



Designation: **A705/A705M – 17** **A705/A705M – 20**

Standard Specification for Age-Hardening Stainless Steel Forgings¹

This standard is issued under the fixed designation A705/A705M; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon (ϵ) indicates an editorial change since the last revision or reapproval.

1. Scope*

1.1 This specification² covers age-hardening stainless steel forgings for general use.

1.2 The values stated in either SI units or inch-pound units are to be regarded separately as standard. The values stated in each system ~~may~~ are not necessarily exact equivalents; therefore, to ensure conformance with the standard, each system shall be used independently of the other. Combining other, and values from the two systems may result in non-conformance with the standard; shall not be combined.

1.3 Unless the order specifies an “M” designation, the material shall be furnished to inch-pound units.

NOTE 1—Bar products are covered by Specification **A564/A564M**.

1.4 *This international standard was developed in accordance with internationally recognized principles on standardization established in the Decision on Principles for the Development of International Standards, Guides and Recommendations issued by the World Trade Organization Technical Barriers to Trade (TBT) Committee.*

2. Referenced Documents

2.1 *ASTM Standards:*³

A370 Test Methods and Definitions for Mechanical Testing of Steel Products

A484/A484M Specification for General Requirements for Stainless Steel Bars, Billets, and Forgings

A564/A564M Specification for Hot-Rolled and Cold-Finished Age-Hardening Stainless Steel Bars and Shapes

A751 Test Methods, Practices, and Terminology for Chemical Analysis of Steel Products

A788/A788M Specification for Steel Forgings, General Requirements

E527 Practice for Numbering Metals and Alloys in the Unified Numbering System (UNS)

2.2 *Other Documents:*⁴

SAE J 1086 Recommended Practice for Numbering Metals and Alloys (UNS)

3. Ordering Information

3.1 It is the responsibility of the purchaser to specify all requirements that are necessary for material ordered under this specification. Such requirements may include but are not limited to the following:

- 3.1.1 Quantity (weight or number of pieces),
- 3.1.2 Name of material (age-hardening stainless steel forgings),
- 3.1.3 Dimensions, including prints or sketches,
- 3.1.4 Type or UNS designation (**Table 1**),
- 3.1.5 Heat-treated condition (**Section 5**),
- 3.1.6 Transverse properties when required (**7.4**),
- 3.1.7 ASTM designation and date of issue, and
- 3.1.8 Special requirements (**5.3.5.3 and 5.4, 5.4**).

¹ This specification is under the jurisdiction of ASTM Committee **A01** on Steel, Stainless Steel and Related Alloys and is the direct responsibility of Subcommittee **A01.17** on Flat-Rolled and Wrought Stainless Steel.

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² For ASME Boiler and Pressure Vessel Code applications see related Specification SA-705/SA-705M in Section II of that Code.

³ For referenced ASTM standards, visit the ASTM website, www.astm.org, or contact ASTM Customer Service at service@astm.org. For *Annual Book of ASTM Standards* volume information, refer to the standard's Document Summary page on the ASTM website.

⁴ Available from Society of Automotive Engineers—SAE International (SAE), 400 Commonwealth Dr., Warrendale, PA 15096-0001-15096, <http://www.sae.org>.

*A Summary of Changes section appears at the end of this standard

TABLE 1 Chemical Requirements^A

Composition, %													
UNS Designation ^B	Type	Carbon ^C	Manganese ^{Mn}	Phosphorus ^P	Sulfur ^S	Silicon ^{Si}	Chromium ^{Cr}	Nickel ^{Ni}	Aluminum ^{Al}	Molybdenum ^{Mo}	Titanium ^{Ti}	Copper ^{Cu}	Other Elements ^C
S17400	630	0.07	1.00	0.040	0.030	1.00	15.00–17.50	3.00–5.00	...	...	...	3.00–5.00	C
S17400	630	0.07	1.00	0.040	0.030	1.00	15.00–17.50	3.00–5.00	...	...	...	3.00–5.00	D
S17700	631	0.09	1.00	0.040	0.030	1.00	16.00–18.00	6.50–7.75	0.75–1.50	...	...	...	...
S15700	632	0.09	1.00	0.040	0.030	1.00	14.00–16.00	6.50–7.75	0.75–1.50	2.00–3.00	...	...	...
S35500	634	0.10–0.15	0.50–1.25	0.040	0.030	0.50	15.00–16.00	4.00–5.00	...	2.50–3.25	...	...	D
S35500	634	0.10–0.15	0.50–1.25	0.040	0.030	0.50	15.00–16.00	4.00–5.00	...	2.50–3.25	...	...	E
S17600	635	0.08	1.00	0.040	0.030	1.00	16.00–17.50	6.00–7.50	0.40	...	0.40–1.20	...	...
S15500	XM-12	0.07	1.00	0.040	0.030	1.00	14.00–15.50	3.50–5.50	...	...	...	2.50–4.50	C
S15500	XM-12	0.07	1.00	0.040	0.030	1.00	14.00–15.50	3.50–5.50	...	...	...	2.50–4.50	D
S13800	XM-13	0.05	0.20	0.010	0.008	0.10	12.25–13.25	7.50–8.50	0.90–1.35	2.00–2.50	...	...	E
S13800	XM-13	0.05	0.20	0.010	0.008	0.10	12.25–13.25	7.50–8.50	0.90–1.35	2.00–2.50	...	...	F
S45500	XM-16	0.03	0.50	0.015	0.015	0.50	11.00–12.50	7.50–9.50	...	0.50	0.90–1.40	1.50–2.50	F
S45500	XM-16	0.03	0.50	0.015	0.015	0.50	11.00–12.50	7.50–9.50	...	0.50	0.90–1.40	1.50–2.50	G
S45500	...	0.010	0.50	0.010	0.010	0.20	11.00–12.50	7.50–9.50	...	0.50	1.00–1.35	1.50–2.50	F
S45503	...	0.010	0.50	0.010	0.010	0.20	11.00–12.50	7.50–9.50	...	0.50	1.00–1.35	1.50–2.50	G
S45000	XM-25	0.05	1.00	0.030	0.030	1.00	14.00–16.00	5.00–7.00	...	0.50–1.00	...	1.25–1.75	G
S45000	XM-25	0.05	1.00	0.030	0.030	1.00	14.00–16.00	5.00–7.00	...	0.50–1.00	...	1.25–1.75	H
S10120	...	0.02	0.25	0.015	0.010	0.25	11.00–12.50	9.00–10.50	0.80–1.10	1.75–2.25	0.20–0.50	...	E
S10120	...	0.02	0.25	0.015	0.010	0.25	11.00–12.50	9.00–10.50	0.80–1.10	1.75–2.25	0.20–0.50	...	F
S11100	...	0.02	0.25	0.015	0.010	0.25	11.00–12.50	10.25–11.25	1.35–1.75	1.75–2.25	0.20–0.50	...	E
S11100	...	0.02	0.25	0.015	0.010	0.25	11.00–12.50	10.25–11.25	1.35–1.75	1.75–2.25	0.20–0.50	...	F

^A Limits are in percent maximum unless shown as a range or stated otherwise.

^B New designation established in accordance with Practice E527 and SAEJ1086, Recommended Practice for Numbering Metals and Alloys (UNS).

^C Columbium (Cb) and niobium (Nb) are considered interchangeable names for element 41 in the periodic table and both names are acceptable for use.

^D Columbium–Niobium (columbium) plus tantalum 0.15–0.45.

^E Nitrogen 0.07–0.13.

^F Nitrogen 0.01.

^G Columbium–Niobium (columbium) plus tantalum 0.10–0.50.

^H Columbium–8 times Niobium (columbium) 8x carbon minimum.

3.2 If possible, the intended end use of the item should be given on the purchase order, especially when the item is ordered for a specific end use or uses.

NOTE 2—A typical ordering description is as follows: five age-hardening stainless steel forgings, Type 630, solution-annealed, ASTM Specification A705 dated __. End use: pump blocks for oil well equipment.

4. General Requirements

4.1 In addition to the requirements of this specification, all requirements of the current edition of Specification A484/A484M shall apply. Forgings shall comply with the Terminology and Forging sections of Specification A788/A788M, which further clarify the forging definitions in the Terminology section of Specification A484/A484M. Failure to comply with the general requirements of Specification A484/A484M, constitutes nonconformance with this specification.

5. Materials and Manufacture

5.1 Material for forgings shall consist of billets or bars, either forged, rolled, or cast, or a section cut from an ingot. The cuts shall be made to the required length by a suitable process. This material may be specified to Specification A564/A564M.

5.2 The material shall be forged by hammering, pressing, rolling, extruding, or upsetting to produce a wrought structure throughout and shall be brought as nearly as possible to the finished shape and size by hot working.

5.3 When specified on the order, sample forging may be sectioned and etched to show flow lines and the condition in regard to internal imperfections. When so specified, the question of acceptable and unacceptable metal flow shall be subject to agreement between the manufacturer and the purchaser prior to order entry.

5.4 When specified on the order, the manufacturer shall submit for approval of the purchaser a sketch showing the shape of the rough forging before machining, or before heat treating for mechanical properties.

5.5 The grain size shall be as fine as practicable and precautions shall be taken to minimize grain growth.

5.6 Material of types other than XM-9 shall be furnished in the solution-annealed condition, or in the equalized and over-tempered condition, as noted in Table 2, unless otherwise specified by the purchaser.

5.6.1 Types 630, XM-16, and XM-25 may be furnished in the solution-annealed or age-hardened condition.

6. Chemical Composition

6.1 The steel shall conform to the chemical composition limits specified in Table 1.



TABLE 2 Solution Heat Treatment

Type	Condition	Solution Treatment	Mechanical Test Requirements in Solution Treated Condition ^A							
			Tensile Strength, min	Yield Strength, min	Elongation in 2 in. [50 mm] or 4D, min. %	Reduction of Area, minute %	Hardness ^B			
							ksi	[MPa]	ksi	[MPa]
630	A	1900 ± 25°F [1040 ± 15°C] (cool as required to below 90°F [32°C])	...	...	...	...	...	...	38	363
631	A	1900 ± 25°F [1040 ± 15°C] (water quench)	...	...	...	...	...	...	Rb89	229
632	A	1900 ± 25°F [1040 ± 15°C] (water quench)	...	...	...	...	...	...	Rb100	269 ^C
634 ^D	A	1900 ± 25°F [1040 ± 15°C] quench, hold not less than 3 h at minus 100°F or lower	...	...	...	...	...	...	...	363 ^D
635	A	1900 ± 25°F [1040 ± 15°C] (air cool)	120	[825]	75	[515]	45	32	302	
XM-12	A	1900 ± 25°F [1040 ± 15°C] (cool as required to below 90°F [32°C])	...	...	...	...	...	38	363	
XM-13	A	1700 ± 25°F [925 ± 15°C] (cool as required to below 60°F [16°C])	...	...	...	...	...	38	363	
XM-16	A	1525 ± 25°F [830 ± 15°C] (cool rapidly)	...	...	...	...	...	36	331	
S45503	A	1525 ± 25°F [830 ± 15°C] (cool rapidly)	...	...	...	...	...	36	331	
XM-25	A	1900 ± 25°F [1040 ± 15°C] (cool rapidly)	125 ^E	[860]	95	[655]	40	33	311	
S10120	A	1545 ± 25°F [840 ± 14°C] (cool rapidly below 90°F [32°C])	...	...	...	...	...	36	331	
S11100	A	1545 ± 25°F [840 ± 14°C] (oil or water quench), hold for min. 8 h at minus 100°F [-73°C], ^F air warm	...	...	...	...	...	36	331	

TABLE 2 Solution Heat Treatment

Type	Condition	Solution Treatment	Mechanical Test Requirements in Solution Treated Condition ^A					
			Tensile Strength, min ksi [MPa]	Yield Strength, min ksi [MPa]	Elongation in 2 in. [50 mm] or 4D, min. %	Reduction of Area, minute %	Hardness ^B	
							Rockwell C, max	Brinell, max
630	A	1900 ± 25 °F [1040 ± 15 °C] (cool as required to below 90 °F [32 °C])	...	...	...	...	38	363
631	A	1900 ± 25 °F [1040 ± 15 °C] (water quench)	...	...	...	...	Rb89	229
632	A	1900 ± 25 °F [1040 ± 15 °C] (water quench)	...	...	...	...	Rb100	269 ^C
634 ^D	A	1900 ± 25 °F [1040 ± 15 °C] quench, hold not less than 3 h at -100 °F or lower	...	...	...	...	...	363 ^D
635	A	1900 ± 25 °F [1040 ± 15 °C] (air cool)	120 [825]	75 [515]	10	45	32	302
XM-12	A	1900 ± 25 °F [1040 ± 15 °C] (cool as required to below 90 °F [32 °C])	...	...	...	...	38	363
XM-13	A	1700 ± 25 °F [925 ± 15 °C] (cool as required to below 60 °F [16 °C])	...	...	...	...	38	363
XM-16	A	1525 ± 25 °F [830 ± 15 °C] (cool rapidly)	...	...	...	...	36	331
S45503	A	1525 ± 25 °F [830 ± 15 °C] (cool rapidly)	...	...	...	...	36	331
XM-25	A	1900 ± 25 °F [1040 ± 15 °C] (cool rapidly)	125 [860] ^E	95 [655]	10	40	33	311
S10120	A	1545 ± 25 °F [840 ± 14 °C] (cool rapidly below 90 °F [32 °C])	...	...	...	...	36	331
S11100	A	1545 ± 25 °F [840 ± 14 °C] (oil or water quench), hold for min. 8 h at minus 100 °F [-73 °C], ^F air warm	...	...	...	...	36	331

^A See 6.1.

^B Either Rockwell C hardness or Brinell is permissible. On sizes of ½ in. [12.70 mm] and smaller, Rockwell C is preferred.

^C 321 BHN for rounds cold drawn after solution treating.

^D Equalization and over-tempering treatment 1425 ± 50°F [775 ± 30°C] [30 °C] for not less than 3 h, cool to room temperature, heat to 1075 ± 25°F [580 ± 15°C] [15 °C] for not less than 3 h.

^E 125 to 165 ksi [860 to 1140 MPa] for sizes up to ½ in. [13 mm].

^F Required hold time at minus 100°F [-73°C] [100 °F [-73 °C]] is not mandatory if product is under 2 in. [51 mm] thickness.

6.2 Methods and practices relating to chemical analysis required by this specification shall be in accordance with Test Methods, Practices, and Terminology A751.

7. Mechanical Properties

7.1 The material, as represented by mechanical test specimens, shall conform to the mechanical property requirements specified in Table 2 and shall be capable of developing the properties in Table 3 when heat treated as specified in Table 3.

7.2 The yield strength shall be determined by the offset method as described in the current edition of Test Methods and Definitions A370. The limiting permanent offset shall be 0.2 % of the gage length of the specimen.

7.3 The impact strength shall be determined at 70 to 80°F [20 to 25°C], [25 °C], by Charpy V-notch specimen Type A as described in Test Methods and Definitions A370.

TABLE 3 Mechanical Test Requirements After Age Hardening Heat Treatment^A

Gondition Type	Suggested Hardening or Aging Treatment, or both ^{B,C,D}	Temperatures		Time, h	Quench	Applicable Thickness, in., and Test Direction ^E	Tensile Strength, min		Yield Strength, min ^F		Elongation in 2 in. [50 mm] or 4D, min. %	Reduction of area, min. %	Hardness ^G		Impact Charpy-V, min	
		°F [°C]	°C				ksi	[MPa]	ksi	[MPa]			Rockwell well C, min	Brinell, min	ft-lbf	J
630	H900	900 [480]		1.0	air cool	Up to 3 in. incl [75 mm] (L)	190	[1310]	170	[1170]	10	40	40	388	...	...
630	H900	900 [480]		1.0	air cool	Up to 3 in. [75 mm], incl (L)	190	[1310]	170	[1170]	10	40	40	388	...	...
						Over 3 in. [75 mm] to 8 in. incl [200 mm] (L)						35				
						Over 3 to 8 in. [75 to 200 mm], incl (L)						35				
	H925	925 [495]		4.0	air cool	Up to 3 in. incl [75 mm] (L)	170	[1170]	155	[1070]	10	44	38	375	5	6.8
	H925	925 [495]		4.0	air cool	Up to 3 in. [75 mm], incl (L)	170	[1170]	155	[1070]	10	44	38	375	5	6.8
						Over 3 in. [75 mm] to 8 in. incl [200 mm] (L)						38				
						Over 3 to 8 in. [75 to 200 mm], incl (L)						38				
	H1025	1025 [550]		4.0	air cool	Up to 8 in. [200 mm], incl (L)	155	[1070]	145	[1000]	12	45	35	331	15	20
	H1075	1075 [580]		4.0	air cool		145	[1000]	125	[860]	13	45	32	311	20	27
	H1075	1075 [580]		4.0	air cool		145	[1000]	125	[860]	13	45	32	311	20	27
	H1100	1100 [595]		4.0	air cool	Up to 8 in. incl [200 mm] (L)	140	[965]	115	[795]	14	45	31	302	25	34
	H1100	1100 [595]		4.0	air cool		140	[965]	115	[795]	14	45	31	302	25	34
	H1150	1150 [620]		4.0	air cool		135	[930]	105	[725]	16	50	28	277	30	41
	H1150	1150 [620]		4.0	air cool		135	[930]	105	[725]	16	50	28	277	30	41
	H1150D	1150 [620] for 4 h, air cool plus 1150 [620] for 4 h, air cool					125	[860]	105	[725]	16	50	24	255	30	41
	H1150D	1150 [620] for 4 h, air cool plus 1150 [620] for 4 h, air cool					125	[860]	10	[725]	16	50	33 max	311 max	30	41
	H1150M	1400 [760] for 2 h, air cool plus 1150 [620] for 4 h, air cool					115	[795]	75	[520]	18	55	24	255	55	75
	H1150M	1400 [760] for 2 h, air cool plus 1150 [620] for 4 h, air cool					115	[795]	75	[520]	18	55	24	255	55	75
631	RH950	1750°F [955°C] for not less than 10 min, but not more than 1 h, cool rapidly to room temperature. Cool within 24 h to minus 100 ± 10°F [75°C], hold not less than 8 h. Warm in air to room temperature. Heat to 950°F [510°C], hold 1 h, air cool.				Up to 4 in. incl. [100 mm] (L)	185	[1280]	150	[1030]	6	10	41	388	...	...
631	RH950	1750°F [955°C] for not less than 10 min, but not more than 1 h, cool rapidly to room temperature. Cool within 24 h to minus 100 ± 10°F [75°C], hold not less than 8 h. Warm in air to room temperature. Heat to 950°F [510°C], hold 1 h, air cool.				Up to 4 in. [100 mm], incl (L)	185	[1280]	150	[1030]	6	10	41	388	...	...
	TH1050	Alternative treatment: 1400°F [760°C] hold 90				Up to 6 in. incl	170	[1170]	140	[965]	6	25	38	352	...	...

TABLE 3 Continued

Condition Type	Condition	Suggested Hardening or Aging Treatment, or both ^{B,C,D}			Applicable Thickness, in., and Test Direction ^E	Tensile Strength, min		Yield Strength, min ^F		Elongation in 2 in. [50 mm] or 4D, min. %	Reduction of area, min. %	Hardness ^G		Impact Charpy-V, min	
		Temperature, °F [°C]	Time, h	Quench		ksi	[MPa]	ksi	[MPa]			Rockwell well C, min	Brinell, min	ft-lbf	J
		min., cool to 55 ± 5°F [15 ± 3°C] within 1 h. Hold not less than 30 min, heat to 1050°F [565°C] hold for 90 min, air cool.			[150 mm] (L)										
	TH1050	Alternative treatment: 1400°F [760°C] hold 90 min, cool to 55 ± 5°F [15 ± 3°C] within 1 h. Hold not less than 30 min, heat to 1050°F [565°C] hold for 90 min, air cool.			Up to 6 in. [150 mm], incl (L)	170	[1170]	140	[965]	6	25	38	352	...	...
632	RH950						Up to 4 in., incl [100 mm] (L)	200	[1380]	175	[1210]	7	25	...	415...
632	RH950	Same as Type 631					Up to 4 in., incl [100 mm], incl (L)	200	[1380]	175	[1210]	7	25	...	415...
	TH1050	Same as Type 631			Up to 6 in., incl [150 mm] (L)	180	[1240]	160	[1100]	8	25	...	375	...	...
	TH1050				Up to 6 in. [150 mm], incl (L)	180	[1240]	160	[1100]	8	25	...	375	...	...
634 ^H	H1000	1750 [955] for not less than 10 min, but not more than 1 h. Water quench. Cool to not higher than minus 100°F [75°C]. Hold for not less than 3 h. Temper at 1000°F [540°C], holding for not less than 3 h.				170	[1170]	155	[1070]	12	25	37	341	...	...
635	H950	950 [510]	0.5	air cool		190	[1310]	170	[1170]	8	25	39	363	...	...
635	H950	950 [510]	0.5	air cool		190	[1310]	170	[1170]	8	25	39	363	...	...
	H1000	1000 [540]	0.5	air cool		180	[1240]	160	[1100]	8	30	37	352	...	...
	H1000	1000 [540]	0.5	air cool		180	[1240]	160	[1100]	8	30	37	352	...	...
	H1050	1050 [565]	0.5	air cool		170	[1170]	150	[1035]	10	40	35	331	...	...
XM-12	H900	900 [480]	1.0	air cool	Up to 12 in., incl [300 mm] (L)	190	[1310]	170	[1170]	10	35	40	388	...	...
XM-12	H900	900 [480]	1.0	air cool	Up to 12 in., incl [300 mm], incl (L)					190	[1310]				[1300]
					Up to 12 in., incl [300 mm] (T)					6		15			
					Up to 12 in., incl [300 mm], incl (T)					6		15			
	H925	925 [495]	4.0	air cool	Up to 12 in., incl [300 mm] (L)	170	[1170]	155	[1070]	10	38	38	375	5	6.8
	H925	925 [495]	4.0	air cool	Up to 12 in., incl [300 mm], incl (L)					170	[1170]			155	[1070]
					Up to 12 in., incl [300 mm] (T)					7		20	
					Up to 12 in., incl [300 mm], incl (T)					7		20	

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TABLE 3 Continued

Condition Type	Suggested Hardening or Aging Treatment, or both ^{B,C,D}			Applicable Thickness, in., and Test Direction ^E	Tensile Strength, min		Yield Strength, min ^F		Elongation in 2 in. [50 mm] or 4D, min. %	Reduction of area, min. %	Hardness ^G		Impact Charpy-V, min			
	Temperature, °F [°C]	Time, h	Quench		ksi	[MPa]	ksi	[MPa]			Rockwell well C, min	Brinell, min	ft-lbf	J		
	H1025	1025 [550]	4.0	air cool	Up to 12 in. incl — [300 mm] ^I (L)	155	[1070]	145	[1000]	12	45	35	331	—15	—20	
	H1025	1025 [550]	4.0	air cool	Up to 12 in. [300 mm], incl ^I (L)					155	[1070]			145	[1000]	
					Up to 12 in. incl — [300 mm] ^I (T)					8		27		10	14	
					Up to 12 in. [300 mm], incl ^I (T)					8	27			10	14	
	H1075	1075 [580]	4.0	air cool	Up to 12 in. incl — [300 mm] ^I (L)	145	[1000]	125	[860]	13	45	32	311	—20	—27	
XM-12 (continued)	H1075	1075 [580]	4.0	air cool	Up to 12 in. [300 mm], incl ^I (L)					145	[1000]			125	[860]	
					Up to 12 in. incl — [300 mm] ^I (T)					9		28		15	20	
					Up to 12 in. [300 mm], incl ^I (T)					9	28			15	20	
	H1100	1100 [595]	4.0	air cool	Up to 12 in. incl — [300 mm] ^I (L)	140	[965]	115	[795]	14	45	31	302	25	34	
	H1100	1100 [595]	4.0	air cool	Up to 12 in. [300 mm], incl ^I (L)					140	[965]			115	[795]	
					Up to 12 in. incl — [300 mm] ^I (T)					10		29		15	20	
					Up to 12 in. [300 mm], incl ^I (T)					10	29			15	20	
	H1150	1150 [620]	4.0	air cool	Up to 12 in. incl — [300 mm] ^I (L)	135	[930]	105	[725]	16	50	28	277	30	41	
	H1150	1150 [620]	4.0	air cool	Up to 12 in. [300 mm], incl ^I (L)					135	[930]			105	[725]	
					Up to 12 in. incl — [300 mm] ^I (T)					11		30		20	27	
					Up to 12 in. [300 mm], incl ^I (T)					11	30			20	27	
	H1150M	1400 [760] for 2 h, air cool plus — 1150 [620] for 4 h, air cool			Up to 12 in. incl — [300 mm] ^I (L)	115	[795]	75	[515]	—18	—55	24	255	—55	—75	
	H1150M	1400 [760] for 2 h, air cool plus — 1150 [620] for 4 h, air cool			Up to 12 in. [300 mm], incl ^I (L)					115	[795]			75	[515]	
					Up to 12 in. incl — [300 mm] ^I (T)					14		35		35	47	
					Up to 12 in. [300 mm], incl ^I (T)					14	35			35	47	
	XM-13	H950	950 [510]	4.0	air cool	Up to 12 in. incl — [300 mm] ^I (L)	220	[1520]	205	[1420]	10	45	45	430
	XM-13	H950	950 [510]	4.0	air cool	Up to 12 in. [300 mm], incl ^I (L)					220				[1420]	
					Up to 12 in. incl — [300 mm] ^I (T)						35					
					Up to 12 in. [300 mm], incl ^I (T)						35					


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