

MIL-C-14613A(WC)

15 May 1972

SUPERSEDING

SAPD-276

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MILITARY SPECIFICATION

CHARGER, BOLT, CAL. .50 MACHINE GUN, M10

1. SCOPE

1.1 This specification covers one type of manually operated charger for the Gun, Machine, Browning, Cal. .50, M2, Heavy Barrel, Turret Type. The charger incorporates a selector which can be set for hand cycling in preparation for automatic firing or for locking the bolt in the retracted position.

2. APPLICABLE DOCUMENTS

2.1 The following documents, of the issue in effect on date of invitation for bids or request for proposal, form a part of this specification to the extent specified herein:

SPECIFICATIONS

<u>Military</u>	
MIL-P-116	- Preservation, Methods of.
MIL-I-6866	- Inspection, Penetrant Method of.
MIL-I-6868	- Inspection Process, Magnetic Particle.
MIL-W-13855	- Weapons: Small Arms and Aircraft Armament Subsystems, General Specification for.
MIL-I-45607	- Inspection Equipment, Acquisition, Maintenance and Disposition of.

STANDARDS

<u>Military</u>	
MIL-STD-105	- Sampling Procedures and Tables for Inspection by Attributes.
MIL-STD-109	- Quality Assurance Terms and Definitions.
MIL-STD-1261	- Welding Procedures for Constructional Steels.

FSC 1005

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DRAWINGS

U. S. Army Weapons Command

F7267982 - Charger, Bolt, Cal .50 Machine Gun, M10

IEL7267982 - Index of Inspection Equipment List

(Product drawings referenced in this specification form a part of F7267982; Acceptance inspection equipment drawings form a part of IEL7267982)

PUBLICATIONS

U. S. Army Weapons Command

F7267982 - Packaging Data Sheet for Charger, Bolt,
Cal .50 Machine Gun, M10

(Copies of specifications, standards, drawings and publications required by contractors in connection with specific procurement functions should be obtained from the procuring activity or as directed by the contracting officer)

3. REQUIREMENTS

3.1 First article. Requirements for submission of first article shall be as specified in the contract (see 6.1). The first article shall be representative of material which has been inspected and determined acceptable. Unless otherwise specified (see 6.1), the first article shall include the pilot pack (see 5.1).

3.2 Materials and construction. Chargers and parts shall conform to the materials and construction requirements specified herein and on drawings referenced on Drawing F7267982, and the materials and construction shall be in accordance with the applicable provisions of MIL-W-13855.

3.2.1 Welding.

3.2.1.1 Certification of welding. Unless otherwise specified (see 6.1), prior to production of any weldments, the contractor or manufacture shall have Government approval of welding procedures and test specimens. Welding of parts and subassemblies shall be in accordance with the applicable drawing and as specified herein.

3.2.1.2 Welded joints. All welded joints of parts and subassemblies shall be sound and free from cracks. Welded joints shall be magnetic particle inspected in accordance with MIL-I-6868 and penetrant inspected in accordance with MIL-I-6866 as applicable.

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3.3 Design. Chargers and parts shall conform to the design specified herein and on drawings referenced on Drawing F7267982, and shall be in accordance with the applicable design provisions of MIL-W-13855.

3.3.1 Channel housing assembly. The slides shall function freely in the channel housing assembly without binding. Welding shall be in accordance with MIL-STD-1261.

3.3.2 Charger stud catch. The charger stud catch shall pivot freely without binding through its full range of travel and shall be held in the protruding position by spring action.

3.3.3 Control cable pulley swivel. The control cable pulley swivel shall turn freely without binding on the bearings in the pulley swivel plate so as to allow proper functioning of the charger when the cable is pulled in any direction.

3.3.4 Cover. The cover shall readily assemble to and disassemble from the channel housing in either the right or the left hand position.

3.3.5 Latches. The swivel bearing retaining plate latch and the housing cover latch shall properly perform their retaining and releasing functions and shall pivot freely between their proper stop positions under spring action.

3.3.6 Pulleys. The control cable pulley and the cable slide pulley shall rotate freely and retain the cable to allow proper functioning of the charger when the cable is pulled.

3.3.7 Pulley swivel plate. The pulley swivel plate slide and the charger slide and cable guide slide shall move without binding in their respective ways through their full length of travel.

3.3.8 Slides. The charger catch and pulley retainer slide and the charger slide and cable guide slide shall move without binding in their respective ways through their full length of travel.

3.3.9 Slide lock pawl. The slide lock pawl shall pivot freely through its full range of travel under spring action. The slide lock pawl shall firmly engage the charger stud catch when the slide lock selector is in the bolt hold-back position and the slides are retracted. The pawl shall continue to firmly engage the catch when the selector is moved to the bolt releasing position. The pawl shall disengage the catch when the slides are further retracted and released to allow travel of the slides to the forward position, and the pawl shall not engage the catch upon subsequent retraction of the slides.

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3.3.10 Slide lock pawl lever. The slide lock pawl lever shall pivot freely through its full range of travel under spring action.

3.3.11 Slide lock selector. The slide lock selector shall be capable of being moved freely from one position to the other. When in the bolt hold-back position it shall allow the slide lock pawl lever to position the slide lock pawl into the slideway of the channel housing. When the selector is switched to the bolt releasing position, it shall properly engage the lever to allow withdrawal of the pawl from the slideway of the channel housing and the slide lock selector shall properly cam the charger stud catch upon retraction of the slides.

3.3.12 Slide return spring housing. The slide return spring housing shall readily assemble to and disassemble from the channel housing and when attached shall be securely retained on the channel housing.

3.4 Performance characteristics.

3.4.1 Functioning. Assembled charger shall operate smoothly and properly without binding. A 7 1/2-pound load applied to the handle in a direction perpendicular to the axis of the charger shall retract the slides to the rearmost position. The charger shall be capable of returning the slides to the forward positions with a one-pound weight attached to the handle. Testing shall be as specified in 4.4.3.1.

3.4.2 Load capacity. The charger shall withstand the load capacity of 200 pounds without fracture or slippage of the cable or cable fittings, distortion of the charger or other visible damage, and without adverse effect on the ease of operation. Testing shall be as specified in 4.4.3.2

3.4.3 Endurance. The assembled charger shall withstand 1000 cycles of operation for endurance without malfunction or unserviceable parts. Testing shall be as specified in 4.4.3.4.

3.5 Interchangeability. Unless otherwise specified on the drawings, all components and assemblies shall be interchangeable. Preferential assembly of components shall be allowed in normal assembly operations provided that all components are dimensionally acceptable. Testing shall be as specified in 4.4.3.3.

3.6 Marking. Each charger and each component thereof for which markings are prescribed, shall be clearly marked in accordance with the applicable drawings and the marking provision of MIL-W-13855.

3.7 Workmanship. Workmanship shall be in accordance with the workmanship requirements of MIL-W-13855.

4. QUALITY ASSURANCE PROVISIONS

4.1 Responsibility for inspection. Unless otherwise specified in the contract or purchase order, the supplier is responsible for performance of all inspection requirements as specified herein. Except as otherwise specified in the contract or order, the supplier may use his own or any other facilities suitable for the performance of the inspection requirements specified herein, unless disapproved by the Government. The Government reserves the right to perform any of the inspections set forth in the specification where such inspections are deemed necessary to assure supplies and services conform to prescribed requirements.

4.2 Quality assurance terms and definitions. Quality assurance terms and definitions used herein are in accordance with MIL-STD-109.

4.3 First article inspection. Inspection of the first article (see 3.1) and pilot pack (see 5.1) shall be performed at the designated testing agency as specified in the contract (see 6.2). The first article and pilot pack shall be subjected to the examination and tests specified herein and such other inspection as is necessary to determine compliance with the requirements of the contract (see 6.2). The contractor will be informed of the results of any tests which indicate failure of the charger to meet prescribed requirements.

4.4 Quality conformance inspection.

4.4.1 Inspection lot. The initial inspection lot of chargers shall consist of not more than 25 chargers and, provided satisfactory results have been obtained, subsequent lots shall consist of 100 chargers. Lot sizes may be progressively increased, at the discretion of the procuring agency, to a maximum of 500 chargers depending on quality and rate of production.

4.4.2 Examination.

4.4.2.1 Component parts and concurrent repair parts. Examination of component parts and concurrent repair parts shall be performed in accordance with the criteria specified in the contract (see 6.1). The contractor's examination of these parts shall be accomplished prior to their assembly into the end item or submission for acceptance as repair parts.

4.4.2.2 Chargers. Examination of chargers shall be performed after completion of all testing and just prior to preservation and packaging. Each charger shall be handfunctioned and examined for compliance with the requirements of 3.3 through 3.3.12. Each step in the examination shall include a visual examination for proper cleaning and presence of the specified protective coating and to determine the general quality, completeness of manufacture, assembly, clarity and legibility of markings and workmanship. Chargers failing to meet the requirements shall be rejected.

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4.4.2.3 Packaging. Examination of packaging of chargers shall be performed in accordance with the classification of defects and acceptable quality levels (AQL's) specified in 4.4.2.3.1. Sample size shall be in accordance with MIL-STD-105, using inspection level I. The following provisions shall apply:

- a. The AQL's are specified as percent defective.
- b. The AQL listed for each defect shall be applied to the individual defect, not to a group of defects.
- c. Examination for packaging defects specified in 4.4.2.3.1 shall apply to each sample of chargers, interior packages, or exterior containers, as applicable.

4.4.2.3.1 Classification of defects for packaging. (Unless otherwise specified in each listed defect, the packaging requirements are specified on Packaging Data Sheet P7267982).

<u>Categories</u>	<u>Defect</u>	<u>AQL</u>
Critical:	None defined.	
Major:		
101	Illegible or incorrect marking.	1.0
102	Improper location of marking.	1.0
103	Improper level of packaging or packing (see procurement documents).	1.0
104	Inadequate cleaning and drying.	1.5
105	Improper preservation application.	1.5
106	Improper closure of unit package.	1.5
Minor:	None defined.	

4.4.2.3.2 Examination of packaging of repair parts shall be performed in accordance with the criteria specified in the contract (see 6.1).

4.4.2.4 Inspection approval stamp. Chargers which have passed all examination after successful completion of testing shall be stamped with the Department of Defense complete inspection approval stamp as specified on the applicable drawing. The Government representative will control the stamp used for such stampings to assure successful completion of all required examination and tests.

4.4.3 Testing.

4.4.3.1 Function testing. Each assembled charger shall be tested for functioning using test method specified in 4.6.1. Any charger failing to meet the requirements of 3.4.1 shall be cause for rejection.

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4.4.3.2 Load capacity testing. Three assembled chargers shall be selected from each inspection lot and tested in accordance with the test method specified in 4.6.2. Failure of any charger to meet the requirements of 3.4.2 shall be cause for rejection of the represented lot.

° 4.4.3.3 Interchangeability testing.

4.4.3.3.1 In plant.

4.4.3.3.1.1 Chargers. The contractor shall test a sample of four chargers selected by the Government representative, from each inspection lot for interchangeability (see 3.5.1) using the test method specified in 4.6.3.1.1. Chargers taken for interchangeability testing shall have been found satisfactory in all other examinations and tests. In addition, the chargers shall be tested for functioning requirement after interchange of parts using the test method specified in 4.6.1. Failure of the interchangeability test shall cause retest or rejection of the represented lot. At the discretion of the Government representative, an interchangeability retest may be allowed without reconditioning the lot of chargers. Failure in the retest shall cause rejection of the represented lot subject to reconditioning and further test as a reconditioned lot. A sample of eight chargers from each retest or reconditioned lot shall be tested using the same procedure described above.

4.4.3.3.1.2 Concurrent repair parts. The contractor shall subject at least two parts from each inspection lot of concurrent repair parts to the interchangeability test specified in 4.6.3.1.2. Failure of any part to meet the requirements shall be cause for rejection of the represented lot of parts subject to reconditioning and further test as a reconditioned lot. A sample of double the number of parts used in the original test shall be tested from each reconditioned lot using the test method specified in 4.6.3.1.2.

4.4.3.3.2 Interplant. When chargers are manufactured concurrently by more than one contractor, each contractor shall forward monthly one charger for the interplant interchangeability test specified in 4.6.3.2 (see 6.1). The contractor will be informed of any failure of the charger to meet prescribed requirements.

4.4.3.4 Endurance testing. The contractor shall test one charger, selected by the Government representative from each inspection lot for endurance, using the test method specified in 4.6.4. If the endurance requirements (see 3.4.4) are not met, the represented lot shall be rejected subject to retest or reconditioning and further test as a reconditioned lot. A retest of two chargers from the same lot shall be made without reconditioning the represented lot, unless in the opinion of the Government representative the failure indicates serious defects in the item, in which case retest shall be made only when authorized by the procuring agency. Failure of any charger

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in the retest to meet the requirements shall cause rejection of the represented lot subject to reconditioning and further testing as a reconditioned lot. Prior to submission of a lot of charger as a reconditioned lot, the cause of failure shall be determined and contractor correction shall be affected on all chargers and parts in production. Sample size and test method for reconditioned lots shall be the same as for retest.

4.4.3.5 Component parts and concurrent repair parts testing. Raw material testing, part testing, and certification shall be performed in accordance with the criteria specified in the contract (see 6.1). This will include chemical analysis and physical tests of materials, and tests of protective finish, heat treatment, bonding, and function of parts as applicable. The contractor shall accomplish these tests prior to assembly of parts into the end item.

4.4.3.6 Packaging testing.

4.4.3.6.1 Chargers.

4.4.3.6.1.1 The contractor shall furnish the Government representative with certification that the packaging materials conform to the applicable packaging data sheets and specifications.

4.4.3.6.1.2 Determination of cleanliness. The contractor shall test items from each inspection lot for cleanliness using the test methods specified in 4.6.5.1. Sampling shall be in accordance with MIL-P-116.

4.4.3.6.1.3 Heat-sealed seam and quick leak. The contractor shall test level A unit packages selected by the Government representative from each inspection lot for heat-sealed seam and quick leak using the test methods specified in 4.6.5.2 and 4.6.5.3, respectively. Sampling shall be in accordance with MIL-P-116.

4.4.3.6.2 Repair parts. Testing of packaging of repair parts shall be performed in accordance with the criteria specified in the contract (see 6.1).

4.5 Inspection equipment. Unless otherwise specified in the procurement documents (see 6.1), responsibilities for acquisition, maintenance, and disposition of measuring and testing equipment prescribed on lists contained in the Index to Inspection Equipment Lists, IEL7267982, and for all other inspection equipment required to perform inspection prescribed herein and by other applicable specifications, shall be in accordance with MIL-I-45607.

4.6 Test methods.

4.6.1 Functioning test. The assembled charger shall be tested for functioning using the functional gage and instructions prescribed on Drawing F7273165. The test shall be accomplished with the slide lock selector in the bolt releasing position. In addition, each charger shall be manually operated through its complete cycle. The direction of pull shall be approximately at right angles to the axis of the charger. With the selector set in the bolt hold-back position, the handle shall be pulled to the rear most position and released. Forward travel of the slides shall be stopped by engagement of the charger stud catch with the slide lock pawl. The selector shall then be switched to the bolt releasing position and the handle shall again be pulled rearward until completion of the rearward cycle, and released. The charger stud catch shall not engage the pawl and shall allow the slides to return to the forward stop position.

4.6.2 Load capacity test. Chargers shall be tested for load capacity by securely mounting the charger to a mounting fixture, using the charger mounting screws, and with the slides held in the forward position by engagement of the charger stud catch with a fixed stud, a load of 200 pounds shall be gradually applied to the handle. The direction of load shall be approximately at right angles to the longitudinal axis to the charger.

4.6.3 Interchangeability test.

4.6.3.1 Inplant.

4.6.3.1.1 Chargers. Chargers shall be tested for interchange of parts by disassembling and then reassembling parts using the parts and a prearranged system specified below. Interchange of parts shall be accomplished by dividing the parts of each charger into four groups of non-mating parts as shown below and distributing the groups into four different trays until each tray contains parts for a complete charger. Groups of parts from the first charger shall be taken in order and placed in trays 1 through 4; groups of parts from the second charger shall be taken in order and placed in trays 2 through 4 to 1; groups of parts from the third charger shall be taken in order and placed in trays 3 through 4 to 2, etc. Parts such as screws, spring pins, etc., shall be placed in the same tray as their mating or associated part. Any such part rendered unserviceable by disassembly shall be replaced without penalty to the interchangeability test. The charger shall be reassembled using only those parts which are in the same tray.

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Group I

Pin, cable slide pulley pivot
(8715567)
Sleeve, swivel brg retaining plate
catch (8715581)(2)
Spring, slide return, assembly
(8715571)
Spring, housing cover latch, slide
lock pawl level, swivel brg
retaining plate latch (7268250)(3)
Pawl, slide lock (7267985)
Spring, slide lock selector (8715827)
Catch, charger stud (7267987)
Retainer, cable washer (7268491)

Group II

Washer, cable (7268107)
Housing, channel, assembly (7267994)
Slide, charger catch and pulley
retainer (7267992)
Roller, Slide return spring (8715586)
Spring, Slide lock pawl (8710154)
Stud, bolt (7268490)
Swivel, control cable pulley (8715552)
Cable assembly (8715562)

Group III

Housing, slide return spring
(7268228)
Pulley, cable slide (8715566)
Latch, swivel bearing retaining plate
(7268362)
Latch, housing cover (7268051)
Cover (7268276)
Selector, slide lock (7267993)
Plunger, gun charger stud catch
(8715584)

Group IV

Lever, slide lock pawl (7267986)
Spring, gun charger stud catch plunger
(8715751)
Pin, spring (7268114)
Pin, charger stud catch pivot (8715582)
Handle assembly (11010041)
Pulley, control, cable (11010051)
Plate, pulley swivel (7268127)
Slide, charger slide and cable guide
(7267991)

4.6.3.1.2 Concurrent repair parts. Concurrent repair parts shall be tested for interchangeability by disassembling two chargers previously tested in 4.6.3.1.1 as necessary and then reassembling them using the concurrent repair parts. No hand refinement of parts will be allowed, and the charges shall operate and function properly. This test may be performed independently of the charger interchangeability test specified in 4.6.3.1.1, and at more frequent intervals using accepted chargers taken from current production.

4.6.3.2 Interplant. Chargers to be subjected to the interplant interchangeability test shall be inspected for functioning using the test method specified in 4.6.1 to assure proper operation before parts are interchanged. Parts shall then be dismantled from the charger and identified as to manufacturer. Disassembled parts shall be mixed and the chargers shall be reassembled by random selection without altering or hand fitting any part. After assembly, the chargers shall be inspected for functioning using the test method specified in 4.6.1. Before chargers are returned to the contractors, the original parts shall be reassembled to their respective charger.

4.6.4 Endurance test. The assembled charger shall be tested for endurance by securely mounting the charger to a machine gun or a fixture simulating action of a machine gun. The charger shall be cycled 500 times mounted on the left hand side and 500 times mounted on right hand side. The direction of pull shall be approximately at right angles to the axis of the charger. Cycling shall be repeated as follows: nine cycles with the selector in the bolt releasing position, and one cycle with the selector in the bolt hold-back position.

4.6.4.1 Upon satisfactory completion of the endurance test, the test charger shall be thoroughly reconditioned by the contractor before returning it to the lot for acceptance.

4.6.5 Packaging tests.

4.6.5.1 Determination of cleanliness. The assembled chargers shall be subjected to the determination of cleanliness test specified in MIL-P-116.

4.6.5.2 Heat-sealed seam test. The sample level A charger unit packages shall be subjected to the heat-sealed seam test specified in MIL-P-116.

4.6.5.3 Leakage test. The sample level A charger unit packages shall be subjected to the leakage test specified in MIL-P-116.

5. PREPARATION FOR DELIVERY

5.1 Pilot pack. The pilot pack shall consist of a complete and packaged unit package in accordance with Packaging Data Sheet P7267982 for the level of protection specified in the contract (see 6.1), packed level C and forwarded in accordance with 3.1.

5.2 Preservation, packaging, packing and marking. Chargers shall be preserved, unit packaged, packed, and marked in accordance with the requirements of Packaging Data Sheet P7267982 for the level of protection specified (see 6.1).

5.3 Repair parts. Repair parts shall be prepared for delivery in accordance with the applicable packaging data sheets specified in the contract (see 6.1).

6. NOTES

6.1 Ordering data. Procurement documents should specify the following:

- a. Title, number, and date of this specification.
- b. Lists of drawings and specifications pertinent to the charger showing applicable revision dates.

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- c. Inspection criteria for components (see 4.4.2.1, 4.4.2.3.2, 4.4.3.5 and 4.4.3.6.2).
- d. Index of inspection equipment lists pertinent to the charger showing applicable revision dates.
- e. Number of first articles required for tests (see 3.1).
- f. That packages opened for examination shall be repackaged by the contractor at the contractor's expense.
- g. Shipping instructions for the first article and pilot pack if different (see 3.1 and 5.2).
- h. Selection of applicable levels of preservation, packaging and packing (see 5.1 and 5.2).
- i. Packaging instructions for repair parts (see 5.3).
- j. Place of final inspection and acceptance (see "Notes" in MIL-W-13855).
- k. List of acceptance inspection equipment to be furnished the contractor (see 4.5) and responsibilities for other Government property to be furnished the contractor.
- l. Certification of welding procedures and test specimens if different (see 3.2.1).
- m. Shipping instructions for chargers and parts when an inter-plant interchangeability test is required (see 4.4.3.3.2).
- n. Procedures and methods for disposing of rejected material.
- o. Disposition of Government furnished property.

6.2 When action by a testing agency is required, work programming will be effected with the testing agency at the earliest practicable date.

6.3 Contract data requirements. Results of final examination, functioning, endurance and interchangeability test shall be as specified for delivery on the DD Form 1423 included in the contract.

6.4 When warranted, the contract should specify the application of MIL-Q-9858 or MIL-I-45208, as appropriate, on the Management Control Systems Summary List, DD Form 1660.

6.5 Unless otherwise specified (see 6.1 k), the contract should specify the application of MIL-I-45607 and MIL-C-45662 on the Management Control Summary List, DD Form 1660.

Custodian:
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1005-A427

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SPECIFICATION ANALYSIS SHEET		Form Approved Budget Bureau No. 22-R255
INSTRUCTIONS: This sheet is to be filled out by personnel, either Government or contractor, involved in the use of the specification in procurement of products for ultimate use by the Department of Defense. This sheet is provided for obtaining information on the use of this specification which will insure that suitable products can be procured with a minimum amount of delay and at the least cost. Comments and the return of this form will be appreciated. Fold on lines on reverse side, staple in corner, and send to preparing activity. Comments and suggestions submitted on this form do not constitute or imply authorization to waive any portion of the referenced document(s) or serve to amend contractual requirements.		
SPECIFICATION		
ORGANIZATION		
CITY AND STATE	CONTRACT NUMBER	
MATERIAL PROCURED UNDER A <input type="checkbox"/> DIRECT GOVERNMENT CONTRACT <input type="checkbox"/> SUBCONTRACT		
1. HAS ANY PART OF THE SPECIFICATION CREATED PROBLEMS OR REQUIRED INTERPRETATION IN PROCUREMENT USE? A. GIVE PARAGRAPH NUMBER AND WORDING.		
B. RECOMMENDATIONS FOR CORRECTING THE DEFICIENCIES		
2. COMMENTS ON ANY SPECIFICATION REQUIREMENT CONSIDERED TOO RIGID		
3. IS THE SPECIFICATION RESTRICTIVE? <input type="checkbox"/> YES <input type="checkbox"/> NO (If "yes", in what way?)		
4. REMARKS (Attach any pertinent data which may be of use in improving this specification. If there are additional papers, attach to form and place both in an envelope addressed to preparing activity)		
SUBMITTED BY (Printed or typed name and activity - Optional)		DATE

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