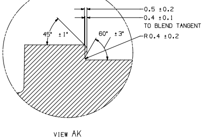
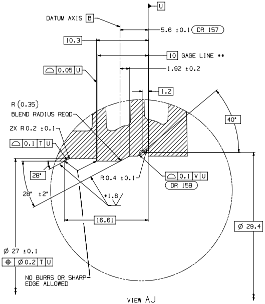
24062509

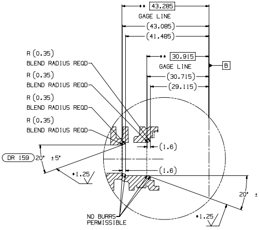
GENERAL MOTORS


0.5 ±0.2
0.4 ±0.1
TO BLEND TANGENT
45° ±1°
60° ±3°
R0.4 ±0.2

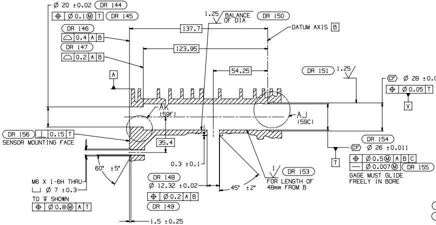
VIEW AK
SCALE 5:1
(56G)


DATUM AXIS B
U
5.6 ±0.1 DR 157
10.3
10 GAGE LINE ••
⌓ 0.05 U
1.92 ±0.2
1.2
R (0.35)
BLEND RADIUS REQD
40°
2X R0.2 ±0.1
⌓ 0.1 T U
28°
R0.4 ±0.1
⌓ 0.1 V U
DR 158
28° ±2°
•1.6
16.61
Ø 29.4
Ø 27 ±0.1
⌖ Ø0.2 T U
NO BURRS OR SHARP EDGE ALLOWED

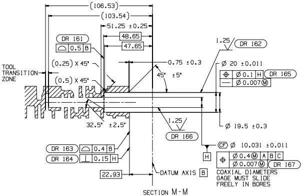
VIEW AJ
SCALE 5:1
(55G)


•• 43.285
GAGE LINE
(43.085)
(41.485)
R (0.35)
BLEND RADIUS REQD
R (0.35)
BLEND RADIUS REQD
R (0.35)
BLEND RADIUS REQD
R (0.35)
BLEND RADIUS REQD
•• 30.915
GAGE LINE
B
(30.715)
(29.115)
(1.6)
(1.6)
DR 159 20° ±5°
•1.25
20° ±5° DR 160
•1.25
NO BURRS PERMISSIBLE

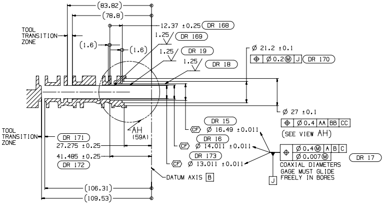
VIEW AH
SCALE 2:1
(56C)


Ø 20 ±0.02 DR 144
⌖ Ø0.1Ⓜ T DR 145
DR 146
⌓ 0.4 A B
DR 147
⌓ 0.2 A B
137.7
123.95
1.25 BALANCE OF DIA
DR 150
DATUM AXIS B
A
54.25
DR 151 1.25
CF Ø 28 ±0.05 DR 152
⌖ Ø0.05 T
V
AK (59F)
AJ (59C)
DR 156 ⊥ 0.15 T
SENSOR MOUNTING FACE
35.4
DR 154
CF Ø 26 ±0.011
⌖ Ø0.5Ⓜ A B C
— Ø0.007Ⓜ DR 155
GAGE MUST GLIDE FREELY IN BORE
T
60° ±5°
0.3 ±0.1
DR 148
Ø 12.32 ±0.02
⌖ Ø0.2 A B
DR 149
45° ±2°
1 DR 153
FOR LENGTH OF 48mm FROM B
M6 X 1-6H THRU
⌴ Ø 7 ±0.3
TO ↧ SHOWN
⌖ Ø0.8Ⓜ A T
1.5 ±0.25

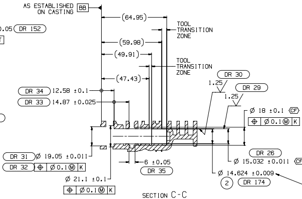
SECTION P-P
(22E)
PARK SERVO VALVE BORE


(106.53)
(103.54)
51.25 ±0.25
DR 161
⌓ 0.5 B
48.65
47.65
0.75 ±0.3
1.25 DR 162
TOOL TRANSITION ZONE
(0.25) X 45°
(0.5) X 45°
45° ±5°
Ø 20 ±0.011
⌖ Ø0.1 H DR 165
— Ø0.007Ⓜ
1.25
DR 166
32.5° ±2.5°
Ø 19.5 ±0.3
CF Ø 10.031 ±0.011
H
⌖ Ø0.4Ⓜ A B C
Ø0.007Ⓜ DR 167
COAXIAL DIAMETERS GAGE MUST SLIDE FREELY IN BORES
DR 163 ⌓ 0.4 B
DR 164 ⊥ 0.15 H
22.93
DATUM AXIS B

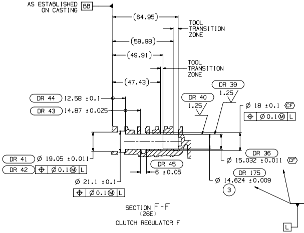
SECTION M-M
MODE VALVE
(26E)


(83.82)
(78.8)
12.37 ±0.25 DR 168
1.25 DR 169
TOOL TRANSITION ZONE
(1.6)
(1.6)
1.25 DR 19
1.25 DR 18
Ø 21.2 ±0.1
⌖ Ø0.2Ⓜ J DR 170
AH (59A)
Ø 27 ±0.1
⌖ Ø0.4 AA BB CC
(SEE VIEW AH)
DR 15
CF Ø 16.49 ±0.011
DR 16
CF Ø 14.011 ±0.011
DR 173
CF Ø 13.011 ±0.011
⌖ Ø0.4Ⓜ A B C
Ø0.007Ⓜ
DR 17
COAXIAL DIAMETERS GAGE MUST GLIDE FREELY IN BORES
J
TOOL TRANSITION ZONE
DR 171
27.275 ±0.25
41.485 ±0.25
DR 172
DATUM AXIS B
(106.31)
(109.53)

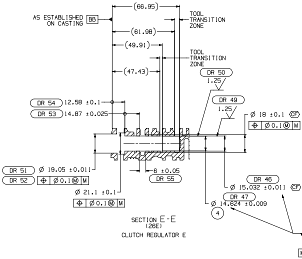
SECTION AB-AB
(26E)
LINE ANTI-BACKFLOW VALVE BORE


AS ESTABLISHED ON CASTING BB
(64.95)
TOOL TRANSITION ZONE
(59.98)
(49.91)
TOOL TRANSITION ZONE
(47.43)
DR 30
1.25
DR 29
1.25
DR 34 12.58 ±0.1
DR 33 14.87 ±0.025
Ø 18 ±0.1 CF
⌖ Ø0.1Ⓜ K
DR 31 Ø 19.05 ±0.011
DR 32 ⌖ Ø0.1Ⓜ K
6 ±0.05
DR 35
DR 26
Ø 15.032 ±0.011 CF
Ø 21.1 ±0.1
⌖ Ø0.1Ⓜ K
Ø 14.624 ±0.009
② DR 174

SECTION C-C
(26E)
CLUTCH REGULATOR C

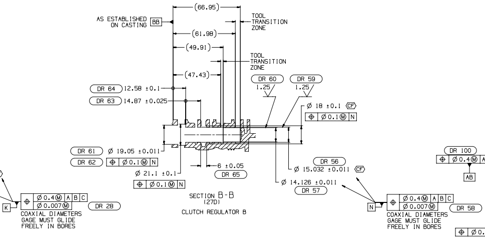

AS ESTABLISHED ON CASTING BB
(64.95)
TOOL TRANSITION ZONE
(59.98)
(49.91)
TOOL TRANSITION ZONE
(47.43)
DR 39
1.25
DR 40
1.25
DR 44 12.58 ±0.1
DR 43 14.87 ±0.025
Ø 18 ±0.1 CF
⌖ Ø0.1Ⓜ L
DR 41 Ø 19.05 ±0.011
DR 42 ⌖ Ø0.1Ⓜ L
DR 45
6 ±0.05
DR 36
Ø 15.032 ±0.011 CF
DR 175
Ø 14.624 ±0.009
③
Ø 21.1 ±0.1
⌖ Ø0.1Ⓜ L
L

SECTION F-F
(26E)
CLUTCH REGULATOR F

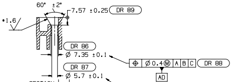

AS ESTABLISHED ON CASTING BB
(66.95)
TOOL TRANSITION ZONE
(61.98)
(49.91)
TOOL TRANSITION ZONE
(47.43)
DR 50
1.25
DR 49
1.25
DR 54 12.58 ±0.1
DR 53 14.87 ±0.025
Ø 18 ±0.1 CF
⌖ Ø0.1Ⓜ M
DR 51 Ø 19.05 ±0.011
DR 52 ⌖ Ø0.1Ⓜ M
6 ±0.05
DR 55
Ø 21.1 ±0.1
⌖ Ø0.1Ⓜ M
DR 46
Ø 15.032 ±0.011 CF
DR 47
Ø 14.624 ±0.009
④
M

SECTION E-E
(26E)
CLUTCH REGULATOR E

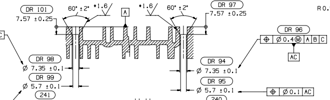
FRAME NUMBER	SHEET NUMBER	DRAWING NUMBER	DWG STATUS
6 OF 6	1 OF 1	24062509	ST R REV 002 PDI


(66.95)
AS ESTABLISHED ON CASTING BB
TOOL TRANSITION ZONE
(61.98)
(49.91)
TOOL TRANSITION ZONE
(47.43)
DR 60 1.25
DR 59 1.25
DR 64 12.58 ±0.1
DR 63 14.87 ±0.025
Ø 18 ±0.1 CF
⊕ Ø0.1Ⓜ N
DR 61 Ø 19.05 ±0.011
DR 62 ⊕ Ø0.1Ⓜ N
6 ±0.05
DR 65
DR 56
Ø 15.032 ±0.011 CF
Ø 21.1 ±0.1
⊕ Ø0.1Ⓜ N
Ø 14.126 ±0.011
DR 57
K ⊕ Ø0.4Ⓜ A B C Ø0.007Ⓜ DR 28
COAXIAL DIAMETERS GAGE MUST GLIDE FREELY IN BORES
N ⊕ Ø0.4Ⓜ A B C Ø0.007Ⓜ DR 58
COAXIAL DIAMETERS GAGE MUST GLIDE FREELY IN BORES

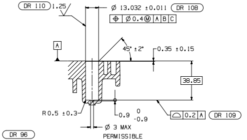
SECTION B-B
(27D)
CLUTCH REGULATOR B


60° ±2°
7.57 ±0.25 DR 89
*1.6
DR 86
Ø 7.35 ±0.1
⊕ Ø0.4Ⓜ A B C DR 88
AD
DR 87
Ø 5.7 ±0.1
⊕ Ø0.1 AD

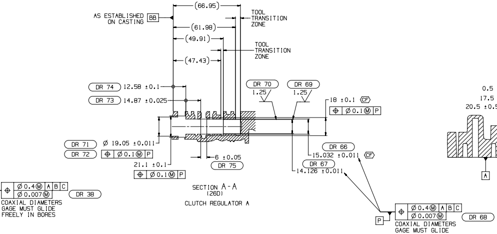
SECTION L-L
ON/OFF / B
(231)
(24D)


DR 101
7.57 ±0.25
60° ±2°
*1.6
A
*1.6
60° ±2°
DR 97
7.57 ±0.25
DR 100
⊕ Ø0.4Ⓜ A B C
AB
DR 96
⊕ Ø0.4Ⓜ A B C
AC
DR 98
Ø 7.35 ±0.1
DR 99
Ø 5.7 ±0.1
(241)
⊕ Ø0.1 AB
DR 94
Ø 7.35 ±0.1
DR 95
Ø 5.7 ±0.1
(240)
⊕ Ø0.1 AC

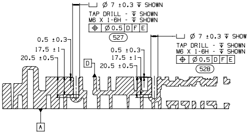
SECTION H-H
ON/OFF / DRIVE LATCH (LEFT)
C3/C5 (C/E) (RIGHT)
(23E)


DR 110 1.25
Ø 13.032 ±0.011 DR 108
⊕ Ø0.4Ⓜ A B C
A
45° ±2°
0.35 ±0.15
38.85
R0.5 ±0.3
0.9 0 -0.9
Ø 3 MAX PERMISSIBLE
⌓ 0.2 A DR 109

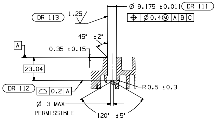
SECTION R-R
MDA LINE DAMPER
(239)
(24C)


(66.95)
AS ESTABLISHED ON CASTING BB
TOOL TRANSITION ZONE
(61.98)
(49.91)
TOOL TRANSITION ZONE
(47.43)
DR 70 1.25
DR 69 1.25
DR 74 12.58 ±0.1
DR 73 14.87 ±0.025
18 ±0.1 CF
⊕ Ø0.1Ⓜ P
DR 71 Ø 19.05 ±0.011
DR 72 ⊕ Ø0.1Ⓜ P
6 ±0.05
DR 75
21.1 ±0.1
⊕ Ø0.1Ⓜ P
DR 66
15.032 ±0.011 CF
DR 67
14.126 ±0.011
⊕ Ø0.4Ⓜ A B C Ø0.007Ⓜ DR 38
COAXIAL DIAMETERS GAGE MUST GLIDE FREELY IN BORES
P ⊕ Ø0.4Ⓜ A B C Ø0.007Ⓜ DR 68
COAXIAL DIAMETERS GAGE MUST GLIDE FREELY IN BORES

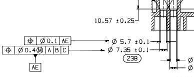
SECTION A-A
(26D)
CLUTCH REGULATOR A


⌴ Ø 7 ±0.3 ↧ SHOWN
TAP DRILL - ↧ SHOWN
M6 X 1-6H - ↧ SHOWN
⊕ Ø0.5 D F E
(527)
⌴ Ø 7 ±0.3 ↧ SHOWN
TAP DRILL - ↧ SHOWN
M6 X 1-6H - ↧ SHOWN
⊕ Ø0.5 D F E
(528)
0.5 ±0.3
17.5 ±1
20.5 ±0.5
D
0.5 ±0.3
17.5 ±1
20.5 ±0.5
A

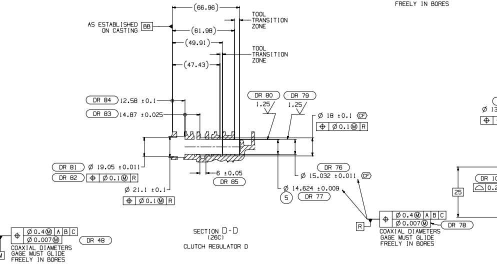
SECTION N-N
(15E)
FILTER ATTACHMENT SCREW HOLES


Ø 9.175 ±0.011 DR 111
⊕ Ø0.4Ⓜ A B C
DR 113 1.25
45° ±2°
A
0.35 ±0.15
23.04
DR 112 ⌓ 0.2 A
Ø 3 MAX PERMISSIBLE
R0.5 ±0.3
120° ±5°

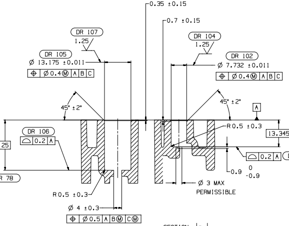
SECTION AL-AL
EXHAUST BACKFEED
ROTATED 23°
(235)
(22F)


*1.6
60° ±2°
60° ±2°
10.57 ±0.25
⊕ Ø0.1 AE
Ø 5.7 ±0.1
⊕ Ø0.4Ⓜ A B C
Ø 7.35 ±0.1
AE
(238)
Ø
Ø
DR

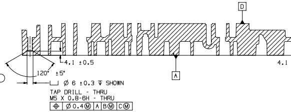
SECTION X-X
(24D)
CONVERTER FEED


(66.96)
AS ESTABLISHED ON CASTING BB
TOOL TRANSITION ZONE
(61.98)
(49.91)
TOOL TRANSITION ZONE
(47.43)
DR 80 1.25
DR 79 1.25
DR 84 12.58 ±0.1
DR 83 14.87 ±0.025
Ø 18 ±0.1 CF
⊕ Ø0.1Ⓜ R
DR 81 Ø 19.05 ±0.011
DR 82 ⊕ Ø0.1Ⓜ R
6 ±0.05
DR 85
Ø 21.1 ±0.1
⊕ Ø0.1Ⓜ R
DR 76
Ø 15.032 ±0.011 CF
Ø 14.624 ±0.009
⑤ DR 77
R ⊕ Ø0.4Ⓜ A B C Ø0.007Ⓜ DR 78
COAXIAL DIAMETERS GAGE MUST GLIDE FREELY IN BORES
⊕ Ø0.4Ⓜ A B C Ø0.007Ⓜ DR 48
COAXIAL DIAMETERS GAGE MUST GLIDE FREELY IN BORES

SECTION D-D
(26C)
CLUTCH REGULATOR D

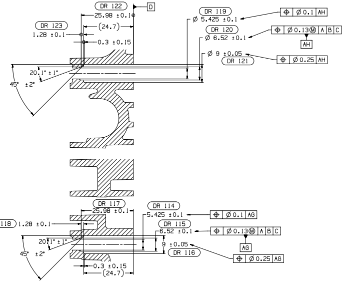

0.35 ±0.15
0.7 ±0.15
DR 107 1.25
DR 104 1.25
DR 105
Ø 13.175 ±0.011
⊕ Ø0.4Ⓜ A B C
DR 102
Ø 7.732 ±0.011
⊕ Ø0.4Ⓜ A B C
45° ±2°
45° ±2°
A
R0.5 ±0.3
13.345
DR 106 ⌓ 0.2 A
25
⌓ 0.2 A DR 103
0.9 0 -0.9
Ø 3 MAX PERMISSIBLE
R0.5 ±0.3
Ø 4 ±0.3
⊕ Ø0.5 A BⓂ CⓂ

SECTION J-J
(230) CONVERTER DRAINBACK (LEFT)
(236) MDA TCC DAMPER (RIGHT)
SCALE 2:1
(27D)

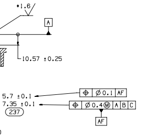

D
4.1 ±0.5
120° ±5°
A
4.1
⌴ Ø 6 ±0.3 ↧ SHOWN
TAP DRILL - THRU
M5 X 0.8-6H - THRU
⊕ Ø0.4Ⓜ A BⓂ CⓂ
(223)

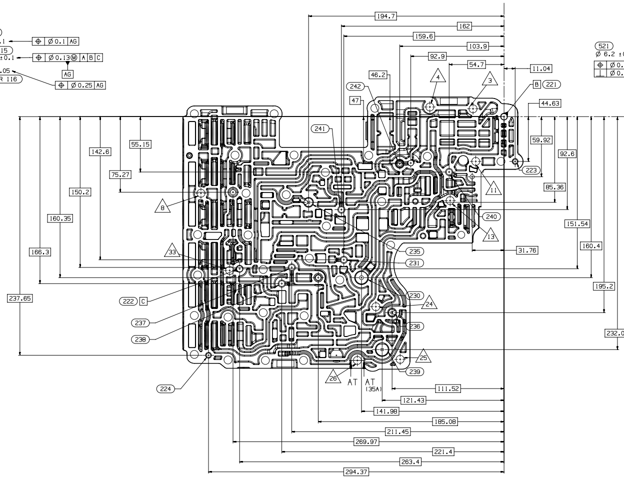
SECTION U-U
(19E)
SEPARATOR PLATE RETENTION HOLES

FRAME NUMBER	SHEET NUMBER	DRAWING NUMBER	DWG STATUS ST	REV	PDI
5 OF 6	1 OF 1	24062509	R	002	

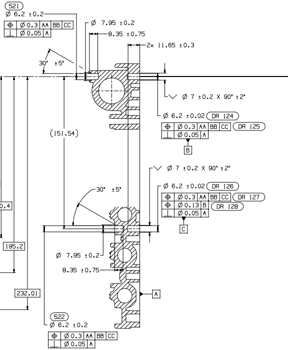

DR 122
25.98 ±0.1
D
DR 123
1.28 ±0.1
(24.7)
0.3 ±0.15
20.1° ±1°
45° ±2°
DR 119
Ø 5.425 ±0.1
⊕ Ø 0.1 AH
DR 120
Ø 6.52 ±0.1
⊕ Ø 0.13Ⓜ A B C
AH
Ø 9 ±0.05
DR 121
⊕ Ø 0.25 AH
DR 117
25.98 ±0.1
118
1.28 ±0.1
20.1° ±1°
45° ±2°
0.3 ±0.15
(24.7)
DR 114
5.425 ±0.1
⊕ Ø 0.1 AG
DR 115
6.52 ±0.1
⊕ Ø 0.13Ⓜ A B C
AG
9 ±0.05
DR 116
⊕ Ø 0.25 AG

SECTION W-W
(525) DEFAULT BLOWOFF (TOP BORE)
(526) RELEASE BLOWOFF (BOTTOM BORE)
SCALE 2:1
(16F)

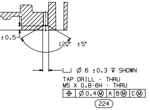

1.6
A
10.57 ±0.25
5.7 ±0.1
⊕ Ø 0.1 AF
7.35 ±0.1
⊕ Ø 0.4Ⓜ A B C
237
AF

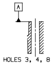

194.7
162
159.6
103.9
92.9
54.7
11.04
46.2
47
4
3
B 221
242
44.63
241
142.6
55.15
59.92
92.6
75.27
223
150.2
11
85.36
8
160.35
240
13
151.54
235
166.3
33
231
31.76
160.4
237.65
222 C
230
24
195.2
237
236
238
232.01
25
239
224
26
AT
AT (35A)
111.52
121.43
141.98
185.08
211.45
269.97
221.4
263.4
294.37

COPY OF
PRINCIPAL VIEW


521
Ø 6.2 ±0.2
⊕ Ø 0.3 AA BB CC
⊥ Ø 0.05 A
Ø 7.95 ±0.2
8.35 ±0.75
2x 11.65 ±0.3
30° ±5°
Ø 7 ±0.2 X 90° ±2°
Ø 6.2 ±0.02 DR 124
⊕ Ø 0.3 AA BB CC DR 125
⊥ Ø 0.05 A
B
(151.54)
Ø 7 ±0.2 X 90° ±2°
30° ±5°
Ø 6.2 ±0.02 DR 126
⊕ Ø 0.3 AA BB CC DR 127
⊕ Ø 0.13 B DR 128
⊥ Ø 0.05 A
C
Ø 7.95 ±0.2
8.35 ±0.75
A
522
Ø 6.2 ±0.2
⊕ Ø 0.3 AA BB CC
⊥ Ø 0.05 A

SECTION K-K
(23F)
PRIMARY DOWELS

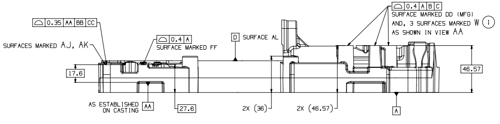

±0.5
120° ±5°
Ø 6 ±0.3 ⊽ SHOWN
TAP DRILL - THRU
M5 X 0.8-6H - THRU
⊕ Ø 0.4Ⓜ A BⓂ CⓂ
224



HOLES 3, 4, 8, 11, 13,
24-26, 33
ARE AS CAST

SECTION AT-AT
(35C)

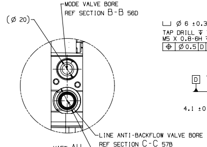
FRAME NUMBER	SHEET NUMBER	DRAWING NUMBER	DWG STATUS ST	REV	PDI
4 OF 6	1 OF 1	24062509	R	002	



⌓ 0.35 AA BB CC
SURFACES MARKED AJ, AK
⌓ 0.4 A
SURFACE MARKED FF
D SURFACE AL
⌓ 0.4 A B C
SURFACE MARKED DD (MFG)
AND, 3 SURFACES MARKED W (1)
AS SHOWN IN VIEW AA
17.6
46.57
AS ESTABLISHED ON CASTING AA
27.6
2X (36)
2X (46.57)
A

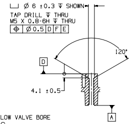
AG (24G)

VIEW AG (25G)



MODE VALVE BORE
REF SECTION B-B 56D
(Ø 20)
LINE ANTI-BACKFLOW VALVE BORE
REF SECTION C-C 57B
(Ø 27)

VIEW AU
SCALE 1:1
(20E)

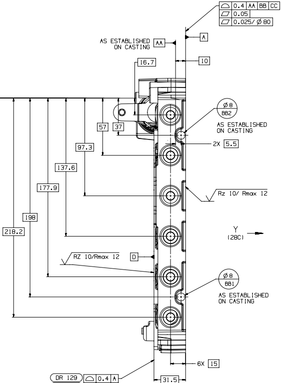


⊔ Ø 6 ±0.3 ↧ SHOWN
TAP DRILL ↧ THRU
M5 X 0.8-6H ↧ THRU
⌖ Ø 0.5 D F E
120°
D
4.1 ±0.5
A

SECTION AR-AR

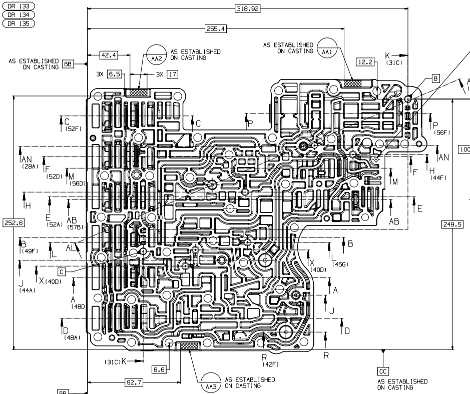
HOLE: (532)

(15E)

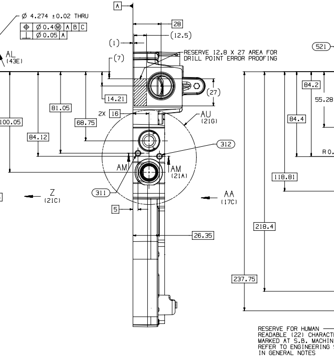


⌓ 0.4 AA BB CC (DR 133)
▱ 0.05 (DR 134)
▱ 0.025/ Ø 80 (DR 135)
AS ESTABLISHED ON CASTING AA
A
10
16.7
57
37
97.3
137.6
177.9
198
218.2
Ø 8 BB2
AS ESTABLISHED ON CASTING
2X 5.5
Rz 10/ Rmax 12
RZ 10/Rmax 12
D
Ø 8 BB1
AS ESTABLISHED ON CASTING
Y (28C)
6X 15
31.5
DR 129 ⌓ 0.4 A
DR 130 // 0.1 A
DR 131 ▱ 0.05
DR 132 ▱ 0.025/ Ø 80

VIEW Y
(27D)
COVER SIDE ◄► EJECTOR SIDE



318.92
255.4
AS ESTABLISHED ON CASTING BB
42.4
AA2 AS ESTABLISHED ON CASTING
3X 6.5
3X 17
AS ESTABLISHED ON CASTING AA1
12.2
K (31C)
Ø 4.274 ±0.02 THRU
⌖ Ø 0.4 Ⓜ A B C
⊥ Ø 0.05 A
B
AL (43E)
C (52F)
C
P
P (56F)
AN (28A)
F (52D)
M (56D)
AN
F
H (44F)
M
H
E (52A)
AB (57B)
E
AB
252.6
249.5
B (49F)
L
AL
C
X (40D)
J (44A)
X (40D)
L (45G)
B
A (48D)
A
J
D (48A)
D
(31C) K
6.6
R (42F)
R
AA3 AS ESTABLISHED ON CASTING
CC
AS ESTABLISHED ON CASTING
92.7
BB
Z (21C)

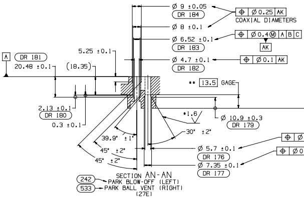


A
28
(12.5)
(1)
(7)
RESERVE 12.8 X 27 AREA FOR DRILL POINT ERROR PROOFING
(521)
14.21
(27)
81.05
2X 16
68.75
100.05
84.12
AU (21G)
312
AM
AM (21A)
311
5
AA (17C)
26.35
84.2
55.28
84.4
R0.
118.81
218.4
237.75

RESERVE FOR HUMAN READABLE (22) CHARACT MARKED AT S.B. MACHIN REFER TO ENGINEERING IN GENERAL NOTES

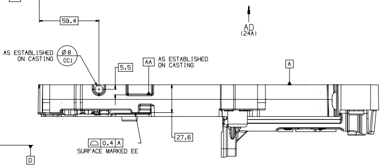
VIEW Z
(22E)

AD
(24A)



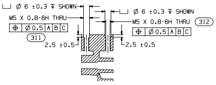
Ø 9 ±0.05 (DR 184)
⌖ Ø 0.25 AK
COAXIAL DIAMETERS
Ø 8 ±0.1
Ø 6.52 ±0.1 (DR 183)
⌖ Ø 0.4 Ⓜ A B C
AK
5.25 ±0.1
A (DR 181)
20.48 ±0.1
(18.35)
Ø 4.7 ±0.1 (DR 182)
⌖ Ø 0.1 AK
** 13.5 GAGE
2.13 ±0.1 (DR 180)
0.3 ±0.1
*1.6
Ø 10.9 ±0.3 (DR 179)
D
39.9° ±1°
30° ±2°
45° ±2°
45° ±2°
Ø 5.7 ±0.1 (DR 176)
⌖ Ø 0.1 AJ
⌖ Ø 0.4 Ⓜ A B C (DR 178)
Ø 7.35 ±0.1 (DR 177)
AJ

SECTION AN-AN
(242) PARK BLOW-OFF (LEFT)
(533) PARK BALL VENT (RIGHT)
(27E)



59.4
AS ESTABLISHED ON CASTING Ø 8 CC1
5.5
AA AS ESTABLISHED ON CASTING
A
27.6
⌓ 0.4 A
SURFACE MARKED EE

VIEW AD
(24C)

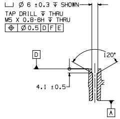


⊔ Ø 6 ±0.3 ↧ SHOWN
M5 X 0.8-6H THRU
⌖ Ø 0.5 A B C
(311)
2.5 ±0.5
⊔ Ø 6 ±0.3 ↧ SHOWN
M5 X 0.8-6H THRU (312)
⌖ Ø 0.5 A B C
2.5 ±0.5

PARTIAL SECTION AM-AM
(21E)

FRAME NUMBER	SHEET NUMBER	DRAWING NUMBER	DWG STATUS
3 OF 6	1 OF 1	24062509	ST R / REV 002 / PDI

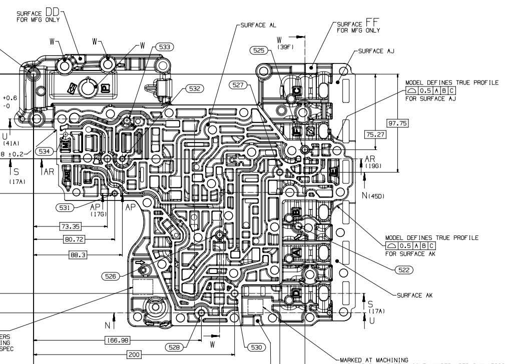
±5°


⌴ Ø 6 ±0.3 ↧ SHOWN
TAP DRILL ↧ THRU
M5 X 0.8-6H ↧ THRU
⌖ Ø0.5 D F E
D
120° ±5°
4.1 ±0.5
A

SECTION AP-AP

HOLE: (531)

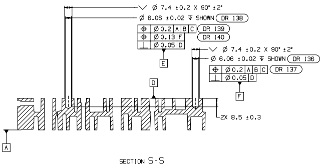
(18D)


SURFACE DD
FOR MFG ONLY
W
W
W
533
532
527
525
W
(39F)
SURFACE AL
SURFACE FF
FOR MFG ONLY
SURFACE AJ
MODEL DEFINES TRUE PROFILE
⌓ 0.5 A B C
FOR SURFACE AJ
97.75
75.27
AR
(19G)
N (45D)
+0.6
-0
U
(41A)
8 ±0.2
534
S
(17A)
AR
531
AP
(17G)
AP
73.35
80.72
88.3
MODEL DEFINES TRUE PROFILE
⌓ 0.5 A B C
FOR SURFACE AK
522
526
SURFACE AK
S
(17A)
U
N
ERS
ING
SPEC
166.98
528
W
530
200
244.98
269.97

MARKED AT MACHINING
MARK 2D PUN (PART UNIQUE NUMBER) PER GMW 15862
LASER ETCH 18 X 18 DATA MATRIX CODE
BLACK WITH WHITE BACKGROUND
PUN DATA STRING CONTEXT EXAMPLE: VVOY233001123412345678
REFER TO ENGINEERING SPEC IN GENERAL NOTES

VIEW AA
(20D)

SURFACE EE
FOR MFG ONLY


⌵ Ø 7.4 ±0.2 X 90° ±2°
Ø 6.06 ±0.02 ↧ SHOWN (DR 138)
⌖ Ø0.2 A B C (DR 139)
⌖ Ø0.13 F (DR 140)
⊥ Ø0.05 D
E
⌵ Ø 7.4 ±0.2 X 90° ±2°
Ø 6.06 ±0.02 ↧ SHOWN (DR 136)
⌖ Ø0.2 A B C (DR 137)
⊥ Ø0.05 D
D
F
2X 8.5 ±0.3
A

SECTION S-S
(15C)
AUX BODY/PLATE LOCATING DOWELS/ON/OFF SOLENOID

GM KCDS SHALL BE ADMINISTERED IN ACCORDANCE WITH THE LATEST VERSIONS OF GMW15049 AND KCDS TEMPLATES.

0	0	0	184	LAST NUMBER USED	KPC (KEY PRODUCT CHARACTERISTIC) PQC (PRODUCT QUALITY CHARACTERISTIC) AQC (ATTRIBUTE QUALITY CHARACTERISTIC) DR (DOCUMENTATION REQUIRED)
0	0	0	156	TOTAL BY COLUMN	

(KPC #) KPC NO.	(PQC #) PQC NO.	(AQC #) AQC NO.	(DR #) DR NO.	CHARACTERISTIC	RATIONALE	ZONE	SH	PLCS
			145	TRUE POSITION	FUNCTION	57H	1	1
			146	PROFILE	FUNCTION	57H	1	1
			147	PROFILE	FUNCTION	57H	1	1
			148	DIAMETER	FUNCTION	56G	1	1
			149	TRUE POSITION	FUNCTION	56F	1	1
			150	SURFACE FINISH	FUNCTION	55H	1	1
			151	SURFACE FINISH	FUNCTION	55H	1	1
			152	DIAMETER	FUNCTION	53H	1	1
			153	SURFACE FINISH	FUNCTION	55G	1	1
			154	DIAMETER	FUNCTION	54G	1	1
			155	STRAIGHTNESS	FUNCTION	54G	1	1
			156	PERPENDICULARITY	FUNCTION	58G	1	1
			157	DIMENSION	FUNCTION	58F	1	1
			158	PROFILE	FUNCTION	59D	1	1
			159	ANGLE	FUNCTION	60B	1	1
			160	ANGLE	FUNCTION	58A	1	1
			161	PROFILE	FUNCTION	57F	1	1
			162	SURFACE FINISH	FUNCTION	55F	1	1
			163	PROFILE	FUNCTION	57E	1	1
			164	PERPENDICULARITY	FUNCTION	57E	1	1
			165	TRUE POSITION	FUNCTION	54E	1	1
			166	SURFACE FINISH	FUNCTION	55E	1	1
			167	STRAIGHTNESS	FUNCTION	54D	1	1
			168	DIMENSION	FUNCTION	56D	1	1
			169	SURFACE FINISH	FUNCTION	56D	1	1
			170	TRUE POSITION	FUNCTION	55C	1	1
			171	DIMENSION	FUNCTION	57C	1	1
			172	DIMENSION	FUNCTION	57B	1	1
			173	DIAMETER	FUNCTION	56B	1	1
			174	DIAMETER	FUNCTION	51F	1	1
			175	DIAMETER	FUNCTION	51D	1	1
			176	DIAMETER	FUNCTION	27A	1	1
			177	DIAMETER	FUNCTION	27A	1	1
			178	TRUE POSITION	FUNCTION	26A	1	1
			179	DIAMETER	FUNCTION	27A	1	1
			180	DIMENSION	FUNCTION	29A	1	1
			181	DIMENSION	FUNCTION	29B	1	1
			182	DIAMETER	FUNCTION	27B	1	1
			183	DIAMETER	FUNCTION	27B	1	1
			184	DIAMETER	FUNCTION	27B	1	1

UNLESS OTHERWISE SPECIFIED:

SCALE: FULL

ALL MACHINED SURFACES 3.2 SURFACE FINISH

MACHINING RADIUS - R 0.8 OR EQUIVALENT

CUT-OFF LENGTH TO BE 0.8 MM

STANDARD DRILL POINT 120° ±30°

WHERE DIMENSIONS ARE SPECIFIED ON THE DRAWING, THE DRAWING IS THE AUTHORITY FOR DIMENSIONAL VALUES.

WHERE DIMENSIONS ARE NOT SPECIFIED ON THE DRAWING, THE DIGITAL MODEL IS THE AUTHORITY FOR DIMENSIONAL VALUES.

DIMENSIONS OBTAINED FROM THE DIGITAL MODEL ARE BASIC:
1. FOR RELATIONSHIPS BETWEEN FEATURES WHEN ESTABLISHED BY GEOMETRIC TOLERANCES.
2. FOR THE FORM OF A FEATURE WHEN CONTROLLED BY A PROFILE TOLERANCE.
3. FOR THE SIZE, FORM AND/OR RELATIONSHIP BETWEEN FIXED DATUM TARGETS.

DIMENSIONS OBTAINED FROM THE DIGITAL MODEL ARE ROUNDED TO TWO DECIMAL PLACES (PER IEEE/ASTM SI 10-2016)

THE DIGITAL MODEL MUST CORRESPOND TO THE RELEASE LEVEL SHOWN IN THE PART BLOCK ON THIS DOCUMENT.

* VERIFICATION OF CHAMFER SURFACE FINISH BASED ON ADJACENT SURFACE FINISH MEASUREMENTS IS ACCEPTABLE WHEN THE SAME TOOL IS USED TO MACHINE BOTH FEATURES. VISUAL INSPECTION REQUIRED TO CONFIRM TOOL INTEGRITY.

* VERIFICATION OF BORE SURFACE FINISH BASED ON SURFACE FINISH OF ADJACENT BORE SURFACE FINISH MEASUREMENTS IS ACCEPTABLE WHEN THE SAME TOOL IS USED TO MACHINE MULTIPLE BORES.

** BORE DIAMETER REQUIRED AT RESPECTIVE GAGE LINES

SURFACE AREA OF CAD MODEL (5373.5 cm²)

REFER TO 24050250 FOR POROSITY ACCEPTANCE STANDARDS AND 2D PUN MATRIX

PARTS MUST BE FREE FROM BURRS AN
WHICH MIGHT BE DETRIMENTAL TO SA
ASSEMBLY, SAFE HANDLING OR FUNCT

FOR SPECIFICATION AND INTERPRETA
AND DRAWING SYMBOLS, SEE GM GLOB
GMW15049 AND GENERAL MOTORS PROC

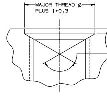
PARTS AS DELIVERED TO MACHINING/
FREE OF DEBRIS, RESIDUAL ABRASIV
PRODUCTS ADVERSELY AFFECTING FUN
CLEANLINESS IS VERIFIED BY VISUA

(DR 143) MUST CONFORM TO CONTAMINATION SP
24282995 - SOLID PARTICLE CONT
AND CONTROL
24282840 - TRANSMISSION SPECIF

COMPONENT CLEANLINESS CODE FOR
FOUND IN SPECIFICATION 2428284
SPECIFIED FOR "OUTER VALVE BO

ANY EXCEPTIONS TO THESE REQUI
APPROVED IN WRITING BY GM ENG

COUNTERSINK ALL THREADED HOLES A


MAJOR THREAD Ø
PLUS 1±0.3

FRAME NUMBER	SHEET NUMBER	DRAWING NUMBER	DWG STATUS ST	REV	PDI
2 OF 6	1 OF 1	24062509	R	002	

GM KCDS SHALL BE ADMINISTERED IN ACCORDANCE WITH THE LATEST VERSIONS OF GMW15049 AND KCDS TEMPLATES.

0	0	0	184	LAST NUMBER USED	KPC (KEY PRODUCT CHARACTERISTIC) PQC (PRODUCT QUALITY CHARACTERISTIC) AQC (ATTRIBUTE QUALITY CHARACTERISTIC) DR (DOCUMENTATION REQUIRED)			
0	0	0	156	TOTAL BY COLUMN				
KPC # KPC NO.	PQC # PQC NO.	AQC # AQC NO.	DR # DR NO.	CHARACTERISTIC	RATIONALE	ZONE	SH	PLCS
			80	SURFACE FINISH	FUNCTION	48C	1	1
			81	DIAMETER	FUNCTION	50B	1	1
			82	TRUE POSITION	FUNCTION	50B	1	1
			83	BORE DEPTH	FUNCTION	50B	1	1
			84	BORE DEPTH	FUNCTION	50C	1	1
			85	BORE DEPTH	FUNCTION	48B	1	1
			86	DIAMETER	FUNCTION	44H	1	1
			87	DIAMETER	FUNCTION	44G	1	1
			88	TRUE POSITION Ø0.4Ⓜ	FUNCTION	43G	1	1
			89	BORE DEPTH	FUNCTION	44H	1	1
			94	DIAMETER	FUNCTION	44F	1	1
			95	DIAMETER	FUNCTION	44F	1	1
			96	TRUE POSITION Ø0.4Ⓜ	FUNCTION	43G	1	1
			97	BORE DEPTH	FUNCTION	43G	1	1
			98	DIAMETER	FUNCTION	45F	1	1
			99	DIAMETER	FUNCTION	45F	1	1
			100	TRUE POSITION	FUNCTION	46G	1	1
			101	BORE DEPTH	FUNCTION	45G	1	1
			102	DIAMETER	FUNCTION	44C	1	1
			103	PROFILE	FUNCTION	43B	1	1
			104	SURFACE FINISH	FUNCTION	44C	1	1
			105	DIAMETER	FUNCTION	46C	1	1
			106	PROFILE	FUNCTION	46B	1	1
			107	SURFACE FINISH	FUNCTION	45C	1	1
			108	DIAMETER	FUNCTION	41H	1	1
			109	PROFILE	FUNCTION	41G	1	1
			110	SURFACE FINISH	FUNCTION	43H	1	1
			111	DIAMETER	FUNCTION	42F	1	1
			112	PROFILE	FUNCTION	43E	1	1
			113	SURFACE FINISH	FUNCTION	43F	1	1
			114	DIAMETER	FUNCTION	39F	1	1
			115	DIAMETER	FUNCTION	38F	1	1
			116	DIAMETER	FUNCTION	38F	1	1
			117	BORE DEPTH	FUNCTION	39F	1	1
			118	BORE DEPTH	FUNCTION	40F	1	1
			119	DIAMETER	FUNCTION	38H	1	1
			120	DIAMETER	FUNCTION	38H	1	1
			121	DIAMETER	FUNCTION	38H	1	1
			122	BORE DEPTH	FUNCTION	39H	1	1
			123	BORE DEPTH	FUNCTION	40H	1	1
			124	DIAMETER	FUNCTION	30E	1	1
			125	TRUE POSITION	FUNCTION	30E	1	1
			126	DIAMETER	FUNCTION	30E	1	1
			127	TRUE POSITION Ø0.5	FUNCTION	30D	1	1
			128	TRUE POSITION Ø0.13	FUNCTION	30D	1	1
			129	PROFILE	FUNCTION	29C	1	1
			130	PARALLEL	FUNCTION	29C	1	1
			131	FLATNESS	FUNCTION	29C	1	1
			132	FLATNESS	FUNCTION	29C	1	1
			133	PROFILE	FUNCTION	27F	1	1
			134	FLATNESS	FUNCTION	27F	1	1
			135	FLATNESS	FUNCTION	27F	1	1
			136	DIAMETER	FUNCTION	15B	1	1
			137	TRUE POSITION	FUNCTION	16B	1	1
			138	DIAMETER	FUNCTION	16B	1	1
			139	TRUE POSITION	FUNCTION	16B	1	1
			140	TRUE POSITION	FUNCTION	16B	1	1
			143	SEDIMENT NOTE	FUNCTION	11C	1	1
			144	DIAMETER	FUNCTION	57H	1	1

GM KCDS SHALL BE ADMINISTERED IN ACCORDANCE WITH THE LATEST VERSIONS OF GMW15049 AND KCDS TEMPLATES.

0	0	0	184	LAST NUMBER USED	KPC (KEY PRODUCT CHARACTERISTIC) PQC (PRODUCT QUALITY CHARACTERISTIC) AQC (ATTRIBUTE QUALITY CHARACTERISTIC) DR (DOCUMENTATION REQUIRED)			
0	0	0	156	TOTAL BY COLUMN				
KPC # KPC NO.	PQC # PQC NO.	AQC # AQC NO.	DR # DR NO.	CHARACTERISTIC	RATIONALE	ZONE	SH	PLCS
			15	DIAMETER	FUNCTION	56C	1	1
			16	DIAMETER	FUNCTION	56C	1	1
			17	TRUE POSITION Ø0.007Ⓜ	FUNCTION	54B	1	1
			18	SURFACE FINISH	FUNCTION	56C	1	1
			19	SURFACE FINISH	FUNCTION	56C	1	1
			26	DIAMETER	FUNCTION	51F	1	1
			28	TRUE POSITION Ø0.007Ⓜ	FUNCTION	50F	1	1
			29	SURFACE FINISH	FUNCTION	51G	1	1
			30	SURFACE FINISH	FUNCTION	51G	1	1
			31	DIAMETER	FUNCTION	53F	1	1
			32	TRUE POSITION	FUNCTION	53F	1	1
			33	BORE DEPTH	FUNCTION	53G	1	1
			34	BORE DEPTH	FUNCTION	53G	1	1
			35	BORE DEPTH	FUNCTION	52F	1	1
			36	DIAMETER	FUNCTION	51D	1	1
			38	TRUE POSITION Ø0.007Ⓜ	FUNCTION	50D	1	1
			39	SURFACE FINISH	FUNCTION	51E	1	1
			40	SURFACE FINISH	FUNCTION	52E	1	1
			41	DIAMETER	FUNCTION	53D	1	1
			42	TRUE POSITION	FUNCTION	53D	1	1
			43	BORE DEPTH	FUNCTION	53E	1	1
			44	BORE DEPTH	FUNCTION	53E	1	1
			45	BORE DEPTH	FUNCTION	52D	1	1
			46	DIAMETER	FUNCTION	51B	1	1
			47	DIAMETER	FUNCTION	51B	1	1
			48	TRUE POSITION Ø0.007Ⓜ	FUNCTION	50A	1	1
			49	SURFACE FINISH	FUNCTION	51C	1	1
			50	SURFACE FINISH	FUNCTION	51C	1	1
			51	DIAMETER	FUNCTION	53B	1	1
			52	TRUE POSITION	FUNCTION	53B	1	1
			53	BORE DEPTH	FUNCTION	53B	1	1
			54	BORE DEPTH	FUNCTION	53C	1	1
			55	BORE DEPTH	FUNCTION	52B	1	1
			56	DIAMETER	FUNCTION	47G	1	1
			57	DIAMETER	FUNCTION	48F	1	1
			58	TRUE POSITION Ø0.007Ⓜ	FUNCTION	46F	1	1
			59	SURFACE FINISH	FUNCTION	48G	1	1
			60	SURFACE FINISH	FUNCTION	48G	1	1
			61	DIAMETER	FUNCTION	50G	1	1
			62	TRUE POSITION	FUNCTION	50G	1	1
			63	BORE DEPTH	FUNCTION	50G	1	1
			64	BORE DEPTH	FUNCTION	50G	1	1
			65	BORE DEPTH	FUNCTION	48F	1	1
			66	DIAMETER	FUNCTION	47D	1	1
			67	DIAMETER	FUNCTION	47D	1	1
			68	TRUE POSITION Ø0.007Ⓜ	FUNCTION	46D	1	1
			69	SURFACE FINISH	FUNCTION	48E	1	1
			70	SURFACE FINISH	FUNCTION	48E	1	1
			71	DIAMETER	FUNCTION	50D	1	1
			72	TRUE POSITION	FUNCTION	50D	1	1
			73	BORE DEPTH	FUNCTION	50E	1	1
			74	BORE DEPTH	FUNCTION	50E	1	1
			75	BORE DEPTH	FUNCTION	48D	1	1
			76	DIAMETER	FUNCTION	47B	1	1
			77	DIAMETER	FUNCTION	48B	1	1
			78	TRUE POSITION Ø0.007Ⓜ	FUNCTION	46A	1	1
			79	SURFACE FINISH	FUNCTION	48C	1	1

ZONE	DWG STATUS					REVISION HISTORY	AUTH	DR	APVD 1	APVD 2	APVD 3	APVD 4	APVD 5
	DATE	ST	REV	POS	PDI								
	08AP24	R	001			RELEASED FOR PRODUCTION AT DLS A DESIGN HISTORY REFERENCE: 24050238	BZ8BK	RK	GKN	PON	JF JG	MO BR	JVH
22H	21JN24	R	002	1		NOTE UPDATED							
51F				2		DIAMETER WAS Ø14.626 ± 0.011							
51D				3		DIAMETER WAS Ø14.626 ± 0.011							
51A				4		DIAMETER WAS Ø14.626 ± 0.011							
48B				5		DIAMETER WAS Ø14.626 ± 0.011	C3M9G	SF	PH IX	PK	JH	BR	MO

ND SHARP EDGES,
ATISFACTORY
TION OF PART

ATION OF KCDS BLOCK
BAL KCDS STANDARD
CEDURE ETQ-114.

/ASSEMBLY SHALL BE CLEAN AND
VE MATERIAL, AND CORROSION
NCTION OR APPEARANCE.
AL EVALUATION.

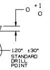
PECIFICATIONS:
TAMINATION MEASUREMENT

FIC LIMITS AND PROCEDURES

R THIS PART CAN BE
40, TABLE H AS
ODY MACH"

REMENTS MUST BE
INEERING

AS SHOWN BELOW:


0 +1 0
7
120° ±30°
STANDARD
DRILL
POINT

DATUM LEGEND:

- A EJECTOR SIDE CHANNEL FACE (22C)
- B PRIMARY DOWEL BORE - VALVE BODY (25E)
- C SECONDARY DOWEL BORE - VALVE BODY (25D)
- D COVER SIDE TRANSFER PLT FACE (28D)
- E SECONDARY DOWEL BORE - OIL TRANSFER PLT (17B)
- F SECONDARY DOWEL BORE - OIL TRANSFER PLT (16B)
- G UNUSED
- H BORE - MODE VALVE (55D)
- J BORE - LINE ANTI-BACKFLOW VALVE (55B)
- K BORE - CLUTCH REGULATOR C (51F)
- L BORE - CLUTCH REGULATOR F (51D)
- M BORE - CLUTCH REGULATOR E (51A)
- N BORE - CLUTCH REGULATOR B (47F)
- P BORE - CLUTCH REGULATOR A (47D)
- R BORE - CLUTCH REGULATOR D (47A)
- T BORE - PARK SERVO VALVE (55G)
- U RETAINER STOP FACE (59F)
- V BORE - RETAINER (54G)
- AB BORE - ON/OFF / DRIVE LATCH (46F)
- AC BORE - C3/C5 (C/E) (43F)
- AD BORE - ON/OFF / B (44G)
- AE BORE - CONVERTER FEED (42D)
- AF BORE - CONVERTER FEED (39D)
- AG BORE - RELEASE BLOW-OFF (38F)
- AH BORE - DEFAULT BLOW-OFF (37H)
- AJ BORE - PARK BALL VENT (26A)
- AK BORE - PARK BLOW-OFF (27B)

DATUMS AA, BB AND CC ARE AS
ESTABLISHED ON CASTING

HIERARCHY /QUANTITY	DWG ITM	ZONE	DWG RLTN SHIP	PART NUMBER	DLS	REV LVL	PDI	CALC MASS (kg)	PART NAME	COMMENT
1	02			24062508	A	001			BODY-C/VLV SOL (CSTG)	
A	01		RD	24062509	A	002		2.9086	BODY-C/VLV SOL (MACH)	

PARTS SHOWN ON DRAWING

FRAME NUMBER
1 OF 6

ADDITIONAL GM APPROVERS		DATE:
APVD7	JEREMY V HORGAN	19MR24
APVD8	BLAKE RHYNARD	18MR24

VIEWS AND SECTIONS ON THIS DRAWING ARE IN ACCORDANCE WITH GM S1100-2

RESTRICTED AND REPORTABLE SUBSTANCES FOR PARTS PER GMW3059

THIS DOCUMENT IS IN ACCORDANCE WITH ASME Y14.5-2018 AS AMENDED BY THE GM GLOBAL DIMENSIONING AND TOLERANCING ADDENDUM-2020 (GMW16812)

CHANGE RESTRICTED
NO MANUAL CHANGES

FOR FURTHER DRAFTING
STANDARDS SEE
GM S1100

METRIC

DIMENSIONS SHOWN IN
MILLIMETERS UNLESS
OTHERWISE SPECIFIED

REFERENCE
AB1V ETRS
HL106148, HL107420
HL107299, HL107422
HL107297, HL107424
HL107418, HL107423
HL107421, HL107419

		DATE
DRAFTER	RAVIKRISHNA L G	01JA24
APVD1	GOPALAKRISHNA K N	28FE24
APVD2	PONSEENI R KUMAR	03AP24
APVD3	JASON FISHER	19MR24
APVD4	JOEL GUNDERSON	19MR24
APVD5	MICHAEL OWEN	18MR24

DRAWING NAME
BODY-C/VLV SOL (MACH)

SIZE	DRAWING NUMBER	DWG STATUS ST	REV	PDI	SHEET NUMBER
R	24062509	R	002		1 OF 1

24062509