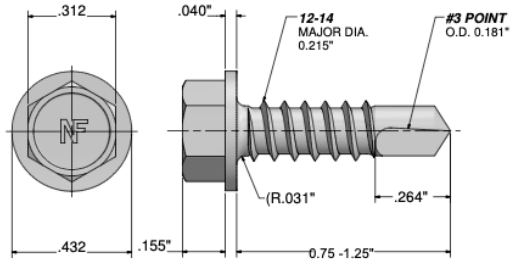
ACS-HWH MD3 - MASTER DRILLERS® – TECHNICAL DATA

- Manufactured in Canada by Leland Industries Inc.
- Available in #12-14, #3 Drill Point, in 3/4" and 1 ¼" Lengths
- Standard Hex Head with Integrated Washer ($^{5}/_{16}$" Driver)
- Available in
  - NZF3000 Coated Carbon Steel or
  - NZF3000 Coated 410 Stainless Steel
- For target fastener performance, driver should have an RPM range of 0-2400
- Fastener capacity reduced by overdriving – limit driver torque/depth setting



FASTENER PERFORMANCE[1]

FASTENER MECHANICAL PROPERTIES

	Carbon Steel	410 Stainless Steel
Minimum Tensile Strength (lbs)	3500	4300
Minimum Torsional Strength (in-lbs)	88	130
Minimum Shear Strength (lbs)	2100	2590

TENSION/SHEAR – STEEL ATTACHMENT

ALLOWABLE STRESS DESIGN (ASD)

Base Steel Attachment Gauge	**20 Ga.**		**18 Ga.**		**16 Ga.**	
Base Steel Attachment Material[2]	A36	A304	A36	A304	A36	A304
Tension (lbs)[3]	123.0	123.0	161.1	184.7	202.2	253.3
Shear (lbs)[4]	247.9	257.3	369.0	453.7	539.8	541.0

CANADIAN LIMIT STATES DESIGN (LSD)

Base Steel Attachment Gauge	**20 Ga.**		**18 Ga.**		**16 Ga.**	
Base Steel Attachment Material	A36	A304	A36	A304	A36	A304
Tension (lbs)[5]	147.6	147.6	193.4	221.6	242.7	304.0
Shear (lbs)[6]	297.5	308.8	442.8	544.4	647.7	649.2

[1] All test results and suggestions are based on laboratory tests and/or relevant Canadian Codes. Specific job site conditions should be taken into consideration when specifying the proper fastener. Because applications vary, we assume no liability for use of this information.

[2] A36 Galvanized Steel Fy = 250 MPa, Fu = 414 MPa, A 304 Stainless Steel Fy = 240 MPa, Fu = 550 MPa

[3] Calculated based on Lesser of Leland Published Data or CSA S136.1 J4.4.1 with FS = 3.0

[4] Calculated based on Lesser of Leland Published Data or CSA S136 J4.3 with FS = 3.0

[5] Calculated based on Lesser of Leland Published Data or CSA S136.1 J4.4.1 with $\phi = 0.4$

[6] Calculated based on Lesser of Leland Published Data or CSA S136 J4.3 with $\phi = 0.4$

SHEET STEEL PULLOVER – BASED ON NOMINAL 0.42" FASTENER HEAD DIAMETER[7]

ALLOWABLE STRESS DESIGN (ASD)

Steel Type[8]	16 Ga	18 Ga	20 Ga	22 Ga	24 Ga
Galv. Carbon Steel	705.2	561.9	431.1	372.6	297.8
Stainless Steel	936.9	746.6	572.7	494.9	395.6

CANADIAN LIMIT STATES DESIGN (LSD) FASTENER VALUES (lbs)[9]

Steel Type[8]	16 Ga	18 Ga	20 Ga	22 Ga	24 Ga
Galv. Carbon Steel	846.3	674.3	517.3	447.1	357.4
Stainless Steel	1124.3	895.9	687.3	593.9	474.7

SHEET STEEL DESIGN THICKNESS REFERENCE[10]

Nominal Gauge	16 Ga	18 Ga	20 Ga	22 Ga	24 Ga
Thickness – mm	1.519	1.214	0.912	0.759	0.607
Thickness - Inches	0.0598	0.0478	0.0359	0.0299	0.0239

[7] Calculated based on CSA S136 J4.4.2

[8] Steel Grades: A36 Galvanized Steel Fy = 250 MPa, Fu = 414 MPa; A304 Stainless Steel Fy = 240 MPa, Fu = 550 MPa

[9] Calculated based on CSA S136 J4.3, J4.4 with $\phi = 0.4$

[10] Steel to Conform to the Requirements of CSA S136/AISI S220 – North American Specification for the Design of Cold-Formed Steel Structural Members