



**WWT  
International**

# Super 4 Long (S4-L) Non-Rotating Protectors (NRP)<sup>™</sup>

**Reduce rotary torque • Protect against casing, riser, and drill pipe wear  
Reduce buckling, heat checking, vibration and stick-slip • Open-hole capabilities**



## Features and Benefits

- Straight blade design with optimized spacing to mitigate incremental ECD increase.
- Global leadership in some of the world's most challenging drilling environments since 1989.
- Clamp-on design doesn't increase stand length, thereby simplifying derrick management.
- Significant torque reduction created by WWT's patented fluid bearing.
- Optimum operating performance range of 30 - 250 RPM.
- Free, no-obligation T&D, and casing wear analysis.
- Provides the greatest side force capabilities compared to similar tools on the market, backed with WWT's long standing 30+ year experience.
- Buoyancy effect results in negligible added weight to the drill string, thereby minimizing impact to max overpull margins.
- Compatible with most oil-, synthetic- and water-based drilling fluids.
- Each assembly accepts up to 120,000 lbs. of axial force before slippage.
- Installation time: Approximately 1 minute, enabling greater placement flexibility.

## Model S4-L (16" Long Sleeve) Specifications

| WWT NRP Model                 | S4-658-L                                                  | S4-658-LF             |
|-------------------------------|-----------------------------------------------------------|-----------------------|
| Drill Pipe Size               | 6.63"                                                     | 6.63"                 |
| Sleeve Max OD                 | 9.13"                                                     | 9.63"                 |
| Hydraulic Effective OD        | 8.49"                                                     | 8.81"                 |
| Collar OD                     | 8.13"                                                     | 8.13"                 |
| Sleeve Length                 | 16"                                                       | 16"                   |
| Sleeve Volume                 | 265 in <sup>3</sup>                                       | 386 in <sup>3</sup>   |
| Sleeve Weight                 | 23 lbs                                                    | 25 lbs                |
| Side-Load Rating Continuous   | 5,000 lbs                                                 | 5,000 lbs             |
| Side-Load Rating Intermittent | 15,000 lbs                                                | 15,000 lbs            |
| Cross-Sectional Area          | 22.2 in <sup>2</sup>                                      | 26.6 in <sup>2</sup>  |
| Total Flow Area               |                                                           |                       |
| 12-1/4" x 134.25 ppf Csg.     | 21.9 in <sup>2</sup>                                      | 17.5 in <sup>2</sup>  |
| 13-3/8" x 72 ppf Csg.         | 63.1 in <sup>2</sup>                                      | 58.7 in <sup>2</sup>  |
| 13-5/8" x 88.2 ppf Csg.       | 63.6 in <sup>2</sup>                                      | 59.2 in <sup>2</sup>  |
| 14" x 115 ppf Csg.            | 63.6 in <sup>2</sup>                                      | 59.2 in <sup>2</sup>  |
| 16" x 97 ppf Csg.             | 116.5 in <sup>2</sup>                                     | 112.1 in <sup>2</sup> |
| 16-1/4" x 136.04 ppf Csg.     | 110.7 in <sup>2</sup>                                     | 106.3 in <sup>2</sup> |
| 18" x 117 ppf Csg.            | 163.7 in <sup>2</sup>                                     | 159.3 in <sup>2</sup> |
| Collar Material               | 6061-T651 Extruded Aluminum Alloy                         |                       |
| Sleeve Material               | Proprietary High-Temperature, Wear Resistant Polyurethane |                       |
| Max. Temperature              | 275° F (135° C)                                           |                       |



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