

Bolt Lift and Closing Forces TLW0300L

	Opening Empty Cocked	Open Empty Fired	Closing Empty	Open Dummy Cocked	Open Dummy Fired	Closing Dummy
B11	2.64	9.56	16.24	3.18	10.00	23.54
	2.75	9.42	16.44	3.24	10.06	21.36
	2.75	9.18	16.50	3.20	9.70	20.60
Average	2.71	9.39	16.39	3.21	9.92	21.83
B12	2.94	11.00	24.68	3.44	11.20	33.70
	2.82	11.24	24.82	3.22	10.90	36.68
	2.64	11.14	24.04	3.36	11.02	32.60
Average	2.80	11.13	24.51	3.34	11.04	34.33
B13	2.74	9.68	20.32	3.12	9.30	21.68
	2.72	9.04	21.26	3.54	9.50	21.94
	2.80	8.84	20.48	3.44	9.34	21.40
Average	2.75	9.19	20.69	3.37	9.38	21.67
B14	2.88	10.06	16.60	3.58	10.30	21.38
	2.98	10.02	16.60	3.60	10.88	23.68
	2.98	9.98	16.82	3.64	10.22	23.56
Average	2.95	10.02	16.67	3.61	10.47	22.87
B15	2.76	9.98	22.92	3.68	10.28	30.90
	2.86	9.78	23.38	3.68	10.16	30.04
	2.78	9.82	23.10	3.58	10.24	30.56
Average	2.80	9.86	23.13	3.65	10.23	30.50
B16	2.80	10.16	19.50	3.02	10.10	44.74
	2.90	9.90	19.12	2.86	10.20	44.48
	2.82	10.22	18.86	3.20	10.38	42.82
Average	2.84	10.07	19.16	3.03	10.23	44.01
B17	2.80	10.36	24.64	2.90	10.36	29.10
	2.52	10.28	25.20	2.82	10.34	29.00
	2.50	10.40	24.18	2.68	10.10	28.20
Average	2.61	10.35	24.67	2.80	10.27	28.77
B18	2.84	9.32	24.38	2.86	9.72	29.88
	2.80	9.60	24.84	3.00	9.72	29.32
	2.82	9.98	25.40	2.90	9.90	30.10
Average	2.82	9.63	24.87	2.92	9.78	29.77
B19	2.66	10.22	20.00	3.14	10.10	21.28
	3.00	10.18	20.08	3.04	10.08	21.20
	2.84	10.10	20.44	3.20	10.30	20.98
Average	2.83	10.17	20.17	3.13	10.16	21.15
B20	2.80	10.38	16.68	2.94	10.80	21.54
	2.84	10.42	16.36	3.00	10.74	21.06
	2.64	10.46	16.16	3.14	11.02	22.38
Average	2.76	10.42	16.40	3.03	10.85	21.66

83

ET28012

Safety On / Off Forces

TLW0300K

	Off	On
B11	2.145	5.755
	2.195	5.630
	2.310	5.580
Average	2.217	5.655
B12	2.435	2.910
	2.605	5.810
	2.555	5.855
Average	2.532	4.858
B13	2.350	6.545
	2.250	6.335
	2.350	3.380
Average	2.317	5.420
B14	2.430	6.145
	2.385	6.230
	2.455	6.210
Average	2.423	6.195
B15	2.405	6.000
	2.800	5.950
	2.380	6.050
Average	2.528	6.000
B16	2.385	6.090
	2.390	5.960
	2.335	5.955
Average	2.370	6.002
B17	2.485	5.980
	2.415	5.895
	2.565	6.090
Average	2.488	5.988
B18	2.210	6.070
	2.305	6.330
	2.365	6.395
Average	2.293	6.265
B19	1.895	6.010
	2.070	6.115
	1.955	5.975
Average	1.973	6.033
B20	2.595	6.305
	2.610	6.425
	2.540	6.210
Average	2.582	6.313

ET28013

Magazine Spring Force

TLW0300M

	@ .200	@ 1.000
B11	2.075	3.370
	2.065	3.385
	2.060	3.375
Average	2.067	3.377
B12	2.125	3.330
	2.080	3.320
	2.050	3.350
Average	2.085	3.333
B13	1.960	3.325
	1.935	3.360
	1.935	3.570
Average	1.943	3.418
B14	2.180	3.465
	2.180	3.510
	2.175	3.510
Average	2.178	3.495
B15	1.935	3.185
	1.955	3.170
	1.935	3.175
Average	1.942	3.177
B16	1.910	3.445
	1.870	3.445
	1.880	3.460
Average	1.887	3.450
B17	2.160	3.645
	2.140	3.880
	2.125	3.845
Average	2.142	3.790
B18	2.160	3.560
	2.135	3.585
	2.130	3.585
Average	2.142	3.577
B19	2.180	3.380
	2.100	3.415
	2.085	3.380
Average	2.122	3.392
B20	1.700	2.730
	1.650	2.750
	1.655	2.755
Average	1.668	2.745

ET28014

Firing Pin Head / Sear Engagement

TLW0300N

Serial Number	Gun Number	Bolt Head to Sear Engagement	Sear Height Relative to Plastic Insert	Gage Pin
71001124	B1	.0725 - .084	0.084	< 0.0115
71001184	B2	.075 - .0865	0.087	< 0.012
71001244	B3	.0735 - .085	0.085	< 0.012
71001288	B4	.0665 - .078	0.078	< 0.012
71001421	B5	.0725 - .084	0.084	< 0.012
71001462	B6	.0595	0.077	< 0.018
71001504	B7	.0715 - .083	0.083	< 0.012
71001511	B8	.0685 - .080	0.080	< 0.012
71001524	B9	.0725 - .084	0.084	< 0.012
71001529	B10	.0705 - .082	0.082	< 0.012
71001534	B11	.0725 - .084	0.084	< 0.012
71001535	B12	.0705 - .082	0.082	< 0.012
71001539	B13	.0695 - .081	0.081	< 0.012
71001559	B14	.0695 - .081	0.081	< 0.012
71001578	B15	.0735 - .085	0.085	< 0.012
71001580	B16	.0685 - .080	0.080	< 0.012
71001583	B17	.0735 - .085	0.085	< 0.012
71001584	B18	.0695 - .081	0.081	< 0.012
71001595	B19	.0745 - .086	0.086	< 0.012
71001605	B20	.0695 - .081	0.081	< 0.012
71001613	B21	.0715 - .083	0.083	< 0.012
71001623	B22	.0715 - .084	0.084	< 0.012
71001632	B23	.0725 - .084	0.084	< 0.012
71001634	B24	.0715 - .083	0.083	< 0.012
71001643	B25	.0725 - .084	0.084	< 0.012
71001647	B26	.0685 - .080	0.080	< 0.012
71001724	B27	.0715 - .083	0.083	< 0.012
71001760	B28	.0705 - .082	0.082	< 0.012
71001782	B29	.0715 - .083	0.083	< 0.012
71001789	B30	.0695 - .081	0.081	< 0.012

Some Bolt Head to Sear measurements are expressed as a range. This is due to the fact that the gage pins used to measure the gap between the bottom of the firing pin head and the plastic liner were only as small as .011 inches.

ET28015

Bolt Stop Function

TLW03000

Serial Number	Gun Number	Force 1	Force 2	Force 3	Average Force	Open With Hand	Open With Glove	Holds Bolt	Releases Bolt
71001124	B1	No Measureable Detent Force			0.000	Yes	Yes	Yes	Yes
71001184	B2	2.980	2.970	2.805	2.918	Yes	Yes	Yes	Yes
71001244	B3	1.205	1.235	1.375	1.272	Yes	Yes	Yes	Yes
71001288	B4	4.000	3.925	3.770	3.898	Yes	Yes	Yes	Yes
71001421	B5	No Measureable Detent Force			0.000	Yes	Yes	Yes	Yes
71001462	B6	No Measureable Detent Force			0.000	Yes	Yes	Yes	Yes
71001504	B7	2.575	2.370	2.680	2.542	Yes	Yes	Yes	Yes
71001511	B8	Out Of Test							
71001524	B9	No Measureable Detent Force			0.000	Yes	Yes	Yes	Yes
71001529	B10	0.655	0.760	0.500	0.618	Yes	Yes	Yes	Yes
71001534	B11	2.105	1.945	1.855	1.968	Yes	Yes	Yes	Yes
71001535	B12	2.270	2.265	2.070	2.202	Yes	Yes	Yes	Yes
71001539	B13	3.420	3.310	3.415	3.382	Yes	Yes	Yes	Yes
71001559	B14	1.995	1.960	2.085	2.013	Yes	Yes	Yes	Yes
71001578	B15	0.215	0.455	0.320	0.330	Yes	Yes	Yes	Yes
71001580	B16	4.750	4.520	4.650	4.640	Yes	Yes	Yes	Yes
71001583	B17	0.895	0.785	0.860	0.847	Yes	Yes	Yes	Yes
71001584	B18	1.875	1.750	1.785	1.803	Yes	Yes	Yes	Yes
71001595	B19	2.190	2.240	2.200	2.210	Yes	Yes	Yes	Yes
71001605	B20	No Measureable Detent Force			0.000	Yes	Yes	Yes	Yes
71001613	B21	0.270	0.250	0.260	0.260	Yes	Yes	Yes	Yes
71001623	B22	3.075	3.150	3.380	3.202	Yes	Yes	Yes	Yes
71001632	B23	3.185	3.315	2.865	3.122	Yes	Yes	Yes	Yes
71001634	B24	2.175	2.175	2.155	2.168	Yes	Yes	Yes	Yes
71001643	B25	2.595	2.715	2.730	2.680	Yes	Yes	Yes	Yes
71001647	B26	1.385	1.280	1.240	1.302	Yes	Yes	Yes	Yes
71001724	B27	1.075	1.135	1.020	1.077	Yes	Yes	Yes	Yes
71001760	B28	1.950	2.165	2.015	2.043	Yes	Yes	Yes	Yes
71001782	B29	0.655	0.540	0.510	0.568	Yes	Yes	Yes	Yes
71001789	B30	0.500	0.475	0.420	0.465	Yes	Yes	Yes	Yes

ISS Function Check

TLW0300P

83

	Phase 1	Phase 2	Phase 3	Phase 4
B11	Could Not Close Bolt	Fired	Pass	Pass
B12	Could Not Close Bolt	Fired	Pass	Pass
B13	Could Not Close Bolt	Fired	Pass	Pass
B14	Could Not Close Bolt	Fired	Pass	Pass
B15	Could Not Close Bolt	Fired	Fail See Note 1	Pass
B16	Could Not Close Bolt	Fired	Pass	Pass
B17	Could Not Close Bolt	Fired	Pass	Pass
B18	Could Not Close Bolt	Fired	Pass	Pass
B19	Could Not Close Bolt	Fired	Pass	Pass
B20	Could Not Close Bolt	Fired	Pass	Pass

Note 1: Could be rotated to unlocked position with a screwdriver. Failed 2 out of 5 times.
Appears that the detent, which holds the rotating cylinder in a locked position, is operating intermittan

ET28017

Balance Point

TLW0300S

83

	Empty	Loaded
B11	0	-0.125
B12	0	-0.125
B13	0	-0.125
B14	0	-0.062
B15	0	-0.125
B16	0	-0.062
B17	0	-0.125
B18	0	-0.125
B19	0	-0.062
B20	0	-0.062

A minus number indicates a direction
towards the butt of the firearm.

ET28018

Chamber Cast

TLW0300T

	4708 - 4728	4425 - 4400	34.5 Deg.	3404 - 3424	3095 - 3105
B11	0.4720	0.4450	34.6400	0.3450	0.3108
B12	0.4694	0.4440	34.1900	0.3430	0.3100
B13	0.4692	0.4437	34.4900	0.3434	0.3097
B14	0.4707	0.4431	34.5000	0.3434	0.3101
B15	0.4703	0.4441	34.0600	0.3449	0.3105
B16	0.4705	0.4447	34.4700	0.3419	0.3099
B17	0.4711	0.4445	34.7900	0.3442	0.3091
B18	0.4697	0.4442	34.6200	0.3441	0.3108
B19	0.4696	0.4436	34.8800	0.3428	0.3092
B20	0.4698	0.4440	34.7100	0.3446	0.3103

ET28019

Confidential - Subject to Protective Order
Williams v. Remington

Bore Diameter

TLW0300U

83

B11	.3003 - .3005
B12	.3002 - .3005
B13	.3002 - .3005
B14	.3002 - .3005
B15	.3002 - .3005
B16	.3000 - .3002
B17	.3002 - .3005
B18	.3002 - .3005
B19	.3002 - .3005
B20	.3002 - .3005

Values above, indicated as a range, are the result of gage pin tolerance.

ET28020

Groove Diameter

TLW0300V

B11	0.3092
B12	0.3092
B13	0.3092
B14	0.3092
B15	0.3092
B16	0.3088
B17	0.3089
B18	0.3094
B19	0.3092
B20	0.3093

83

ET28021

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Twist Rate

TLW0300W

B11	1 in 10.1875
B12	1 in 10.1875
B13	1 in 10.125
B14	1 in 9.875
B15	1 in 9.875
B16	1 in 10.0625
B17	1 in 9.875
B18	1 in 10.0625
B19	1 in 9.75
B20	1 in 10

83

ET28022

Magazine Box Capacity

TLW0300X

	Check Number	Check Pass / Fail	Notes
B11	1 2 3	Pass Pass Pass	
B12	1 2 3	Pass Pass Pass	
B13	1 2 3	Pass Pass Pass	
B14	1 2 3	Pass Pass Pass	
B15	1 2 3	Pass Pass Pass	
B16	1 2 3	Pass Pass Pass	
B17	1 2 3	Pass Pass Pass	
B18	1 2 3	Pass Pass Pass	Rnd # 2 - Stem low box.
B19	1 2 3	Pass Pass Pass	Rnd # 1 - Stem low box. Rnd # 1, #2, - Stem low box. Rnd # 1, #2, # 3, - Stem low box.
B20	1 2 3	Pass Pass Pass	

83

ET28023