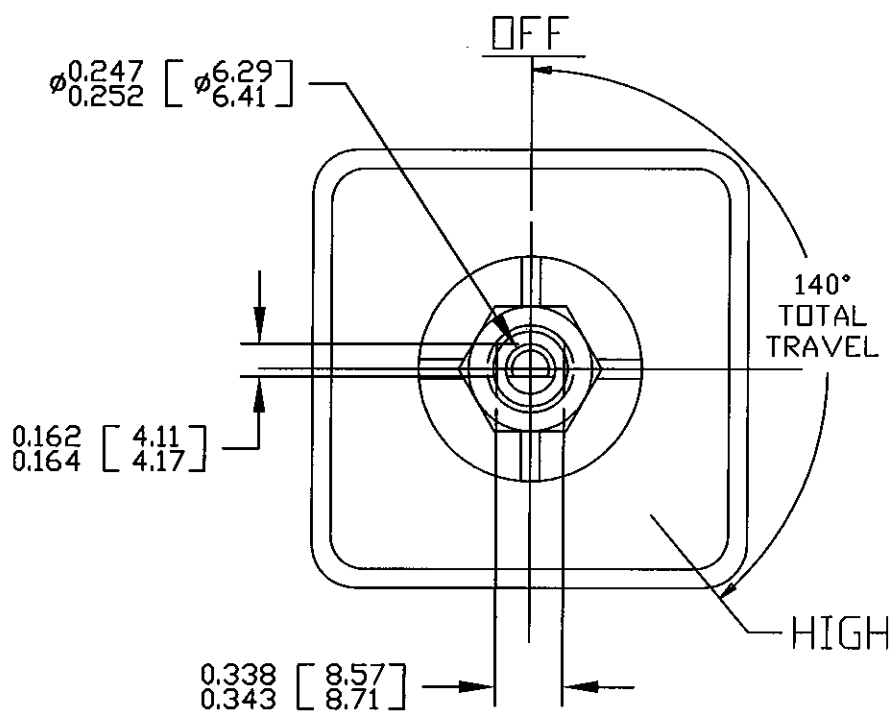
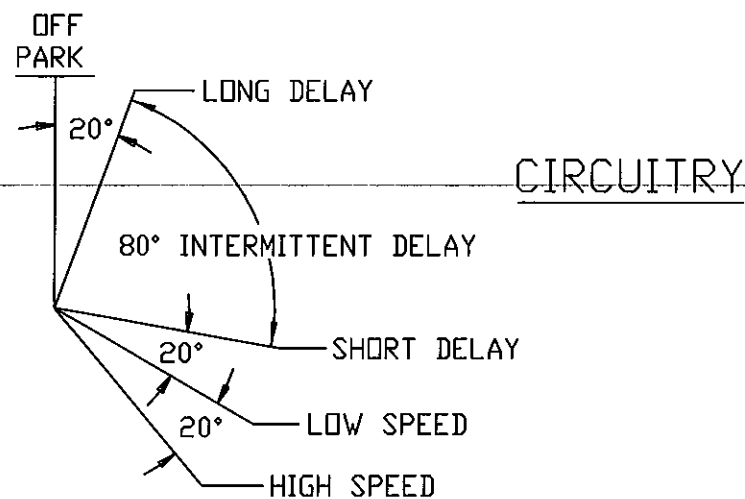
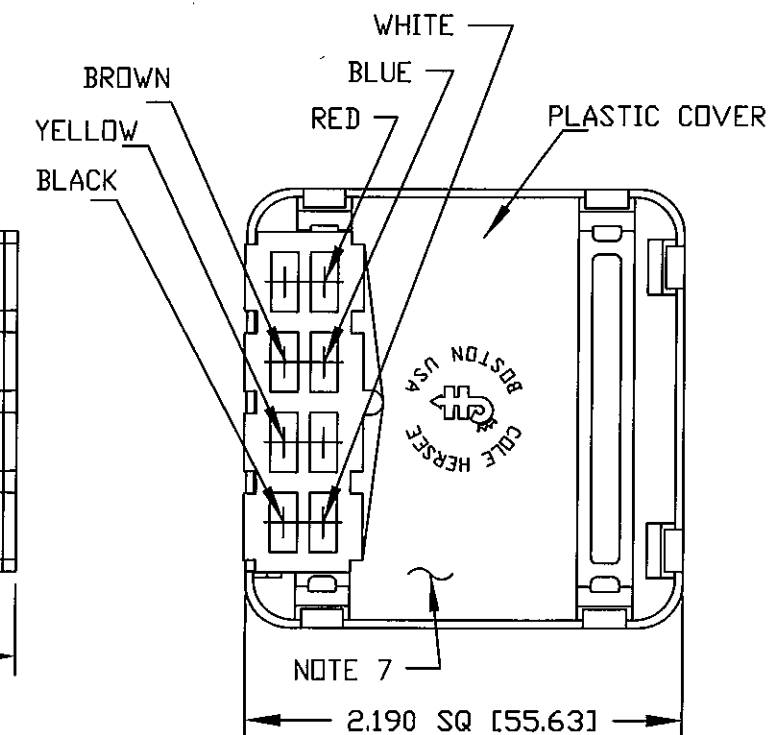
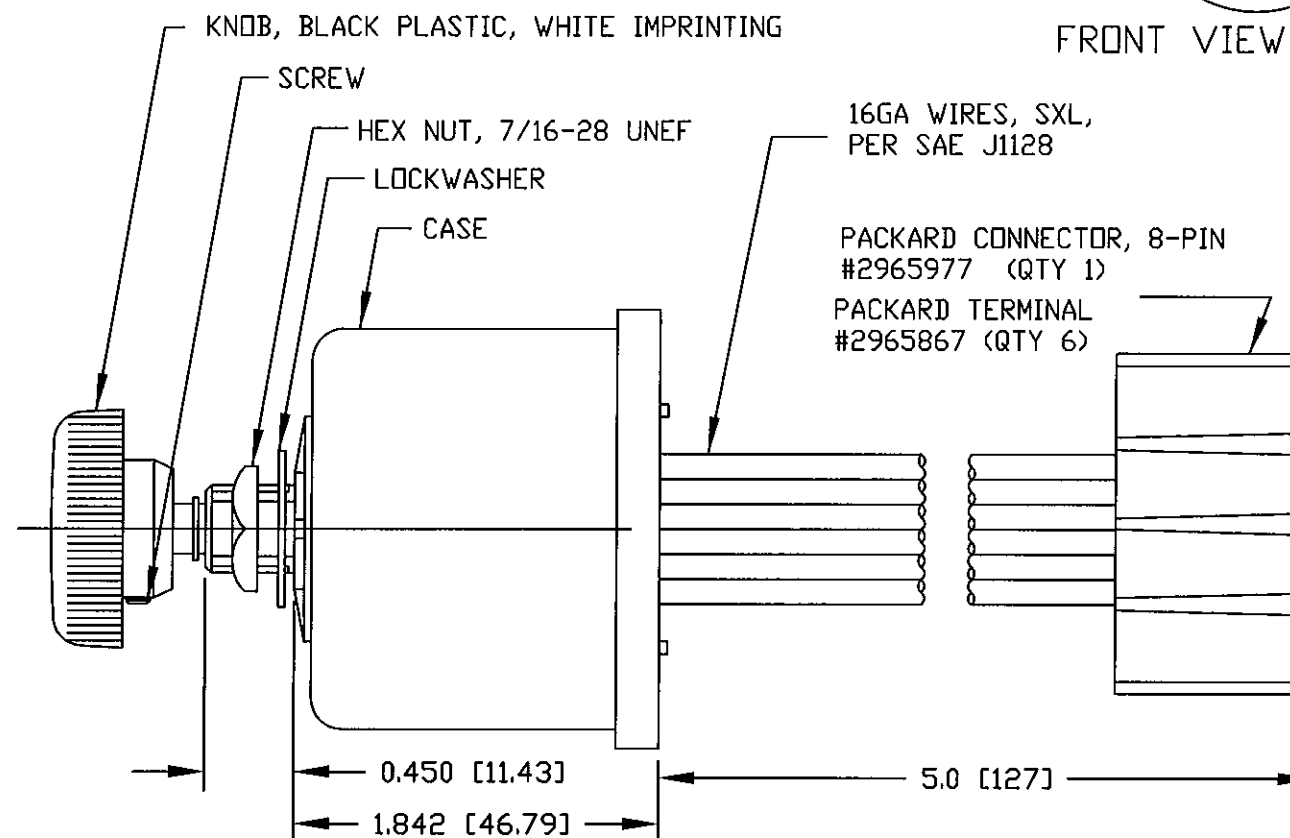


Revision Control Record

Rev.	Description of Change	ECN No.	Date
E	REVISED DRAWING, SSR	07035	1/25/07
F	BOM CHANGE	09588	01/15/10



FRONT VIEW OF KNOB



NOTES:

- DESIGNED FOR 12V SYSTEM, SINGLE MOTOR, DYNAMIC AND NON-DYNAMIC PARK. TO BE USED WITH PERMANENT MAGNET MOTOR, NEGATIVE GROUND ONLY.
- PUSH TO WASH FUNCTION: RESULTS IN 2 TO 3 WIPES AFTER RELEASE OF PUSH SWITCH.
- RATING: VOLTAGE OPERATING RANGE 9VDC TO 16VDC
 ROTARY SWITCH ACTUATION 20,000 CYCLES MINIMUM.
 MOTOR DRIVE: 15 AMPS CONTINUOUS. START-UP/STALL/LOCKED-ROTOR 50 AMPS. SHORT-CIRCUIT PROOF.
 WASHER CIRCUIT 3 AMPS, PUSH SWITCH 20,000 CYCLES MINIMUM.
- MICROPROCESSOR CONTROLLED, SOLID-STATE RELAY, CURRENT LIMIT SENSE CIRCUIT, REVERSE POLARITY PROTECTED
- CONFORMS TO SAE J1455:
 - GENERAL HEAVY DUTY TRUCK ELECTRICAL ENVIRONMENT.
 - STEADY-STATE ELECTRICAL CHARACTERISTICS.
 - TRANSIENT, NOISE AND ELECTROSTATIC CHARACTERISTICS.
 - ENVIRONMENTAL EXTREMES BY LOCATION.
 - INTERIOR-FORWARD.
- ALL DIMENSIONS ARE REFERENCE ONLY UNLESS NOTED OTHERWISE.
- COLE HERSEE PART NUMBER, REVISION, & DATE CODE STAMPED IN WHITE.

COLOR	FUNCTION
WHITE	MOTOR HIGH SPEED
YELLOW	MOTOR LOW SPEED
BLACK	GROUND (0V)
BROWN	WASHER PUMP
RED	VBB (12V)
BLUE	MOTOR PARK

Tolerances Unless otherwise specifically noted, the following are default tolerances:
 * 2-place Decimal Dimensions +/- .02"
 * 3-place Decimal Dimensions +/- .005"
 * Angular Dimensions +/- 1.0 Deg.
 * Metric: Refer to equivalent English Dimension Tolerance
 >>> NOTE: All tolerances are Non-Cumulative. <<<

Dimensional Units All dimensions are expressed in inches except those shown in brackets (xxx) are expressed in millimeters

"REF." or an Asterisk (*) = Non-Toleranced Reference Dimension, shown for clarification purposes only.

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DO NOT SCALE - Dimensional variation may occur during printing / reproduction.

Special Characteristics:

- CC Critical Characteristic, relating to Safety and/or Regulatory Compliance
- X Significant Characteristic relating to Process Control (SPC)
- KC Control Dimension relating to Form - Fit - Function as defined by Cole Hersee Company and/or the Customer

(Note that the identification of any Characteristics as being "Special" does not alter the requirement that ALL specified dimensions & tolerances must be met.)

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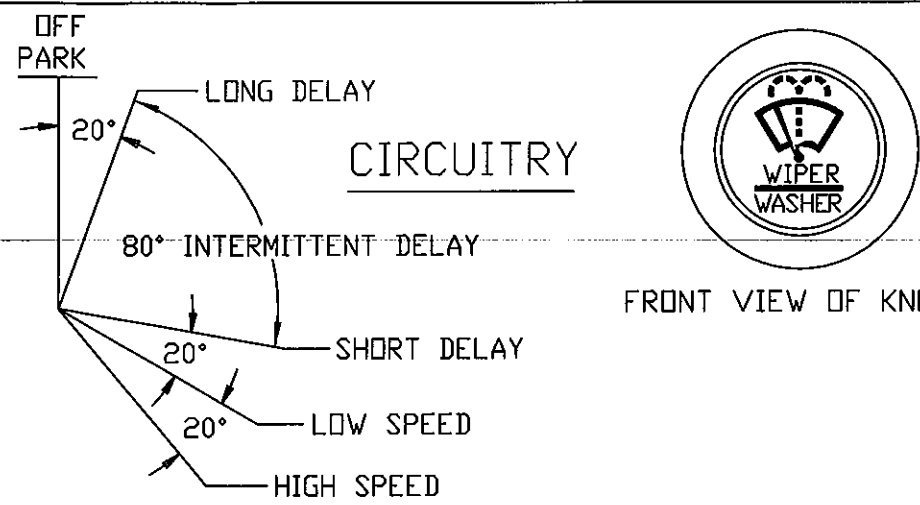
Description: WINDSHIELD WIPER CONTROLLER, UNIVERSAL, 12V

Drawing / Part No.: 75600

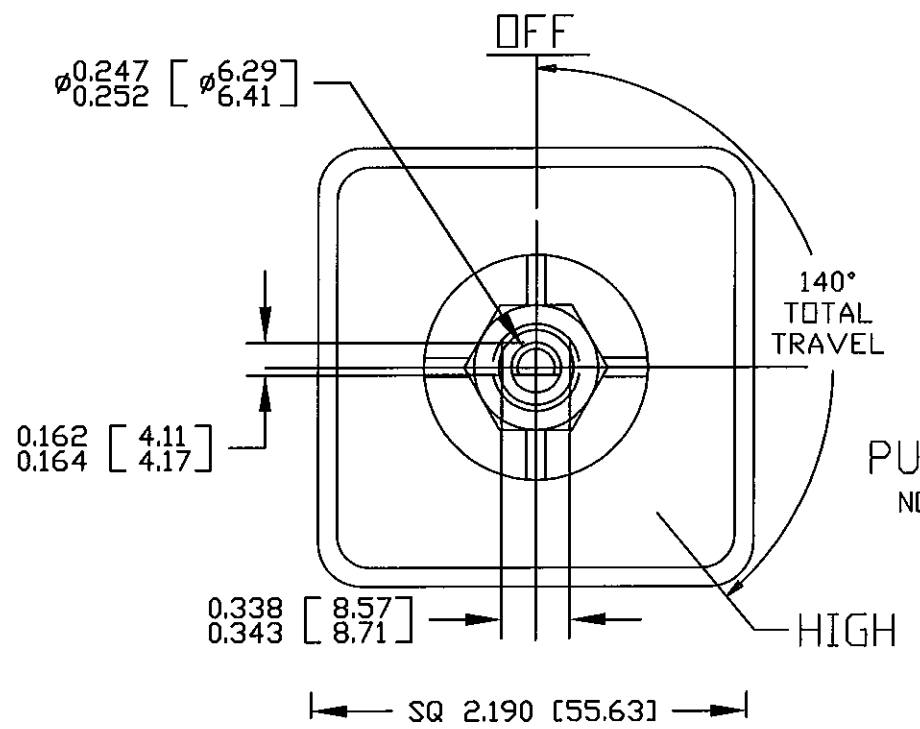
Current Rev.: F

Revision Control Record

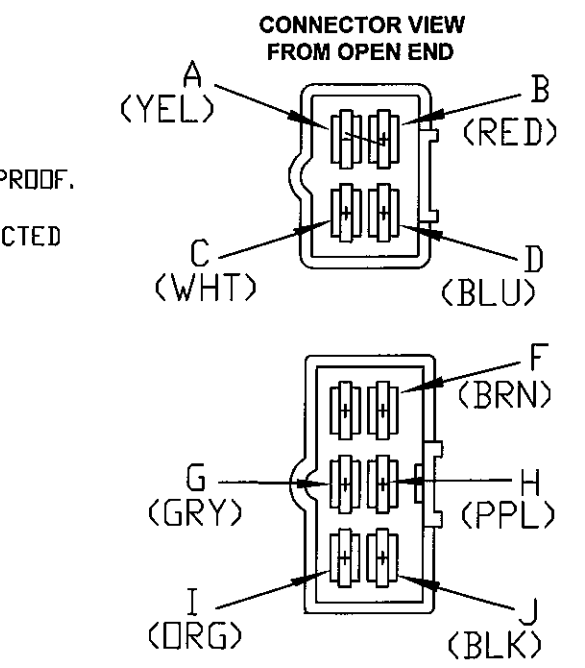
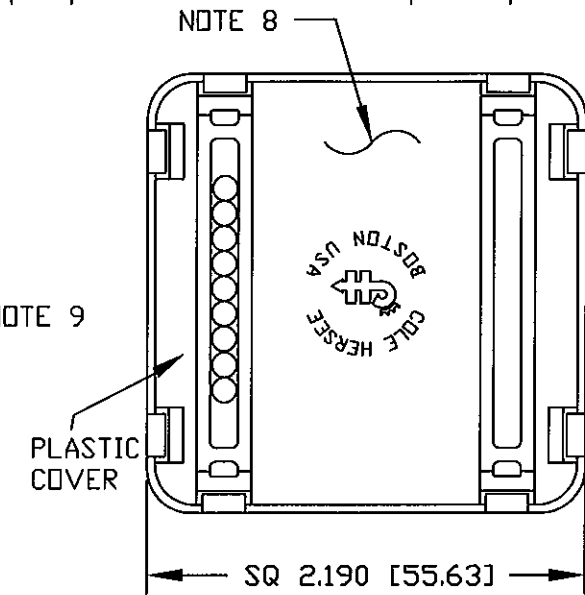
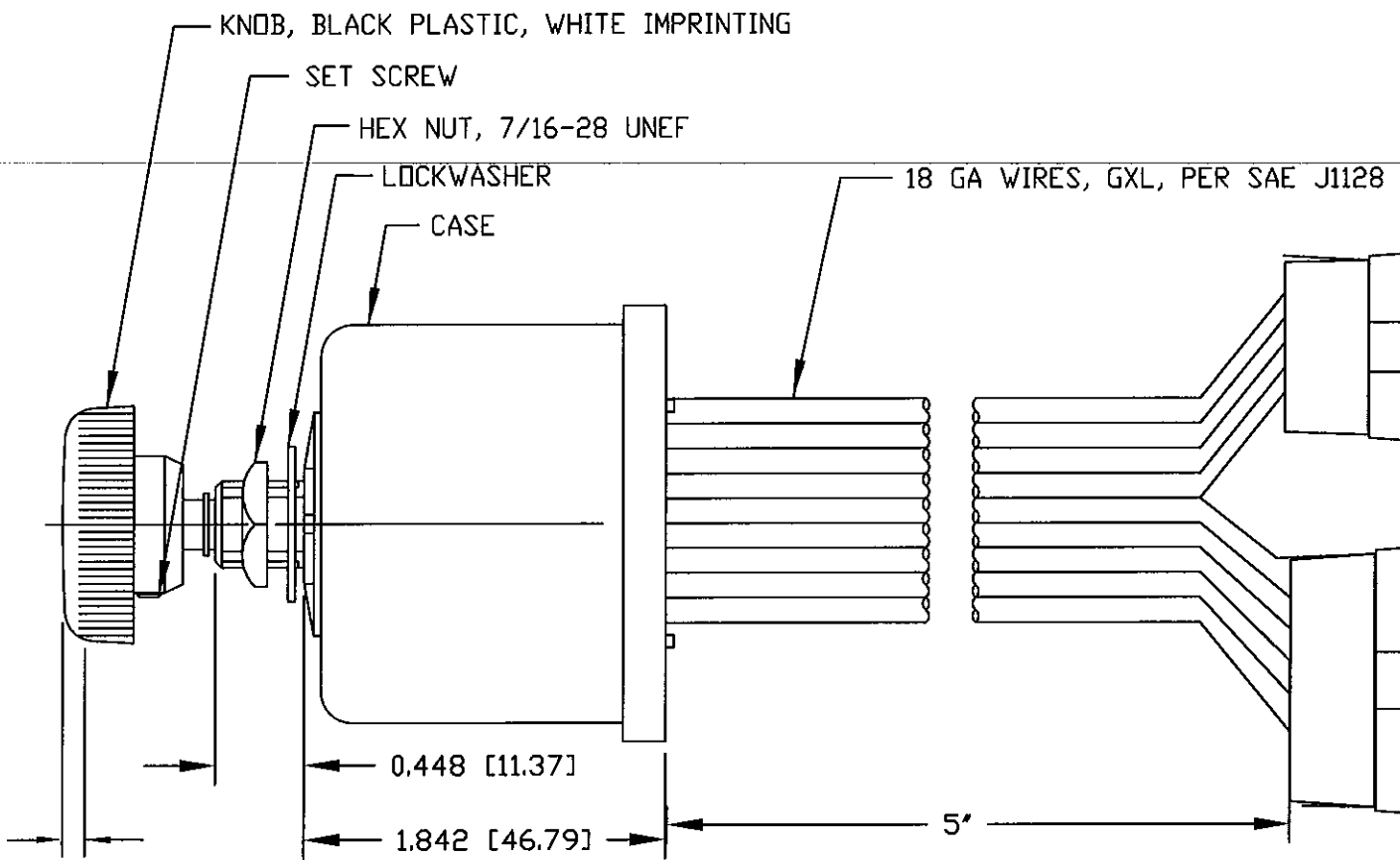
Rev.	Description of Change	ECN No.	Date
E	ADDED NOTE TO COVER VIEW	03274	7/24/03
F	CHANGE TO SSR PCB	07060	02/16/07
G	BOM CHANGE	09587	01/13/10



FRONT VIEW OF KNOB



PUSH TO WASH
NOTE 2



- NOTES:
- DESIGNED FOR 12V SYSTEM, DUAL MOTOR, DYNAMIC AND NON-DYNAMIC PARK.
 - PUSH TO WASH FUNCTION RESULTS IN 3 WIPES AFTER RELEASE OF PUSH SWITCH.
 - RATING: VOLTAGE OPERATING RANGE 9VDC TO 16VDC
 ROTARY SWITCH ACTUATION 20,000 CYCLES MINIMUM.
 MOTOR DRIVE: 10 AMPS PER MOTOR CONTINUOUS. START-UP/STALL/LOCKED-ROTOR 30 AMPS. SHORT-CIRCUIT PROOF.
 WASHER CIRCUIT 3 AMPS, PUSH SWITCH 20,000 CYCLES MINIMUM.
 - MICROPROCESSOR CONTROLLED, SOLID-STATE RELAY, CURRENT LIMIT SENSE CIRCUIT, REVERSE POLARITY PROTECTED
 - CONFORMS TO SAE J1455:
 4.11 GENERAL HEAVY DUTY TRUCK ELECTRICAL ENVIRONMENT.
 4.11.1 STEADY-STATE ELECTRICAL CHARACTERISTICS.
 4.11.2 TRANSIENT, NOISE AND ELECTROSTATIC CHARACTERISTICS.
 - INTERMITTENT DELAYS: 1, 2, 4, 7, 11 AND 16 SECONDS
 - ALL DIMENSIONS ARE REFERENCE ONLY UNLESS NOTED OTHERWISE.
 - COLE HERSEE PART NUMBER, REVISION, & DATE CODE STAMPED IN WHITE ON REAR PLASTIC COVER.
 - CONNECTORS, DELPHI: 6-PIN, PART# 2977042 (QTY 1); 4-PIN, PART# 6294544 (QTY 1)
 TERMINALS, DELPHI: PART#2965439 (QTY 10)

COLOR	FUNCTION	TERMINAL
YELLOW	LOW-SPEED MOTOR #1	A
RED	VBB (12V POWER)	B
WHITE	HIGH-SPEED MOTOR#1	C
BLUE	PARK MOTOR #1	D
BROWN	WASHER	F
GREY	HIGH-SPEED MOTOR #2	G
PURPLE	PARK MOTOR #2	H
ORANGE	LOW-SPEED MOTOR #2	I
BLACK	GROUND (0V)	J

Tolerances Unless otherwise specifically noted, the following are default tolerances:
 * 2-place Decimal Dimensions +/- .02"
 * 3-place Decimal Dimensions +/- .005"
 * Angular Dimensions +/- 1.0 Deg.
 * Metric: Refer to equivalent English Dimension Tolerance
 >>> NOTE: All tolerances are Non-Cumulative. <<<

Dimensional Units All dimensions are expressed in inches except those shown in brackets (xxx) are expressed in millimeters

"REF." or an Asterisk (*) = Non-Toleranced Reference Dimension, shown for clarification purposes only.

Used On or Ref.: **EX28333** Scale: **1:1**

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DO NOT SCALE - Dimensional variation may occur during printing / reproduction.

Drawn **JCS** Date **10/10/06**
 By: Responsible Engineer: **JCS**

Special Characteristics:

- Critical Characteristic, relating to Safety and/or Regulatory Compliance
- Significant Characteristic relating to Process Control (SPC)
- Control Dimension relating to Form - Fit - Function as defined by Cole Hersee Company and/or the Customer

(Note that the identification of any Characteristics as being "Special" does not alter the requirement that ALL specified dimensions & tolerances must be met.)

Responsible Engineer: **JCS** Pg. **1**

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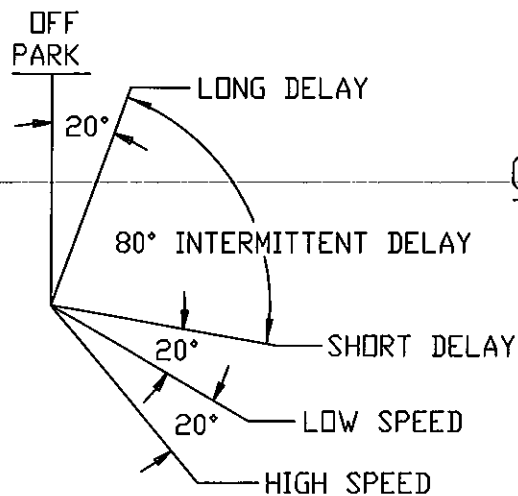
Description:
WINDSHIELD WIPER CONTROLLER, DUAL-MOTOR, W/ WIPER ENABLE, 12V, SSR

Drawing / Part No.: **75600-01** Current Rev.: **G**

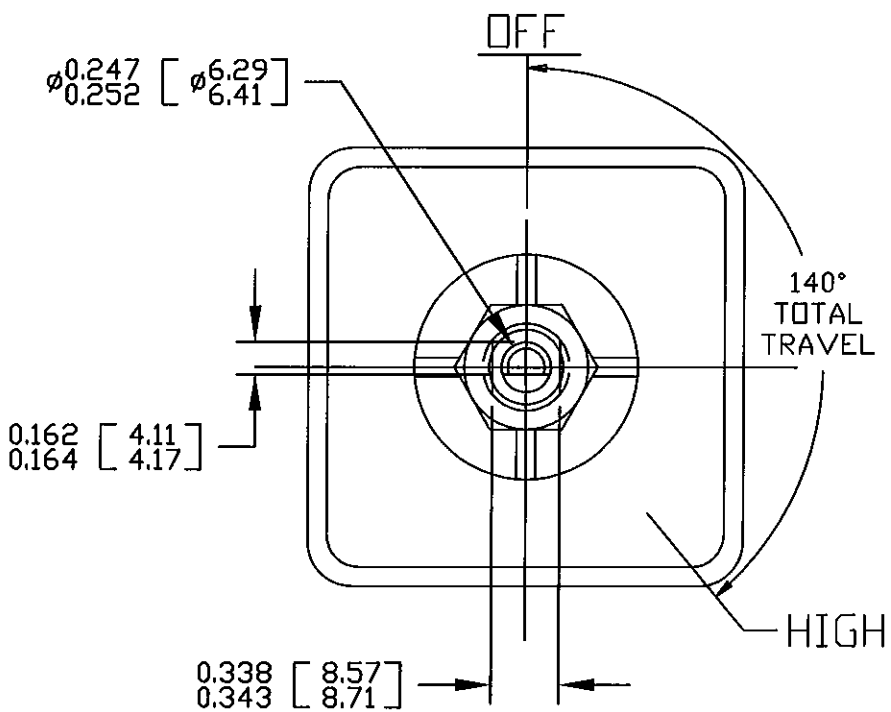


Revision Control Record

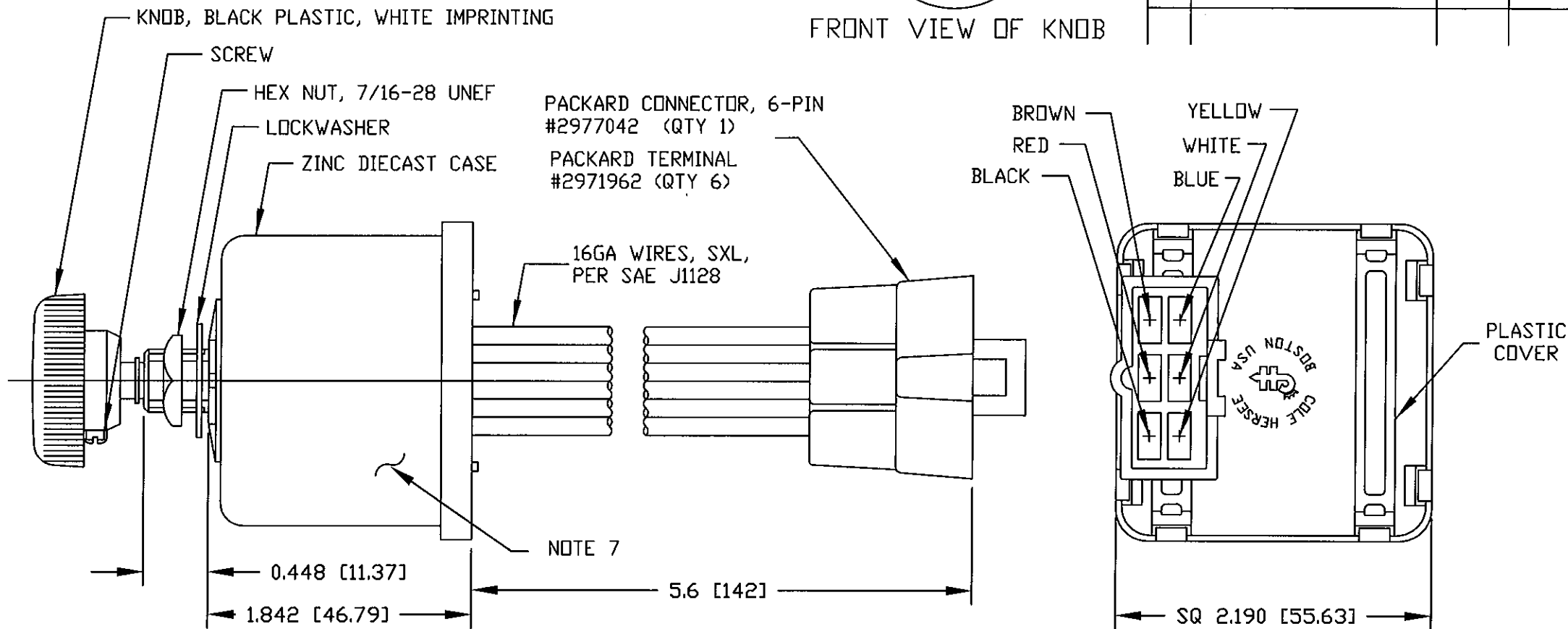
Rev.	Description of Change	ECN No.	Date
L	REVISED DRAWING, SSR	07035	1/24/07
M	EDIT NOTE 7	09257	04/21/09
N	BOM CHANGE	09588	01/15/10



CIRCUITRY



FRONT VIEW OF KNOB



NOTES:

- DESIGNED FOR 12V SYSTEM, SINGLE MOTOR, DYNAMIC AND NON-DYNAMIC PARK. TO BE USED WITH PERMANENT MAGNET MOTOR, NEGATIVE GROUND ONLY.
- PUSH TO WASH FUNCTION: RESULTS IN 2 TO 3 WIPES AFTER RELEASE OF PUSH SWITCH.
- RATING: VOLTAGE OPERATING RANGE 9VDC TO 16VDC
 ROTARY SWITCH ACTUATION 20,000 CYCLES MINIMUM.
 MOTOR DRIVE: 15 AMPS CONTINUOUS. START-UP/STALL/LOCKED-ROTOR 50 AMPS. SHORT-CIRCUIT PROOF.
 WASHER CIRCUIT 3 AMPS, PUSH SWITCH 20,000 CYCLES MINIMUM.
- MICROPROCESSOR CONTROLLED, SOLID-STATE RELAY, CURRENT LIMIT SENSE CIRCUIT, REVERSE POLARITY PROTECTED
- CONFORMS TO SAE J1455:
 - GENERAL HEAVY DUTY TRUCK ELECTRICAL ENVIRONMENT.
 - STEADY-STATE ELECTRICAL CHARACTERISTICS.
 - TRANSIENT, NOISE AND ELECTROSTATIC CHARACTERISTICS.
 - ENVIRONMENTAL EXTREMES BY LOCATION.
 - INTERIOR-FORWARD.
- ALL DIMENSIONS ARE REFERENCE ONLY UNLESS NOTED OTHERWISE.
- COLE HERSEE PART NUMBER, REVISION, & DATE CODE MARKED AT RANDOM ON CASE.

COLOR	FUNCTION
WHITE	MOTOR HIGH SPEED
YELLOW	MOTOR LOW SPEED
RED	VBB (+12V)
BROWN	WASHER PUMP
BLACK	GROUND (0V)
BLUE	MOTOR PARK

Tolerances Unless otherwise specifically noted, the following are default tolerances:
 * 2-place Decimal Dimensions +/- .02"
 * 3-place Decimal Dimensions +/- .005"
 * Angular Dimensions +/- 1.0 Deg.
 * Metric: Refer to equivalent English Dimension Tolerance
 >>> NOTE: All tolerances are Non-Cumulative. <<<

Dimensional Units All dimensions are expressed in inches except those shown in brackets (xxx) are expressed in millimeters

"REF." or an Asterisk (*) = Non-Toleranced Reference Dimension, shown for clarification purposes only.

Used On or Ref.: **EX26541** Scale: **1:1**

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DO NOT SCALE - Dimensional variation may occur during printing / reproduction.

Drawn By: **DPS** Date Drawn: **1/23/07**

Special Characteristics:

- Critical Characteristic, relating to Safety and/or Regulatory Compliance
- Significant Characteristic relating to Process Control (SPC)
- Control Dimension relating to Form - Fit - Function as defined by Cole Hersee Company and/or the Customer

(Note that the Identification of any Characteristics as being "Special" does not alter the requirement that ALL specified dimensions & tolerances must be met.)

Responsible Engineer: **JCS** Pg. **1**

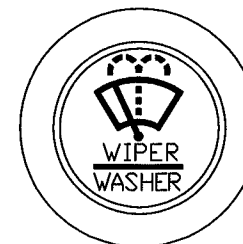
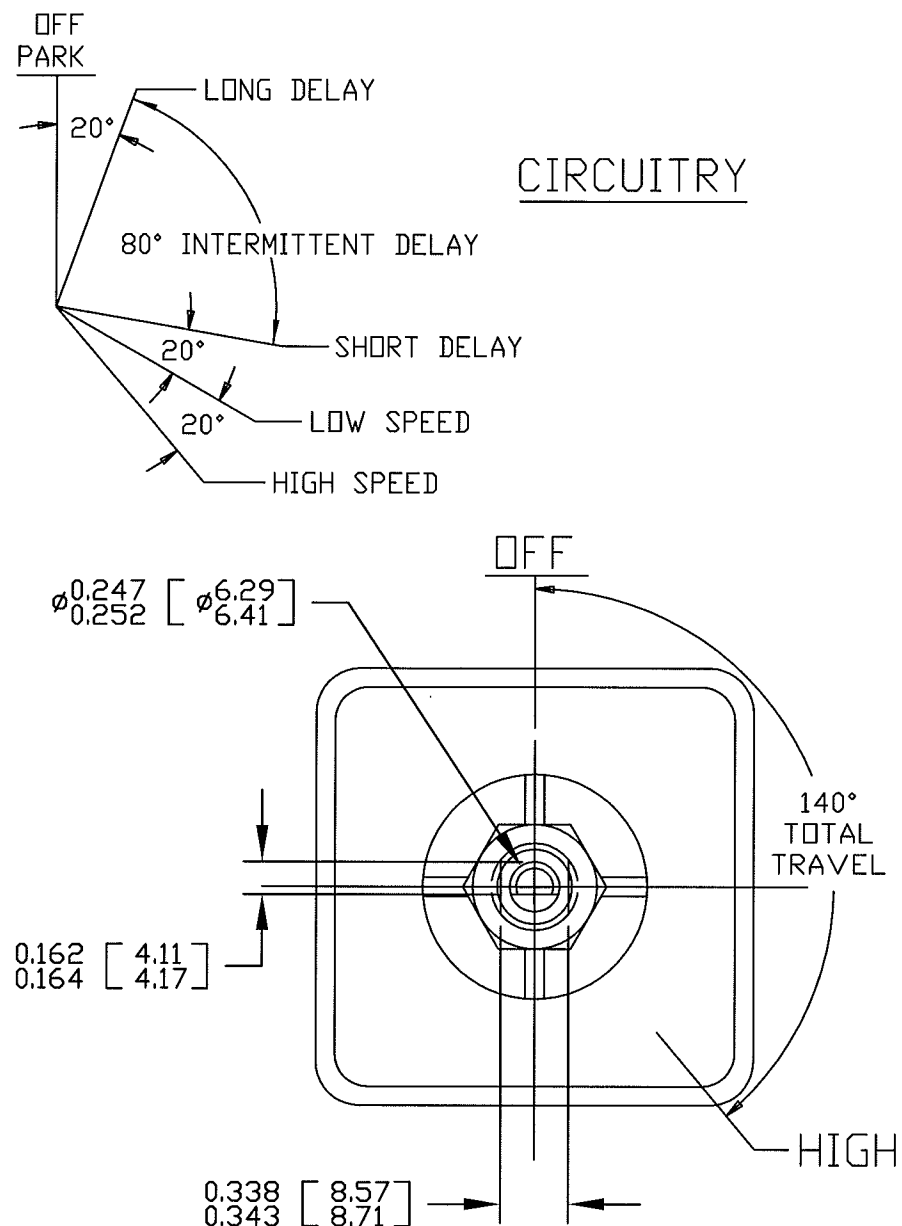
Cole Hersee Co.
 20 Old Colony Ave., South Boston, MA, 02127
 Phn: 617-268-2100 Web: www.colehersee.com

Description: WINDSHIELD WIPER CONTROLLER, UNIVERSAL, 12V

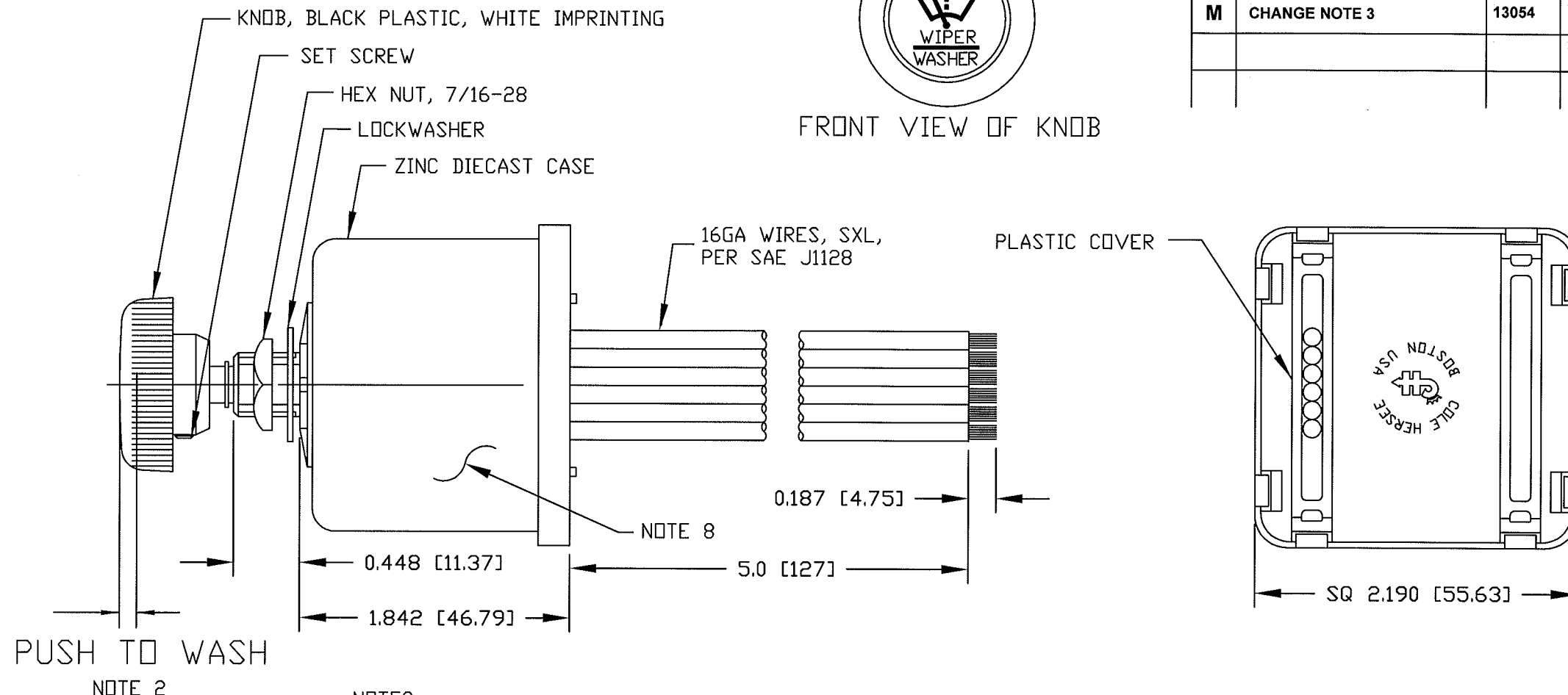
Drawing / Part No.: **75600-02** **Current Rev.:** **N**

Revision Control Record

Rev.	Description of Change	ECN No.	Date
L	CHANGE BOM	09588	01/15/10
M	CHANGE NOTE 3	13054	02/07/13



FRONT VIEW OF KNOB



NOTES:

- DESIGNED FOR 12V SYSTEM, SINGLE MOTOR, DYNAMIC AND NON-DYNAMIC PARK. TO BE USED WITH PERMANENT MAGNET MOTOR, NEGATIVE GROUND ONLY.
- PUSH TO WASH FUNCTION: RESULTS IN 2 TO 3 WIPES AFTER RELEASE OF PUSH SWITCH.
- RATING: VOLTAGE OPERATING RANGE 9VDC TO 16VDC
ROTARY SWITCH ACTUATION 20,000 CYCLES MINIMUM.
MOTOR DRIVE: 15 AMPS CONTINUOUS. START-UP/STALL/LOCKED-ROTOR 50 AMPS. SHORT-CIRCUIT PROTECTED^(M)
WASHER CIRCUIT 3 AMPS, PUSH SWITCH 20,000 CYCLES MINIMUM.
- MICROPROCESSOR CONTROLLED, SOLID-STATE RELAY, CURRENT LIMIT SENSE CIRCUIT, REVERSE POLARITY PROTECTED
- CONFORMS TO SAE J1455:
4.11 GENERAL HEAVY DUTY TRUCK ELECTRICAL ENVIRONMENT.
4.11.1 STEADY-STATE ELECTRICAL CHARACTERISTICS.
4.11.2 TRANSIENT, NOISE AND ELECTROSTATIC CHARACTERISTICS.
- ENVIRONMENTAL EXTREMES BY LOCATION.
5.2 INTERIOR-FORWARD.
- ALL STEEL PARTS PLATED
- ALL DIMENSIONS ARE REFERENCE ONLY UNLESS NOTED OTHERWISE.
- COLE HERSEE PART NUMBER, REVISION, & DATE CODE MARKED AT RANDOM ON CASE.

COLOR	FUNCTION
WHITE	MOTOR HIGH SPEED
YELLOW	MOTOR LOW SPEED
RED	VBB (+12V)
BROWN	WASHER PUMP
BLACK	GROUND (0V)
BLUE	MOTOR PARK

Tolerances Unless otherwise specifically noted, the following are default tolerances:
 * 2-place Decimal Dimensions +/- .02"
 * 3-place Decimal Dimensions +/- .005"
 * Angular Dimensions +/- 1.0 Deg.
 * Metric: Refer to equivalent English Dimension Tolerance
 >>> NOTE: All tolerances are Non-Cumulative. <<<

Dimensional Units All dimensions are expressed in inches except those shown in brackets (xxx) are expressed in millimeters

"REF." or an Asterisk (*) = Non-Toleranced Reference Dimension, shown for clarification purposes only.

Used On or Ref.: **EX28241** Scale: **1:1**

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DO NOT SCALE - Dimensional variation may occur during printing / reproduction.

Drawn By: **JCS** Date Drawn: **1/9/07**

Special Characteristics:

CC Critical Characteristic, relating to Safety and/or Regulatory Compliance

X Significant Characteristic relating to Process Control (SPC)

KC Control Dimension relating to Form - Fit - Function as defined by Cole Hersee Company and/or the Customer

(Note that the identification of any Characteristics as being "Special" does not alter the requirement that ALL specified dimensions & tolerances must be met.)

Responsible Engineer: **JCS** Pg. **1**

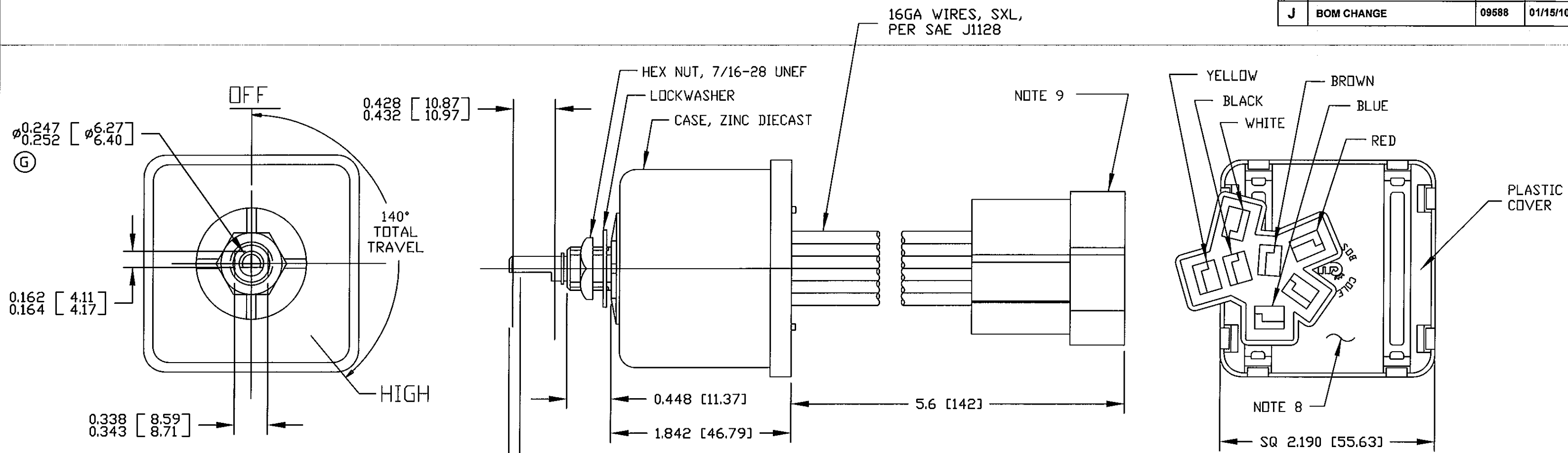
Cole Hersee Co.
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 Phn: 617-268-2100 Web: www.colehersee.com

Description: WINDSHIELD WIPER CONTROLLER, UNIVERSAL, 12V

Drawing / Part No.: **75600-04** Current Rev.: **M**

Revision Control Record

Rev.	Description of Change	ECN No.	Date
H	CHANGED TO SSR	07074	03/02/07
J	BOM CHANGE	09588	01/15/10



- NOTES:**
- DESIGNED FOR 12V SYSTEM, SINGLE MOTOR, DYNAMIC AND NON-DYNAMIC PARK. TO BE USED WITH PERMANENT MAGNET MOTOR, NEGATIVE GROUND ONLY.
 - PUSH TO WASH FUNCTION: RESULTS IN 2 TO 3 WIPES AFTER RELEASE OF PUSH SWITCH.
 - RATING: VOLTAGE OPERATING RANGE 9VDC TO 16VDC
 ROTARY SWITCH ACTUATION 20,000 CYCLES MINIMUM.
 MOTOR DRIVE: 15 AMPS CONTINUOUS. START-UP/STALL/LOCKED-ROTOR 50 AMPS. SHORT-CIRCUIT PROOF.
 WASHER CIRCUIT 3 AMPS, PUSH SWITCH 20,000 CYCLES MINIMUM.
 - MICROPROCESSOR CONTROLLED, SOLID-STATE RELAY, CURRENT LIMIT SENSE CIRCUIT, REVERSE POLARITY PROTECTED
 - CONFORMS TO SAE J1455:
 4.11 GENERAL HEAVY DUTY TRUCK ELECTRICAL ENVIRONMENT.
 4.11.1 STEADY-STATE ELECTRICAL CHARACTERISTICS.
 4.11.2 TRANSIENT, NOISE AND ELECTROSTATIC CHARACTERISTICS.
 - ENVIRONMENTAL EXTREMES BY LOCATION.
 5.2 INTERIOR-FORWARD.
 - ALL STEEL PARTS PLATED.
 - ALL DIMENSIONS ARE REFERENCE ONLY UNLESS NOTED OTHERWISE.
 - COLE HERSEE PART NUMBER, REVISION, & DATE CODE STAMPED IN WHITE.
 - CONNECTOR: DILL #059074. TERMINALS: DELPHI #12020126, QTY 6

COLOR	FUNCTION
WHITE	MOTOR HIGH SPEED
YELLOW	MOTOR LOW SPEED
BLACK	GROUND (0V)
BROWN	WASHER PUMP
RED	VBB (12V)
BLUE	MOTOR PARK

Tolerances Unless otherwise specifically noted, the following are default tolerances:
 • 2-place Decimal Dimensions +/- .02"
 • 3-place Decimal Dimensions +/- .005"
 • Angular Dimensions +/- 1.0 Deg.
 • Metric: Refer to equivalent English Dimension Tolerance
 >>> NOTE: All tolerances are Non-Cumulative. <<<

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- CC Critical Characteristic, relating to Safety and/or Regulatory Compliance
- X Significant Characteristic relating to Process Control (SPC)
- KC Control Dimension relating to Form - Fit - Function as defined by Cole Hersee Company and/or the Customer

(Note that the identification of any Characteristics as being "Special" does not alter the requirement that ALL specified dimensions & tolerances must be met.)

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Description: WINDSHIELD WIPER & WASHER SW. INTERMITTENT DELAY, 12V.D.C.

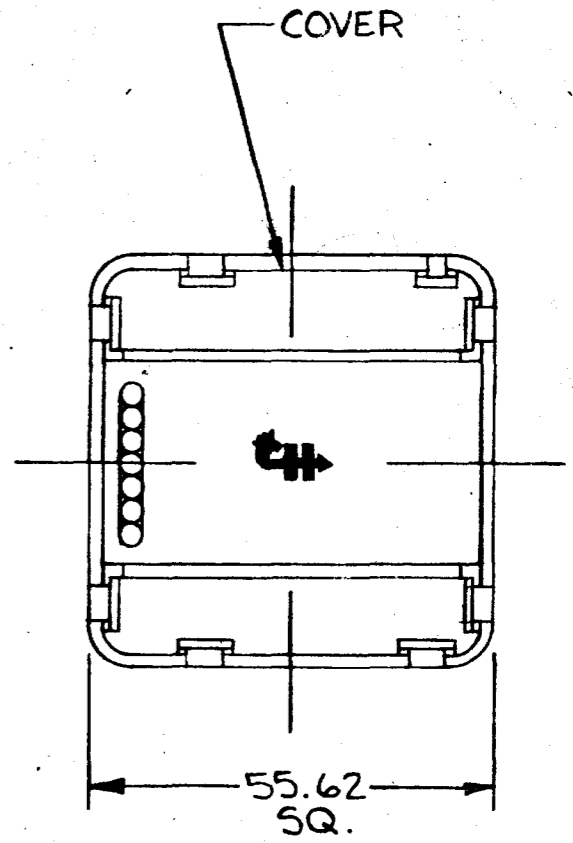
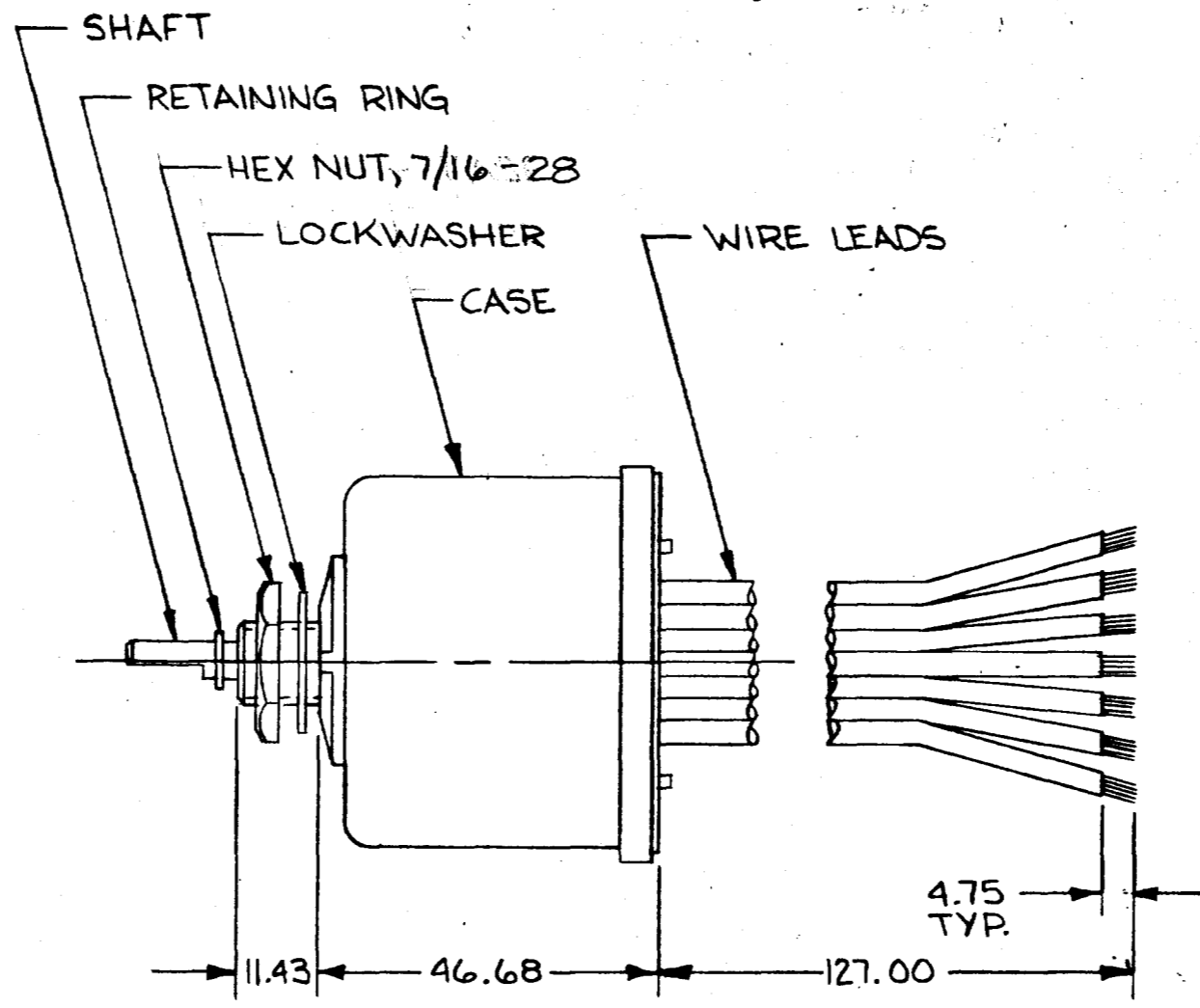
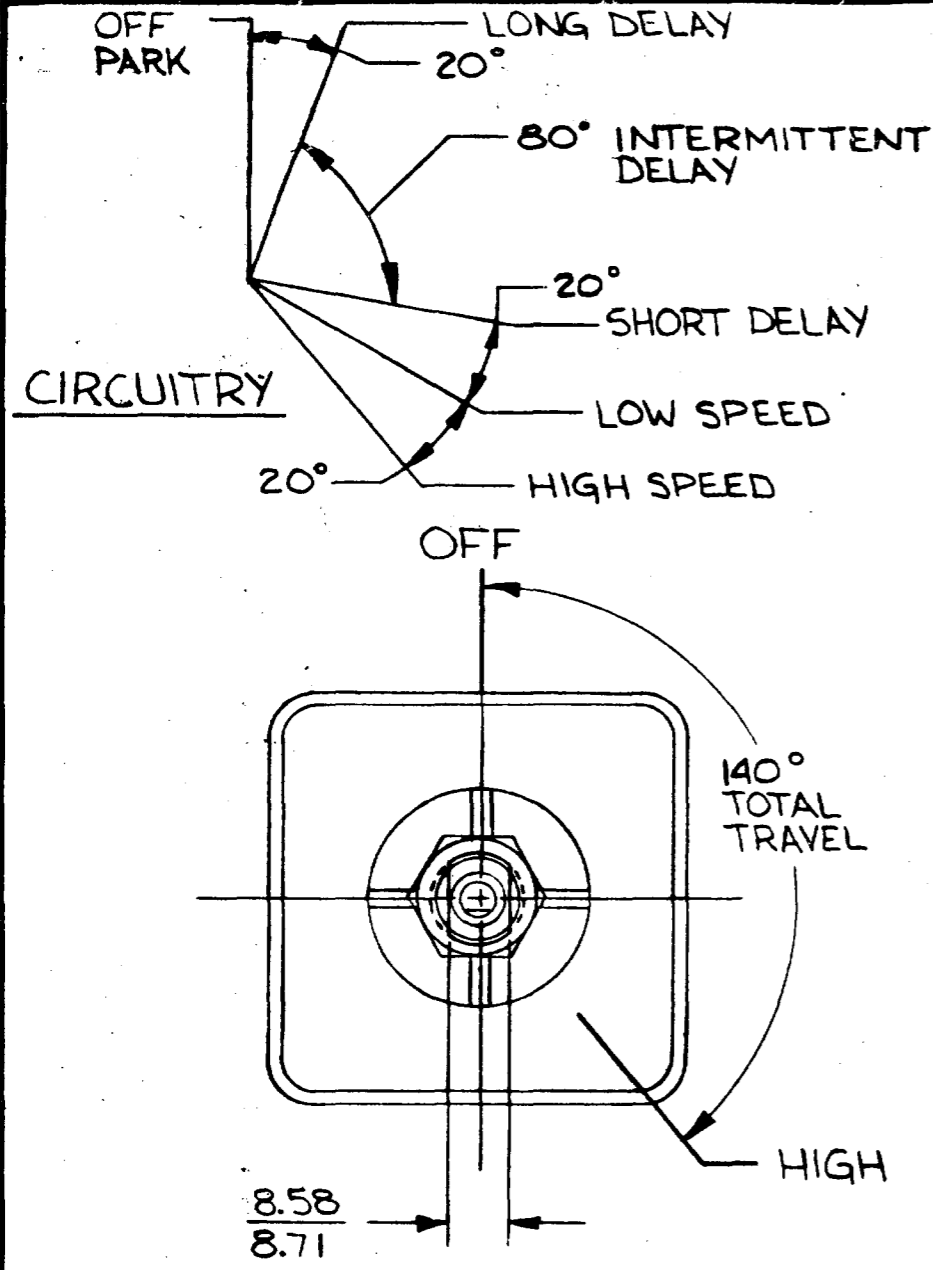
Drawing / Part No.: 75600-07

Current Rev.: J

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475.62	18.701
479.00	18.833
482.00	18.951
485.62	19.094
489.00	19.226
492.00	19.344
495.62	19.487
499.00	19.619
502.00	19.737
505.62	19.880
509.00	20.012
512.00	20.130
515.62	20.273
519.00	20.405
522.00	20.523
525.62	20.666
529.00	20.798
532.00	20.916
535.62	21.059
539.00	21.191
542.00	21.309
545.62	21.452
549.00	21.584
552.00	21.702
555.62	21.845
559.00	21.977
562.00	22.095
565.62	22.238
569.00	22.370
572.00	22.488
575.62	22.631
579.00	22.763
582.00	22.881
585.62	23.024
589.00	23.156
592.00	23.274
595.62	23.417
599.00	23.549
602.00	23.667
605.62	23.810
609.00	23.942
612.00	24.060
615.62	24.203
619.00	24.335
622.00	24.453
625.62	24.596
629.00	24.728
632.00	24.846
635.62	24.989
639.00	25.121
642.00	25.239
645.62	25.382
649.00	25.514
652.00	25.632
655.62	25.775
659.00	25.907
662.00	26.025
665.62	26.168
669.00	26.300
672.00	26.418
675.62	26.561
679.00	26.693
682.00	26.811
685.62	26.954
689.00	27.086
692.00	27.204
695.62	27.347
699.00	27.479
702.00	27.597
705.62	27.740
709.00	27.872
712.00	28.000
715.62	28.143
719.00	28.275
722.00	28.393
725.62	28.536
729.00	28.668
732.00	28.786
735.62	28.929
739.00	29.061
742.00	29.179
745.62	29.322
749.00	29.454
752.00	29.572
755.62	29.715
759.00	29.847
762.00	29.965
765.62	30.108
769.00	30.240
772.00	30.358
775.62	30.501
779.00	30.633
782.00	30.751
785.62	30.894
789.00	31.026
792.00	31.144
795.62	31.287
799.00	31.419
802.00	31.537
805.62	31.680
809.00	31.812
812.00	31.930
815.62	32.073
819.00	32.205
822.00	32.323
825.62	32.466
829.00	32.598
832.00	32.716
835.62	32.859
839.00	32.991
842.00	33.109
845.62	33.252
849.00	33.384
852.00	33.502
855.62	33.645
859.00	33.777
862.00	33.895
865.62	34.038
869.00	34.170
872.00	34.288
875.62	34.431
879.00	34.563
882.00	34.681
885.62	34.824
889.00	34.956
892.00	35.074
895.62	35.217
899.00	35.349
902.00	35.467
905.62	35.610
909.00	35.742
912.00	35.860
915.62	36.003
919.00	36.135
922.00	36.253
925.62	36.396
929.00	36.528
932.00	36.646
935.62	36.789
939.00	36.921
942.00	37.039
945.62	37.182
949.00	37.314
952.00	37.432
955.62	37.575
959.00	37.707
962.00	37.825
965.62	37.968
969.00	38.100
972.00	38.218
975.62	38.361
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982.00	38.611
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992.00	39.004
995.62	39.147
999.00	39.279

75601-06

COLE-HERSEE CO.



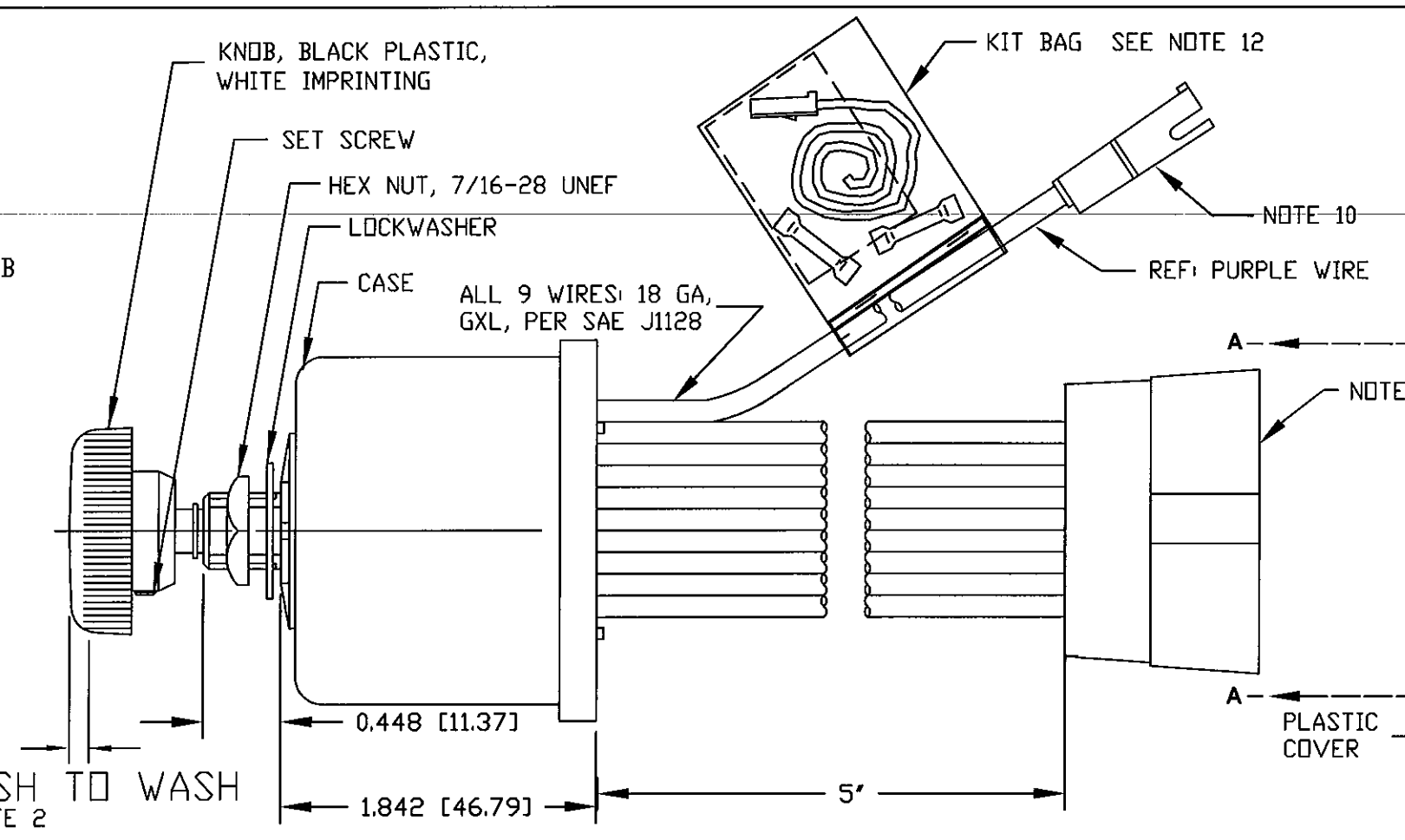
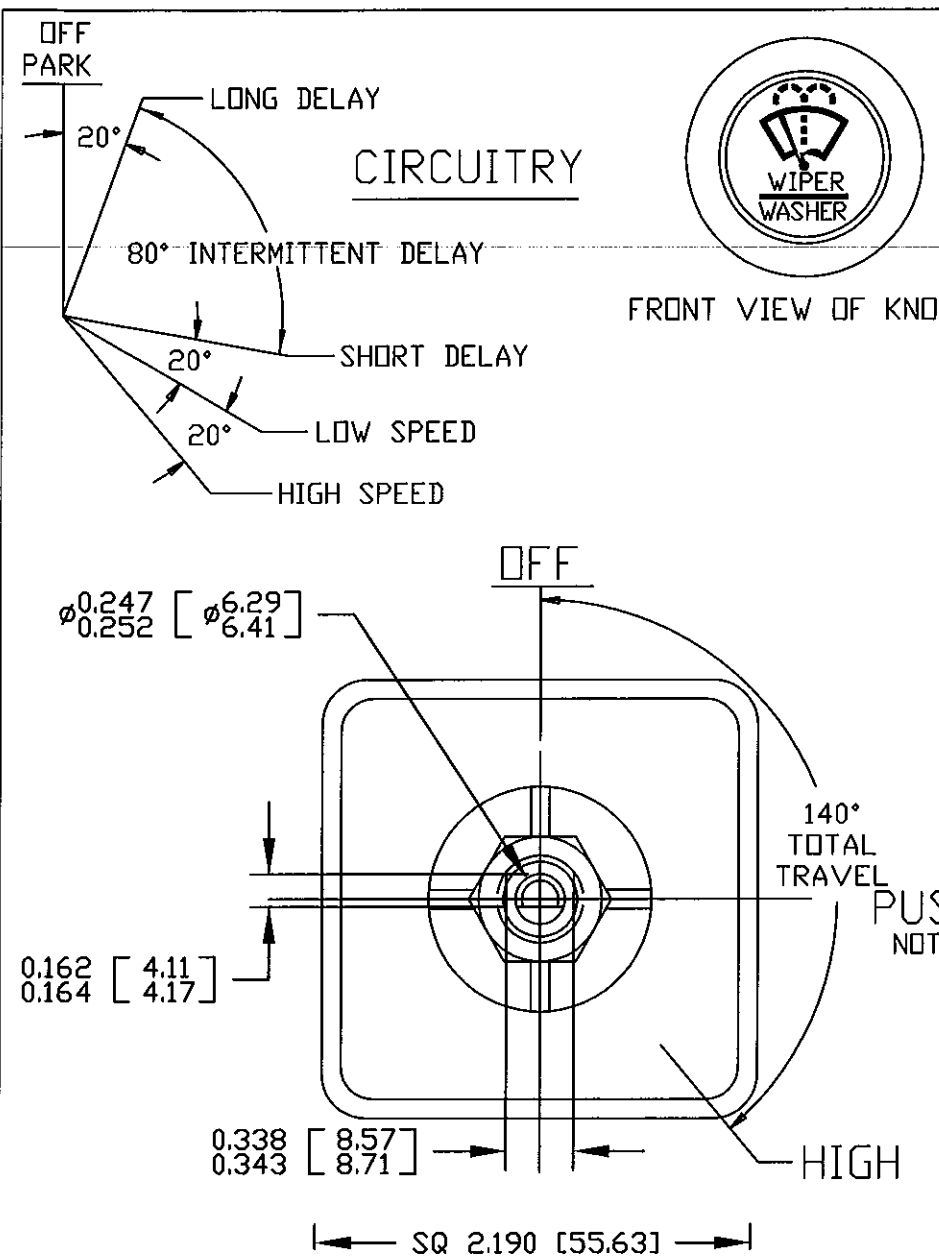
SWITCH CONNECTIONS		
COLOR	WIRE SIZE	CONNECT WIRE TO:
YELLOW	2.0 mm ² (14 GA)	MOTOR LOW SPEED TERMINAL
WHITE	2.0 mm ² (14 GA)	MOTOR HIGH SPEED TERMINAL
GREEN	2.0 mm ² (14 GA)	MOTOR PARK TERMINAL
BLACK	0.8 mm ² (18 GA)	GROUND (B-) THIS CONNECTION MUST BE MADE
BROWN	0.8 mm ² (18 GA)	WASHER PUMP (B+ TERMINAL)
RED	2.0 mm ² (14 GA)	B+ (THESE TWO WIRES MUST BE CONNECTED TOGETHER)
RED	0.8 mm ² (18 GA)	

NOTES:

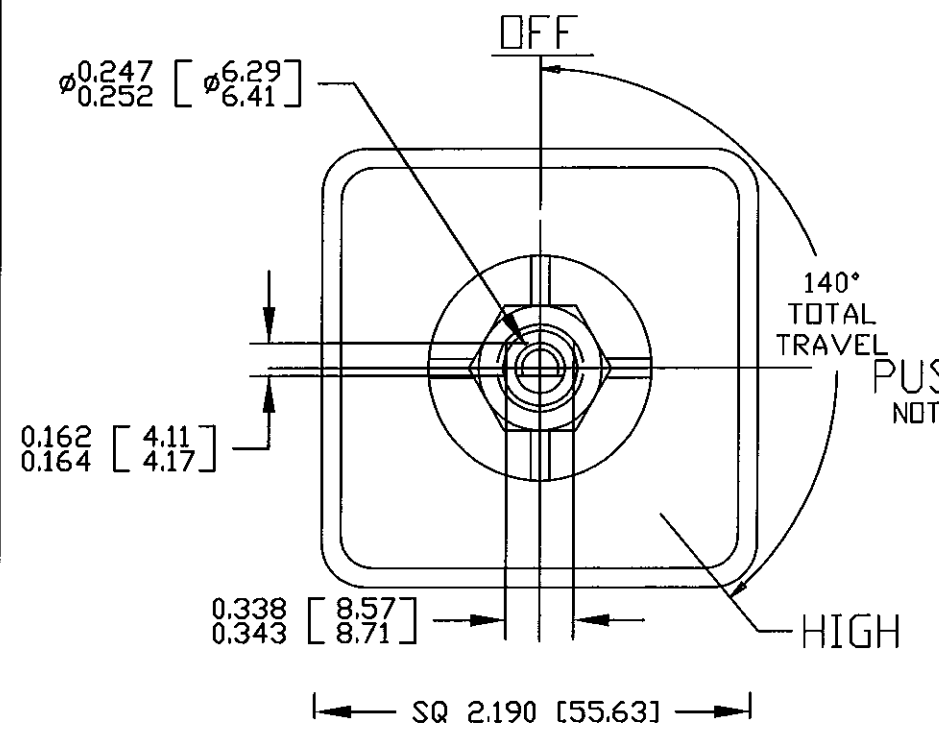
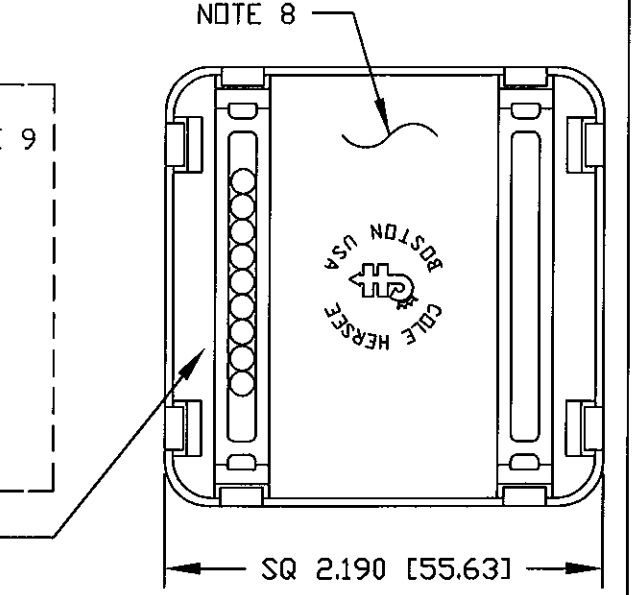
1. PUSH TO WASH, WASHER & WIPER CIRCUIT ACTIVATED (1-3 WIPES AFTER WASHER CIRCUIT IS DEACTIVATED).
2. ALL STEEL PARTS PLATED.
3. ALL DIMENSIONS ARE REF. ONLY.
4. 12 VOLTS D.C.
5. SEPARATE B+ AND GROUND CONNECTIONS MUST BE MADE TO THE WIPER MOTOR.

METRIC

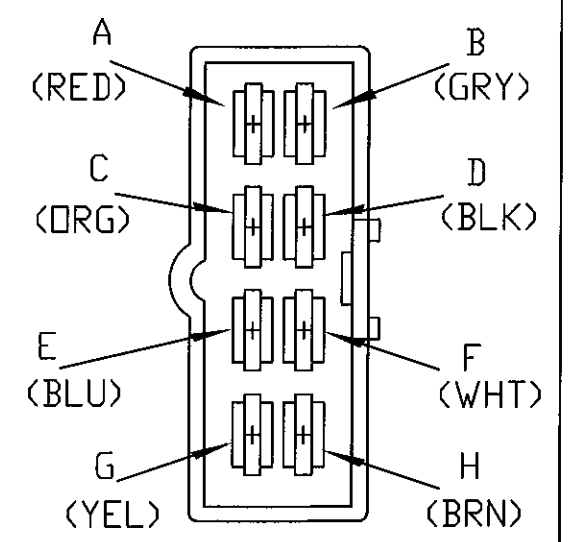
LET.	WAS	DATE	BY	LET.	WAS	DATE	BY	MATERIAL	DRAWN	CHECKED	APPRVD.	SCALE	DATE DRAWN
								#	LZ			1:1	3-18-87
								FINISH					DATE BLUEPRINT
								TOLERANCES	 WINDSHIELDWIPER & WASHER SWITCH PM MOTOR				75601-06
							DECIMAL ± METRIC ±						
				A	ECN 24882	7-22-91	AF						
					ISSUED	3-23-87	AF						



Revision Control Record			
Rev.	Description of Change	ECN No.	Date
A	NEW RELEASE	07475	12/04/07
B	SOFTWARE CHANGE	08085	01/31/08
C	BOM CHANGE	09587	01/13/10



- NOTES:
- DESIGNED FOR 12V SYSTEM, DUAL MOTOR. MUST BE USED WITH NON-DYNAMIC PARK MOTORS ONLY.
 - PUSH TO WASH FUNCTION RESULTS IN 3 WIPES AFTER RELEASE OF PUSH SWITCH.
 - RATING: VOLTAGE OPERATING RANGE 9VDC TO 16VDC
 ROTARY SWITCH ACTUATION 20,000 CYCLES MINIMUM.
 MOTOR DRIVE: 10 AMPS PER MOTOR CONTINUOUS, START-UP/STALL/LOCKED-ROTOR 30 AMPS. SHORT-CIRCUIT PROOF.
 WASHER CIRCUIT 3 AMPS, PUSH SWITCH 20,000 CYCLES MINIMUM.
 - MICROPROCESSOR CONTROLLED, SOLID-STATE RELAY, CURRENT LIMIT SENSE CIRCUIT, REVERSE POLARITY PROTECTED
 - CONFORMS TO SAE J1455:
 4.11 GENERAL HEAVY DUTY TRUCK ELECTRICAL ENVIRONMENT.
 4.11.1 STEADY-STATE ELECTRICAL CHARACTERISTICS.
 4.11.2 TRANSIENT, NOISE AND ELECTROSTATIC CHARACTERISTICS.
 - INTERMITTENT DELAYS: 1, 2, 4, 7, 11 AND 16 SECONDS
 - ALL DIMENSIONS ARE REFERENCE ONLY UNLESS NOTED OTHERWISE.
 - COLE HERSEE PART NUMBER, REVISION, & DATE CODE STAMPED IN WHITE ON REAR PLASTIC COVER.
 - CONNECTOR, DELPHI: 8-PIN, PART# 2965972 (QTY 1)
 TERMINALS, DELPHI: 2965439 (QTY 8)
 - CONNECTOR, DELPHI: 1-PIN, PART# 8905650 (QTY 1)
 TERMINALS, DELPHI: 2965439 (QTY 1)
 - UNIT REQUIRES TWO SEPARATE WIRE CONNECTIONS TO MOTOR PARK SIGNALS.
 THIS MAY REQUIRE RE-WIRING VEHICLE HARNESS. DO NOT CONNECT PARK WIRES TOGETHER.
 NOTE THAT 1-PIN CONNECTOR (PURPLE WIRE) IS FOR PARK MOTOR #2.
 - WRAP PLASTIC BAG AROUND SWITCH PURPLE WIRE, FOLD AND STAPLE AS SHOWN.



COLOR	FUNCTION	CONNECTOR	TERMINAL
RED	VBB (12V POWER)	8-PIN	A
GREY	HIGH-SPEED MOTOR #2	8-PIN	B
ORANGE	LOW-SPEED MOTOR #2	8-PIN	C
BLACK	GROUND (0V)	8-PIN	D
BLUE	PARK MOTOR #1 (SEE NOTE 11)	8-PIN	E
WHITE	HIGH-SPEED MOTOR#1	8-PIN	F
YELLOW	LOW-SPEED MOTOR #1	8-PIN	G
BROWN	WASHER	8-PIN	H
PURPLE	PARK MOTOR #2 (SEE NOTE 11)	1-PIN	

Tolerances Unless otherwise specifically noted, the following are default tolerances:
 * 2-place Decimal Dimensions +/- .02"
 * 3-place Decimal Dimensions +/- .005"
 * Angular Dimensions +/- 1.0 Deg.
 * Metric: Refer to equivalent English Dimension Tolerance
 >>> NOTE: All tolerances are Non-Cumulative. <<<

Dimensional Units All dimensions are expressed in inches except those shown in brackets (xxx) are expressed in millimeters

"REF." or an Asterisk (*) = Non-Toleranced Reference Dimension, shown for clarification purposes only.

Used On or Ref.: **EX28333** Scale: **1:1**

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DESIGN CONTROL It is the responsibility of the individual using / referencing this drawing to assure that the noted design revision level agrees with the revision level of the Controlled Document (Master Drawing). This is a NON-CONTROLLED DOCUMENT unless otherwise specifically noted.

DO NOT SCALE - Dimensional variation may occur during printing / reproduction.

Drawn **JCS** Date **12/04/07**
 By: **JCS** Date Drawn: **12/04/07**

Special Characteristics:

- ⊠ Critical Characteristic, relating to Safety and/or Regulatory Compliance
- ⓧ Significant Characteristic relating to Process Control (SPC)
- Ⓚ Control Dimension relating to Form - Fit - Function as defined by Cole Hersee Company and/or the Customer

(Note that the Identification of any Characteristics as being "Special" does not alter the requirement that ALL specified dimensions & tolerances must be met.)

Responsible Engineer: **JCS** Pg. **1**

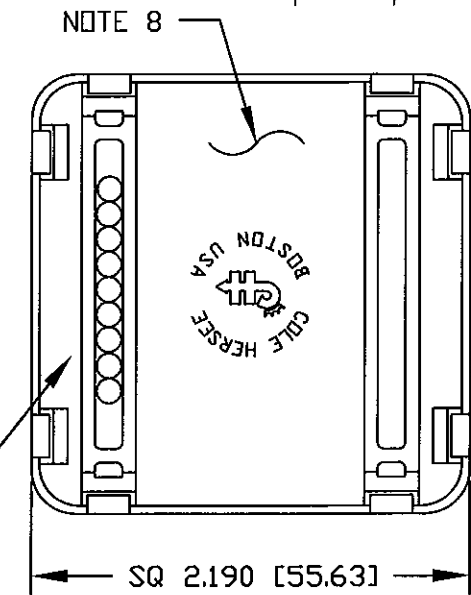
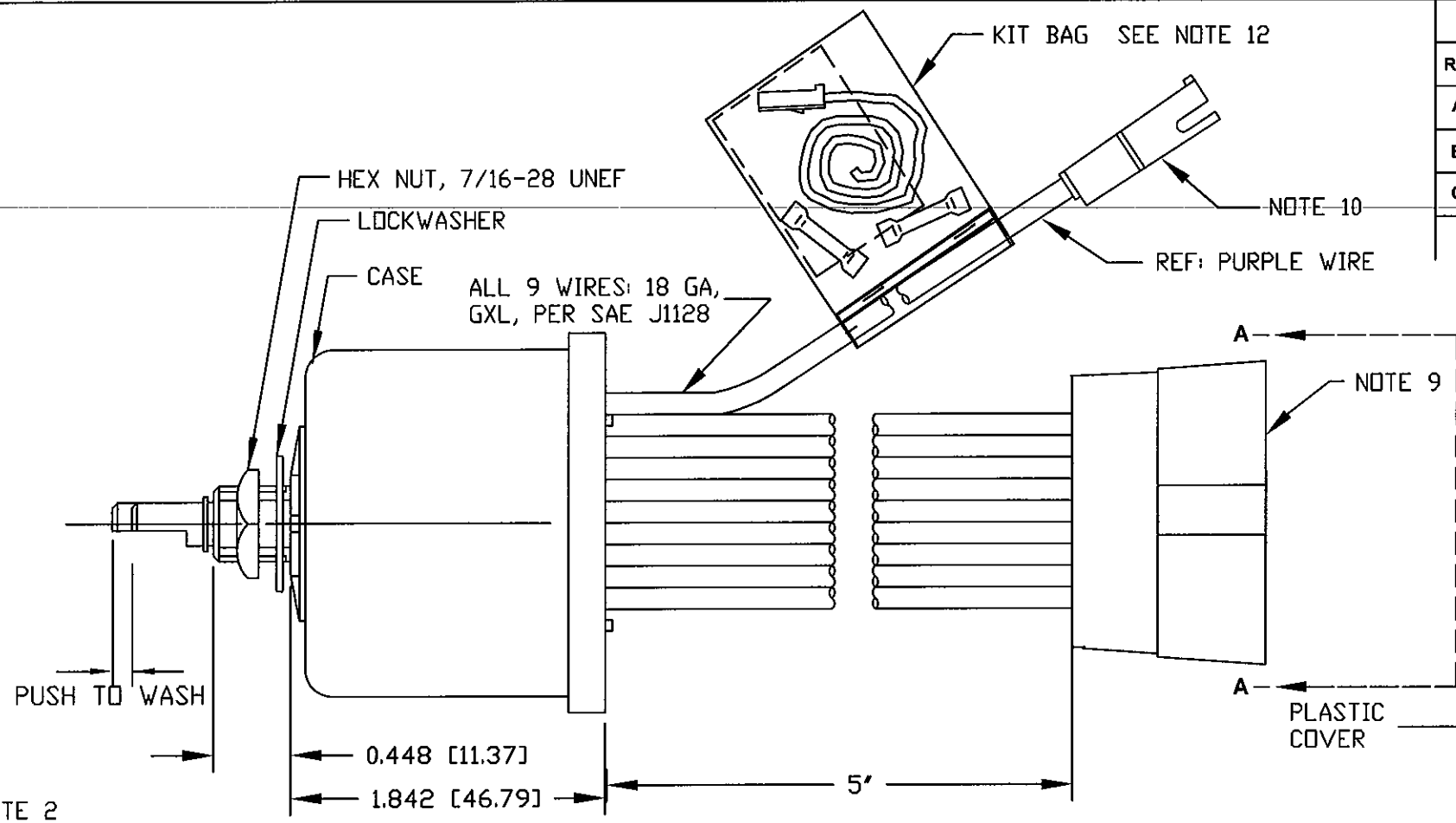
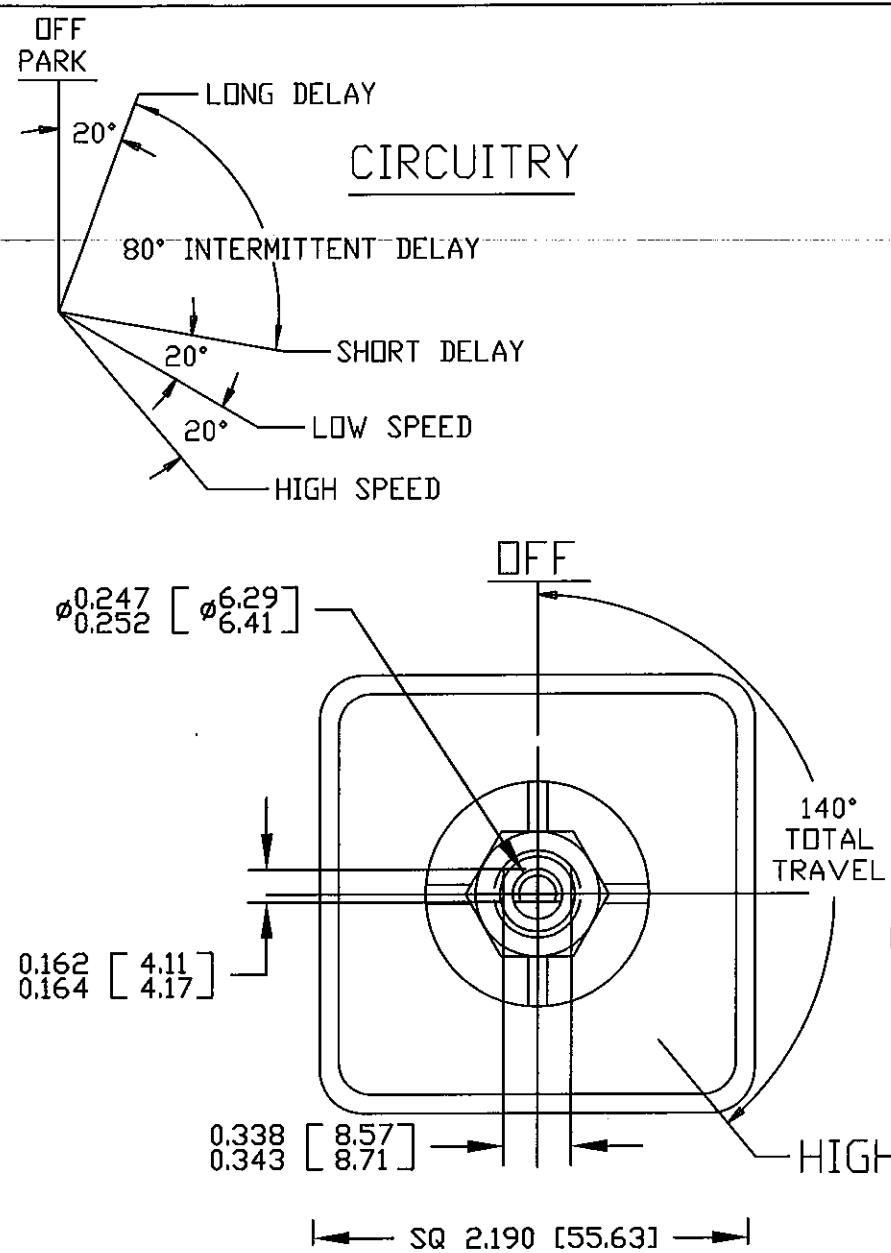
Cole Hersee Co.
 20 Old Colony Ave., South Boston, MA, 02127
 Phn: 617-268-2100 Web: www.colehersee.com

Description:
WINDSHIELD WIPER CONTROLLER, DUAL-MOTOR, 12V, SSR, NON-DYNAMIC PARK MOTOR

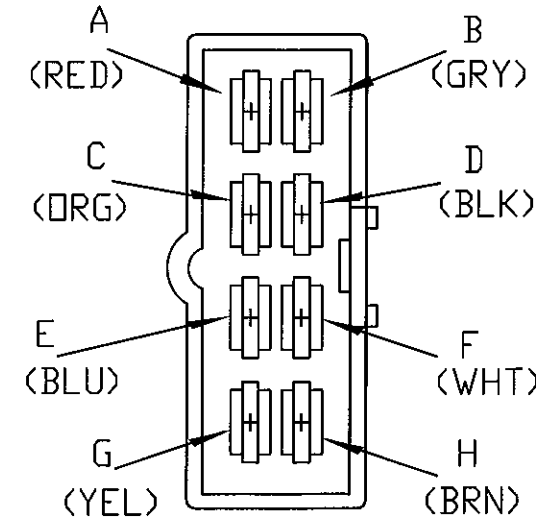
Drawing / Part No.: **75601-14** Current Rev. **C**

Revision Control Record

Rev.	Description of Change	ECN No.	Date
A	NEW RELEASE	07476	12/04/07
B	PROGRAM SOFTWARE	08085	01/31/08
C	BOM CHANGE	09587	01/13/10



- NOTES:**
- DESIGNED FOR 12V SYSTEM, DUAL MOTOR. MUST BE USED WITH NON-DYNAMIC PARK MOTORS ONLY.
 - PUSH TO WASH FUNCTION RESULTS IN 3 WIPES AFTER RELEASE OF PUSH SWITCH.
 - RATING: VOLTAGE OPERATING RANGE 9VDC TO 16VDC
 ROTARY SWITCH ACTUATION 20,000 CYCLES MINIMUM.
 MOTOR DRIVE: 10 AMPS PER MOTOR CONTINUOUS. START-UP/STALL/LOCKED-ROTOR 30 AMPS. SHORT-CIRCUIT PROOF.
 WASHER CIRCUIT 3 AMPS, PUSH SWITCH 20,000 CYCLES MINIMUM.
 - MICROPROCESSOR CONTROLLED, SOLID-STATE RELAY, CURRENT LIMIT SENSE CIRCUIT, REVERSE POLARITY PROTECTED
 - CONFORMS TO SAE J1455:
 4.11 GENERAL HEAVY DUTY TRUCK ELECTRICAL ENVIRONMENT.
 4.11.1 STEADY-STATE ELECTRICAL CHARACTERISTICS.
 4.11.2 TRANSIENT, NOISE AND ELECTROSTATIC CHARACTERISTICS.
 - INTERMITTENT DELAYS: 1, 2, 4, 7, 11 AND 16 SECONDS
 - ALL DIMENSIONS ARE REFERENCE ONLY UNLESS NOTED OTHERWISE.
 - COLE HERSEE PART NUMBER, REVISION, & DATE CODE STAMPED IN WHITE ON REAR PLASTIC COVER.
 - CONNECTOR, DELPHI: 8-PIN, PART# 2965972 (QTY 1)
 TERMINALS, DELPHI: 2965439 (QTY 8)
 - CONNECTOR, DELPHI: 1-PIN, PART# 8905650 (QTY 1)
 TERMINALS, DELPHI: 2965439 (QTY 1)
 - UNIT REQUIRES TWO SEPARATE WIRE CONNECTIONS TO MOTOR PARK SIGNALS.
 THIS MAY REQUIRE RE-WIRING VEHICLE HARNESS. DO NOT CONNECT PARK WIRES TOGETHER.
 NOTE THAT 1-PIN CONNECTOR (PURPLE WIRE) IS FOR PARK MOTOR #2.
 - WRAP PLASTIC BAG AROUND SWITCH PURPLE WIRE, FOLD AND STAPLE AS SHOWN.



VIEW A-A

COLOR	FUNCTION	CONNECTOR	TERMINAL
RED	VBB (12V POWER)	8-PIN	A
GREY	HIGH-SPEED MOTOR #2	8-PIN	B
ORANGE	LOW-SPEED MOTOR #2	8-PIN	C
BLACK	GROUND (0V)	8-PIN	D
BLUE	PARK MOTOR #1 (SEE NOTE 11)	8-PIN	E
WHITE	HIGH-SPEED MOTOR#1	8-PIN	F
YELLOW	LOW-SPEED MOTOR #1	8-PIN	G
BROWN	WASHER	8-PIN	H
PURPLE	PARK MOTOR #2 (SEE NOTE 11)	1-PIN	

Tolerances Unless otherwise specifically noted, the following are default tolerances:
 * 2-place Decimal Dimensions +/- .02"
 * 3-place Decimal Dimensions +/- .005"
 * Angular Dimensions +/- 1.0 Deg.
 * Metric: Refer to equivalent English Dimension Tolerance
 >>> NOTE: All tolerances are Non-Cumulative. <<<

Dimensional Units All dimensions are expressed in inches except those shown in brackets (xxx) are expressed in millimeters

"REF." or an Asterisk (*) = Non-Toleranced Reference Dimension, shown for clarification purposes only.

Used On **EX28333** Scale: **1:1**

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DESIGN CONTROL It is the responsibility of the individual using / referencing this drawing to assure that the noted design revision level agrees with the revision level of the Controlled Document (Master Drawing). This is a NON-CONTROLLED DOCUMENT unless otherwise specifically noted.

DO NOT SCALE - Dimensional variation may occur during printing / reproduction.

Drawn By: **JCS** Date Drawn: **12/04/07**

Special Characteristics:

- Critical Characteristic, relating to Safety and/or Regulatory Compliance
- Significant Characteristic relating to Process Control (SPC)
- Control Dimension relating to Form - Fit - Function as defined by Cole Hersee Company and/or the Customer

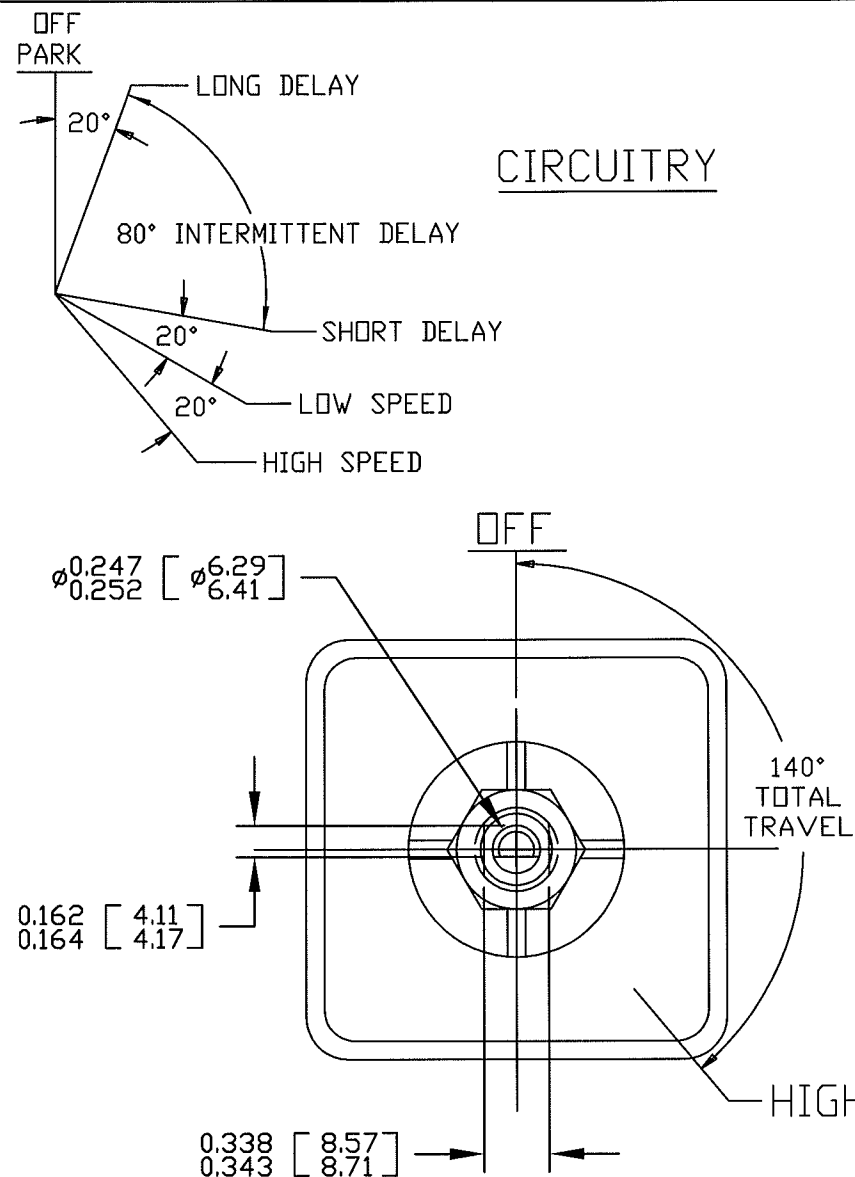
(Note that the Identification of any Characteristics as being "Special" does not alter the requirement that ALL specified dimensions & tolerances must be met.)

Responsible Engineer: **JCS** Pg. **1**

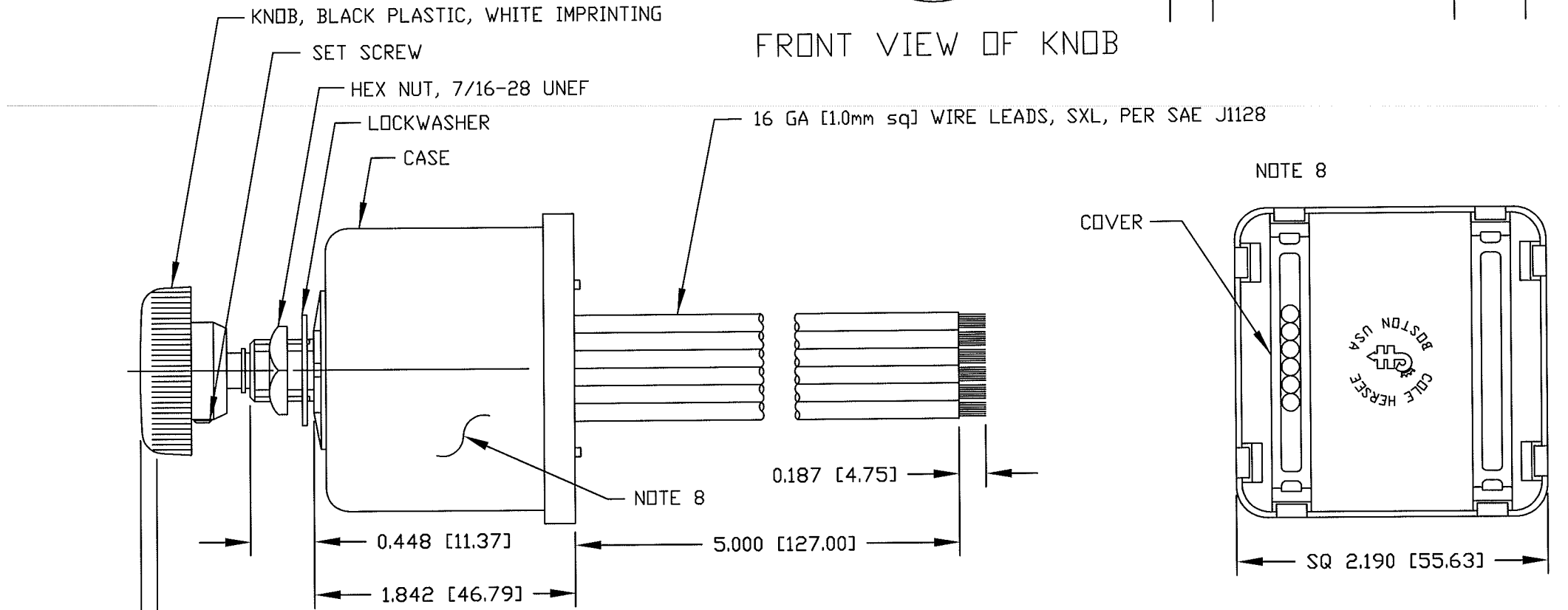
Cole Hersee Co.
 20 Old Colony Ave., South Boston, MA, 02127
 Phn: 617-268-2100 Web: www.colehersee.com

Description:
WINDSHIELD WIPER CONTROLLER, DUAL-MOTOR, 12V, SSR, NON-DYNAMIC PARK MOTOR

Drawing / Part No.: **75601-15** Current Rev. **C**



Revision Control Record			
Rev.	Description of Change	ECN No.	Date
H	BOM CHANGE	09588	01/18/10
J	CHANGE NOTE 3	13055	02/07/13



PUSH TO WASH
NOTE 2

- NOTES:
- DESIGNED FOR 24V SYSTEM, SINGLE MOTOR, DYNAMIC AND NON-DYNAMIC PARK. TO BE USED WITH PERMANENT MAGNET MOTOR, NEGATIVE GROUND ONLY.
 - PUSH TO WASH FUNCTION: RESULTS IN 2 TO 3 WIPES AFTER RELEASE OF PUSH SWITCH.
 - RATING: VOLTAGE OPERATING RANGE 18VDC TO 32VDC
ROTARY SWITCH ACTUATION 20,000 CYCLES MINIMUM.
MOTOR DRIVE: 15 AMPS CONTINUOUS, START-UP/STALL/LOCKED-ROTOR 50 AMPS. SHORT-CIRCUIT PROTECTED.
WASHER CIRCUIT 3 AMPS, PUSH SWITCH 20,000 CYCLES MINIMUM.
 - MICROPROCESSOR CONTROLLED, SOLID-STATE RELAY, CURRENT LIMIT SENSE CIRCUIT, REVERSE POLARITY PROTECTED
 - CONFORMS TO SAE J1455:
4.11 GENERAL HEAVY DUTY TRUCK ELECTRICAL ENVIRONMENT.
4.11.1 STEADY-STATE ELECTRICAL CHARACTERISTICS.
4.11.2 TRANSIENT, NOISE AND ELECTROSTATIC CHARACTERISTICS.
 - ENVIRONMENTAL EXTREMES BY LOCATION.
5.2 INTERIOR-FORWARD.
 - ALL STEEL PARTS PLATED.
 - ALL DIMENSIONS ARE REFERENCE ONLY UNLESS NOTED OTHERWISE.
 - COLE HERSEE PART NUMBER, REVISION, & DATE CODE MARKED AT RANDOM ON CASE.

COLOR	CONNECT WIRE TO:
YELLOW	MOTOR LOW SPEED TERMINAL
WHITE	MOTOR HIGH SPEED TERMINAL
BLUE	MOTOR PARK TERMINAL
BLACK	GROUND (B-) THIS CONNECTION MUST BE MADE
BROWN	WASHER PUMP (B+ TERMINAL)
RED	B+

SEPARATE B+ AND GROUND CONNECTIONS MUST BE MADE TO THE WIPER MOTOR

<p>Tolerances Unless otherwise specifically noted, the following are default tolerances: * 2-place Decimal Dimensions +/- .02" * 3-place Decimal Dimensions +/- .005" * Angular Dimensions +/- 1.0 Deg. * Metric: Refer to equivalent English Dimension Tolerance >>> NOTE: All tolerances are Non-Cumulative. <<<</p> <p>Dimensional Units All dimensions are expressed in inches except those shown in brackets (xxx) are expressed in millimeters</p> <p>"REF." or an Asterisk (*) = Non-Toleranced Reference Dimension, shown for clarification purposes only.</p>	<p>PROPRIETARY INFORMATION This Engineering Drawing, and the information contained herein, is proprietary to Cole Hersee Company and may not be disclosed, re-produced, or in any other way transferred or communicated to any other party without the express written consent of an authorized representative of Cole Hersee Company.</p> <p>DESIGN CONTROL It is the responsibility of the individual using / referencing this drawing to assure that the noted design revision level agrees with the revision level of the Controlled Document (Master Drawing). This is a NON-CONTROLLED DOCUMENT unless otherwise specifically noted.</p> <p>DO NOT SCALE - Dimensional variation may occur during printing / reproduction.</p>	<p>Special Characteristics:</p> <p>CC Critical Characteristic, relating to Safety and/or Regulatory Compliance</p> <p>X Significant Characteristic relating to Process Control (SPC)</p> <p>KC Control Dimension relating to Form - Fit - Function as defined by Cole Hersee Company and/or the Customer</p> <p>(Note that the identification of any Characteristics as being "Special" does not alter the requirement that ALL specified dimensions & tolerances must be met.)</p>	<p>Cole Hersee Co. 20 Old Colony Ave., South Boston, MA, 02127 Phn: 617-268-2100 Web: www.colehersee.com</p> <p>Description: WINDSHIELD WIPER & WASHER SW. INTERMITTENT DELAY, 24V.D.C.</p>
<p>Used On or Ref.: EX-26548</p>	<p>Scale: 1:1</p>	<p>Drawn By: ZU</p>	<p>Date Drawn: 03/13/87</p>
<p>Responsible Engineer: Pg. 1</p>		<p>Drawing / Part No.: 75602-04</p>	
		<p>Current Rev.: J</p>	