

HYDROWYPE

A-SERIES, STYLE-1, 2 & 3 (MS28776) MIL-SPEC SCRAPERS

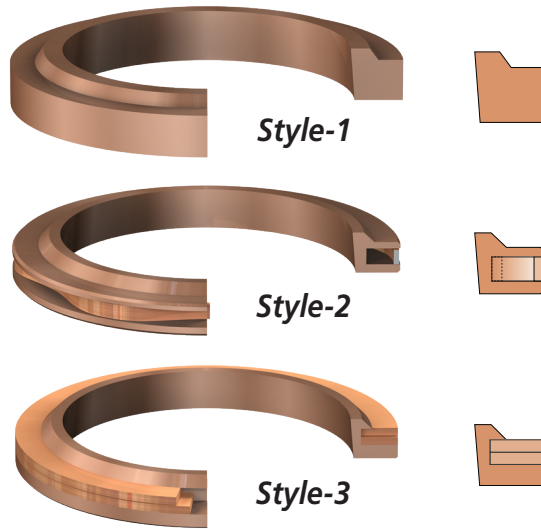
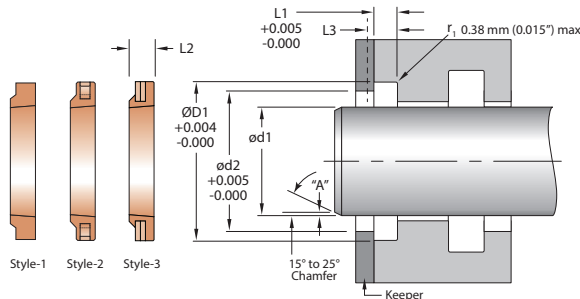
A-Series, Style-1 scrapers are the original MS28776 metal scraper Mil-Spec. These are still available for purchase, for repair maintenance, and for retrofit installations. But wherever possible, it is highly recommended that this style be substituted with a Style-2 or Style-3, which through the inclusion of a metal spring, that serves as a tensioning member, are capable of meeting the full MS28776-M2 requirements for light-tightness, rod pressure and breakout friction.

A-Series, Style-2 & 3 Rod Scraper dimensions are according to the MS28776 specification set forth under MIL-R-5049. Style-2 provides a scraping body with a narrow groove accommodating a 302 stainless steel serpentine form spring to generate scraping load. Style-3 provides a scraping body with a wide groove in the outside diameter containing two 1095 high carbon steel (plated) c-springs (resembling split washers) to generate scraping load. Both of these spring types are installed in a groove on OD of the scraper body (springs do not contact the rod).

The following certification levels are offered:

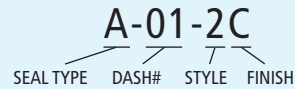
1. Manufacturer Certificate of Conformance (CoC).
2. Material and Process certificates plus CoC.
3. Full conformance report (MIL-STD-831 format) plus material, process and manufacturers certs.

Please identify certification requirements that time of requesting a quote and placing order.



Available materials based on style.
Contact MFP Seals for detailed information.

HYDROWYPE PART NUMBER



FINISH DESIGNATION

- B = UNFINISHED*
- C = CADMIUM (Standard)
- N = NICKEL
- Z = ZINC

*Unfinished parts are susceptible to oxidation and should not be stored for long periods without appropriate treatment. Parts will be shipped in plastic bags with light coating of machine oil to prevent corrosion.

Scrapers are typically held in place by a Keeper/Follower plate or Retaining Ring. Groove dimensions in accordance with MS33675. Rod diameter in conformance with MIL-G-5514 Rev. G.

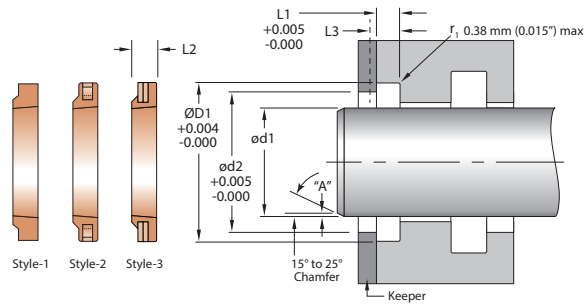
| PART NUMBER | STYLE | ROD APPLICATION | | | | |
|-----------------------|-------|-----------------|---------------|---------------|---------------|---------------|
| | | ød1 | ØD1 | ød2 | L1 | L3 |
| .104" - GROOVE | | | | | | |
| A-01 | 1 & 3 | NOMINAL | +0.004/-0.000 | +0.005/-0.000 | +0.005/-0.000 | +0.005/-0.000 |
| A-02 | 1 & 3 | 0.500 | 0.760 | 0.647 | 0.104 | 0.136 |
| A-03 | 1 & 3 | 0.563 | 0.823 | 0.710 | 0.104 | 0.136 |
| A-04 | 1 & 3 | 0.625 | 0.885 | 0.772 | 0.104 | 0.136 |
| A-05 | 1 & 3 | 0.688 | 0.948 | 0.834 | 0.104 | 0.136 |
| A-06 | 1 & 3 | 0.750 | 1.010 | 0.897 | 0.104 | 0.136 |
| A-07 | 1 & 3 | 0.813 | 1.052 | 0.949 | 0.104 | 0.136 |
| A-08 | 1 & 3 | 0.875 | 1.114 | 1.012 | 0.104 | 0.136 |
| A-09 | 1 & 3 | 0.938 | 1.177 | 1.074 | 0.104 | 0.136 |
| A-10 | 1 & 3 | 1.000 | 1.239 | 1.136 | 0.104 | 0.136 |
| A-11 | 1 & 3 | 1.063 | 1.302 | 1.199 | 0.104 | 0.136 |
| A-12 | 1 & 3 | 1.125 | 1.364 | 1.262 | 0.104 | 0.136 |
| A-12 | 1 & 3 | 1.188 | 1.427 | 1.324 | 0.104 | 0.136 |



A-Series, Style-1, 2 & 3 (MS28776) Rod Scrapers

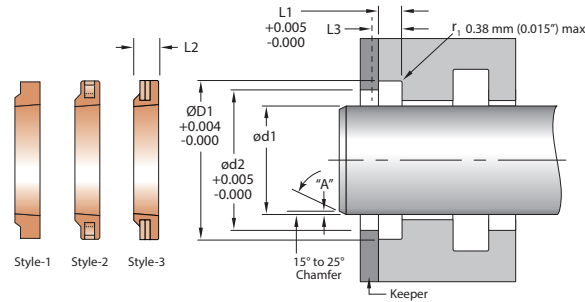
Medium Duty

A-SERIES (MS28776)
STYLE-1, 2 & 3



ROD SCRAPERS

| PART NUMBER | STYLE | ROD APPLICATION - MS33675 | | | | |
|-----------------------|-------|---------------------------|---------------|---------------|---------------|---------------|
| | | ød1 | ØD1 | ød2 | L1 | L3 |
| .104" - GROOVE | | NOMINAL | +0.004/-0.000 | +0.005/-0.000 | +0.005/-0.000 | +0.005/-0.000 |
| A-13 | 1 & 3 | 1.250 | 1.489 | 1.386 | 0.104 | 0.136 |
| A-14 | 1 & 3 | 1.313 | 1.614 | 1.480 | 0.104 | 0.136 |
| A-15 | 1 & 3 | 1.375 | 1.677 | 1.542 | 0.104 | 0.135 |
| A-16 | 1 & 2 | 1.438 | 1.739 | 1.605 | 0.104 | 0.135 |
| A-17 | 1 & 2 | 1.500 | 1.802 | 1.668 | 0.104 | 0.135 |
| A-18 | 1 & 2 | 1.625 | 1.927 | 1.793 | 0.104 | 0.135 |
| A-19 | 1 & 2 | 1.750 | 2.052 | 1.918 | 0.104 | 0.135 |
| A-20 | 1 & 2 | 1.875 | 2.177 | 2.043 | 0.104 | 0.135 |
| A-21 | 1 & 2 | 2.000 | 2.302 | 2.178 | 0.104 | 0.135 |
| A-22 | 1 & 2 | 2.125 | 2.427 | 2.303 | 0.104 | 0.135 |
| A-23 | 1 & 2 | 2.250 | 2.552 | 2.428 | 0.104 | 0.135 |
| A-24 | 1 & 2 | 2.375 | 2.677 | 2.553 | 0.104 | 0.135 |
| A-25 | 1 & 2 | 2.500 | 2.802 | 2.678 | 0.104 | 0.135 |
| .119" - GROOVE | | NOMINAL | +0.004/-0.000 | +0.005/-0.000 | +0.005/-0.000 | +0.005/-0.000 |
| A-26 | 1 & 2 | 2.625 | 2.989 | 2.834 | 0.119 | 0.150 |
| A-27 | 1 & 2 | 2.750 | 3.114 | 2.959 | 0.119 | 0.150 |
| A-28 | 1 & 2 | 2.875 | 3.239 | 3.084 | 0.119 | 0.150 |
| A-29 | 1 & 2 | 3.000 | 3.364 | 3.209 | 0.119 | 0.150 |
| A-30 | 1 & 2 | 3.125 | 3.489 | 3.334 | 0.119 | 0.150 |
| A-31 | 1 & 2 | 3.250 | 3.614 | 3.459 | 0.119 | 0.150 |
| A-32 | 1 & 2 | 3.375 | 3.739 | 3.584 | 0.119 | 0.150 |
| A-33 | 1 & 2 | 3.500 | 3.864 | 3.709 | 0.119 | 0.150 |
| A-34 | 1 & 2 | 3.625 | 3.989 | 3.834 | 0.119 | 0.150 |
| A-35 | 1 & 2 | 3.750 | 4.114 | 3.959 | 0.119 | 0.150 |
| A-36 | 1 & 2 | 3.875 | 4.239 | 4.084 | 0.119 | 0.150 |
| .135" - GROOVE | | NOMINAL | +0.004/-0.000 | +0.005/-0.000 | +0.005/-0.000 | +0.005/-0.000 |
| A-37 | 1 & 2 | 4.000 | 4.427 | 4.240 | 0.135 | 0.166 |
| A-38 | 1 & 2 | 4.125 | 4.552 | 4.365 | 0.135 | 0.166 |
| A-39 | 1 & 2 | 4.250 | 4.677 | 4.490 | 0.135 | 0.166 |
| A-40 | 1 & 2 | 4.375 | 4.802 | 4.615 | 0.135 | 0.166 |
| A-41 | 1 & 2 | 4.500 | 4.927 | 4.740 | 0.135 | 0.166 |
| A-42 | 1 & 2 | 4.625 | 5.052 | 4.865 | 0.135 | 0.166 |
| A-43 | 1 & 2 | 4.750 | 5.177 | 4.990 | 0.135 | 0.166 |
| A-44 | 1 & 2 | 4.875 | 5.302 | 5.115 | 0.135 | 0.166 |
| A-45 | 1 & 2 | 5.000 | 5.427 | 5.240 | 0.135 | 0.166 |
| A-46 | 1 & 2 | 5.125 | 5.552 | 5.365 | 0.135 | 0.166 |



| ROD APPLICATION - MS33675 | | | | | | |
|---------------------------|-------|---------|---------------|---------------|---------------|---------------|
| PART NUMBER | STYLE | ød1 | ØD1 | ød2 | L1 | L3 |
| .135" - GROOVE | | NOMINAL | +0.004/-0.000 | +0.005/-0.000 | +0.005/-0.000 | +0.005/-0.000 |
| A-47 | 1 & 2 | 5.250 | 5.677 | 5.490 | 0.135 | 0.166 |
| A-48 | 1 & 2 | 5.375 | 5.802 | 5.615 | 0.135 | 0.166 |
| A-49 | 1 & 2 | 5.500 | 5.927 | 5.740 | 0.135 | 0.166 |
| .151" - GROOVE | | NOMINAL | +0.004/-0.000 | +0.005/-0.000 | +0.005/-0.000 | +0.005/-0.000 |
| A-50 | 1 & 2 | 5.625 | 6.114 | 5.896 | 0.151 | 0.182 |
| A-51 | 1 & 2 | 5.750 | 6.239 | 6.022 | 0.151 | 0.182 |
| A-52 | 1 & 2 | 5.875 | 6.364 | 6.146 | 0.151 | 0.182 |
| A-53 | 1 & 2 | 6.000 | 6.489 | 6.272 | 0.151 | 0.182 |
| A-54 | 1 & 2 | 6.250 | 6.739 | 6.522 | 0.151 | 0.182 |
| A-55 | 1 & 2 | 6.500 | 6.989 | 6.772 | 0.151 | 0.182 |
| A-56 | 1 & 2 | 6.750 | 7.239 | 7.022 | 0.151 | 0.182 |
| A-57 | 1 & 2 | 7.000 | 7.489 | 7.272 | 0.151 | 0.182 |
| A-58 | 1 & 2 | 7.250 | 7.739 | 7.522 | 0.151 | 0.182 |
| A-59 | 1 & 2 | 7.500 | 7.989 | 7.772 | 0.151 | 0.182 |
| A-60 | 1 & 2 | 7.750 | 8.239 | 8.022 | 0.151 | 0.182 |
| A-61 | 1 & 2 | 8.000 | 8.489 | 8.272 | 0.151 | 0.182 |
| A-62 | 1 & 2 | 8.500 | 8.989 | 8.772 | 0.151 | 0.182 |
| A-63 | 1 & 2 | 9.000 | 9.489 | 9.272 | 0.151 | 0.182 |
| A-64 | 1 & 2 | 9.500 | 9.989 | 9.772 | 0.151 | 0.182 |
| A-65 | 1 & 2 | 10.000 | 10.489 | 10.272 | 0.151 | 0.182 |
| A-66 | 1 & 2 | 10.500 | 10.989 | 10.772 | 0.151 | 0.182 |
| A-67 | 1 & 2 | 11.000 | 11.489 | 11.272 | 0.151 | 0.182 |
| .166" - GROOVE | | NOMINAL | +0.004/-0.000 | +0.005/-0.000 | +0.005/-0.000 | +0.005/-0.000 |
| A-68 | 1 & 2 | 11.500 | 11.989 | 11.772 | 0.166 | 0.197 |
| A-69 | 1 & 2 | 12.000 | 12.489 | 12.272 | 0.166 | 0.197 |
| A-70 | 1 & 2 | 12.500 | 12.989 | 12.772 | 0.166 | 0.197 |
| A-71 | 1 & 2 | 13.000 | 13.489 | 13.272 | 0.166 | 0.197 |