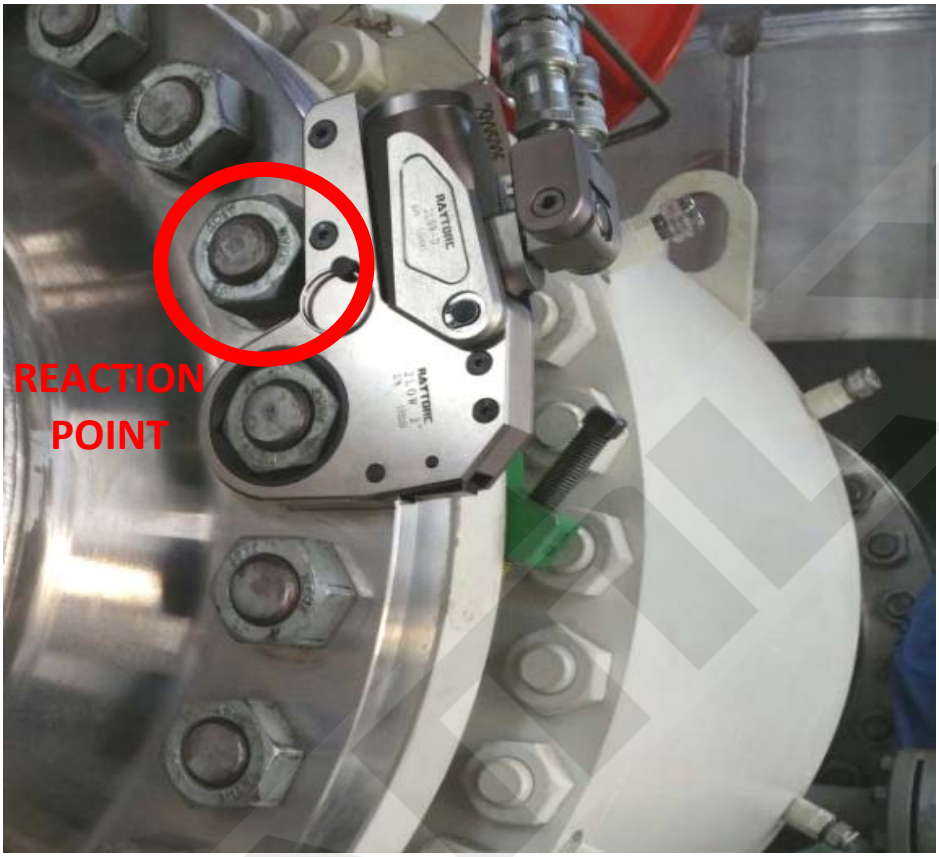
## LOW PROFILE SERIES HYDRAULIC TORQUE WRENCH SETUP PROCEDURE

### 10) Correct Position for reaction point

**** NEVER PLACE HANDS NEAR ACTION OR REACTION POINTS**

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LOW PROFILE SERIES HYDRAULIC TORQUE WRENCH

PRESSURE (BAR) / TORQUE (NM) CONVERSION CHART

| Model | 2 LOW<br>2 XLCT | 4 LOW<br>4 XLCT | 8 LOW<br>8 XLCT | 14 LOW<br>14 XLCT | H 210<br>H 210 | H 210<br>H 210 | 30 LOW<br>30 XLCT |
|---|---|---|---|---|---|---|---|
| Nut AF | 30 - 50 mm | 46 - 65 mm | 70-90 mm | 95-117 | 95-100 mm | 105-117 mm | 100 - 120 mm |
| bar | N.m | N.m | N.m | N.m | N.m | N.m | N.m |
| 70 | 232 | 585 | 1,094 | 1852 | 2,121 | 2,312 | 4,188 |
| 80 | 265 | 669 | 1,250 | 2117 | 2,424 | 2,642 | 4,786 |
| 90 | 299 | 752 | 1,407 | 2381 | 2,727 | 2,973 | 5,385 |
| 100 | 332 | 836 | 1,563 | 2646 | 3,030 | 3,303 | 5,983 |
| 110 | 365 | 920 | 1,719 | 2910 | 3,333 | 3,633 | 6,581 |
| 120 | 398 | 1,003 | 1,876 | 3175 | 3,636 | 3,963 | 7,180 |
| 130 | 432 | 1,087 | 2,032 | 3440 | 3,939 | 4,294 | 7,778 |
| 140 | 465 | 1,171 | 2,188 | 3704 | 4,242 | 4,624 | 8,376 |
| 150 | 498 | 1,255 | 2,344 | 3969 | 4,545 | 4,954 | 8,975 |
| 160 | 531 | 1,338 | 2,501 | 4233 | 4,848 | 5,285 | 9,573 |
| 170 | 565 | 1,422 | 2,657 | 4498 | 5,151 | 5,615 | 10,171 |
| 180 | 598 | 1,506 | 2,813 | 4762 | 5,454 | 5,945 | 10,770 |
| 190 | 631 | 1,589 | 2,970 | 5027 | 5 757 | 6,275 | 11,368 |
| 200 | 665 | 1,673 | 3,126 | 5292 | 6,060 | 6,606 | 11,966 |
| 210 | 698 | 1,757 | 3,282 | 5556 | 6,363 | 6,936 | 12,564 |
| 220 | 731 | 1,841 | 3,439 | 5821 | 6,666 | 7,266 | 13,163 |
| 230 | 764 | 1,924 | 3,595 | 6085 | 6,969 | 7,597 | 13,761 |
| 240 | 798 | 2,008 | 3,751 | 6350 | 7,272 | 7,927 | 14,359 |
| 250 | 831 | 2,092 | 3,907 | 6615 | 7,575 | 8,257 | 14,958 |
| 260 | 864 | 2,175 | 4,064 | 6879 | 7,878 | 8,587 | 15,556 |
| 270 | 897 | 2,259 | 4,220 | 7144 | 8,181 | 8,918 | 16,154 |
| 280 | 931 | 2,343 | 4,376 | 7408 | 8,484 | 9,248 | 16,753 |
| 290 | 964 | 2,426 | 4,533 | 7673 | 8,787 | 9,578 | 17,351 |
| 300 | 997 | 2,510 | 4,689 | 7938 | 9,090 | 9,909 | 17,949 |
| 310 | 1,030 | 2,594 | 4,845 | 8202 | 9,393 | 10,239 | 18,548 |
| 320 | 1,064 | 2,677 | 5,002 | 8467 | 9,696 | 10,569 | 19,146 |
| 330 | 1,097 | 2,761 | 5,158 | 8731 | 9,999 | 10,899 | 19,744 |
| 340 | 1,130 | 2,845 | 5,314 | 8996 | 10,302 | 11,230 | 20,343 |
| 350 | 1,164 | 2,929 | 5,470 | 9260 | 10,605 | 11,560 | 20,941 |
| 360 | 1,197 | 3,012 | 5,627 | 9525 | 10,908 | 11,890 | 21,539 |
| 370 | 1,230 | 3,096 | 5,783 | 9790 | 11,211 | 12,221 | 22,138 |
| 380 | 1,263 | 3,180 | 5,939 | 10054 | 11,514 | 12,551 | 22,736 |
| 390 | 1,297 | 3,263 | 6,096 | 10319 | 11,817 | 12,881 | 23,334 |
| 400 | 1,330 | 3,347 | 6,252 | 10583 | 12,120 | 13,211 | 23,932 |
| 410 | 1,363 | 3,431 | 6,408 | 10848 | 12,423 | 13,542 | 24,531 |
| 420 | 1,396 | 3,514 | 6,565 | 11113 | 12,726 | 13,872 | 25,129 |
| 430 | 1,430 | 3,598 | 6,721 | 11377 | 13,029 | 14,202 | 25,727 |
| 440 | 1,463 | 3,682 | 6,877 | 11642 | 13,332 | 14,533 | 26,326 |
| 450 | 1,496 | 3,766 | 7,033 | 11906 | 13,635 | 14,863 | 26,924 |
| 460 | 1,530 | 3,849 | 7,190 | 12171 | 13,938 | 15,193 | 27,522 |
| 470 | 1,563 | 3,933 | 7,346 | 12435 | 14,241 | 15,523 | 28,121 |
| 480 | 1,596 | 4,017 | 7,502 | 12700 | 14,544 | 15,854 | 28,719 |
| 490 | 1,629 | 4,100 | 7,659 | 12965 | 14,847 | 16,184 | 29,317 |
| 500 | 1,663 | 4,184 | 7,815 | 13229 | 15,150 | 16,514 | 29,916 |
| 510 | 1,696 | 4,268 | 7,971 | 13494 | 15,453 | 16,845 | 30,514 |
| 520 | 1,729 | 4,351 | 8,128 | 13758 | 15,756 | 17,175 | 31,112 |
| 530 | 1,762 | 4,435 | 8,284 | 14023 | 16,059 | 17,505 | 31,711 |
| 540 | 1,796 | 4,519 | 8,440 | 14288 | 16,362 | 17,835 | 32,309 |
| 550 | 1,829 | 4,603 | 8,596 | 14552 | 16,665 | 18,166 | 32,907 |
| 560 | 1,862 | 4,686 | 8,753 | 14817 | 16,968 | 18,496 | 33,506 |
| 570 | 1,895 | 4,770 | 8,909 | 15081 | 17,271 | 18,826 | 34,104 |
| 580 | 1,929 | 4,854 | 9,065 | 15346 | 17,574 | 19,157 | 34,702 |
| 590 | 1,962 | 4,937 | 9,222 | 15611 | 17,877 | 19,487 | 35,301 |
| 600 | 1,995 | 5,021 | 9,378 | 15875 | 18,180 | 19,817 | 35,899 |
| 610 | 2,029 | 5,105 | 9,534 | 16140 | 18,483 | 20,147 | 36,497 |
| 620 | 2,062 | 5,188 | 9,691 | 16404 | 18,786 | 20,478 | 37,095 |
| 630 | 2,095 | 5,272 | 9,847 | 16669 | 19,089 | 20,808 | 37,694 |
| 640 | 2,128 | 5,356 | 10,003 | 16933 | 19,392 | 21,138 | 38,292 |
| 650 | 2,162 | 5,440 | 10,159 | 17198 | 19,695 | 21,469 | 38,890 |
| 660 | 2,195 | 5,523 | 10,316 | 17463 | 19,998 | 21,799 | 39,489 |
| 670 | 2,228 | 5,607 | 10,472 | 17727 | 20,301 | 22,129 | 40,087 |
| 680 | 2,261 | 5,691 | 10,628 | 17992 | 20,604 | 22,459 | 40,685 |
| 690 | 2,295 | 5,774 | 10,785 | 18256 | 20,907 | 22,790 | 41,284 |
| 700 | 2,328 | 5,858 | 10,941 | 18521 | 21,216 | 23,124 | 41,882 |

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LOW PROFILE SERIES HYDRAULIC TORQUE WRENCH

PRESSURE (PSI) / TORQUE (FT.LBS) CONVERSION CHART

| Model | 2 LOW<br>2 XLCT | 4 LOW<br>4 XLCT | 8 LOW<br>8 XLCT | 14 LOW<br>14 XLCT | H 210<br>H 210 | H 210<br>H 210 | 30 LOW<br>30 XLCT |
|---|---|---|---|---|---|---|---|
| Nut AF | 30 - 50 mm | 46 - 65 mm | 70-90 mm | 95-117 | 95-100 mm | 105-117 mm | 100 - 120 mm |
| psi | ft.lbs | ft.lbs | ft.lbs | ft.lbs | ft.lbs | ft.lbs | ft.lbs |
| 1,000 | 169 | 426 | 795 | 1346 | 1,545 | 1,684 | 3,043 |
| 1,200 | 203 | 511 | 954 | 1615 | 1,854 | 2,021 | 3,652 |
| 1,400 | 237 | 596 | 1,113 | 1884 | 2,163 | 2,358 | 4,260 |
| 1,600 | 270 | 681 | 1,272 | 2153 | 2,472 | 2,694 | 4,869 |
| 1,800 | 304 | 766 | 1,431 | 2422 | 2,781 | 3,031 | 5,477 |
| 2,000 | 338 | 852 | 1,590 | 2692 | 3,090 | 3,368 | 6,086 |
| 2,200 | 372 | 937 | 1,749 | 2961 | 3,399 | 3,705 | 6,694 |
| 2,400 | 406 | 1,022 | 1,908 | 3230 | 3,708 | 4,042 | 7,303 |
| 2,600 | 440 | 1,107 | 2,067 | 3499 | 4,017 | 4,378 | 7,911 |
| 2,800 | 473 | 1,192 | 2,226 | 3768 | 4,326 | 4,715 | 8,520 |
| 3,000 | 507 | 1,277 | 2,385 | 4037 | 4,635 | 5,052 | 9,128 |
| 3,200 | 541 | 1,362 | 2,544 | 4306 | 4,944 | 5,389 | 9,737 |
| 3,400 | 575 | 1,447 | 2,703 | 4575 | 5,253 | 5,726 | 10,345 |
| 3,600 | 609 | 1,533 | 2,861 | 4844 | 5,562 | 6,062 | 10,954 |
| 3,800 | 642 | 1,618 | 3,020 | 5113 | 5,871 | 6,399 | 11,562 |
| 4,000 | 676 | 1,703 | 3,179 | 5383 | 6,180 | 6,736 | 12,171 |
| 4,200 | 710 | 1,788 | 3,338 | 5652 | 6,488 | 7,073 | 12,779 |
| 4,400 | 744 | 1,873 | 3,497 | 5921 | 6,797 | 7,410 | 13,388 |
| 4,600 | 778 | 1,958 | 3,656 | 6190 | 7,106 | 7,746 | 13,996 |
| 4,800 | 812 | 2,043 | 3,815 | 6459 | 7,415 | 8,083 | 14,605 |
| 5,000 | 845 | 2,128 | 3,974 | 6728 | 7,724 | 8,420 | 15,213 |
| 5,200 | 879 | 2,214 | 4,133 | 6997 | 8,033 | 8,757 | 15,822 |
| 5,400 | 913 | 2,299 | 4,292 | 7266 | 8,342 | 9,094 | 16,430 |
| 5,600 | 947 | 2,384 | 4,451 | 7535 | 8,651 | 9,430 | 17,039 |
| 5,800 | 981 | 2,469 | 4,610 | 7804 | 8,960 | 9,767 | 17,647 |
| 6,000 | 1,015 | 2,554 | 4,769 | 8074 | 9,269 | 10,104 | 18,256 |
| 6,200 | 1,048 | 2,639 | 4,928 | 8343 | 9,578 | 10,441 | 18,865 |
| 6,400 | 1,082 | 2,724 | 5,087 | 8612 | 9,887 | 10,778 | 19,473 |
| 6,600 | 1,116 | 2,809 | 5,246 | 8881 | 10,196 | 11,114 | 20,082 |
| 6,800 | 1,150 | 2,894 | 5,405 | 9150 | 10,505 | 11,451 | 20,690 |
| 7,000 | 1,184 | 2,980 | 5,564 | 9419 | 10,814 | 11,788 | 21,299 |
| 7,200 | 1,217 | 3,065 | 5,723 | 9688 | 11,123 | 12,125 | 21,907 |
| 7,400 | 1,251 | 3,150 | 5,882 | 9957 | 11,432 | 12,462 | 22,516 |
| 7,600 | 1,285 | 3,235 | 6,041 | 10226 | 11,741 | 12,798 | 23,124 |
| 7,800 | 1,319 | 3,320 | 6,200 | 10495 | 12,050 | 13,135 | 23,733 |
| 8,000 | 1,353 | 3,405 | 6,359 | 10765 | 12,359 | 13,472 | 24,341 |
| 8,200 | 1,387 | 3,490 | 6,518 | 11034 | 12,668 | 13,809 | 24,950 |
| 8,400 | 1,420 | 3,575 | 6,677 | 11303 | 12,977 | 14,146 | 25,558 |
| 8,600 | 1,454 | 3,661 | 6,835 | 11572 | 13,286 | 14,482 | 26,167 |
| 8,800 | 1,488 | 3,746 | 6,994 | 11841 | 13,595 | 14,819 | 26,775 |
| 9,000 | 1,522 | 3,831 | 7,153 | 12110 | 13,904 | 15,156 | 27,384 |
| 9,200 | 1,556 | 3,916 | 7,312 | 12379 | 14,213 | 15,493 | 27,992 |
| 9,400 | 1,589 | 4,001 | 7,471 | 12648 | 14,522 | 15,830 | 28,601 |
| 9,600 | 1,623 | 4,086 | 7,630 | 12917 | 14,831 | 16,166 | 29,209 |
| 9,800 | 1,657 | 4,171 | 7,789 | 13186 | 15,140 | 16,503 | 29,818 |
| 10,000 | 1,691 | 4,256 | 7,948 | 13456 | 15,449 | 16,840 | 30,426 |

**Conversion Factors**

Torque

| Units | Nm | ft.lbs |
|---|---|---|
| 1 ft.lbs | 1.356 | 1.000 |
| 1 Nm | 1.000 | 0.738 |

Pressure

| Units | psi | bar |
|---|---|---|
| 1 bar | 14.500 | 1.000 |
| 1 psi | 1.000 | 0.069 |

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