ERGOLAB™
by Greenlee®

BODY BENEFITS

ESG45LX – ACSR Cutter

ESG45LX

In-line design keeps tool lighter than the competition

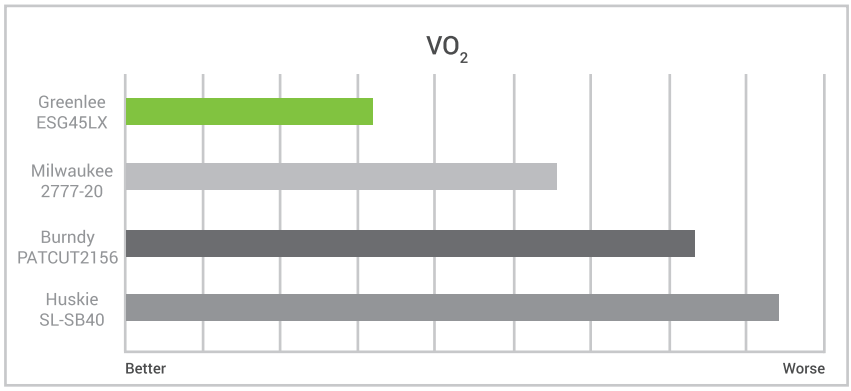
- **Decreased effort and strain** lower risk of injuries
- **Lower amount of energy expended (VO2)** translates to more energy to get the job done

Testing Spotlight

Less Energy Consumed

The study included metabolic testing and oxygen usage (VO_2) to measure how much energy a tool uses. For users of these tools this translates to higher VO_2 = more fatigue and strain. This muscle strain and fatigue increases risk of injury.

The ESG45LX had the lowest VO2 values for the ACSR cutters tested. It is the lightest inline tool in this category and shows in the decrease energy consumed when using the tool.



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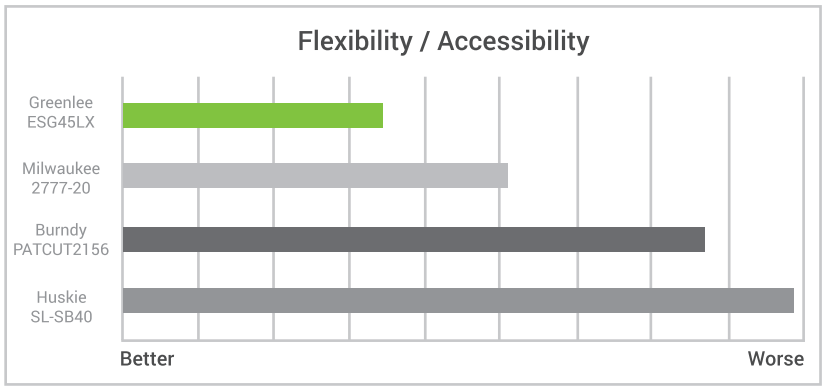
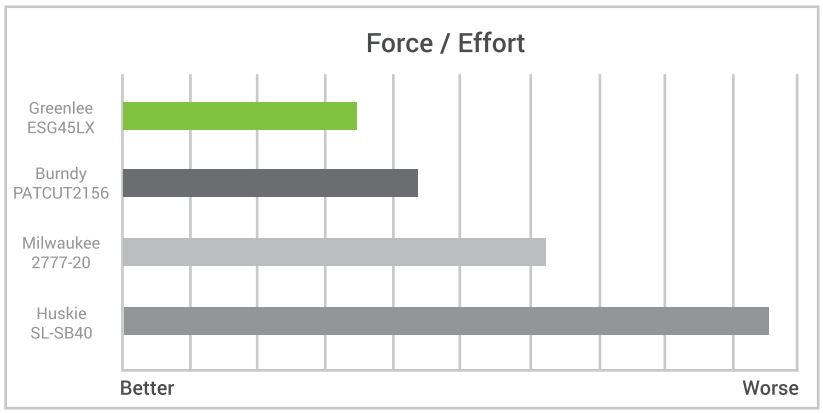
ESG45LX SUBJECTIVE TESTING HIGHLIGHTS

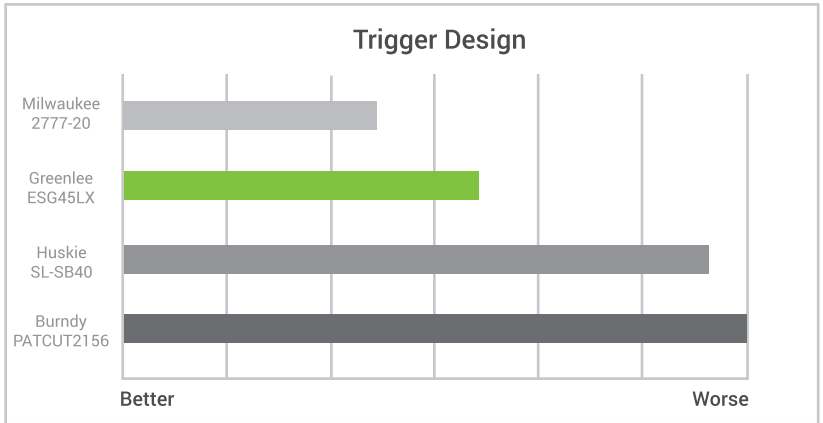
Survey: Participants rated the tools in 8 categories on a 10-point scale after using the tools, with 1 being best and 10 being worst. Some categories surveyed were:



Flexibility / Accessibility: Perception of tools ability to adjust to match job conditions. Linked with improved posture which reduces risk of injury.



Force / Effort: Perception of the force of effort it takes to operate the tool. Linked with reduced fatigue and muscle strain.



Trigger Design: Perception of the ease of using the trigger. Linked with reduced risk of tendinitis.

Injury Prevention

Reduced strain from improved flexibility, improved trigger design, and decreased effort to use translates into reduced risk of muscle and tendon injuries.

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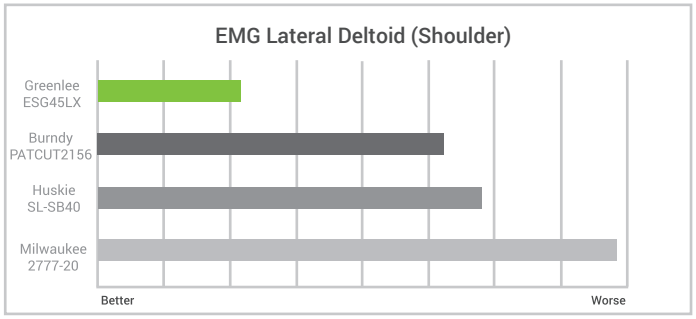
ESG45LX OBJECTIVE TESTING HIGHLIGHTS

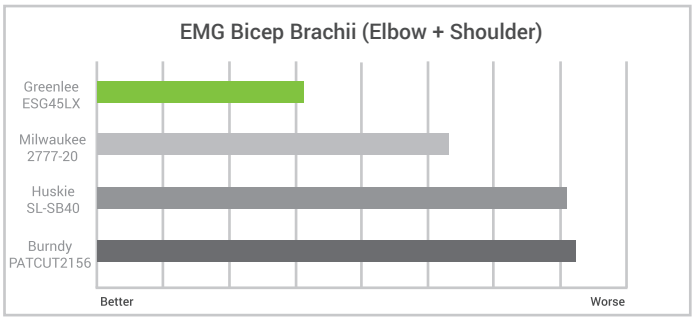
Electromyography (or EMG): Measures the activation of muscles or how hard a muscle is working. For the tool operator this translates to higher EMG = greater effort and strain. Muscle strain leads to fatigue and increased risk of injury.



Deltoid

- Muscle involved in shoulder motions
- Lower EMG signifies less fatigue and strain

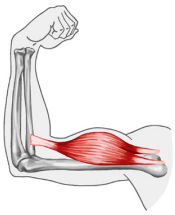
Possible Injuries Include:
Muscle tear and speeding onset of osteoarthritis

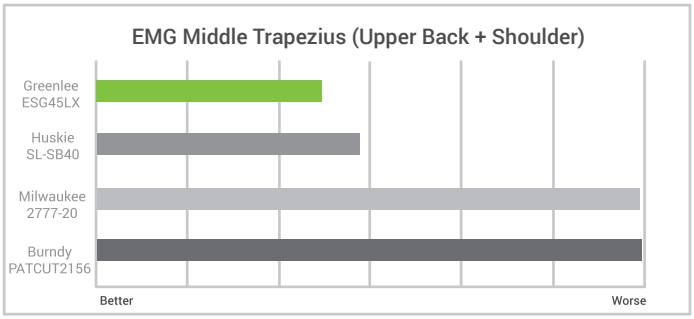


Biceps Brachii

- Muscle involved in elbow and shoulder motions
- Lower EMG signifies less effort and exertion

Possible Injuries Include:
Muscle sprain and tendon avulsion

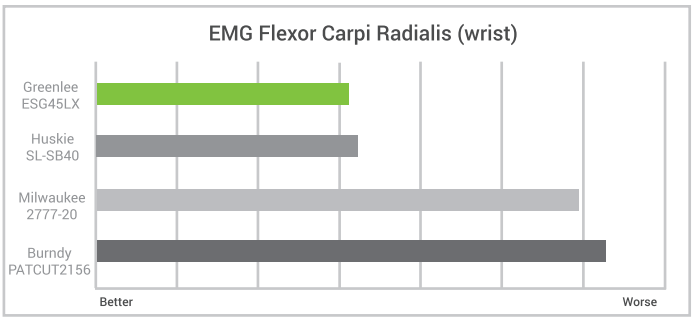




Middle Trapezius

- Muscle stabilizes of shoulder during use
- Lower EMG signifies less muscle use and fatigue

Possible Injuries Include:
Back sprain, rotator cuff tear, and arm weakness



Flexor Carpi Radialis

- Muscle controls wrist movement and stabilization
- Lower EMG signifies less fatigue and damage

Possible Injuries Include:
Carpal Tunnel Syndrome and tendinitis

UNDERSTANDING THE TRUE IMPACT OF POOR ERGONOMICS

ERGONOMIC INJURIES ARE THE MOST COMMON TYPE OF INJURY REQUIRING DAYS AWAY FROM WORK.[1]

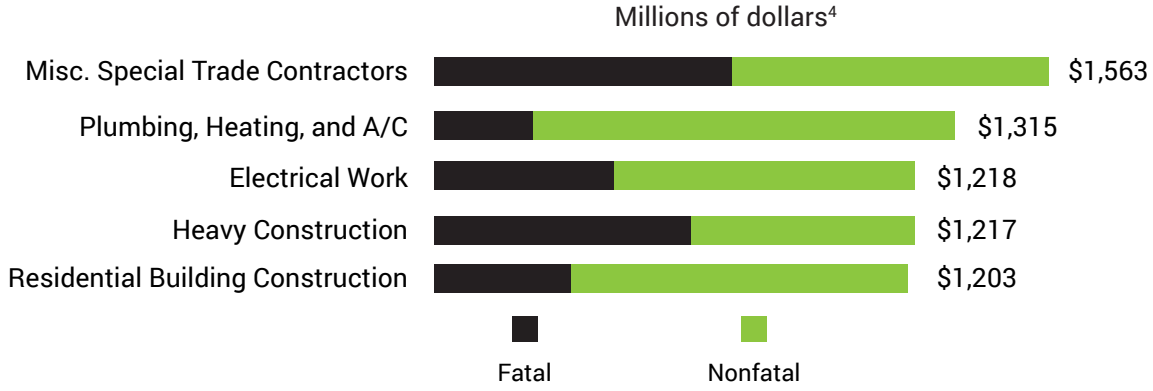
$100,397[2]

Repetitive motion injuries had an average total cost (direct medical and non-direct) per injury, which require days away from work. The non-direct costs are typically larger and are driven by days away from work.

$56,309[3]

Average total cost for all injuries (direct medical and non-direct) of nonfatal injury requiring days away from work for Electrical work per injury.

ESTIMATED COSTS OF WORK-RELATED INJURIES BY CONSTRUCTION INDUSTRY



1 - Waehrer G, et al. "Costs of Occupational Injuries in Construction in the United States", Accid Anal Prev. 2007 November ; 39(6): 1258-1266
2 - Ibid. Source state a value of ($75,254) and was adjusted due to inflation for 2002 to 2016
3 - Ibid. Source state a value of ($37,000) and was adjusted due to inflation for 2002 to 2016
4 - Ibid. not adjusted for inflation

Results determined through testing performed by Iowa State University's ATHENA lab using the Greenlee ESG45LX, Milwaukee 2777-20, Burndy PATCUT2156, and Huskie SL-SB40 on 'Raven' 1/0 Aluminum steel reinforced. Results may vary depending on the wire type, work environment, user technique and personal characteristics.

MA6506
4455 Boeing Dr • Rockford, IL 61109 • USA • 800-435-0786

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