

[METRIC]  
A-A-52155A  
July 25, 1995  
SUPERSEDING  
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## COMMERCIAL ITEM DESCRIPTION

### ENGINE ACCESSORY DRIVE V-BELTS

The General Services Administration has authorized the use of this Commercial Item Description (CID) for all federal agencies.

1. SCOPE. This CID covers requirements for standard and heavy duty V-type engine accessory drive belts of various lengths and belt widths. The belts are either plain or notched or cogged base.

1.1 Classification. Belts shall be of the following grades, styles and nominal belt widths (SAE sizes):

1.1.1 Grade.

- A - Standard duty.
- B - Heavy duty.

1.1.2 Style.

- P - Plain base.
- C - Notched or cogged base.

Beneficial comments, recommendations, additions, deletions clarifications, etc. and any other data which may improve this document should be sent by letter to: U.S. Army Tank-automotive and Armaments Command, ATTN: AMSTA-TR-E, Warren, MI 48397-5000.
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FSC 3030

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1.1.3 Nominal belt width (SAE size).

- 0.380 inch.
- 0.500 inch.
- 11/16 inch.
- 3/4 inch.
- 7/8 inch.
- 1.0 inch.

2. SALIENT CHARACTERISTICS.

2.1 Materials. Belt cord shall be pre-stretched and impregnated with a rubber compound. Cord for grade A belts shall be natural or synthetic fibers. Grade B belts shall have polyester cord. The use of recovered materials made in compliance with regulatory requirements is acceptable providing that all requirements of this CID are met (see 5.5).

2.2 Construction. The construction of stock V-belts shall consist of tension members (inserts) and a compression member (cushion) molded into an endless loop having a trapezoidal cross-section. The belt dimensions, tolerances, and method of measurement shall be in accordance with SAE J636.

2.2.1 Belt lengths. Unless otherwise specified (see 5.2), the effective lengths for each nominal width classification of belts shall be as shown in table I.

2.2.2 Belt grade. Unless otherwise specified (see 5.2), the belts shall be grade A.

2.2.3 Belt style. The belt style (see 1.1), shall be as specified in the contract or order (see 5.2). If any belt style is acceptable, it shall be so stated in the contract or order (see 5.2).

2.4 Belt matched sets. When specified (see 5.2), belts shall be furnished in matched sets of the size and number of belts required.

2.3 Performance.

2.3.1 Fatigue. The belts shall not break nor any portion of the belt chunk out during a 100 hour operating period when tested for fatigue in accordance with SAE J637. For belt widths 7/8 inch (20 mm) and greater, the fatigue test horsepower (hp) loads shall be as listed in table II.

TABLE I. Effective belt lengths.

Nominal Belt Widths						PIN Dash No.	Effective length		Nominal Belt Widths						PIN Dash No.	Effective length	
1/	2/	3/	4/	5/	6/		Inch	mm	1/	2/	3/	4/	5/	6/		Inch	mm
X	X		X			-20	20	508	X	X	X	X	X	X	-47	47	1194
X	X		X			-21	21	533	X	X	X	X	X	X	-48	48	1219
X	X		X			-22	22	559	X	X	X	X	X	X	-49	49	1245
X	X		X			-23	23	584	X	X	X	X	X	X	-50	50	1270
X	X		X			-24	24	610	X	X	X	X	X	X	-51	51	1295
X	X	X	X			-25	25	635	X	X	X	X	X	X	-52	52	1321
X	X	X	X			-26	26	660	X	X	X	X	X	X	-53	53	1346
X	X	X	X			-27	27	686	X	X	X	X	X	X	-54	54	1372
X	X	X	X	X	X	-28	28	711	X	X	X	X	X	X	-55	55	1397
X	X	X	X	X	X	-29	29	737	X	X	X	X	X	X	-56	56	1422
X	X	X	X	X	X	-30	30	762	X	X	X	X	X	X	-57	57	1448
X	X	X	X	X	X	-31	31	787	X	X	X	X	X	X	-58	58	1473
X	X	X	X	X	X	-32	32	813	X	X	X	X	X	X	-59	59	1499
X	X	X	X	X	X	-33	33	838	X	X	X	X	X	X	-60	60	1524
X	X	X	X	X	X	-34	34	864		X	X		X	X	-62	62	1574
X	X	X	X	X	X	-35	35	889	X	X	X		X	X	-64	64	1626
X	X	X	X	X	X	-36	36	914		X	X		X	X	-66	66	1676
X	X	X	X	X	X	-37	37	940			X	X	X	X	-68	68	1727
X	X	X	X	X	X	-38	38	965			X	X	X	X	-70	70	1778
X	X	X	X	X	X	-39	39	991					X	X	-72	72	1829
X	X	X	X	X	X	-40	40	1016		X			X	X	-74	74	1880
X	X	X	X	X	X	-41	41	1041		X		X	X	X	-76	76	1930
X	X	X	X	X	X	-42	42	1067					X	X	-78	78	1981
X	X	X	X	X	X	-43	43	1092					X	X	-80	80	2032
X	X	X	X	X	X	-44	44	1118					X		-82	82	2083
X	X	X	X	X	X	-45	45	1143					X		-84	84	2134
X	X	X	X	X	X	-46	46	1168					X		-86	86	2184

1/ 0.380 inch (9.6 mm)

4/ 3/4 inch (19.1 mm)

2/ 0.500 inch (12.7 mm)

5/ 7/8 inch (22.2 mm)

3/ 11/16 inch (17.5 mm)

6/ 1.0 inch (25.4 mm)

- NOTES: 1. The PIN dash numbers and the prior slash sheet dash numbers are the same.
2. Fractional effective lengths shall be designated by adding a two-digit number representing hundredths of an inch to PIN dash number, i.e. 64.50 effective length = 6450.

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TABLE II. Fatigue test loads.

Nominal Belt Width	Belt Effective Length (Inches)	HP Loads	Tension Weight (Pounds)
7/8	Under 40.0	13.0	130
	44.0 - 55.0	14.0	140
	55.0 and over	15.0	150
1.0	Under 40.0	13.0	130
	44.0 - 55.0	14.0	140
	55.0 and over	15.0	150

2.3.2 Resistance to temperature. The belts shall not break or require more torque than specified in table III when subjected to temperature extremes of plus 150 degrees Fahrenheit (°F) and minus 20°F under the following conditions: Place the unrestrained belt in a heat chamber in a horizontal position so that it does not contact the sides of the chamber. Next subject the belt to 150 + 2°F for 12 hours duration followed by 30 minutes cooling at ambient temperature. Following the cooling period, place the belt on the same pulley arrangement used for the fatigue test (see 2.3.1). Apply and set tension to the belt equivalent to the tension applied when measuring the belt per SAE J636 (see 2.2). Next, subject the assembly to minus 20°F for 12 hours duration and while still at the cold temperature, rotate the drive pulley not less than 2 revolutions. Measure and record the torque required to start and to continue rotation.

TABLE III. Maximum torque requirements.

Nominal belt width (inches)	Torque required to start rotation (maximum-foot pounds)	Torque required to continue rotation (maximum-foot pounds)
0.380 & 0.500	20	12.5
11/16 & 3/4	25	15.0
7/8 & 1.0	30	20.0

2.3.3 Oil resistance. When “oil resistant” is specified (see 5.2), the belt thickness shall increase no more than 20 percent nor decrease more than 1 percent when immersed in ASTM oil No. 1 and ASTM IRM 903 oil as cited in ASTM D471 under the following conditions: Immerse two 3 inch (7.6 mm) long sections of hose in 158°F (70°C) oil bath for 22 hours. The average of three measurements-the center point and ½ inch from each end shall constitute the thickness.

2.4 Age. When specified (see 5.2), the age of the belts shall be not more than 12 months (4 quarters) old from the time of manufacture to the date of acceptance by the Government.

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2.5 Identification and markings. Identification and markings of the belts shall be permanent and legible. The belts shall be marked on the outside circumference. Each belt shall be marked with the nominal top width, the effective length, the contractor's identification code (CAGE) or trademark, the date of manufacture and the part identification number (PIN) or manufacturer's commercial part number.

2.5.1 Matched sets. Each belt in a matched set shall be marked as specified in 2.5. In addition, all belts of a matched set shall be tied together. A tag or separate label shall include the following notice: **“WARNING: THIS IS A MATCHED SET. DO NOT BREAK TIES EXCEPT AT INSTALLATION.”**

### 3. QUALITY ASSURANCE PROVISIONS.

3.1 Responsibility for inspection. The contractor is responsible for the performance of all inspections (examinations and tests).

3.2 Contractor certification. The contractor shall certify and maintain substantiating evidence that the product offered meets the salient characteristics of this commercial item description and that the product conforms to the producer's own drawings, specifications, workmanship standards, and quality assurance practices. Items with known defects shall not be submitted for Government acceptance. The Government reserves the right to require proof of such conformance prior to the first delivery and thereafter as may be otherwise provided for under the provisions of the contract.

### 4. PRESERVATION, PACKAGING, PACKING, LABELING, AND MARKING.

Preservation, packaging, packing, labeling, and marking for the desired level shall be as specified in the contract (see 5.2).

### 5. NOTES.

(This section contains information of a general or explanatory nature that may be helpful, but is not mandatory.)

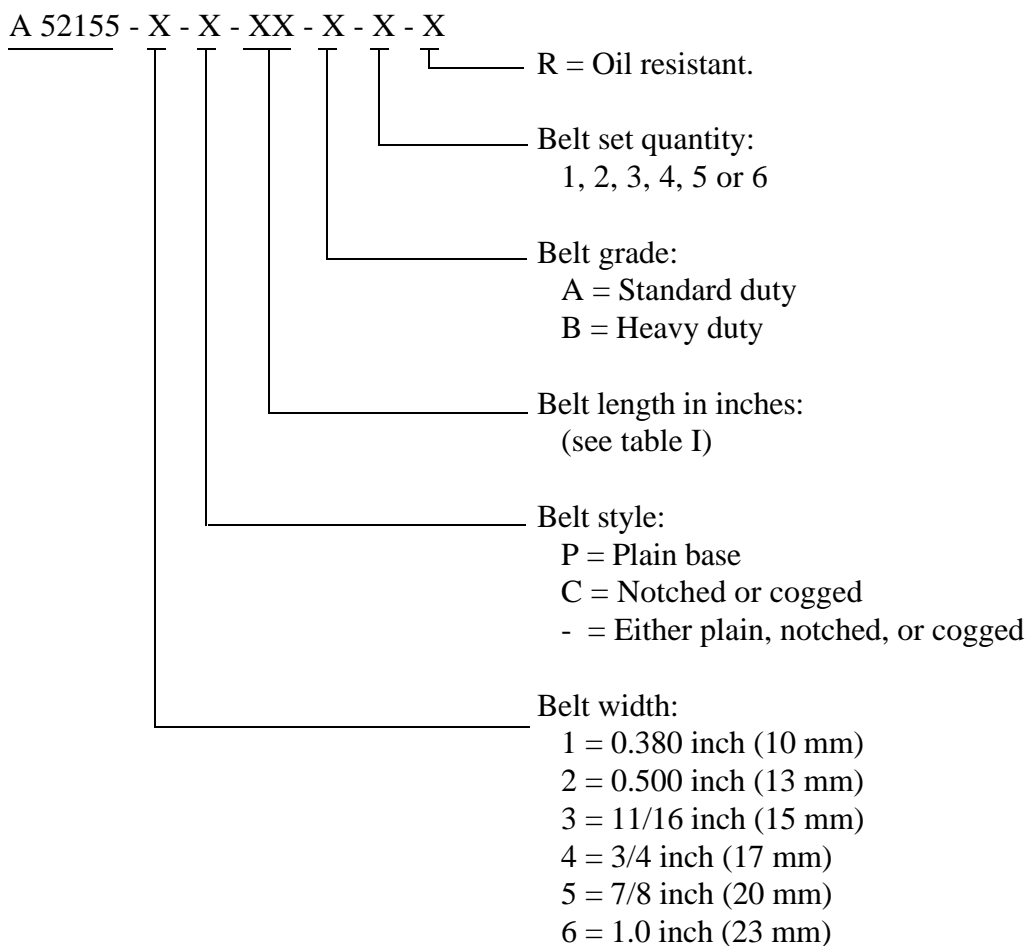
5.1 Non-Government documents. Copies of ASTM D471 “Standard Test Method for Rubber Property” are available from the American Society for Testing and Materials (ASTM), 1916 Race Street, Philadelphia, PA 19103-1187. Copies of SAE J636 “V-Belts and Pulleys, Standard” and SAE J637 “Automotive V-Belt Drives, Recommended Practices” are available from the Society of Automotive Engineers, Inc., 400 Commonwealth Drive, Warrendale, PA 15096-0001.

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5.2 Ordering data. Acquisition documents must specify the following:

- a. Title, number, and date of this CID.
- b. Issue of DODISS to be cited in the solicitation.
- c. PIN number and quantity of belts required.
- d. If Grade B (heavy duty) belts are required.
- e. Belt style, if particular style is required.
- f. If any belt style is acceptable.
- g. Belt effective length when not in accordance with table I.
- h. When matched belt sets are required and size and number of belts in each set.
- i. When oil resistance is required.
- j. When age of belts will not be more than 12 months.
- k. Selection of applicable level and packaging requirements.

5.3 PIN. The PINs to be used for belts acquired to this CID are created as follows:



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5.4 Cross-reference data. Belts conforming to this CID are interchangeable/substitutable with belts conforming to ZZ-B-190C.

5.5 Regulatory requirements. The offeror/contractor is encouraged to use recovered materials in accordance with Public Law 94-580 to the maximum extent practicable.

MILITARY INTERESTS:

Custodians

Army - AT  
Air Force - 99

Review Activities

Air Force - 82  
Navy - MC, SH, YD  
DLA - CS

CIVIL AGENCY COORDINATING ACTIVITY:

GSA - FSS

PREPARING ACTIVITY:

Army - AT

(Project 3030-0200)