

MILLIMETRES TO INCHES				MILLIMETRES TO INCHES				METRIC VALUE	EQUIVALENT
mm MIN/NOM	mm MAX	in. MIN/NOM	in. MAX	mm MIN/NOM	mm MAX	in. MIN/NOM	in. MAX	KILOGRAMS	POUNDS
.20		.007		50.8		2.00		15.9	35
.3		.01		58.4		2.30		22.7	50
.41		.016		65.10		2.5630		45.4	100
.41		.016		65.11		2.5633		59.0	130
0.5		.02		69.04		2.718		63.5	140
.77	1.01	.030	.040	71.12		2.800		821	1810
0.8		.03		73.2		2.88			
0.8	1.5	.03	.06	76.2		3.00			
1.53	2.54	.060	.100	77.2		3.04			
2.0		.08		77.72		3.060			
2.34		.092		78.2		3.08			
5.69	6.19	.224	.244	81.3		3.20			
6.4		.25		81.79	81.91	3.220	3.225		
10.27	10.56	.404	.416	84.12		3.3118			
11.10		.437		88.9		3.50			
11.9	13.5	.47	.53	89.4		3.50			
12.45	12.95	.490	.510	90.4		3.56			
12.65	12.72	.498	.501	92.07		3.6250			
12.7		.50		94.0		.90			
13.06		.515		94.0		3.70			
13.2		.52		94.49		3.720			
14.2		.56		99.1		3.90			
14.22		.560		108.5		4.27			
15.2		.60		112.8		4.44			
15.75		.620		115.8		4.56			
16.67		.6562		115.8		4.56			
17.3		.68		116.84		4.600			
17.8	18.8	.70	.74	122.7		4.83			
17.8		.70		124.5		4.90			
19.1		.75		126.0		4.96			
19.3		.76		130.6		5.14			
22.4		.88		131.06		5.16			
22.4		.88		131.1		5.16			
22.9		.90		133.35		5.250			
23.4	24.4	.92	.96	134.1		5.28			
23.82		.938		134.6		5.30			
25.4		1.00		137.16		5.400			
25.9		1.02		139.7		5.50			
26.9		1.06		146.3		5.76			
26.9	28.4	1.06	1.12	147.3		5.80			
25.9		1.06		156.97		6.180			
29.9		1.18		166.9		6.57			
30.48		1.200		167.64		6.600			
31.50		1.240		175.3		6.90			
33.0		1.30		177.8		7.00			
35.71		1.4059		179.99	180.03	7.086	7.088		
37.3	38.4	1.47	1.51	184.15		7.2500			
38.10		1.500		188.0		7.40			
39.1		1.54		188.60		7.425			
40.4	43.9	1.59	1.73	190.5		7.50			
40.9		1.37		191.3		7.53			
43.18		1.700		194.1		7.64			
44.7		1.76		205.7		8.10			
45.2		46.74		208.3		8.20			
45.7		1.80		209.53	209.58	8.249	8.251		
48.3		8.10		212.9		8.38			

DEGREE CELSIUS	DEGREE FAHRENHEIT
121.11	250

4552-017



Alfacon Transmissions

SHEET 2 OF 3

BASIC INSTALLATION

REF: CRT 7031 4552-017

MILLIMETRES TO INCHES				MILLIMETRES TO INCHES			
mm MIN/NOM	mm MAX	in. MIN/NOM	in. MAX	mm MIN/NOM	mm MAX	in. MIN/NOM	in. MAX
215.90		8.500		551.5		21.71	
219.0		8.62		562.7		22.15	
222.0		8.74		570.2		22.45	
223.0		8.78		632.8		24.91	
223.87		8.814		658.4		25.92	
226.1		8.90		709.3		27.93	
227.1		8.94		808.8		31.84	
228.60		9.000		883.0		32.40	
230.1		9.06		884.4		34.82	
230.51	230.58	9.075	9.078				
230.96		9.093					
237.57		9.353					
239.73		9.438					
241.3		9.50					
243.9		9.60					
256.54		10.100					
257.05		10.120					
257.61		10.142					
261.1		10.28					
262.29		10.326					
266.70		10.500					
269.22	269.26	10.599	10.601				
275.3		10.84					
279.4		11.00					
281.9		11.10					
287.0		11.30					
287.5		11.33					
288.0		11.34					
290.6		11.44					
295.9		11.65					
305.3		12.02					
305.7		12.10					
310.13		12.210					
317.50		12.500					
320.6		12.62					
330.20		13.000					
333.76		13.140					
335.5		13.21					
337.82		13.300					
348.0		13.70					
362.5		14.27					
364.11		14.335					
366.27		14.420					
383.0		15.08					
409.27		16.113					
414.02		16.300					
422.2		16.62					
447.0		17.60					
462.53		18.210					
469.9		18.50					
470.2		18.51					
474.7		18.69					
492.8		19.40					
511.5		20.15					
532.1		20.95					
538.46	538.50	21.199	21.201				

A552-017

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 Allison Transmissions
SHEET 3 OF 3
BASIC INSTALLATION
WARRANTY 7031 A552-017

D695



MILLIMETRES TO INCHES			
mm MIN/NOM	mm MAX	in. MIN/NOM	in. MAX
1.52		.06	
2.79		.11	
10.16		.40	
11.01	11.03	.4336	.4341
11.18		.44	
12.45	14.99	.49	.59
17.27		.68	
19.30		.76	
20.45	20.70	.805	.815
28.45		1.12	
76.20		3.000	
104.78		4.125	
209.52	209.58	8.249	8.251
231.98		9.133	
350.67		13.806	
531.88		20.94	
543.81		21.41	
600.96		23.66	

.4375-14 NC-3B
INCH SERIES THD
19.30 MINIMUM FULL THD
8 HOLES

BASE
LINE

A

PTO
CENTERLINE

76.20

10.16R
TRUE

17.27

14.99

12.45

28.45

350.67

11.03 DIA
11.01
2 DOWELS
MARKED B

104.78

209.58
209.52
DOWEL
LOCATION
ONLY

10.5000°

9.5000°

TRANSMISSION
CENTERLINE

11.18

20.70

20.45

GEAR
P.D.

CENTERLINE

OPTIONAL PTO LUBE LINE CONNECTION
(SEE BASIC INSTALLATION DRAWING)
NUMBER 4 HOSE SIZE, .188 INCH ID
RECOMMENDED ORIFICE SIZE 1.52 DIA
(2.79 DIA MAXIMUM PERMISSIBLE)

BASIC INSTALLATION DRAWING	DIM. A
AS 56-002	531.88
AS 56-003	543.81
AS 56-015	543.81
AS 52-023	600.96

DRIVE GEAR DATA IN INCHES:
6 PITCH - 25° PRESSURE ANGLE
7.6667 PD - 46 TEETH - ENG. SPEED.
AFTER PTO INSTALLATION, BACKLASH
OF .005 TO .025 IS REQUIRED BETWEEN
TRANSMISSION DRIVING GEAR AND
PTO DRIVE GEAR

OPTIONAL SIDE PTO
MOUNTING FLANGE,
SAE HEAVY DUTY TYPE
(MODIFIED APERTURE)

FOR ALL TRANSMISSION INSTALLATION
DATA NOT SHOWN SEE BASIC
INSTALLATION DRAWING

AS 56-005

METRIC
ALL DIMENSIONS ARE IN MILLIMETRES,
UNLESS OTHERWISE SPECIFIED

THIRD ANGLE
PROJECTION



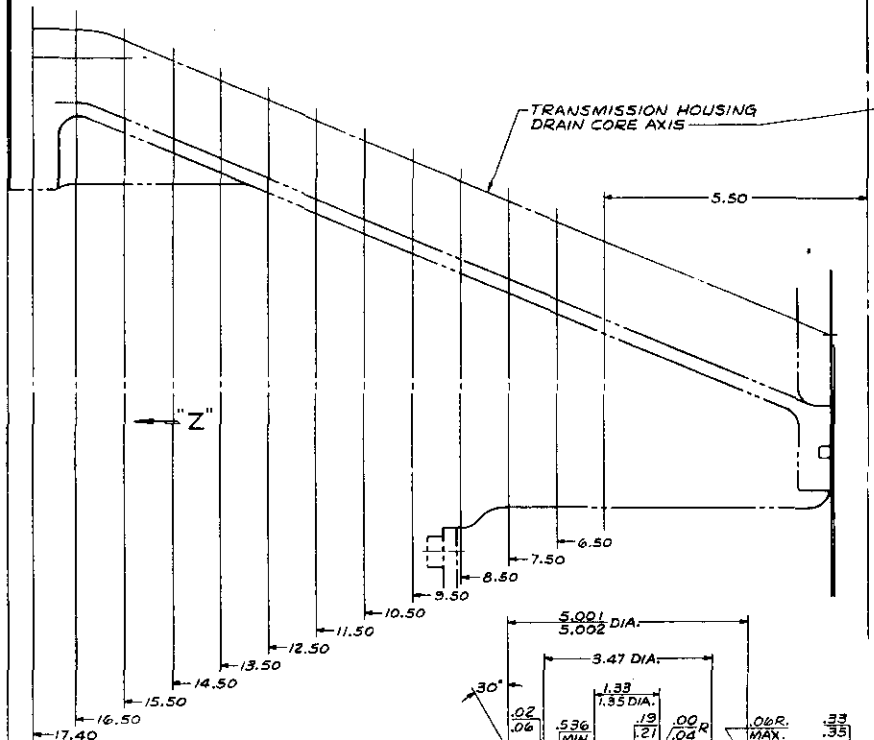
Allison Transmissions

REVISIONS	DATE	BY	CHKD	APP'D	DESCRIPTION
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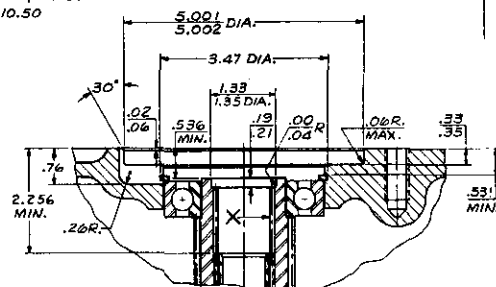
SIDE POWER TAKE-OFF OPTION

MODEL CRT SERIES AS 56-005

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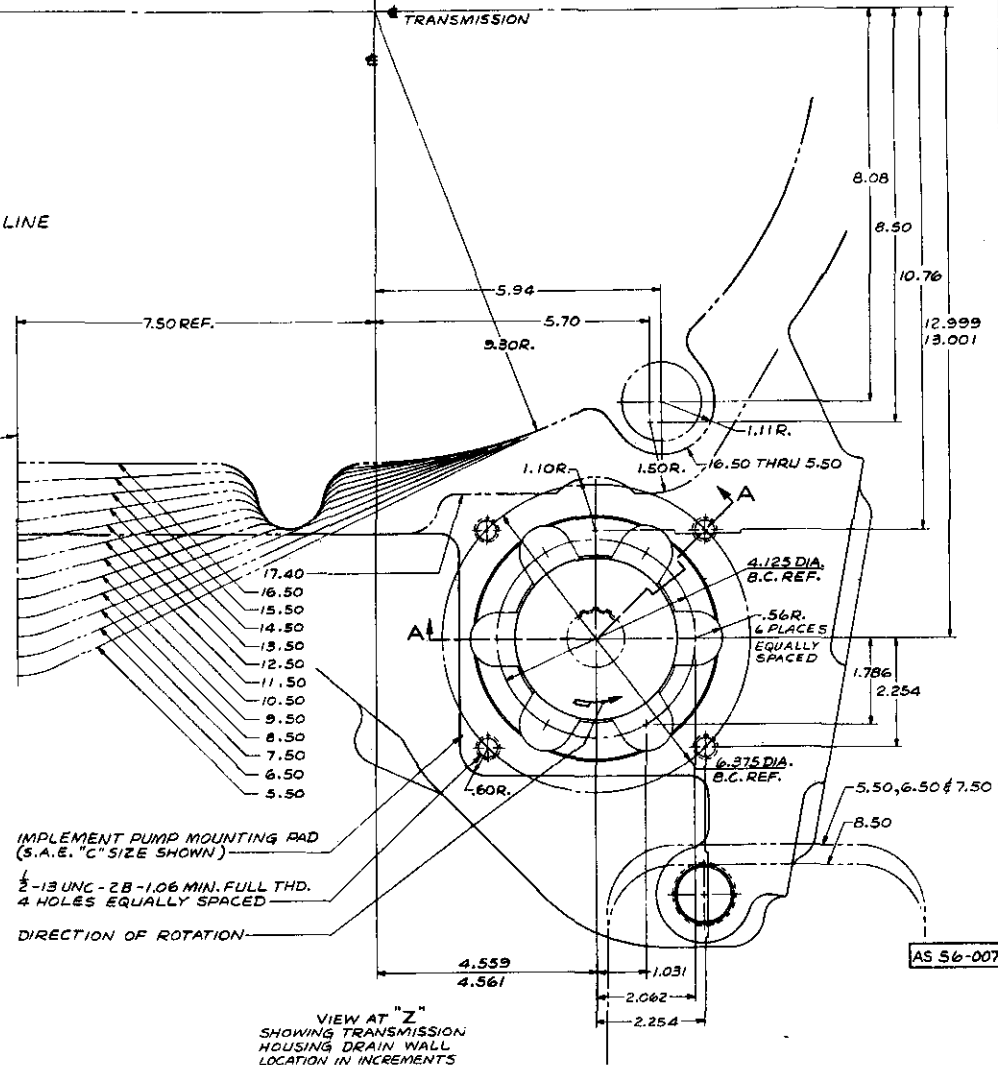


IMPLEMENT PUMP MOUNTING FACE (FOR DIMENSIONS NOT SHOWN SEE BASIC INSTALLATION DRAWING)



SECTION A-A
IMPLEMENT PUMP DRIVE
(S.A.E. SIZE "C" MOUNTING FLANGE)
ENGINE DRIVEN
P.T.O. DRIVE = ENGINE SPEED

BASE LINE



IMPLEMENT PUMP MOUNTING PAD (S.A.E. "C" SIZE SHOWN)

1/2-13 UNC-2B-1.06 MIN. FULL THD.
4 HOLES EQUALLY SPACED

DIRECTION OF ROTATION

VIEW AT "Z"
SHOWING TRANSMISSION HOUSING DRAIN WALL LOCATION IN INCREMENTS FOR CLEARANCE PURPOSES ALLOW APPROXIMATE .25 CLEARANCE IN ADDITION TO OUTLINE SHOWN.

INTERNAL SPLINE DATA "X"

12
24 PITCH 14 TEETH
30° PRESSURE ANGLE
P.D. = 1.1667 I.D. = 1.083-1.086
R.D. = 1.271-1.284 T.I.D. = 1.250

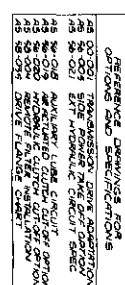
APPLY MOLY-COAT OR EQUIV GREASE TO FULL SPLINE LENGTH OF COUPLING AND/OR SHAFT AT ASSEM OF HYD PUMP

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
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ALLISON TRANS-DRIVE

IMPLEMENT PUMP DRIVE OPTION

CR7-369048431 AS 56-007



MILLIMETRES TO INCHES							
mm MIN/NOM	mm MAX	in. MIN/NOM	in. MAX	mm MIN/NOM	mm MAX	in. MIN/NOM	in. MAX
0.38		.015		114.8		4.52	
0.5		.02		115.8		4.56	
	1.01		.04	116.59		4.59	
	1.52		.06	118.87		4.68	
1.52	2.54	.06	.10	121.9		4.80	
1.57		.062		127.0		5.00	
	1.78		.07	130.56		5.14	
1.83		.07		134.11		5.28	
2.18		.086		134.62		5.30	
3.35	4.01	.132	.158	135.1		5.32	
4.37	5.02	.172	.198	136.4		5.37	
6.35		.25		137.16		5.400	
10.16		.40		146.3		5.76	
11.9		.469		151.38		5.96	
11.94	13.46	.47	.53	156.97		6.18	
12.45	12.95	.49	.51	166.9		6.57	
12.70	12.78	.500	.503	173.2		6.82	
12.7		.50		175.26		6.90	
14.28		.5625		177.3		6.98	
15.0		.59		183.97	184.09	7.243	7.248
15.24		.60		187.96		7.40	
17.27		.70		191.26		7.53	
19.05		.75		191.5		7.54	
19.30		.76		203.20		8.00	
20.3		.80		204.5		8.05	
22.6		.89		206.76		8.14	
22.9		.90		208.28		8.20	
	24.38		1.2458	215.90		8.50	
25.9		1.02		219.7		8.65	
26.0		1.02		222.25		8.75	
26.40		1.04		223.0		8.78	
26.92	28.45	1.06	1.12	224.0		8.82	
33.0		1.30		226.06		8.90	
33.02		1.30		227.8		8.97	
36.58		1.44		228.6		9.00	
37.47	41.27	1.475	1.625	229.11		9.02	
41.66		1.64		232.7		9.16	
45.21		1.78		233.7		9.20	
46.0		1.81		234.95		9.250	
				236.2		9.30	
61.98		2.44		237.57		9.35	
64.0		2.52		241.3		9.50	
77.0		3.03		257.30		10.13	
				261.1		10.28	
78.28		3.082		262.13		10.32	
82.55		3.25		262.6		10.34	
89.7		3.53		265.18		10.44	
90.6		3.56		266.7		10.50	
99.1		3.90		274.3		10.80	
101.60		4.00		275.3		10.84	
101.6		4.00		279.4		11.00	
110.0		4.33		281.9		11.10	
114.0		4.48		287.53		11.32	
114.3		4.50		289.0		11.38	

AS 56-015

 Allison Transmissions	
SHEET 2	
BASIC INSTALLATION DRAWING	
CRT 503.9	AS 56-015

R-715

MILLIMETRES TO INCHES				METRIC VALUES	EQUIVALENTS
mm MIN/NOM	mm MAX	in. MIN/NOM	in. MAX	930 kPa 49 litres 1090 kg 120° C 180 N	135 PSI 13 GALLONS 2400 POUNDS 250° F 40 POUNDS
295.9		11.65			
302.3		11.90			
305.3		12.02			
307.5		12.10			
309.6		12.19			
310.21		12.21			
311.9		12.28			
312.67		12.31			
317.50		12.50			
318.26		12.53			
320.55		12.62			
330.2		13.00			
336.6		13.25			
351.0		13.82			
363.6		14.31			
366.27		14.42			
372.15		14.650			
380.7		14.9			
383.0		15.08			
386.08		15.20			
392.0		15.43			
395.0		15.55			
395.2		15.56			
401.08		15.790			
414.78		16.33			
439.4		17.30			
441.46		17.380			
454.9		17.91			
463.30		18.24			
469.90		18.50			
487.2		19.18			
492.8		19.40			
494.54		19.47			
511.05	511.17	20.120	20.125		
513.33		20.21			
	555.75		21.880		
572.3		22.53			
606.55		23.88			
612.1		24.10			
662.9		26.10			
678.2		26.70			
743.3		29.26			
748.54		29.47			
ADDITIONS - CHG A 652.2 653.4 25.68 25.72					

AS56-015

 Anison Transmissions	
SHEET 3	
BASIC INSTALLATION DRAWING	
PART 563 AS 56-015	

R-715



MILLIMETRES TO INCHES

mm MIN/NOM	mm MAX	in. MIN/NOM	in. MAX	mm MIN/NOM	mm MAX	in. MIN/NOM	in. MAX
0.38		.015		114.8		4.52	
0.5		.02		115.8		4.56	
	1.01		.04	116.59		4.59	
	1.52		.06	118.87		4.68	
1.52	2.54	.06	.10	121.9		4.80	
1.57		.062		127.0		5.00	
	1.78		.07	130.56		5.14	
1.83		.07		134.11		5.28	
2.18		.086		134.62		5.30	
3.35	4.01	.132	.158	135.1		5.32	
4.37	5.02	.172	.198	136.4		5.37	
6.35		.25					
10.16		.40		146.3		5.76	
11.9		.469		151.38		5.96	
11.94	13.46	.47	.53				
12.45	12.95	.49	.51	166.9		6.57	
12.70	12.78	.500	.503	173.2		6.82	
12.7		.50		175.26		6.90	
14.28		.5625		177.3		6.98	
15.0		.59		183.97	184.09	7.243	7.248
15.24		.60		187.96		7.40	
17.27		.70		191.26		7.53	
19.05		.75		191.5		7.54	
19.30		.76		203.20		8.00	
20.3		.80		204.5		8.05	
22.6		.89		206.76		8.14	
22.9		.90		208.28		8.20	
	24.38		1.2458	215.90		8.50	
25.9		1.02		219.7		8.65	
26.0		1.02		222.25		8.75	
26.40		1.04		223.0		8.78	
26.92	28.45	1.06	1.12	224.0		8.82	
33.0		1.30		226.06		8.90	
33.02		1.30		227.8		8.97	
36.58		1.44		228.6		9.00	
37.47	41.27	1.475	1.625	229.11		9.02	
41.66		1.64		232.7		9.16	
45.21		1.78		233.7		9.20	
46.0		1.81		234.95		9.250	
				236.2		9.30	
61.98		2.44					
64.0		2.52		241.3		9.50	
77.0		3.03		257.30		10.13	
				261.1		10.28	
78.28		3.082		262.13		10.32	
82.55		3.25		262.6		10.34	
89.7		3.53		265.18		10.44	
90.6		3.56		266.7		10.50	
99.1		3.90		274.3		10.80	
101.60		4.00		275.3		10.84	
101.6		4.00		279.4		11.00	
110.0		4.33		281.9		11.10	
114.0		4.48		287.53		11.32	
114.3		4.50		289.0		11.38	

4556-016

 Allison Transmission	
2 OF 3	
BASIC INSTALLATION DRAWING	
FIG. NO.	CR15633
REV.	1856-016

Q-719

MILLIMETRES TO INCHES				METRIC VALUES	EQUIVALENTS
mm MIN/NOM	mm MAX	in. MIN/NOM	in. MAX	930 kPa 49 litres 1090 kg 120° C 180 N	135 PSI 13 GALLONS 2400 POUNDS 250° F 40 POUNDS
295.9		11.65			
302.3		11.90			
305.3		12.02			
307.5		12.10			
309.6		12.19			
310.21		12.21			
311.9		12.28			
312.67		12.31			
317.50		12.50			
318.26		12.53			
320.55		12.62			
330.2		13.00			
336.6		13.25			
351.0		13.82			
363.6		14.31			
366.27		14.42			
380.7		14.9			
383.0		15.08			
386.08		15.20			
392.0		15.43			
395.0		15.55			
395.2		15.56			
401.08		15.790			
414.78		16.33			
439.4		17.30			
441.46		17.380			
454.9		17.91			
463.30		18.24			
469.90		18.50			
487.2		19.18			
492.8		19.40			
494.54		19.47			
511.05	511.17	20.120	20.125		
513.33		20.21			
	555.75		21.880		
572.3		22.53			
606.55		23.88			
612.1		24.10			
662.9		26.10			
678.2		26.70			
712.7		28.06			
748.54		29.47			
75.7		2.98			
127.0		5.00			
330.2		13.00			
394.0		15.51			
743.3		29.26			
ADDITIONS CHG A					
652.2	653.4	25.68	25.72		

AS56-016

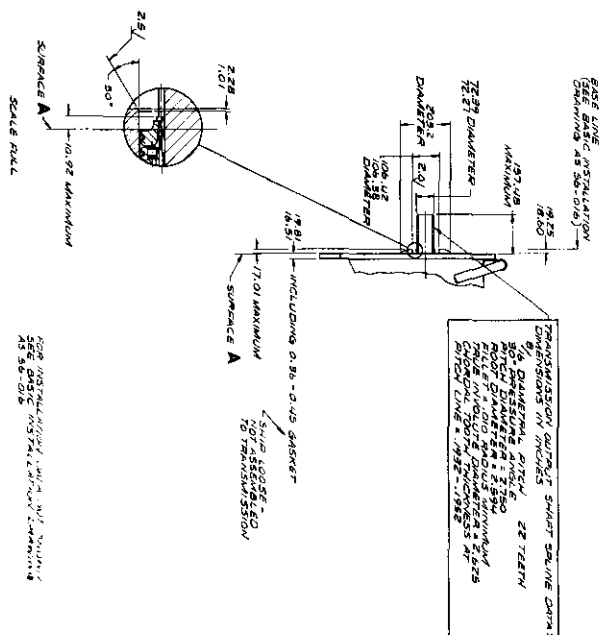
 Allison Transmission	
3 OF 3	
DATE: 10/10/00 DRAWN BY: [blank] CHECKED BY: [blank] APPROVED BY: [blank]	TITLE: INSTALLATION DRAWING PART: CRT5623 REV: 01

Q-719

MILLIMETRES TO INCHES			
mm MIN/NOM	mm MAX	in. MIN/NOM	in. MAX
.36	.45	.014	.018
1.01	2.28	.04	.09
13.20	10.92	.520	.43
13.48		.531	
16.51	17.01	.65	.670
17.8	19.81	.70	.78
18.60	19.25	.732	.758
18.66		.735	
18.95	18.98	.7463	.7473
19.3		.76	
22.9		.90	
25.40		1.000	
30.48		1.200	
33.0		1.30	
38.1		1.50	
43.18		1.700	
45.7		1.80	
48.26		1.900	
52.8		2.08	
58.4		2.30	
69.03		2.718	
71.12		2.800	
72.27	72.39	2.845	2.850
76.2		3.00	
81.3		3.20	
92.5		3.64	
93.98		3.700	
94.49		3.720	
106.38	106.42	4.190	4.188
108.5		4.27	
109.7		4.32	
116.84		4.600	
124.5		4.90	
126.0		4.96	
133.35		5.250	
139.7		5.50	
147.3		5.80	
152.40		6.000	
167.64	157.48	6.600	6.200
177.80		7.000	
188.59		7.425	
190.50		7.500	
201.7		7.94	
203.2		8.00	
205.7		8.10	
211.8		8.34	
212.8		8.38	

MILLIMETRES TO INCHES			
mm MIN/NOM	mm MAX	in. MIN/NOM	in. MAX
223.0		8.78	
228.60		9.000	
230.1		9.06	
230.96		9.093	
239.72		9.438	
241.30		9.500	
248.9		9.80	
256.54		10.100	
257.04		10.120	
257.60		10.142	
262.28		10.326	
266.70		10.500	
269.22	269.26	10.599	10.601
281.9		11.10	
282.4		11.12	
287.0		11.30	
288.0		11.34	
330.20		13.000	
333.76		13.140	
337.82		13.300	
348.0		13.70	
366.27		14.420	
414.02		16.300	
452.0		17.80	
469.9		18.50	
514.0		20.30	
538.46	538.50	21.199	21.201

METRIC VALUES	EQUIVALENTS
2.0 ✓	80 ✓
2.5 ✓	100 ✓
38 LITRES	10 GALLONS
.04 SQ METRE	70 SQ INCHES

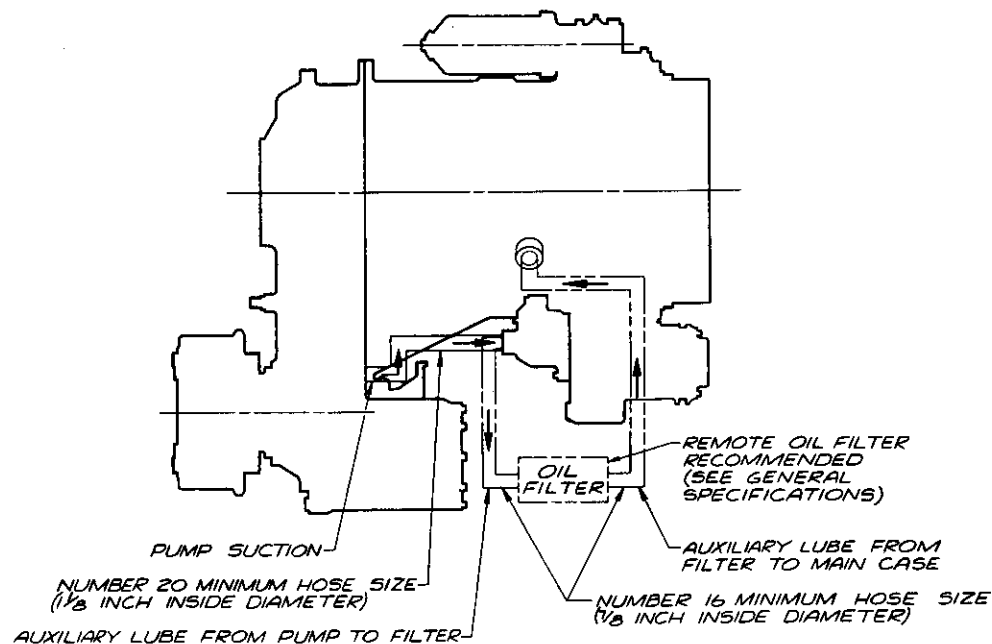


PCRP INSTALLED IN/INP 10/1/91
SEE BASIC INSTALLED IN/INP 2-24-91
AS 56-016

FIRZ



METRIC VALUES	EQUIVALENTS
2.00 LITRE/s	30 GPM
120°C	250°F
34 kPa	5 PSI
70-100 kPa	10-15 PSI
140-170 kPa	20-25 PSI
210 kPa	30 PSI



PARTS SHOWN IN PHANTOM ARE
FURNISHED BY CUSTOMER

AS 56-018

FOR TRANSMISSION INSTALLATION
DATA NOT SHOWN SEE BASIC
INSTALLATION DRAWING - AS 56-015

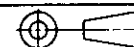
REMOTE OIL FILTER - GENERAL SPECIFICATIONS

OIL FLOW 2.00 LITRE/s MAXIMUM
OPERATING OIL PRESSURE 210 kPa (2.14 kg/cm²)
OPERATING OIL TEMPERATURE 120°C MAXIMUM CONTINUOUS
OIL PRESSURE DROP 34 kPa (0.35 kg/cm²) MAXIMUM
BY-PASS VALVE TO BE INCORPORATED IN FILTER ASSEMBLY
- INITIAL BY-PASS PRESSURE 70-100 kPa (0.71-1.02 kg/cm²)
- FULL BY-PASS PRESSURE 140-170 kPa (1.43-1.73 kg/cm²)
DEGREE OF FILTRATION 44 MICRONS MAXIMUM
INTERVAL BETWEEN SERVICING 500-1000 HOURS
TYPE OF CONTAMINATE
EARTH, IRON, STEEL, BRONZE, COPPER, AND ALUMINUM PARTICLES,
ROCK, COAL, AND CEMENT DUST
METHOD OF INSTALLATION:
INDEPENDENT MOUNTED WITH 1.00-1.15 NPTF INCH
SERIES MINIMUM PIPE TAP CONNECTIONS

METRIC

ALL DIMENSIONS ARE IN MILLIMETRES,
UNLESS OTHERWISE SPECIFIED

THIRD ANGLE
PROJECTION

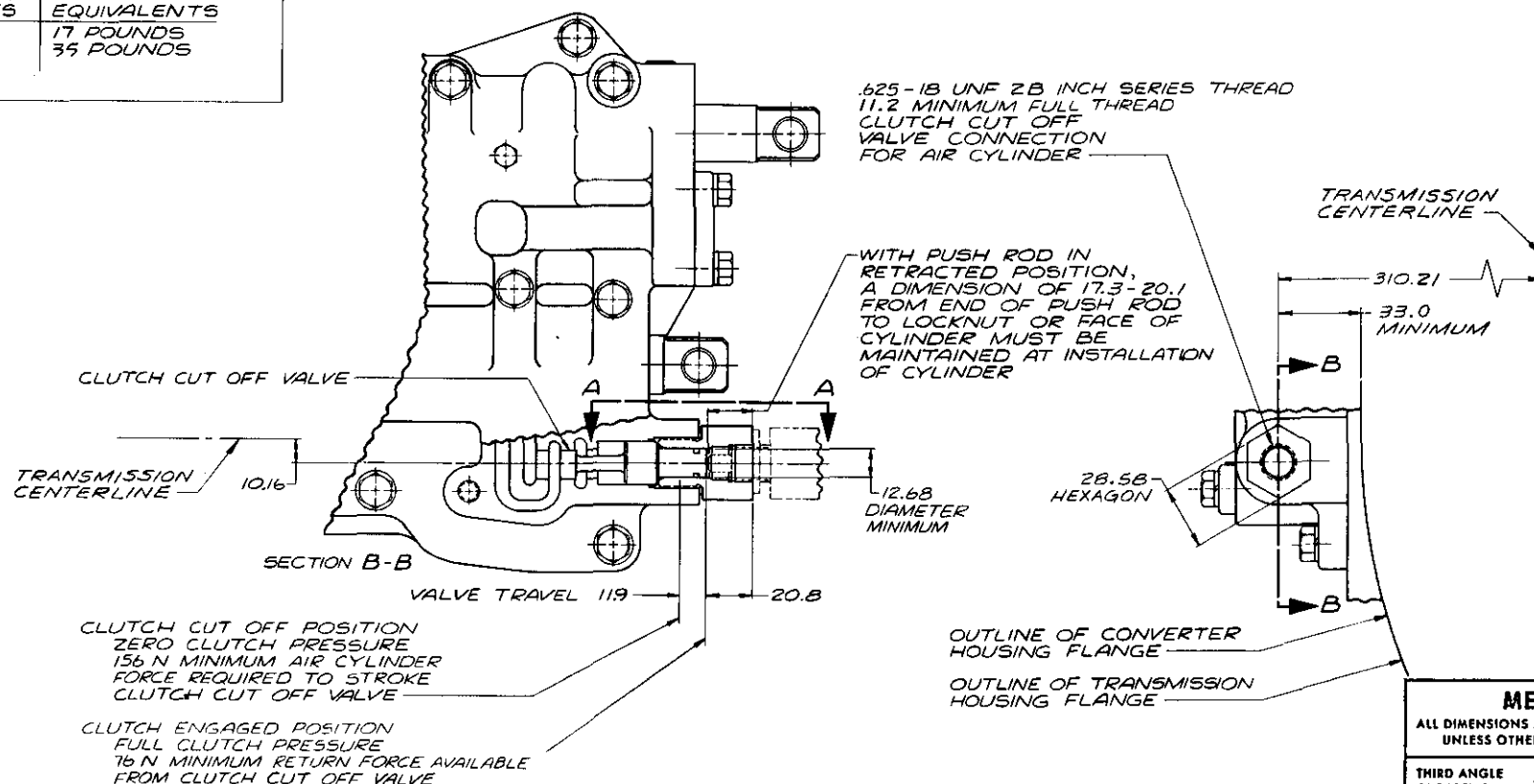
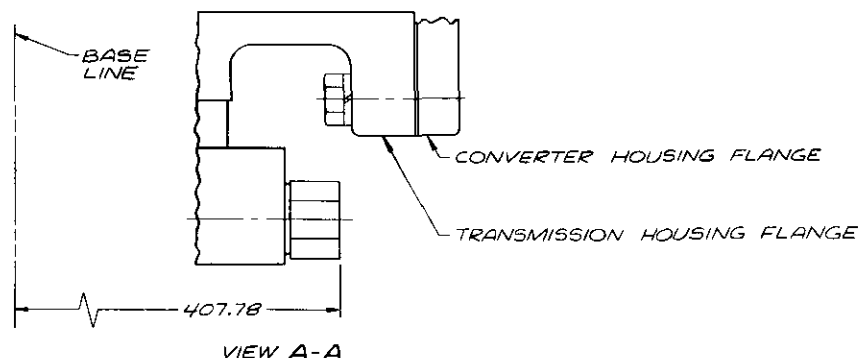


Allison Transmissions

CHANGES			
DATE	BY	DESCRIPTION	APPROVED
8-18-73	ENH. MANN	MOYER	
8-23-73	PAUL ENGR	APPROVED	
8-23-73			
TITLE			
AUXILIARY LUBE CIRCUIT			
MODEL CRT 5633			
AS 56-018			
Detroit Diesel Allison Division of General Motors - Indianapolis, Indiana			

METRIC TO INCHES			
MM MIN/NOM	MM MAX	IN MIN/NOM	IN MAX
10.16		.400	
11.2		.44	
11.9		.47	
12.68		.4995	
17.3	20.1	.68	.79
20.8		.82	
28.58		1.125	
33.0		1.31	
310.21		12.213	
407.78		16.054	

METRIC VALUES	EQUIVALENTS
76 N	17 POUNDS
156 N	35 POUNDS



NOTE:

- 1 AIR MUST NOT BE INTRODUCED INTO VALVE BODY
- 2 AIR CYLINDER TO ACTUATE VALVE BY MEANS OF PUSH ROD AND PROVIDE POSITIVE RETURN FORCE
- 3 TRANSMISSION ENGINEERING DEPARTMENT'S APPROVAL IS A PREREQUISITE TO USE OF ACTUATING MECHANISM

FOR TRANSMISSION INSTALLATION DATA NOT SHOWN SEE BASIC INSTALLATION DRAWING - AS 56-015 OR AS 56-016

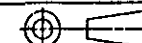
PARTS SHOWN IN PHANTOM ARE CUSTOMER FURNISHED

AS 56-019

METRIC

ALL DIMENSIONS ARE IN MILLIMETRES, UNLESS OTHERWISE SPECIFIED

THIRD ANGLE PROJECTION

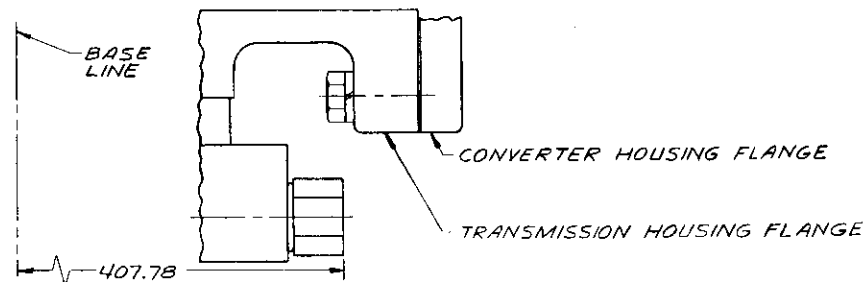


Allison Transmissions

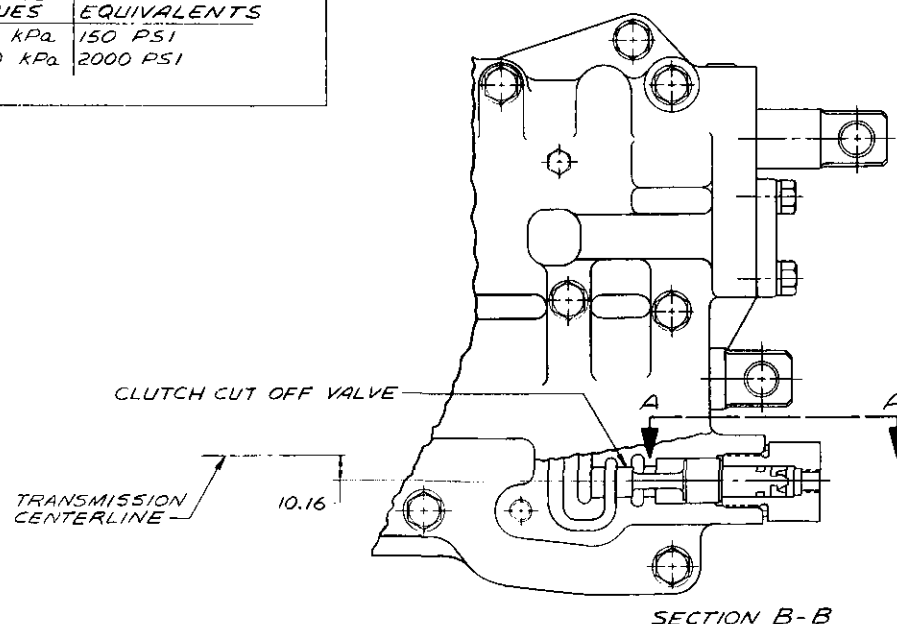
DATE	BY	CHKD	APPROVED	TITLE
11-18-75	S. GEEBY	11-18-75	11-18-75	AIR ACTUATED CLUTCH CUT OFF OPTION
11-18-75	11-18-75	11-18-75	11-18-75	MODEL CRT 5633
11-18-75	11-18-75	11-18-75	11-18-75	AS 56-019
11-18-75	11-18-75	11-18-75	11-18-75	DETROIT DIESEL Allison Division of General Motors - Indianapolis, Indiana

MILLIMETRES TO INCHES			
mm MIN/NOM	mm MAX	in. MIN/NOM	in. MAX
10.16		.40	
28.58		1.125	
33.0		1.31	
310.21		12.213	
407.78		16.054	

METRIC VALUES	EQUIVALENTS
1034 kPa	150 PSI
13790 kPa	2000 PSI

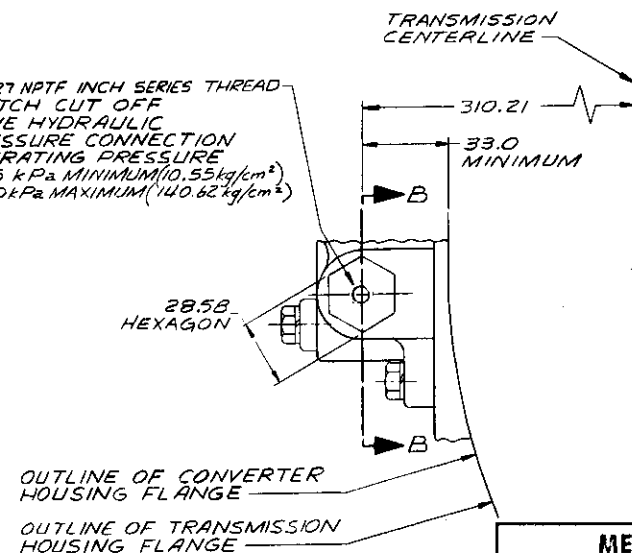


VIEW A-A



SECTION B-B

.125-27 NPTF INCH SERIES THREAD
CLUTCH CUT OFF
VALVE HYDRAULIC
PRESSURE CONNECTION
OPERATING PRESSURE
1035 kPa MINIMUM (10.55 kg/cm²)
13790 kPa MAXIMUM (140.62 kg/cm²)



AS 56-020

METRIC
ALL DIMENSIONS ARE IN MILLIMETRES,
UNLESS OTHERWISE SPECIFIED

THIRD ANGLE
PROJECTION

FOR TRANSMISSION INSTALLATION DATA
NOT SHOWN SEE BASIC INSTALLATION
DRAWING - AS 56-015 OR AS 56-016

Allison Transmissions	
HYDRAULIC CLUTCH CUT-OFF OPTION	
MODEL CRT 5633	
AS 56-020	

DESIGNED BY	DATE	APPROVED BY	DATE
REVISED BY	DATE	REVISED BY	DATE
DATE	DATE	DATE	DATE
DATE	DATE	DATE	DATE

METRIC VALUES	EQUIVALENTS
-40°C	-40°F
+121°C	+250°F
+135°C	+275°F
2.52 LITRES/SEC	40 GPM
34 kPa	5 PSI
241 kPa	35 PSI
448 kPa	65 PSI
1379 kPa	200 PSI
103 kPa	15 PSI
70-100 kPa	10-15 PSI
140-170 kPa	20-25 PSI

REFERENCE DRAWINGS FOR
OPTIONS AND SPECIFICATIONS

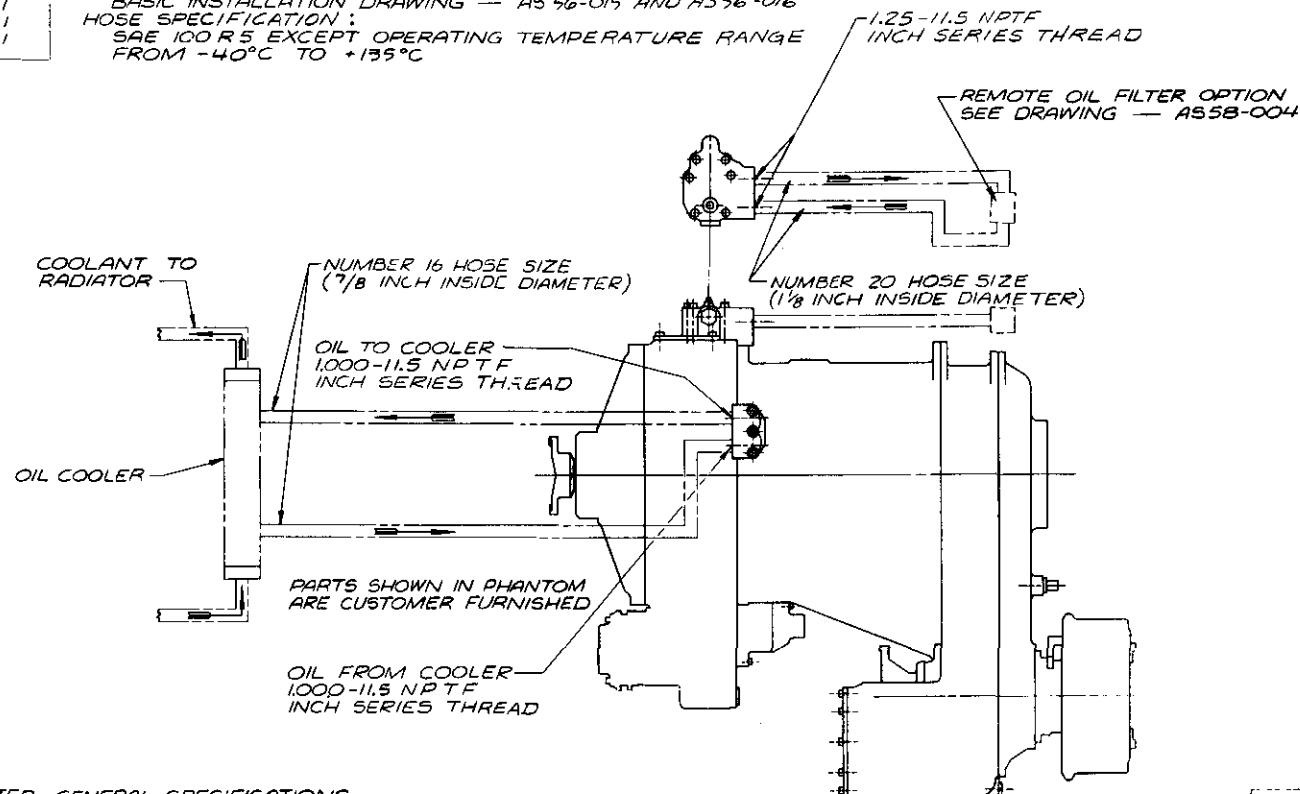
AS 56-022 COOLER OIL FLOW

COOLER CIRCUIT PRESSURE SPECIFICATIONS:

AT OPERATING TEMPERATURE AND MAXIMUM SPEED, HIGH RANGE
MAXIMUM ALLOWABLE CONVERTER OUT OIL PRESSURE 448 kPa (4.57 kg/cm²)
MAXIMUM ALLOWABLE EXTERNAL CIRCUIT PRESSURE DROP, 241 kPa (2.46 kg/cm²)

REFERENCE:

AS 56-022 CURVE FOR COOLER OIL FLOW
BASIC INSTALLATION DRAWING — AS 56-015 AND AS 56-016
HOSE SPECIFICATION:
SAE 100 R5 EXCEPT OPERATING TEMPERATURE RANGE
FROM -40°C TO +135°C



REMOTE OIL FILTER - GENERAL SPECIFICATIONS

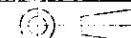
TYPE OF FLUID HYDRAULIC TRANSMISSION FLUID TYPE C-2
OIL FLOW 2.52 litre/s MAXIMUM
OPERATING OIL PRESSURE 1379 kPa (14.06 kg/cm²) MAXIMUM
OPERATING OIL TEMPERATURE 121.1°C MAXIMUM CONTINUOUS
OIL PRESSURE DROP:
INITIAL (CLEAN ELEMENT) 34 kPa (.35 kg/cm²) MAXIMUM
MAXIMUM PRIOR TO SERVICING 103 kPa (1.05 kg/cm²)
BY-PASS VALVE TO BE INCORPORATED IN FILTER ASSEMBLY
INITIAL BY-PASS PRESSURE 70-100 kPa (.71-1.02 kg/cm²)
FULL BY-PASS PRESSURE 140-170 kPa (1.43-1.73 kg/cm²)
DEGREE OF FILTRATION 44 MICROMETRES MAXIMUM
INTERVAL BETWEEN SERVICING 500 HOURS
TYPE OF CONTAMINATE:
EARTH, IRON, STEEL, BRONZE, COPPER AND ALUMINUM PARTICLES
ROCK, COAL AND CEMENT DUST
METHOD OF INSTALLATION:
INDEPENDENT MOUNTED WITH 1,00-11.5 NPT F INCH SERIES MINIMUM
PIPE TAP CONNECTIONS

AS 56-021

METRIC

ALL DIMENSIONS ARE IN MILLIMETRES,
UNLESS OTHERWISE SPECIFIED

THIRD ANGLE
PROJECTION



Allison Transmissions

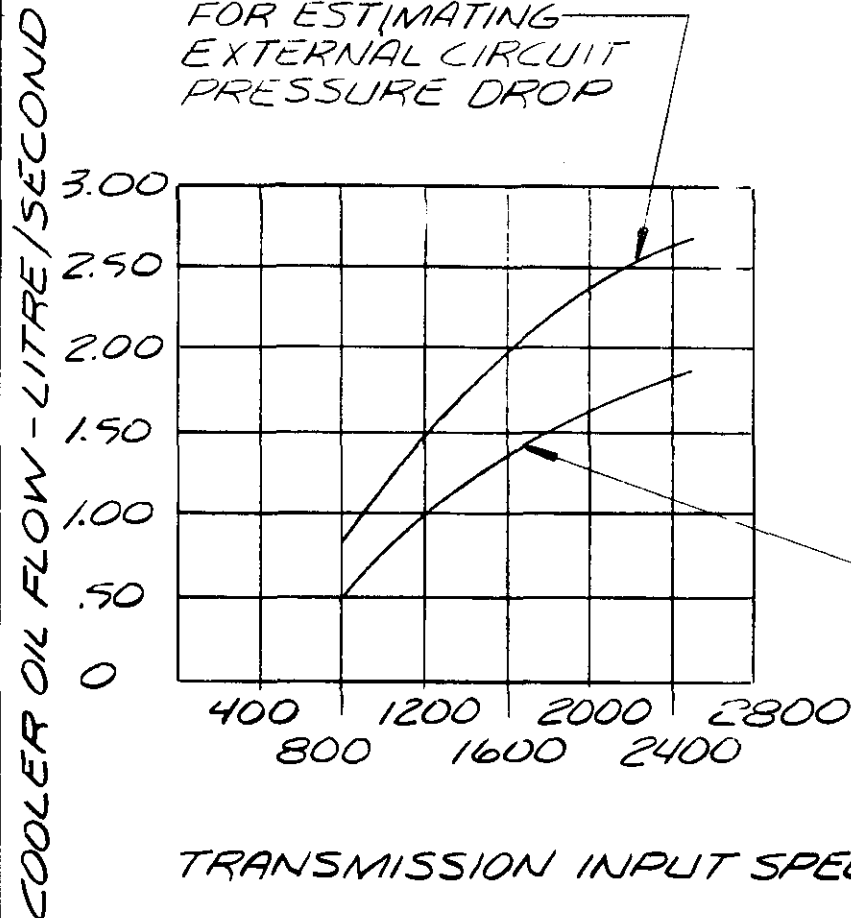
DATE		REV		BY		CHK		APP		TITLE	
1		2		3		4		5		EXTERNAL HYDRAULIC CIRCUIT	
6		7		8		9		10		MODEL CRT 5633	
11		12		13		14		15		AS 56-021	
16		17		18		19		20		Allison Transmissions Division of General Motors, Indianapolis, Indiana	

COOLER OIL FLOW DATA CRT-5633 TRANSMISSION

COOLER CIRCUIT PRESSURE SPECIFICATIONS:

1. AT OPERATING TEMPERATURE
AND MAXIMUM SPEED IN TRAVEL
GEAR-MAXIMUM ALLOWABLE
CONVERTER OUT OIL PRESSURE
448 kPa (4.57 kg/cm²)
MAXIMUM ALLOWABLE EXTERNAL
CIRCUIT PRESSURE DROP 241 kPa
(2.46 kg/cm²)
2. AT OPERATING TEMPERATURE
AND FULL THROTTLE STALL,
MINIMUM ALLOWABLE CONVERTER
OUT OIL PRESSURE 241 kPa
(2.46 kg/cm²)
CUSTOMER TO INSTALL RESTRICTION
IN COOLER RETURN LINE IF
NECESSARY

FOR ESTIMATING
EXTERNAL CIRCUIT
PRESSURE DROP



FOR ESTIMATING
CONVERTER COOLING
REQUIREMENTS

METRIC
ALL DIMENSIONS ARE IN MILLIMETERS
UNLESS OTHERWISE SPECIFIED

THIRD ANGLE
PROJECTION

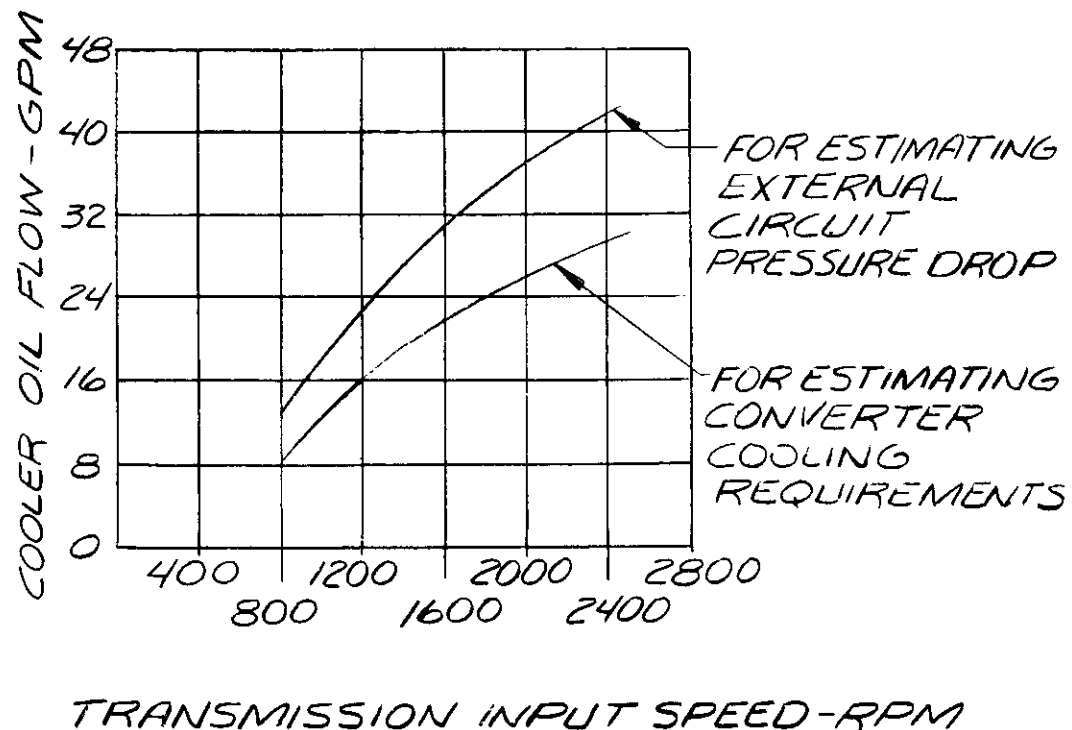
Allison Transmission

SHEET 1 OF 2

COOLER OIL FLOW
CRT-5633 1A56-022

METRIC VALUES	EQUIVALENTS
241 kPa	35 PSI
448 kPa	65 PSI

COOLER OIL FLOW DATA CRT-5633 TRANSMISSION

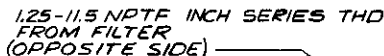




MILLIMETRES TO INCHES



SEE DRAWING - AS 00-046 FOR FILTER BYPASS
SIGNAL SWITCH ASSEMBLY CONFIGURATION



1.25-11.5 NPTF
INCH SERIES THD
TO FILTER
(OPPOSITE SIDE) —

28.57 HEXAGON
2 PLACES

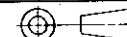
127.00
DIA

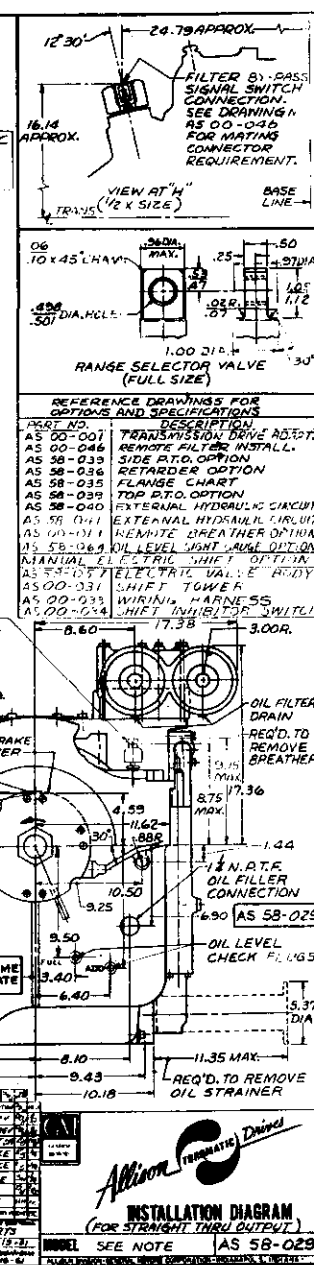
246.88
APPROXIMATE

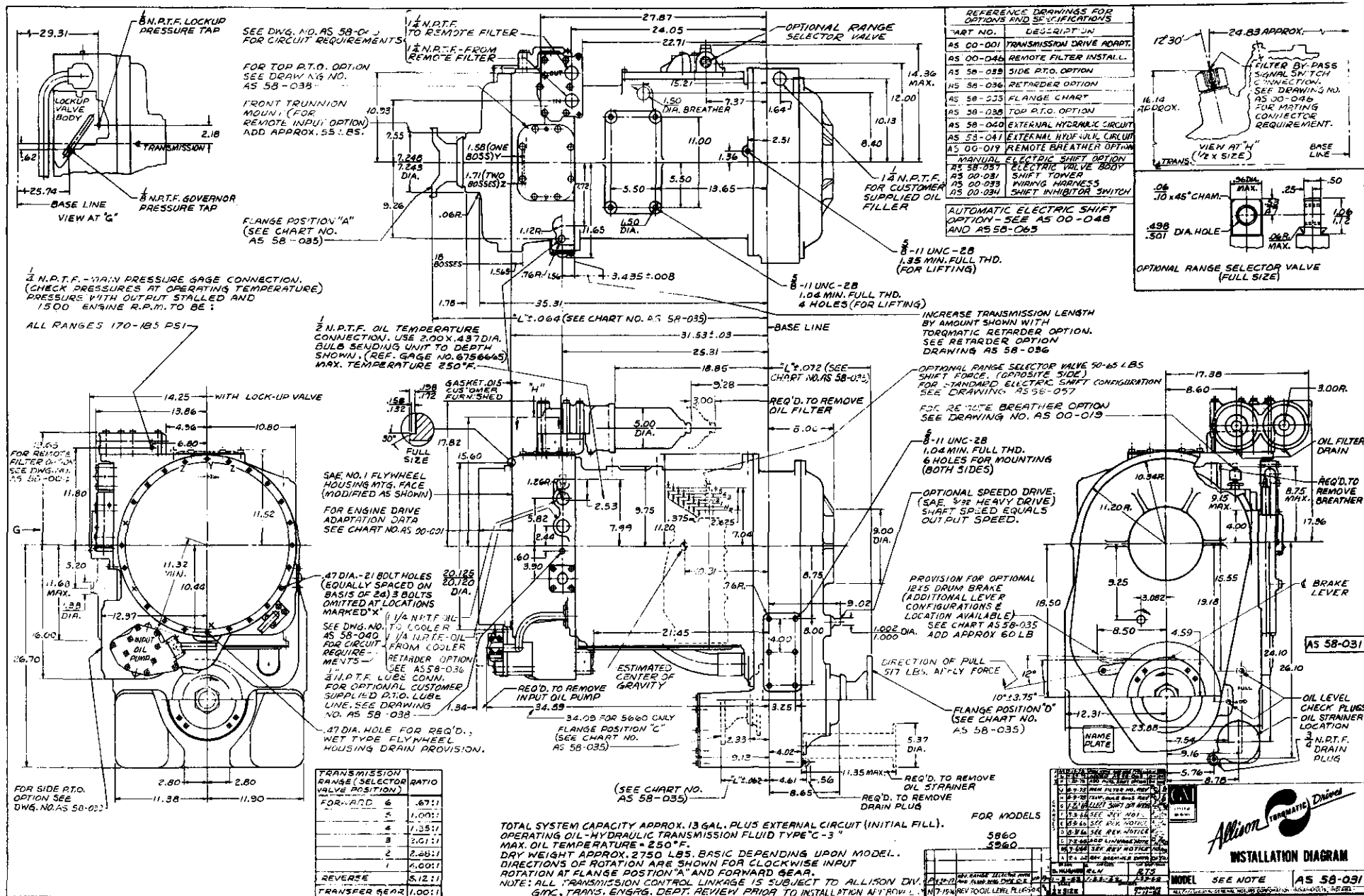
METRIC

ALL DIMENSIONS ARE IN MILLIMETRES,
UNLESS OTHERWISE SPECIFIED

THIRD ANGLE
PROJECTION

[illegible]

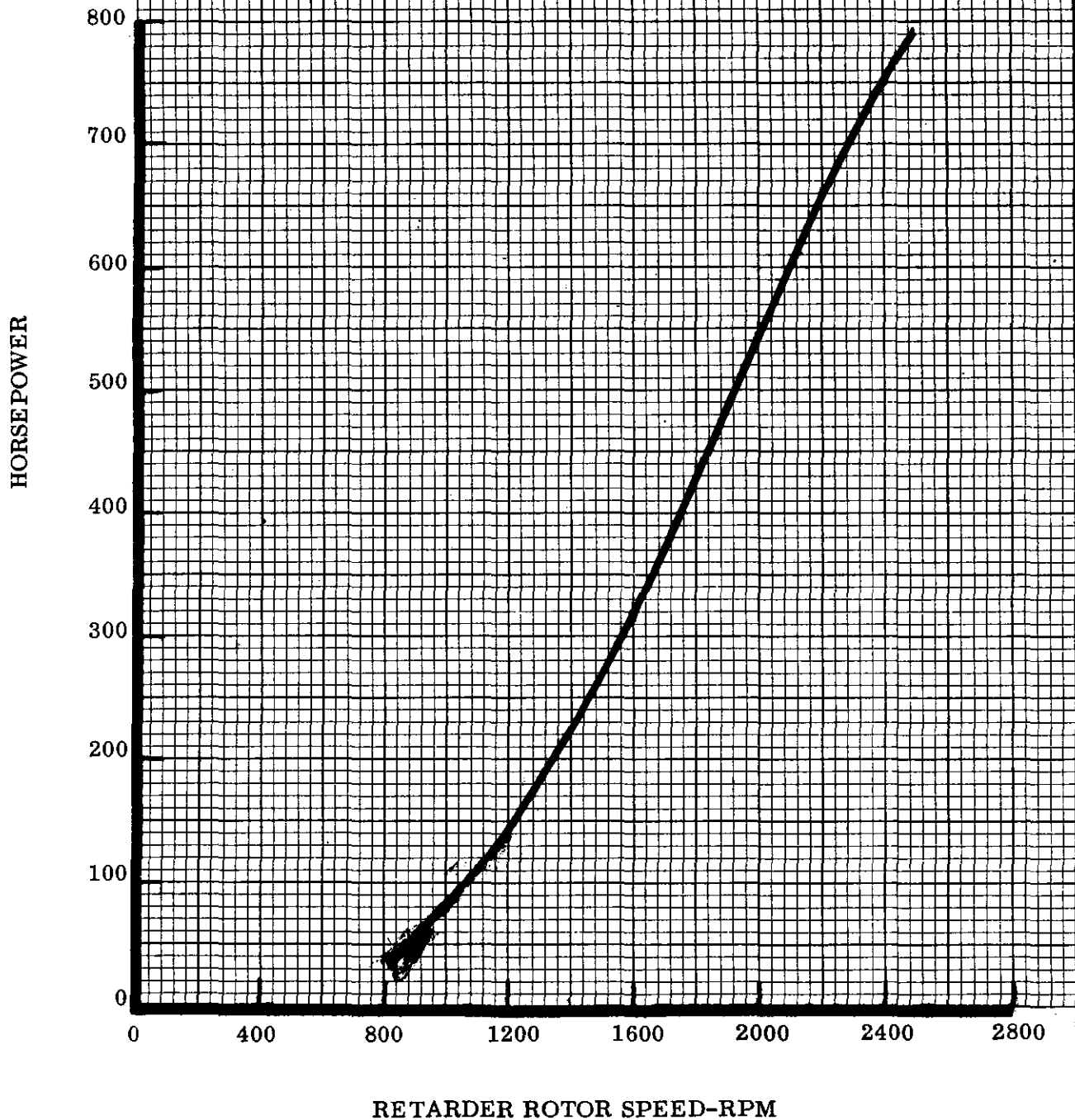




**Allison Transmissions**ENGINEER
RAMSEY
1-25-62PERF. APPR.
RDR
2-11-74

AS-58-032

INTEGRAL HYDRAULIC RETARDER HORSEPOWER ABSORPTION
CHARACTERISTICS
(FULL BRAKING PERFORMANCE)
ALLISON C(L)BT 5860, 5960, AND 6061 TRANSMISSIONS



(CHANGE - B) CONVERTER OIL FLOW NOTE ADDED, 1-28-76
(CHANGE - A) REVISED AND REDRAWN - RAMSEY, 2-8-74

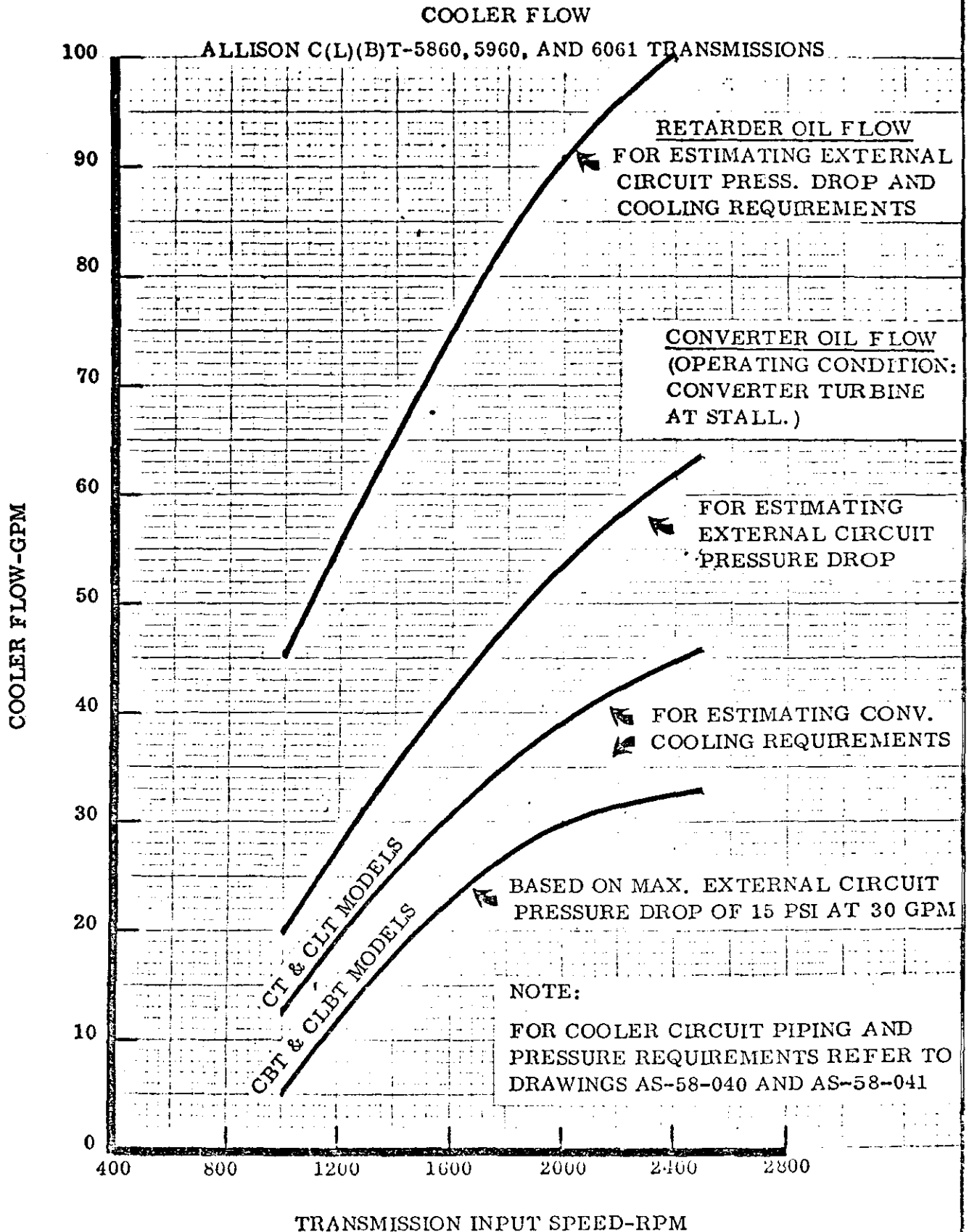


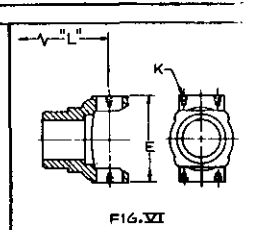
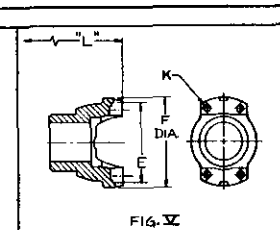
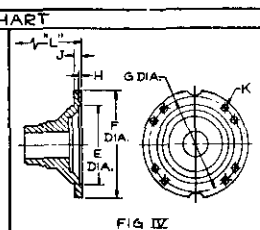
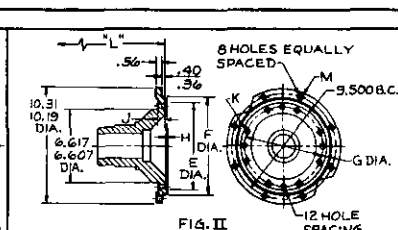
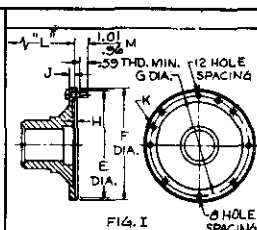
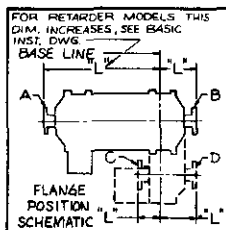
Allison Transmissions

RAMSEY
1-25-62

RDR
2-11-74

AS-58-034

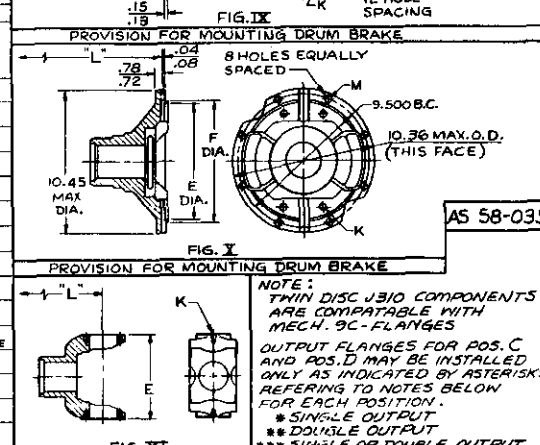
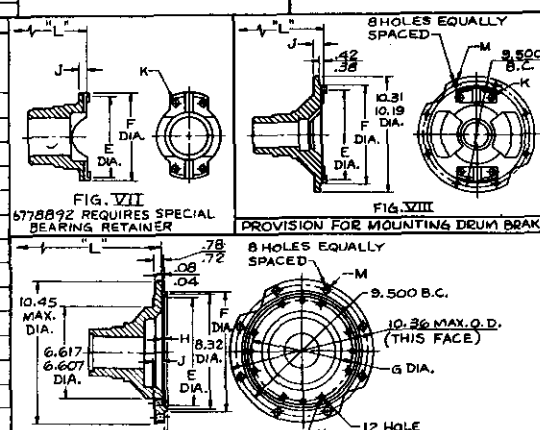




FLANGE DELINEATION CHART

FLANGE						PROVISION FOR MOUNTING DRUM BRAKE										FLANGE DETAIL DIMENSIONS									
POSITION	TYPE	SIZE	FIG. NO.	PART NO.	DETAIL NO.	"L" DIMENSION FOR MODEL & BASIC INSTALLATION						K FOR DRIVE LINE MOUNTING						M FOR PARKING BRAKE DRUM MOUNTING							
						5860 AS 58-031	5860 AS 58-029	5960 AS 58-031	5960 AS 58-029	5630 AS 56-002	5631 AS 56-003	E	F	G	H	J									
A	SPICER	1700	I	6754103	6754103	41.56	41.52	—	—	—	—	7.780 7.752	6.01 7.59	7.250	.050 .060	.390 .370	.377 DIA. 8 HOLES EQUALLY SPACED								
A	SPICER	1700	VI	6770785	6770785	41.15	41.11	—	—	—	—	6.038 6.091	—	—	—	—	.377 DIA. 8 HOLES EQUALLY SPACED								
A	SPICER	1800	I	6752520	6752520	41.56	41.52	41.56	41.52	—	—	7.750 7.752	6.01 7.59	7.250	.050 .060	.390 .370	.433 DIA. 12 HOLES								
A	MECH.	8-C	VII	6769263	6769263	40.56	40.52	40.56	40.52	—	—	8.123 8.125	8.470	—	—	.562	.516 DIA. THRU 4 HOLES								
A	SPICER	1700	VI	6773140	6773140	—	—	—	—	34.08	34.55	6.093 6.091	—	—	—	.377	.377 DIA. 8 HOLES EQUALLY SPACED								
A	SPICER	1850	IX	6834885	6834885	42.54	42.50	42.54	42.50	—	—	8.093 8.091	8.80 8.84	—	—	.377	.377 DIA. 8 HOLES EQUALLY SPACED								
A	MECH.	7-C	VII	6757609	6757609	—	—	—	—	32.56	33.43	5.844 5.844	6.25 6.22	—	—	.521 .541	.521 DIA. THRU 4 HOLES								
A	MECH.	9-C	VII	6774663	6774663	40.78	40.74	40.78	40.74	—	—	8.251 8.249	8.625	—	—	.625	.591 DIA. THRU 4 HOLES								
A	TWIN DISC	J230	VII	6830343	6830343	40.84	40.80	40.84	40.80	—	—	6.501 6.449	6.880	—	—	1.020 1.000	.7-20 THD THRU 4 HOLES								

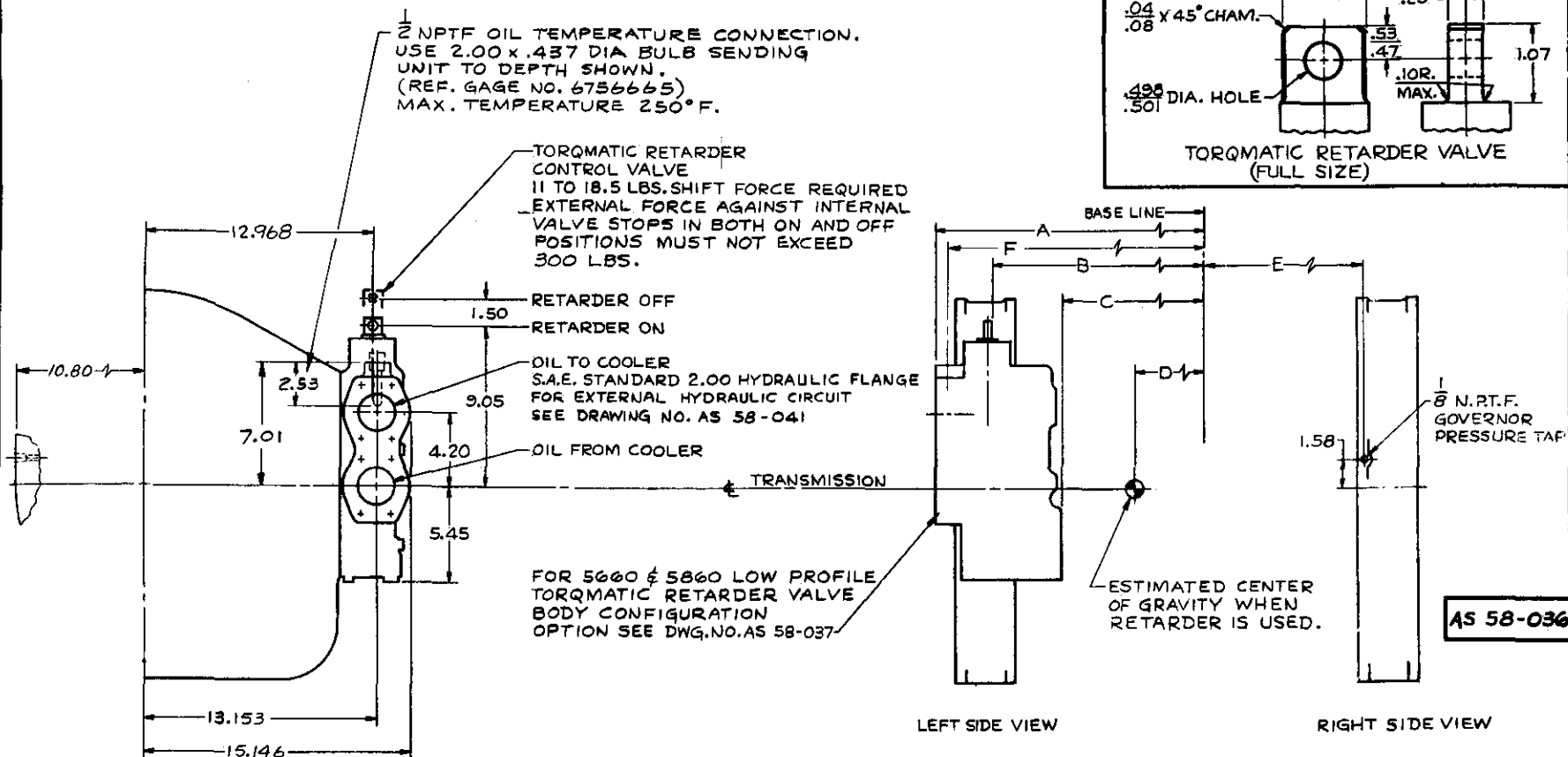
TYPE	SIZE	FIG. NO.	PART NO.	DETAIL NO.	5860 AS 58-031		5860 AS 58-029		5960 AS 58-031		5960-6061 AS 58-029		5630-5631 AS 56-002 AS 56-003		E	F	G	H	J	K FOR DRIVE LINE MOUNTING	M FOR PARKING BRAKE DRUM MOUNTING	
					POS. C	POS. D	POS. B		POS. C	POS. D	POS. B		POS. C	POS. D								
MECH.	8-C	VII	6757572	6769412	*5.74	*12.02	—	—	*5.74	*12.02	—	—	*5.72	*12.02	8.123 8.125	8.51 8.49	—	—	6.35 6.15	454 479	DIA.-THRU 4 HOLES	
MECH.	9-C	VII	6757633	6757623	*6.01	*12.30	—	—	*6.01	*12.30	—	—	*5.99	*12.30	8.249 8.251	8.65 8.68	—	—	6.55 6.35	521	DIA.-THRU 4 HOLES	
MECH.	9-C	VIII	6769940	6769940	—	*15.16	—	—	—	*15.16	—	—	—	*15.16	8.249 8.251	8.68 8.65	—	—	5.90 5.30	20 THD.-85 DEEP MIN. 4 HOLES	1/2 20 THD	
MECH.	9-C	IX	6772116	6772116	—	—	11.62	—	—	—	11.62	—	—	—	8.249 8.251	8.68 8.65	—	—	—	20 THD.-85 DEEP MIN. 4 HOLES	1/2 20 THD	
MECH.	10-C	VII	6774667	6774666	*6.76	—	—	—	*6.76	—	—	—	—	—	8.374 8.375	8.875	—	—	.875	18 THD-THRU 4 HOLES		
SPICER	1800	II	6769929	6769929	—	*15.14	—	—	—	*15.14	—	—	—	—	7.750 7.752	8.687 8.685	7.250	.050	.790	439	DIA. 12 HOLES	1/2 20 THD.
SPICER	1800	IX	6772168	6772168	—	—	11.62	—	—	—	11.62	—	—	—	7.750 7.752	8.687 8.685	7.250	.050	.790	439	DIA. 12 HOLES	1/2 20 THD.
SPICER	1850	IV	6770847	6770826	*6.20	*12.50	—	—	*6.20	*12.50	—	—	—	—	7.000 7.002	9.48 9.46	8.250	.125	.630 6.10	627	DIA. 8 HOLES	PARKING BRAKE MOUNTS BETWEEN FLANGE AND DRIVELINE
MECH.	8-C	VIII	6775916	6775916	—	*15.16	—	—	—	*15.16	—	—	—	—	8.123 8.125	8.687 8.685	—	—	7.750	439	20 THD.-85 DEEP MIN. 4 HOLES	1/2 20 THD.-THRU
MECH.	9-C	VII	6769388	6769387	*6.01	*12.30	—	—	*6.01	*12.30	—	—	*5.99	*12.30	8.249 8.251	8.65 8.39	—	—	6.55 6.15	1/2	20 THD.-THRU 4 HOLES	
MECH.	9-C	VII	6772116	6772116	—	—	10.25	—	—	—	10.25	—	—	—	8.249 8.251	8.68 8.500	—	—	7.750	439	20 THD.-THRU 4 HOLES	
MECH.	9-C	VII	6769630	6769630	*6.01	—	—	—	*6.01	—	—	—	—	—	8.249 8.251	8.65 8.560	—	—	1.00	1/2	20 THD.-85 DEEP MIN. 4 HOLES	
SPICER	1800	I	6770710	6770710	*4.82	*11.11	—	—	*4.82	*11.11	—	—	*4.80	*11.11	7.750 7.752	8.01 8.59	7.250	.050	.370	1/2	20 12 BOLTS (437-435 O.D.)	
SPICER	1850	IV	6774061	6774061	—	—	11.78	—	—	—	11.78	—	—	—	7.000 7.002	9.560 9.558	8.250	.125 1.35	.930 1.930	5	18 THD-THRU 8 HOLES	PARKING BRAKE MOUNTS BETWEEN FLANGE AND DRIVELINE
SPICER	1850	I	6772186	6772185	—	—	—	—	—	—	11.78	—	—	—	7.000 7.002	9.560 9.558	8.250	.125 1.35	.640 1.410	1/2	18 8 BOLTS (625-628 O.D.)	



NOTE:
THIN DISC J310 COMPONENTS ARE COMPATIBLE WITH MECH. 9C-FLANGES
OUTPUT FLANGES FOR POS. C AND POS. D MAY BE INSTALLED ONLY AS INDICATED BY ASTERISKS REFERRING TO NOTES BELOW FOR EACH POSITION.
* SINGLE OUTPUT
** DOUBLE OUTPUT
*** SINGLE OR DOUBLE OUTPUT

DRIVE FLANGE OPTION
MODEL SEE CHART AS 58-035

ALLISON TRANSMISSIONS



OPTIONAL TORQMATIC RETARDER
DRY WEIGHT APPROX. 165 LBS.
(FOR ALL OTHER TRANSMISSION
INSTALLATION DATA SEE BASIC
INSTALLATION DRAWING)

NOTE:
A RETURN SPRING OF SUFFICIENT FORCE
TO GIVE A POSITIVE RETURN OF LINKAGE
AND VALVE TO THE RETARDER OFF
POSITION MUST BE PROVIDED IN THE
RETARDER ACTUATING MECHANISM.

BASIC INSTALLATION DRAWING	DIM."A"	DIM."B"	DIM."C"	DIM."D"	DIM."E"	DIM."F"
AS 58-031	28.35	25.10	21.16	11.1	24.13	27.58
AS 58-029	28.31	25.06	21.12	16.4	24.09	27.54

J						
H						
G						
F						
E						
D						
C	349-75	REV. RETARDER DIMS	ON	WH		
B	18-10-73	ADDED TEMP. BUSS. FINE	1/2			
A	12-28-62	SEE CHG. NOTICE	1/2			
DRAWN	HUGHES	CHECKED	RTS			
1-4-62	1-17-62	1-17-62				
1 SCALE	WELCHER	APPROVED	80NMAN			
1/4 X SIZE	1-12-62	1-12-62				



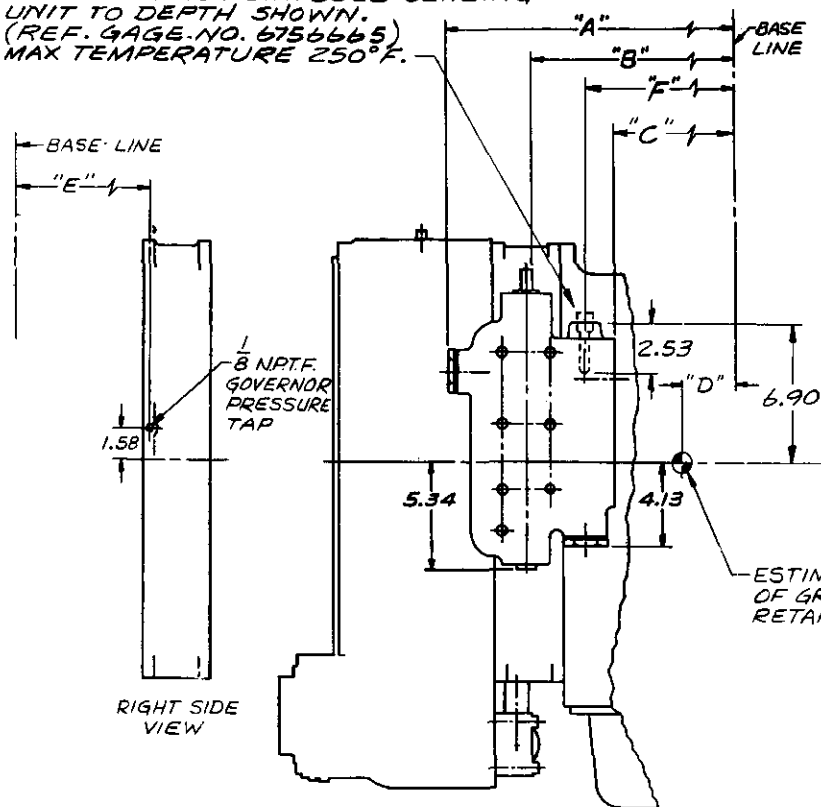
Allison **TORQMATIC** Drives

**TORQMATIC RETARDER
INSTALLATION DIAGRAM**

MODEL CBT & CLBT AS-58-036

ALLISON DIVISION - GENERAL MOTORS CORPORATION - WARREN, MICHIGAN, U.S.A.

1/2 NPTF OIL TEMPERATURE CONNECTION.
USE 2.00 x .437 DIA. BULB SENDING
UNIT TO DEPTH SHOWN.
(REF. GAGE NO. 6756665)
MAX TEMPERATURE 250°F.



LEFT SIDE VIEW

TORQMATIC RETARDER
CONTROL VALVE
EXTERNAL FORCE
AGAINST INTERNAL
VALVE STOPS IN BOTH
ON AND OFF POSITIONS
MUST NOT EXCEED
300 LBS.

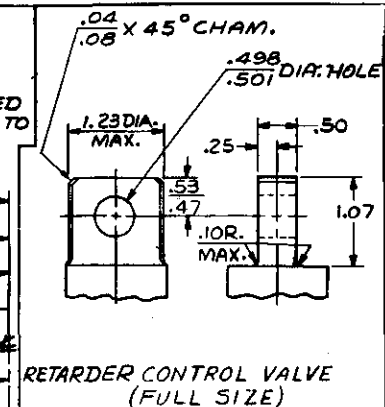
RETARDER OFF
RETARDER ON

OIL TO
COOLER

OIL FROM
COOLER

ESTIMATED CENTER
OF GRAVITY WHEN
RETARDER IS USED.

CLEARANCE REQUIRED
OVER 7 BOLT HEADS TO
REMOVE VALVE BODY.



RETARDER CONTROL VALVE
(FULL SIZE)

S.A.E. STANDARD 2.00
HYDRAULIC FLANGE.
(SEE AS 58-041 FOR
HYDRAULIC CIRCUIT
REQUIREMENTS.)

AS 58-037

OPTIONAL TORQMATIC RETARDER
CONTROL VALVE
DRY WEIGHT APPROX. 165 LBS.
(FOR ALL OTHER TRANSMISSION
INSTALLATION DATA SEE BASIC
INSTALLATION DRAWING)

NOTE:
A RETURN SPRING OF SUFFICIENT
FORCE TO GIVE A POSITIVE RETURN
OF LINKAGE AND VALVE TO THE
RETARDER OFF POSITION MUST BE
PROVIDED IN THE RETARDER
ACTUATING MECHANISM.

BASIC INSTALLATION DRAWING	DIM."A"	DIM."B"	DIM."C"	DIM."D"	DIM."E"	DIM."F"
AS 58-031	29.44	25.10	21.25	11.1	24.13	22.40
AS 58-029	29.40	25.06	21.21	16.4	24.09	22.36

DATE	DESIGNED	CHECKED	BY
HUGHES	RH	BT	
1-8-62	1-17-62	1-17-62	
SCALE	WELCHER	APPROVED	BONHAM
1-12-62	1-12-62		



Allison TORQMATIC Drives

TORQMATIC RETARDER
INSTALLATION DIAGRAM
(LOW PROFILE VALVE BODY)

MODEL CBT & CLBT 5660 AS 58-037
ALLISON DIVISION - GENERAL MOTORS CORPORATION - INDIANAPOLIS, INDIANA

ALLISON DIVISION • GENERAL MOTORS CORPORATION • INDIANAPOLIS, INDIANA

BASE LINE

P.T.O.

"A"

TRANSMISSION

4.12

3.000

"B"

15.502

3.00

2.60

.20R.

15.497

15.507

DOWEL LOC. ONLY

.40R.

"B"

.70

.55

1.12

8.251

8.249

DOWEL LOC. ONLY

.434/DIA.

.4536

(2) DOWELS MARKED "B"

11.36

.815

.805

.48

12.415

12.407

← DRIVE GEAR DATA:
6 PITCH - 25° PRESSURE ANGLE
7.6667 P.D. - 46 TEETH - ENG. SPEED.
AFTER P.T.O. INSTALLATION, BACKLASH
OF .005 TO .025 IS REQUIRED BETWEEN
TRANSMISSION DRIVING GEAR AND
P.T.O. DRIVE GEAR.

FOR ALL OTHER TRANSMISSION
INSTALLATION DATA SEE
BASIC INSTALLATION DWG.

		AS 58-039
BASIC INSTALLATION DRAWINGS		DIM. "A"
AS 58-031		27.24
AS 58-029		27.20

J			
H			
G			
F			
E			
D			
C			
B			
A	1-18-71	ADDED TAP NOTE	U/P

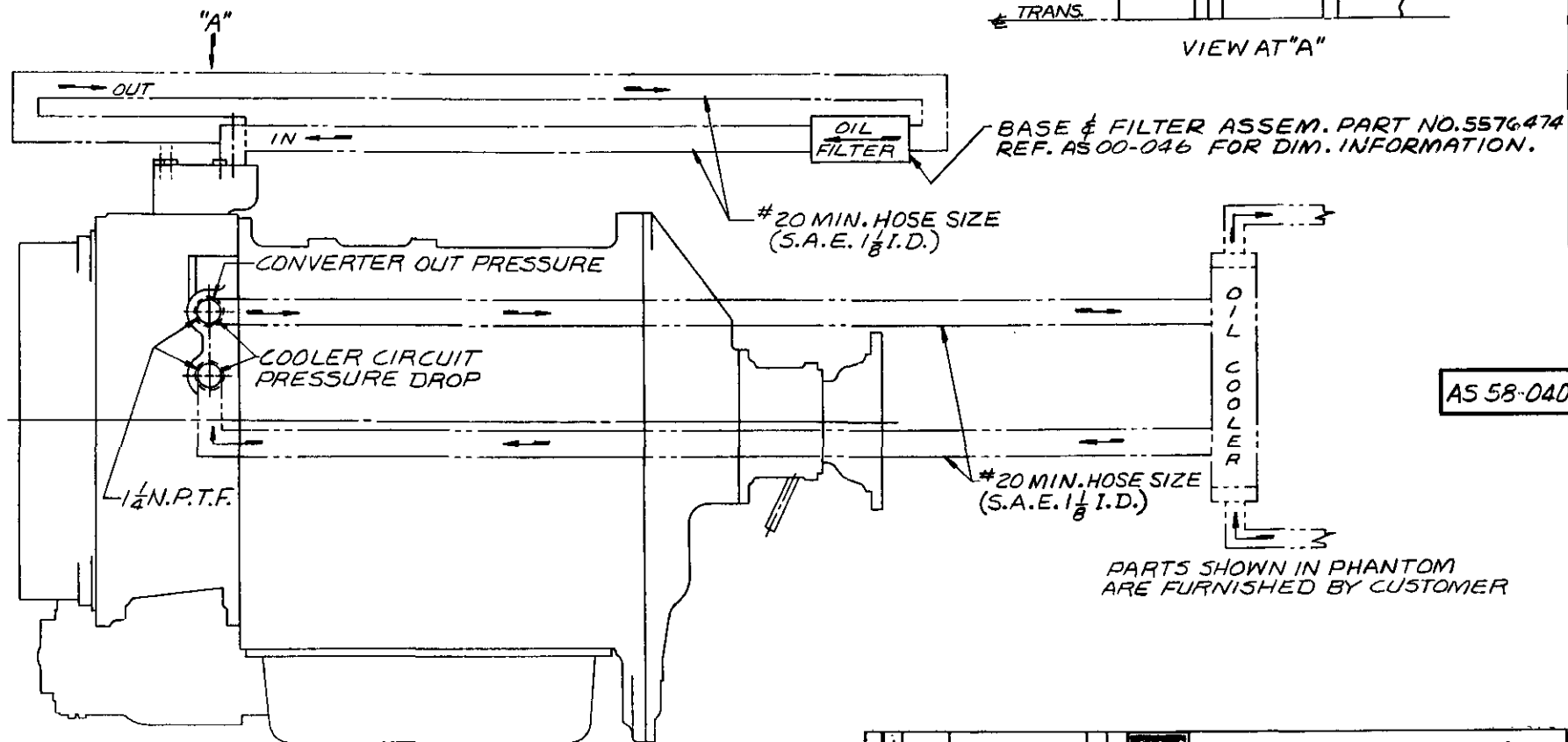
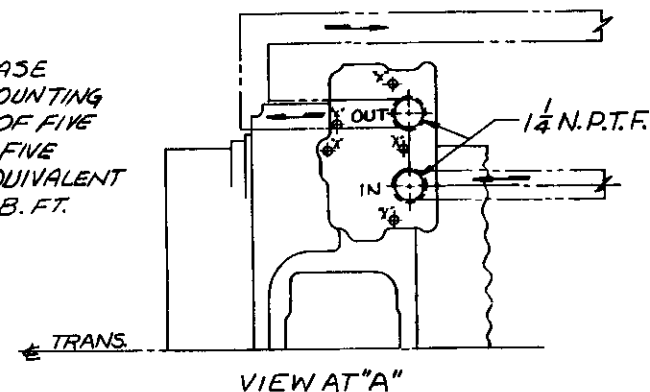
DRY RUN	OIL PRESS	Oil Temp/Fan
HUGHES	CLH	RTS
1-3-62	1-17-62	1-17-62
SCALE	WELCHER APPROVED BONHAM	
SIZE	1-12-62	1-12-62



 SIDE POWER TAKE-OFF
INSTALLATION DIAGRAM

MODEL SEE BASIC INSTALLATION DRAWING **AS 58-039**
 ALLISON DIVISION - GENERAL MOTORS CORPORATION • INDIANAPOLIS, INDIANA •

CUSTOMER REMOVAL OF FILTER BASE FROM TRANSMISSION FOR REMOTE MOUNTING REQUIRES ADDITION BY CUSTOMER OF FIVE $\frac{7}{16}$ -14 $\times$ 3 $\frac{1}{2}$ BOLTS GM P/N 179872 AND FIVE $\frac{7}{16}$ LOCKWASHERS GM P/N 103322 OR EQUIVALENT AT "X" LOCATIONS. TORQUE TO 42-50 LB. FT.



AS 58-040

PARTS SHOWN IN PHANTOM ARE FURNISHED BY CUSTOMER

COOLER CIRCUIT PRESS. SPECIFICATIONS:

1. AT OPERATING TEMPERATURE & MAX. SPEED 6TH GEAR
- MAX. ALLOWABLE CONVERTER OUT OIL PRESS. - 65 P.S.I.
2. MAX. ALLOWABLE EXTERNAL CIRCUIT PRESS. DROP -

REF-AS58-068

REFERENCE:

COOLER OIL FLOW CHART:
CONVERTER OPERATION-AS58-068

HOSE SPECIFICATION:

SAE 100R5 EXCEPT P
OPERATING TEMPERATURE
RANGE FROM - 40°F TO
+ 275°F.

J		GM		Allison TORQMATIC Drives	
H		GENERAL MOTORS			
G					
F					
E					
D					
C					
B					
A		7-1-76 REV PART NO. 58-040		TITLE: EXTERNAL HYDRAULIC CIRCUIT	
DESIGNED BY		DESIGNED BY		MODEL CT & CLT	
HUGHES		RTS		AS 58-040	
1-8-62		1-17-62			
SCALE		APPL. ENG.			
NONE		WELCHER		BOHANN	
		1-12-62		1-12-62	

ALLISON DIVISION - GENERAL MOTORS CORPORATION - INDIANAPOLIS, INDIANA 46203

COOLER CIRCUIT PRESSURE SPECIFICATIONS

1. AT OPERATING TEMPERATURE AND MAX. SPEED 6TH. GEAR, RETARDER OFF.

• MAX. ALLOWABLE CONVERTER OUT OIL PRESSURE — 65 P.S.I.

• MAX. ALLOWABLE EXTERNAL CIRCUIT PRESSURE DROP — REF. A558-065

2. AT OPERATING TEMPERATURE WITH RETARDER IN OPERATION. REFERENCE A558-065 FOR EXTERNAL CIRCUIT PRESSURE DROP

REFERENCE :

COOLER OIL FLOW CHARTS: A558-066 AND A558-067

HOSE SPECIFICATION :

SAE 100R5 EXCEPT OPERATING TEMPERATURE RANGE FROM -40°F TO +275°F.

COOLER CIRCUIT PRESSURE DROP

CONVERTER OUT PRESSURE

TWO S.A.E. STANDARD 2.00 HYDRAULIC FLANGES

OIL TO COOLER

OIL FROM COOLER

#32 MIN. HOSE SIZE (S.A.E. 1 1/8 I.D.)

BASE & FILTER ASSEM. PART NO. 5576474 REF. A500-046 FOR DIM. INFORMATION

TRANS.

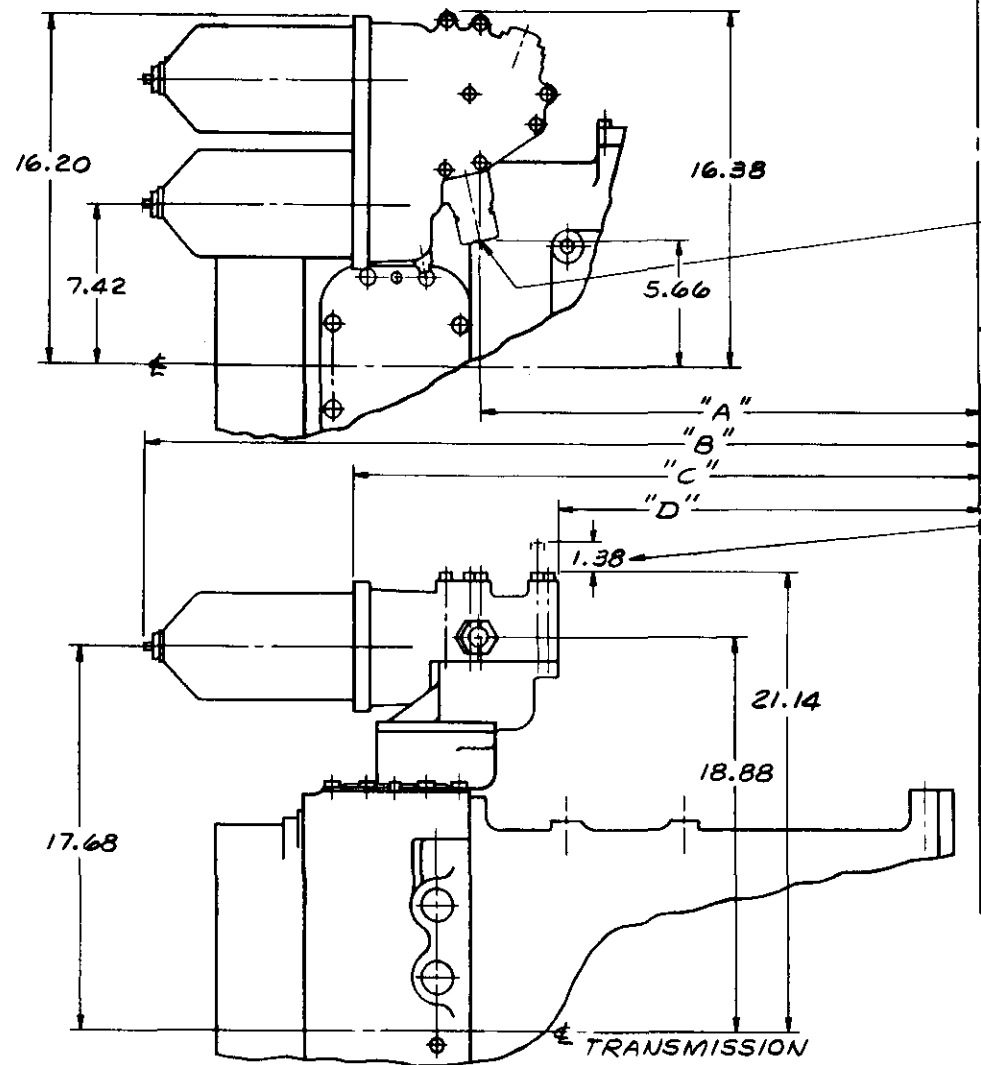
VIEW AT "A"

CUSTOMER REMOVAL OF FILTER BASE FROM TRANSMISSION FOR REMOTE MOUNTING REQUIRES ADDITION BY CUSTOMER OF FIVE 7/16-14 x 3 1/2 BOLTS GM P/N 179872 AND FIVE 7/16 LOCKWASHERS GM P/N 103322 OR EQUIVALENT AT "X" LOCATIONS. TORQUE TO 42-50 LB. FT.

AS 58-041

PARTS SHOWN IN PHANTOM ARE FURNISHED BY CUSTOMER

A 7-76		REV PART NO. 5576474	TITLE:
HUGHES		R.H.	EXTERNAL HYDRAULIC CIRCUIT
1-8-62		1-17-62	MODEL CBT & CLBT
SCALE		PROJ. ENGR. WELCHER	AS 58-041
NONE		1-18-62	ALLISON DIVISION - GENERAL MOTORS CORPORATION - INDIANAPOLIS, INDIANA



FILTER BY-PASS SIGNAL
SWITCH CONNECTION

BASE
LINE

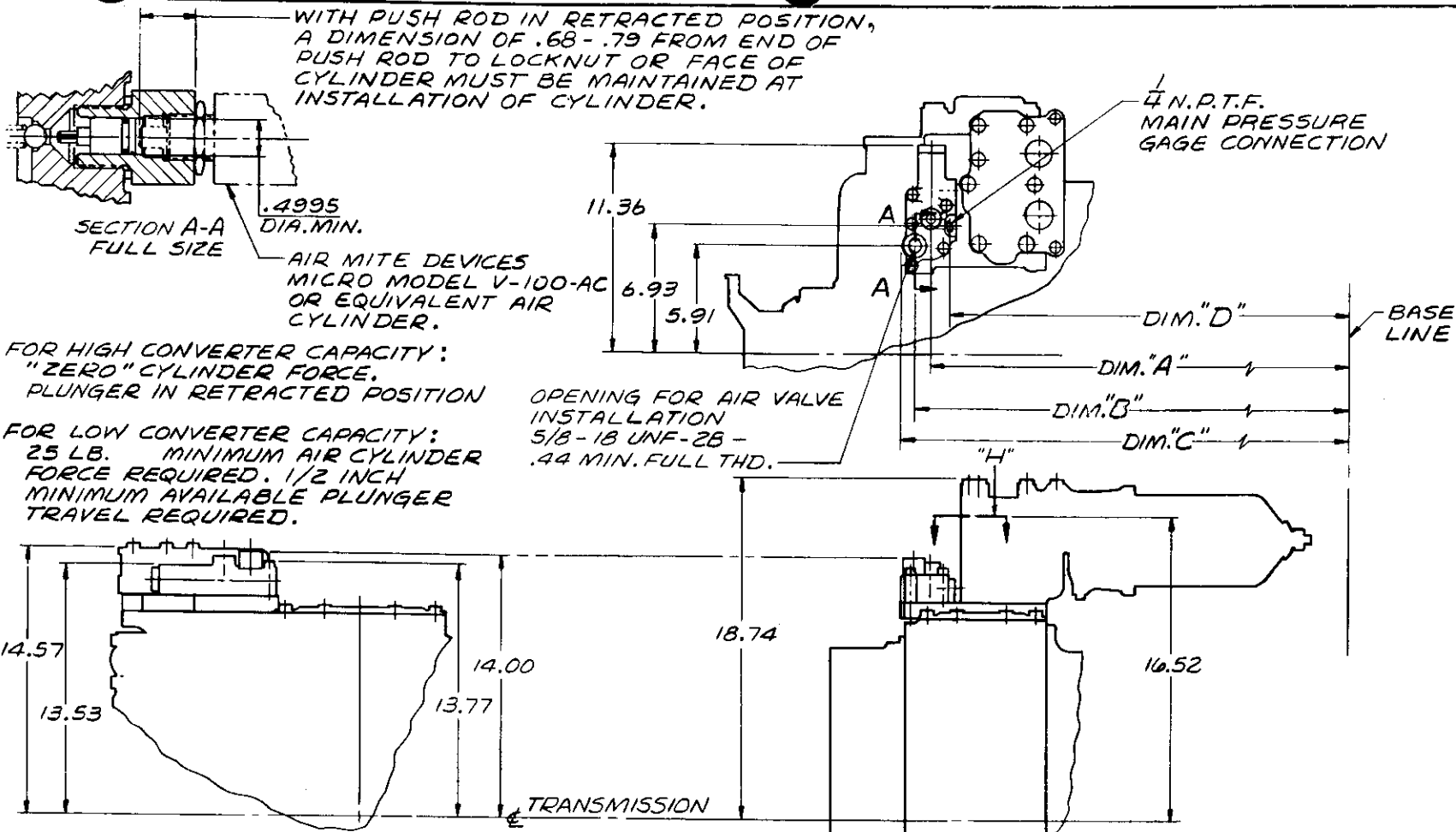
CLEARANCE REQUIRED
OVER BOLT HEADS TO
REMOVE FILTER

AS 58-042

FOR ALL OTHER TRANSMISSION
INSTALLATION DATA SEE BASIC
INSTALLATION DRAWING

BASIC INSTALLATION DWG.	DIM."A"	DIM."B"	DIM."C"	DIM."D"
AS 58-029	23.39	39.17	29.32	19.83
AS 58-031	23.43	39.21	29.36	19.87

J H G F E D C B A	DESIGN			CM GENERAL MOTORS	
	HUGHES				
	5-9-62				
	5-21-62				
SCALE		PROJ. ENGR.	APPL. ENGR.	TITLE: REVERSED FILTER INSTALLATION	
4 x 5 1/2		5-15-62	5-21-62	MODEL SEE BASIC INSTALLATION DWG. AS 58-042	
ALLISON DIVISION - GENERAL MOTORS CORPORATION - INDIANAPOLIS, INDIANA					



AS 58-048

NOTE:

1. AIR MUST NOT BE INTRODUCED INTO VALVE BODY
2. AIR CYLINDER TO ACTUATE VALVE BY MEANS OF PUSH ROD AND PROVIDE POSITIVE RETURN FORCE.

3. TRANSMISSION ENGINEERING DEPARTMENTS APPROVAL IS A PREREQUISITE TO USE OF ACTUATING MECHANISM.

FOR ALL TRANSMISSION INSTALLATION DATA NOT SHOWN SEE BASIC INSTALLATION DRAWING

PARTS SHOWN IN PHANTOM ARE TO BE FURNISHED BY CUSTOMER

BASE INSTALLATION DRAWING	DIM. A	DIM. B	DIM. C	DIM. D
AS 58-020	2.27	30	31	
AS 58-048	2.27	30	31	

CHANGES	DATE	BY	REASON
J			
H			
G			
F			
E			
D			
C			
B	5-20-66	SEE REV. NOTICE	
A	3-17-66	WHS	



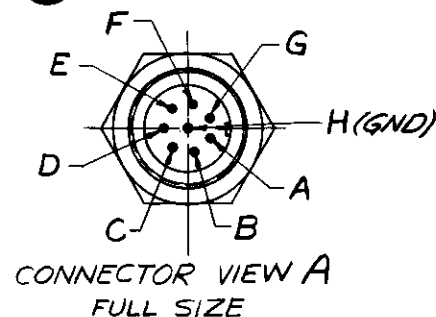
5660, 5660, 5960 AND 6061 AS 58-048

TRANSMISSION RANGE	SOLENOID						
	A	B	C	D	E	F	G
6					X		X
5					X	X	
4				X			X
3				X		X	
2			X				X
1			X			X	
N	X					X	
R	X	X				X	

CONNECTOR PIN	A	B	C	D	E	F	G
NEU							
REV							
LO							
INT							
HI							
SLO							
SHI							

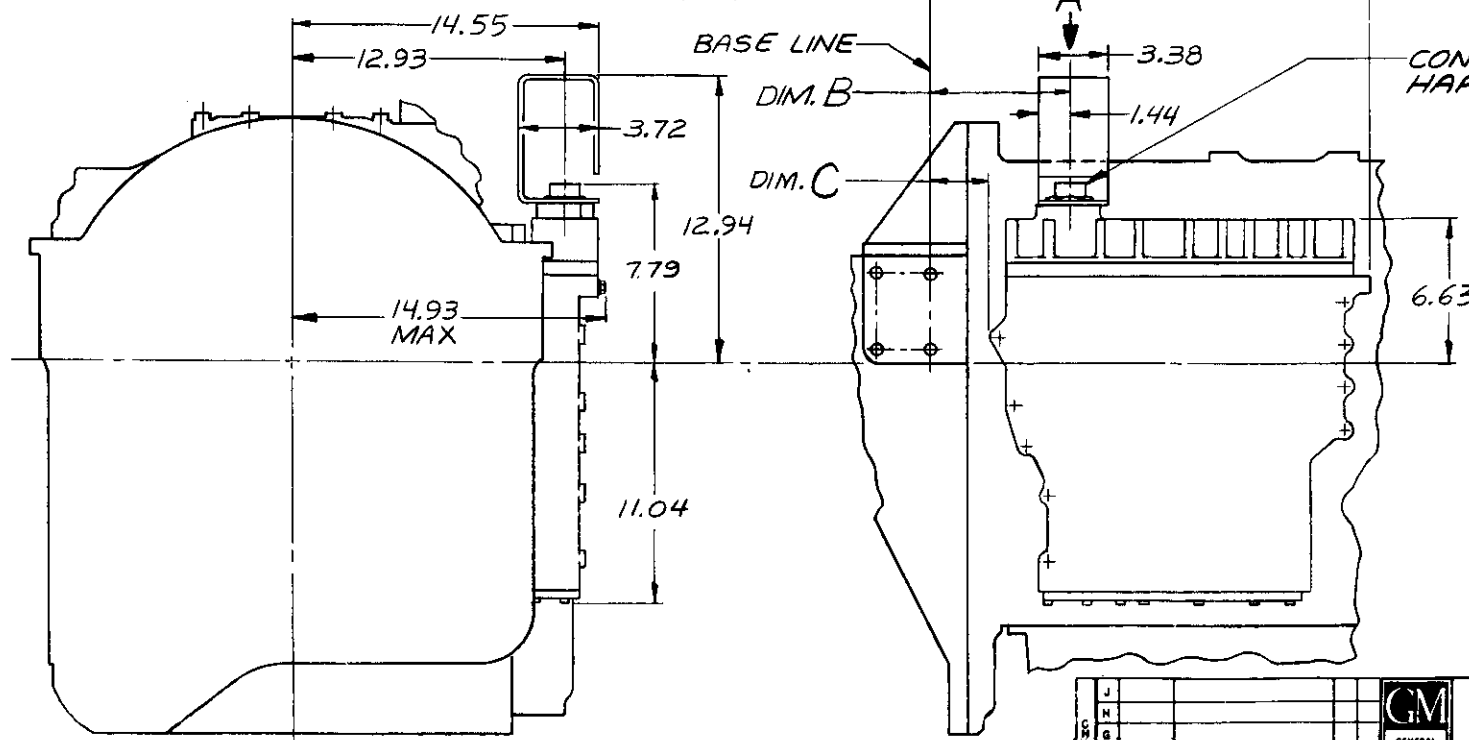
FAIL SAFE IN RANGE - TOTAL ELECTRIC FAILURE LEAVES THE TRANSMISSION IN THE RANGE IT WAS IN WHEN FAILURE OCCURED EXCEPT FOR REVERSE

FOR FAIL SAFE IN NEUTRAL, SOLENOIDS "A" AND "G" ARE NOT INCLUDED IN THE VALVE BODY ASSEM



REQUIRED TO ACTUATE EACH SOLENOID -
24 VOLT SUPPLY-APPROX 0.3 AMPS
12 VOLT SUPPLY-APPROX 0.6 AMPS

NOTE:
SOLENOIDS FOR 24 VOLT AND 12 VOLT SYSTEMS ARE DIFFERENT AND WILL OPERATE SATISFACTORILY ONLY WITH PROPER VOLTAGE



AS 58-057

REF. BASIC INSTALLATION DRAWING	DIMENSIONS		
	A	B	C
AS 58-029	20.42	6.43	2.78
AS 58-031	20.46	6.47	2.82

FOR INSTALLATION DATA NOT SHOWN SEE BASIC INSTALLATION DRAWING AND DRAWINGS AS 00-031, AS 00-033, AND AS 00-034.

J	
H	
G	
F	
E	
D	12-10-69 (1) ADDED BRACKET
C	7 MAR 69 (1) WAS "6.24"
B	1-17-69 ADDED AS 00-034 LC
A	1-2-69 REV. NOTES
DATE	1-2-69
BY	RLH
CHKD	5-10-66
APPROV	FOX
DATE	4-20-66



Allison TORQUEMATIC Drives

TITLE: ELECTRIC SHIFT CONTROL OPTION

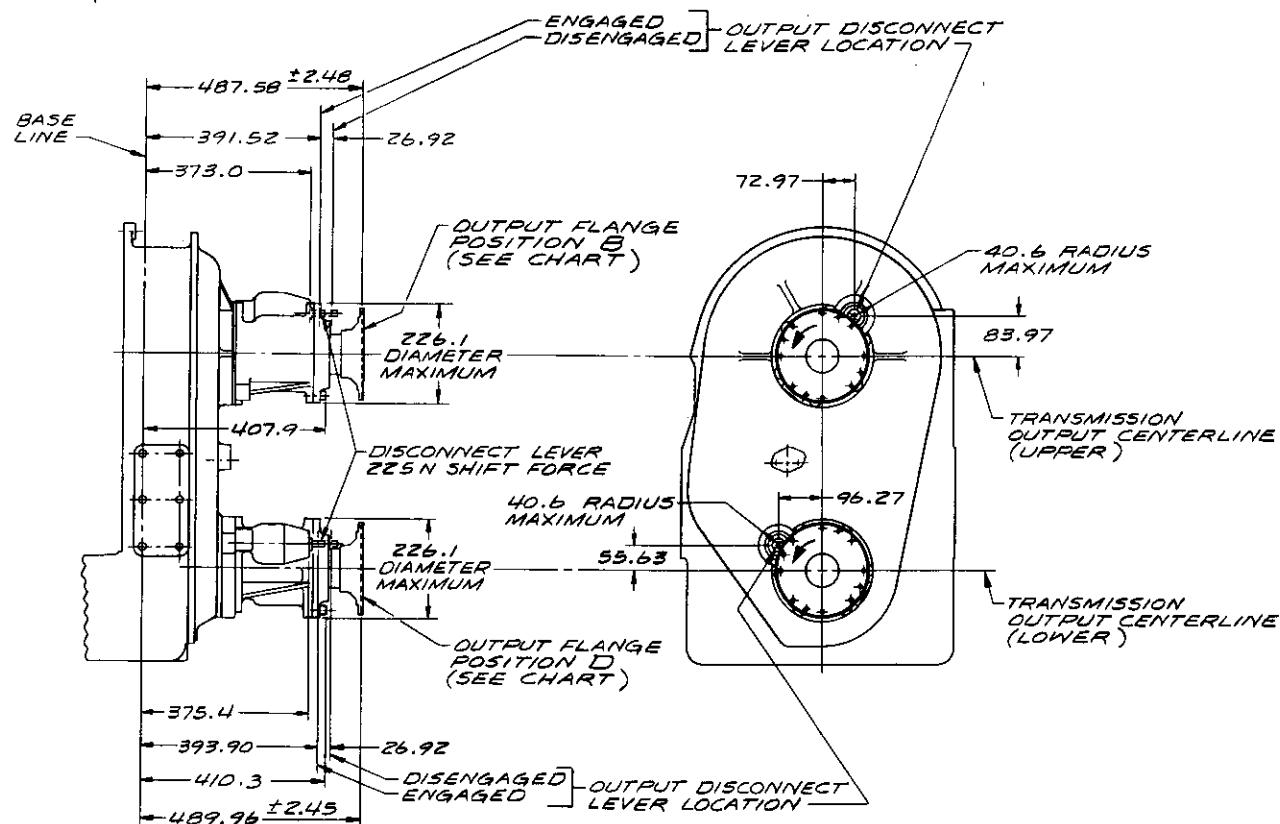
MODEL CLT, CLBT-5000, 6000 AS 58-057

ALLISON DIVISION-GENERAL MOTORS CORPORATION-INDIANAPOLIS, INDIANA, U.S.A.

REF. XAS 58-050

MILLIMETRES TO INCHES			
mm MIN/NOM	mm MAX	in. MIN/NOM	in. MAX
1.3	1.8	.05	.07
2.45	1.8	.097	.07
2.48		.098	
6.35		.250	
12.45	12.95	.490	.510
26.92		1.060	
28.19	28.43	1.11	1.119
	28.70		1.13
	40.6		1.60
55.63		2.190	
72.97		2.873	
83.97		3.306	
96.27		3.793	
373.0	226.1	14.69	8.90
375.4		14.78	
391.52		15.414	
393.90		15.508	
407.9		16.06	
410.3		16.15	
487.58		19.196	
489.96		19.289	

METRIC VALUE	EQUIVALENT
225 N 36 kg	50 POUNDS 80 POUNDS

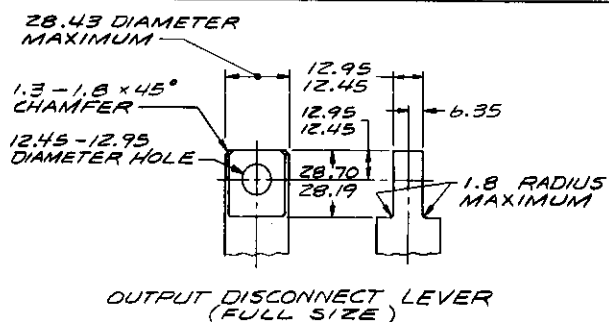


AS 58-061

OPTIONAL REAR OUTPUT DISCONNECTS

FOR TRANSMISSION INSTALLATION
DATA NOT SHOWN SEE BASIC
INSTALLATION DRAWING AS 58-031
ADDITIONAL WEIGHT = APPROXIMATELY
36 kg EACH DISCONNECT

NOTE:
TRANSMISSIONS AVAILABLE WITH
EITHER UPPER, LOWER OR BOTH
DISCONNECTS



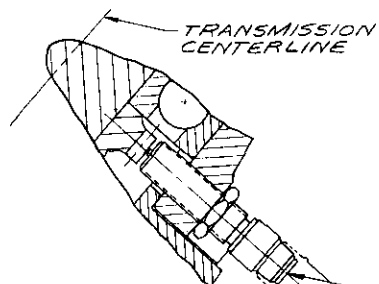
METRIC
ALL DIMENSIONS ARE IN MILLIMETRES,
UNLESS OTHERWISE SPECIFIED

THIRD ANGLE
PROJECTION

Allison Transmissions

TITLE: REAR OUTPUT
DISCONNECT OPTIONS
MODEL CLBT 5860 AS 58-061
Detroit Diesel Allison Division of General Motors - Indianapolis, Indiana

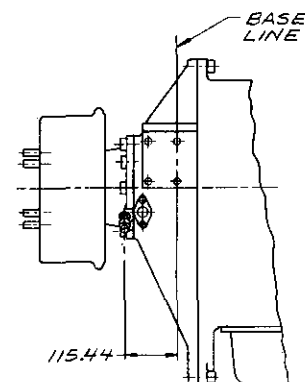
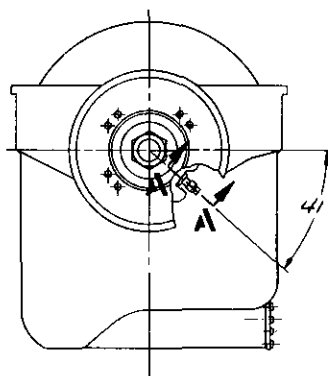
MILLIMETRES TO INCHES			
mm MIN/NOM	mm MAX	in. MIN/NOM	in. MAX
115.44		4.545	



SECTION A-A
SCALE - FULL

TO ADJUST PICKUP TO PROPER
DEPTH SCREW IN UNTIL PICKUP
CONTACTS GEAR. BACK OFF
3/4 TURN AND LOCK JAM NUT

WIRING HARNESS CONNECTOR INSTALLED
(FOR WIRING HARNESS CONNECTION
SEE DRAWING AS 00-042)



AS 58-062

FOR TRANSMISSION
INSTALLATION DATA NOT
SHOWN, SEE BASIC
INSTALLATION DRAWING
AS 58-029

METRIC
ALL DIMENSIONS ARE IN MILLIMETRES,
UNLESS OTHERWISE SPECIFIED

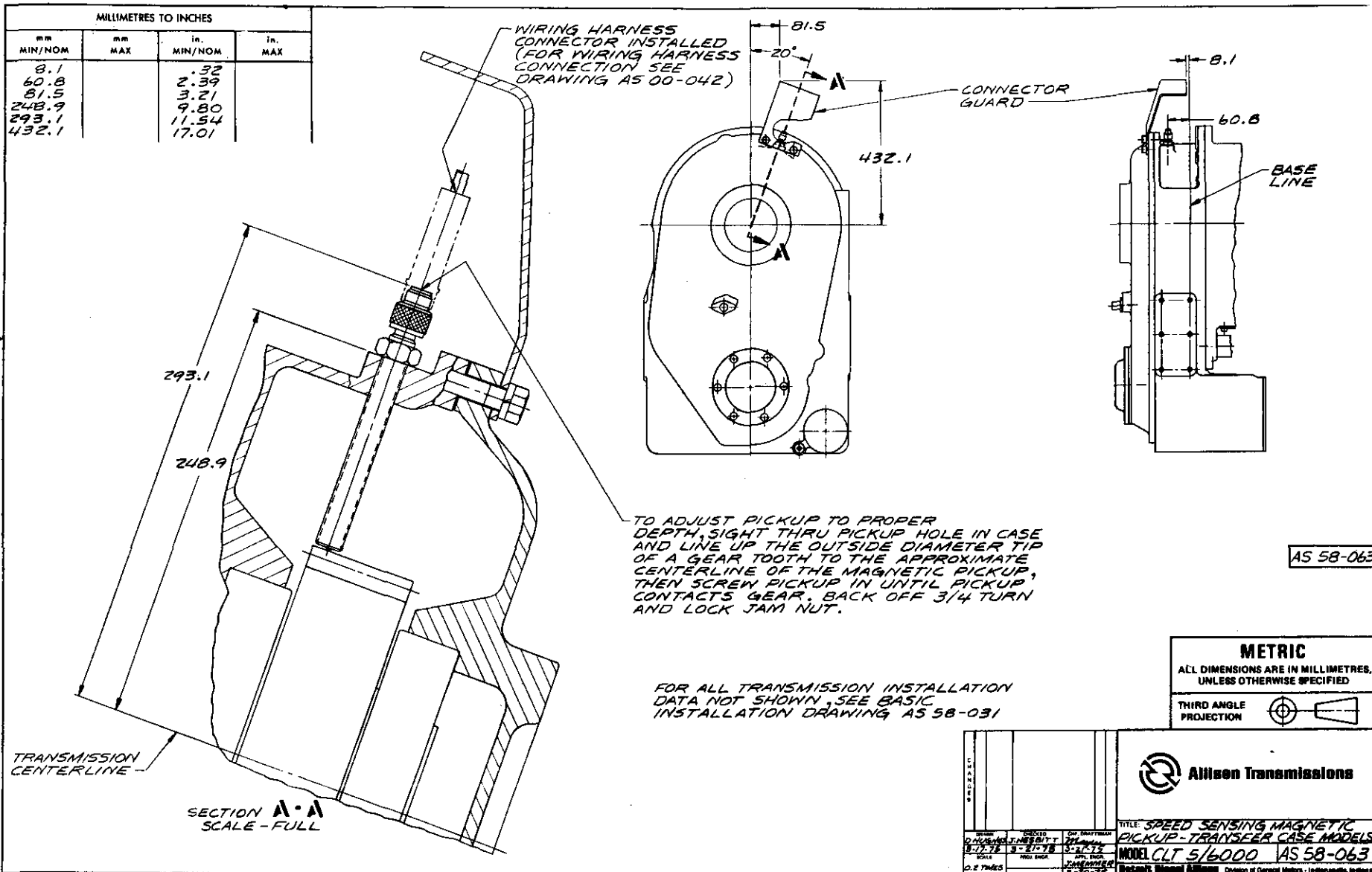
THIRD ANGLE
PROJECTION



TITLE: SPEED SENSING MAGNETIC
PICKUP-STRAIGHT THRU MODELS
MODEL CLT 5/6000 AS 58-062
Detroit Diesel Allison Division of General Motors - Indianapolis, Indiana

DATE	CHECKED	BY	DATE
3-14-75	J. HESBITT	J. HESBITT	3-14-75
D. S.	1. HESBITT	1. HESBITT	3-14-75
THREE			

MILLIMETRES TO INCHES			
mm MIN/NOM	mm MAX	in. MIN/NOM	in. MAX
8.1		.32	
60.8		2.39	
81.5		3.21	
248.9		9.80	
293.1		11.54	
432.1		17.01	



CHECKING OIL LEVEL:

COLD CHECK

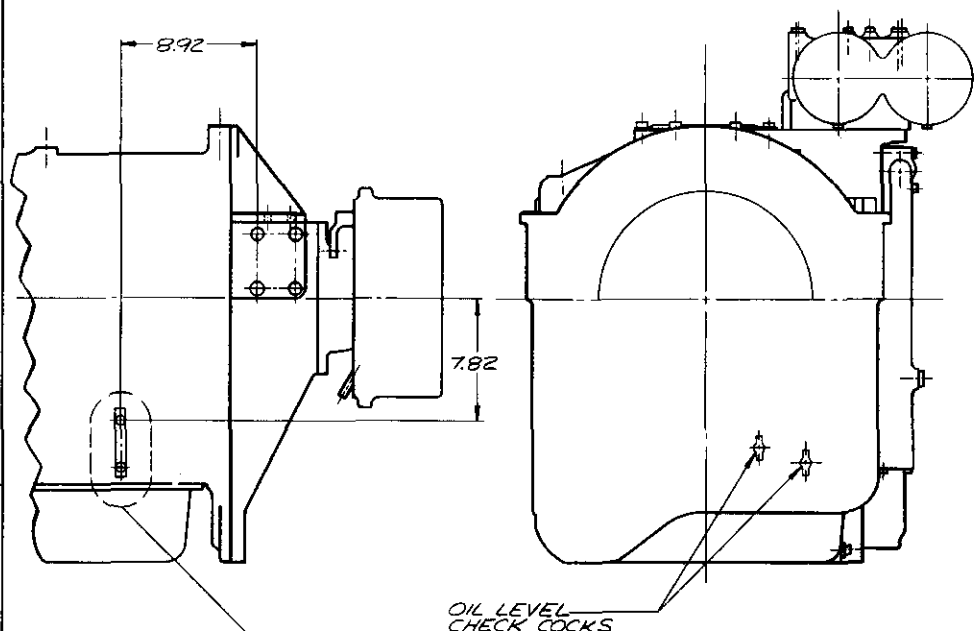
THE COLD OIL CHECK (ENGINE NOT RUNNING), IS MADE ONLY TO DETERMINE IF THERE IS SUFFICIENT OIL TO PERMIT SAFE STARTING OF THE ENGINE. THE OIL LEVEL SHOULD BE VISIBLE IN THE TOP HALF OF THE SIGHT GAGE.

HOT CHECK

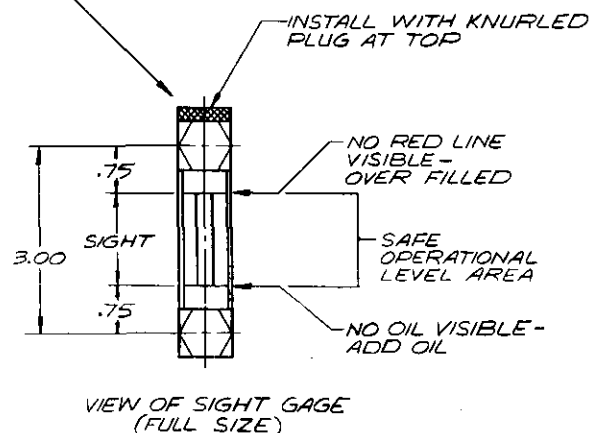
THE HOT OIL CHECK IS MADE TO DETERMINE IF THERE IS SUFFICIENT OIL FOR WORKING OPERATION OF THE TRANSMISSION. THIS CHECK IS MADE WITH THE VEHICLE STANDING LEVEL AND THE TRANSMISSION AT NORMAL OPERATING TEMPERATURE (180°-200°F). AFTER THE ENGINE HAS BEEN RUNNING A FEW MINUTES AT ENGINE IDLE (APPROX 650 RPM) THE OIL LEVEL MUST BE VISIBLE IN THE RANGE OF THE SIGHT GAGE.

ADDITIONAL MEANS TO CHECK OIL LEVEL:

IN THE EVENT THAT VISUAL OBSERVATION OF THE SIGHT GAGE IS RESTRICTED, OIL LEVEL CHECK PLUGS ARE LOCATED AT THE REAR OF THE TRANSMISSION.



OIL LEVEL CHECK COCKS



VIEW OF SIGHT GAGE (FULL SIZE)

AS 58-064

FOR INSTALLATION DATA NOT SHOWN SEE BASIC INSTALLATION DRAWING AS 58-029 AND AS 58-031



CHANGES		TITLE: SIGHT GAGE OIL LEVEL CHECKING OPTION	
DESIGN	POWELL	DESIGN	H. CLARK
DATE	4-15-76	DATE	4-15-76
BY	POWELL	BY	H. CLARK
DATE	4-15-76	DATE	4-15-76
MODEL CLT 5000/6000 AS 58-064		Allison Transmissions Division of General Motors - Indianapolis, Indiana	



Allison Transmissions

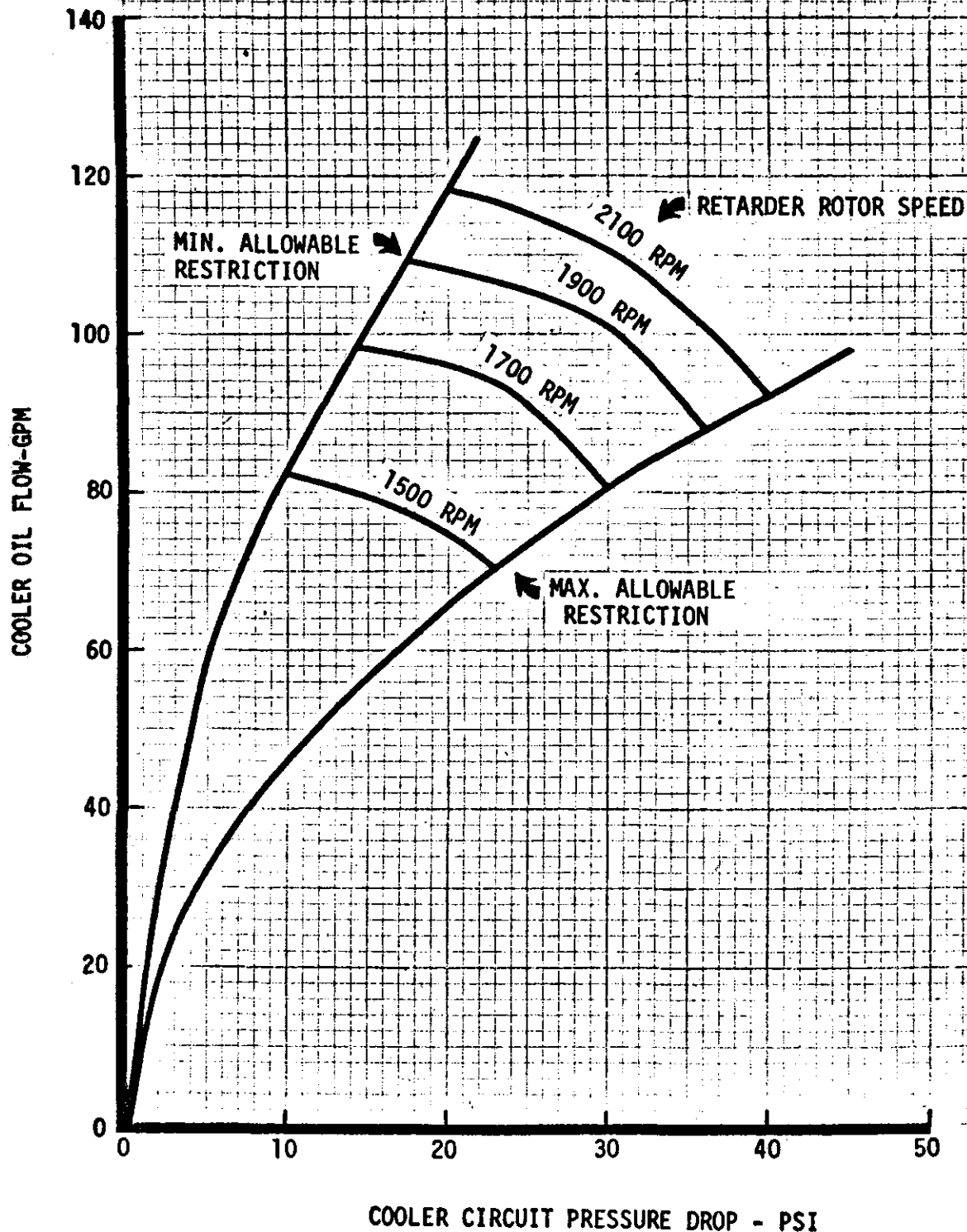
ENGINEERED BY
D. A. MEMMER
4-6-76

DATE CORRECTED
RDR
6-16-76

AS 58-065

COOLER CIRCUIT OIL FLOW-PRESSURE DROP
(RETARDER FULLY APPLIED OR CONVERTER TURBINE @ STALL)
CLBT-5860, 5960, AND 6061 TRANSMISSIONS

REF.-INSTRUCTION SHEET AS58-069





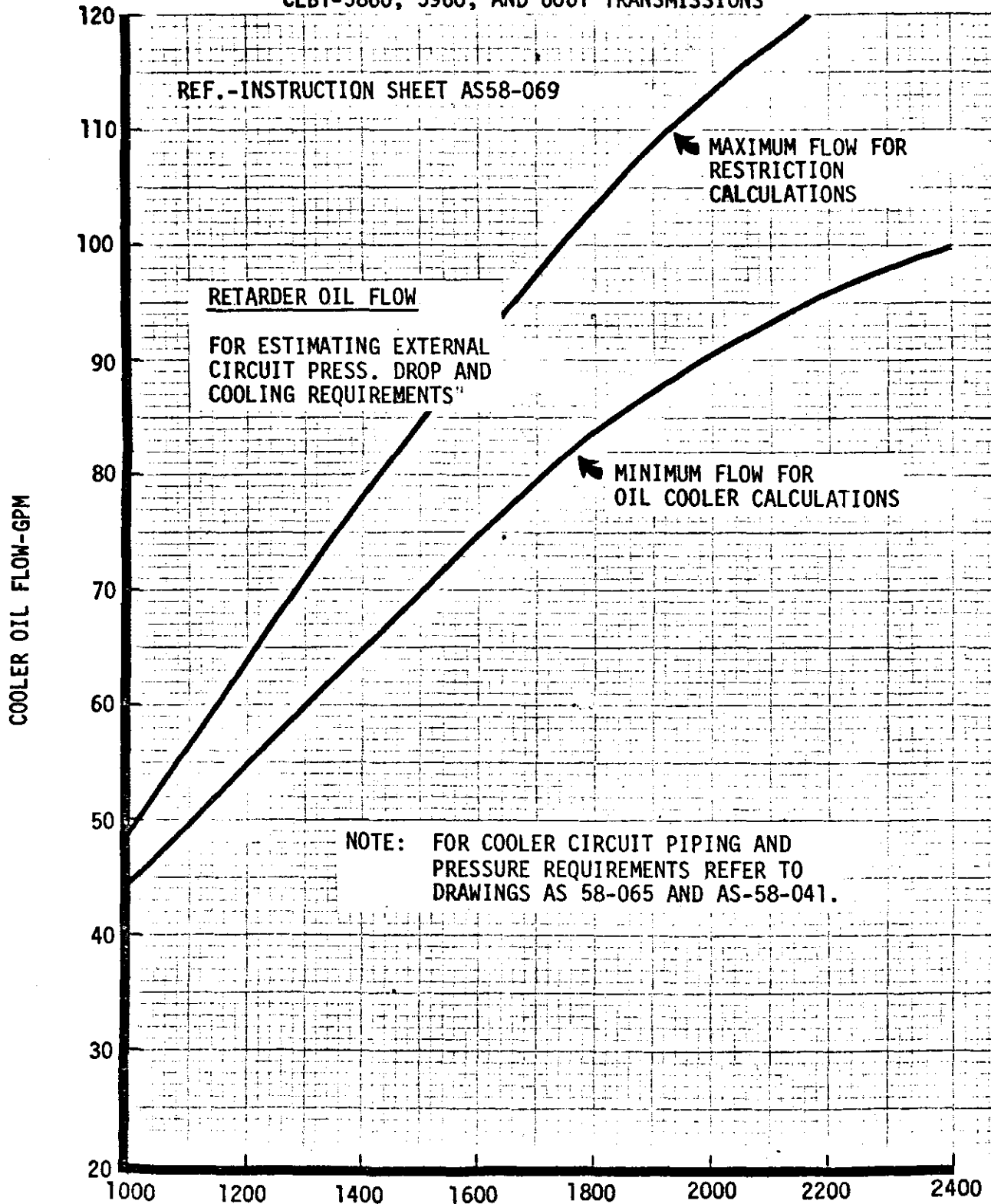
Allison Transmissions

J. A. MEMMER
4-12-76

RDR
6-16-76

AS 58-066

**COOLER CIRCUIT OIL FLOW
(RETARDER OPERATION)
CLBT-5860, 5960, AND 6061 TRANSMISSIONS**



NOTE EQUIVALENT TO ENGINE SPEED (IN CONV. L.U.)



Allison Transmission

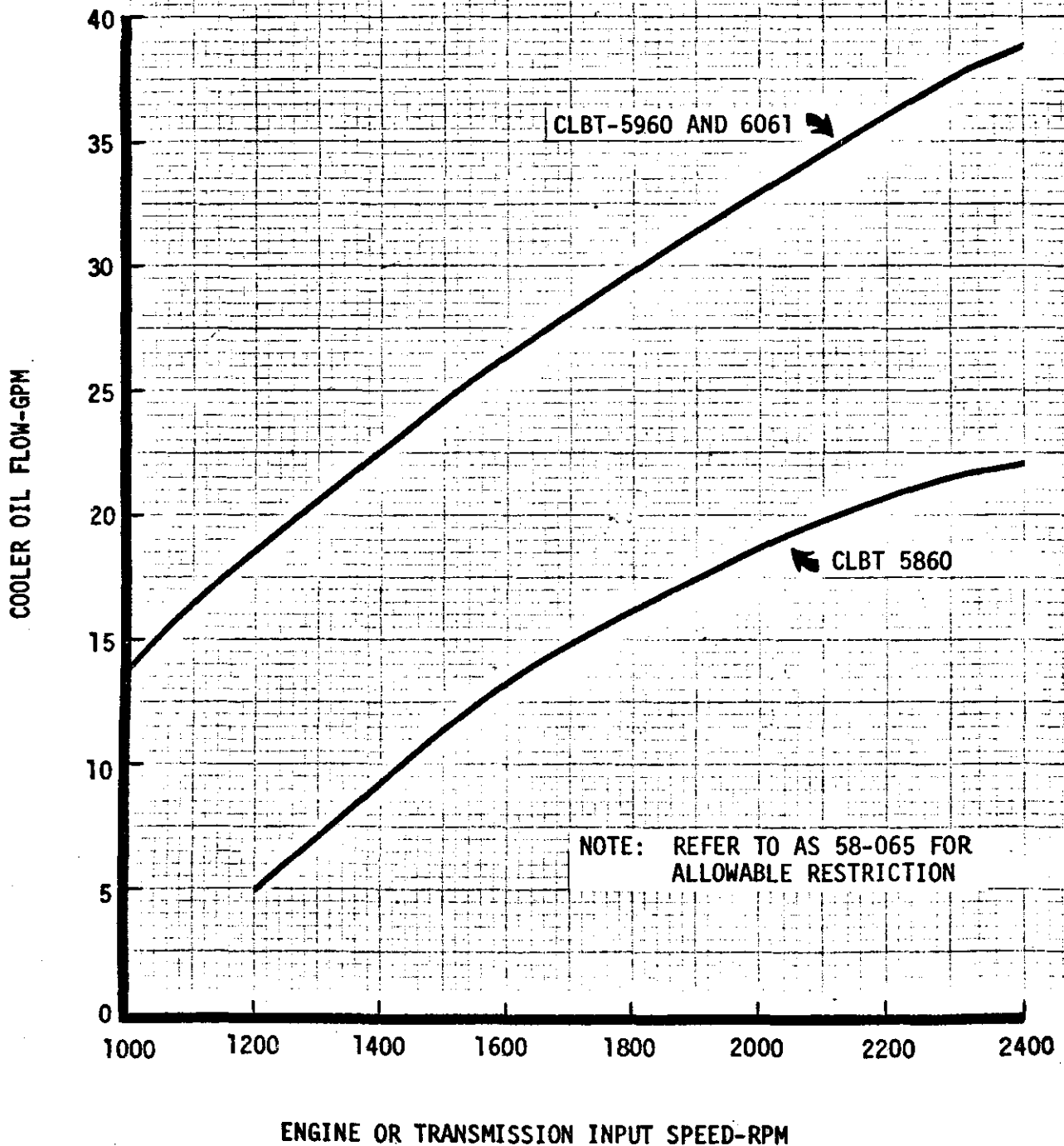
J. A. MEMMER
4-12-76

ROR
6-16-76

AS 58-067

**COOLER CIRCUIT OIL FLOW
CONVERTER OPERATION-TURBINE @ STALL AND 70% CONVERTER EFFICIENCY POINT
CLBT-5860, 5960, AND 6061 TRANSMISSIONS**

REF.-INSTRUCTION SHEET AS58-069

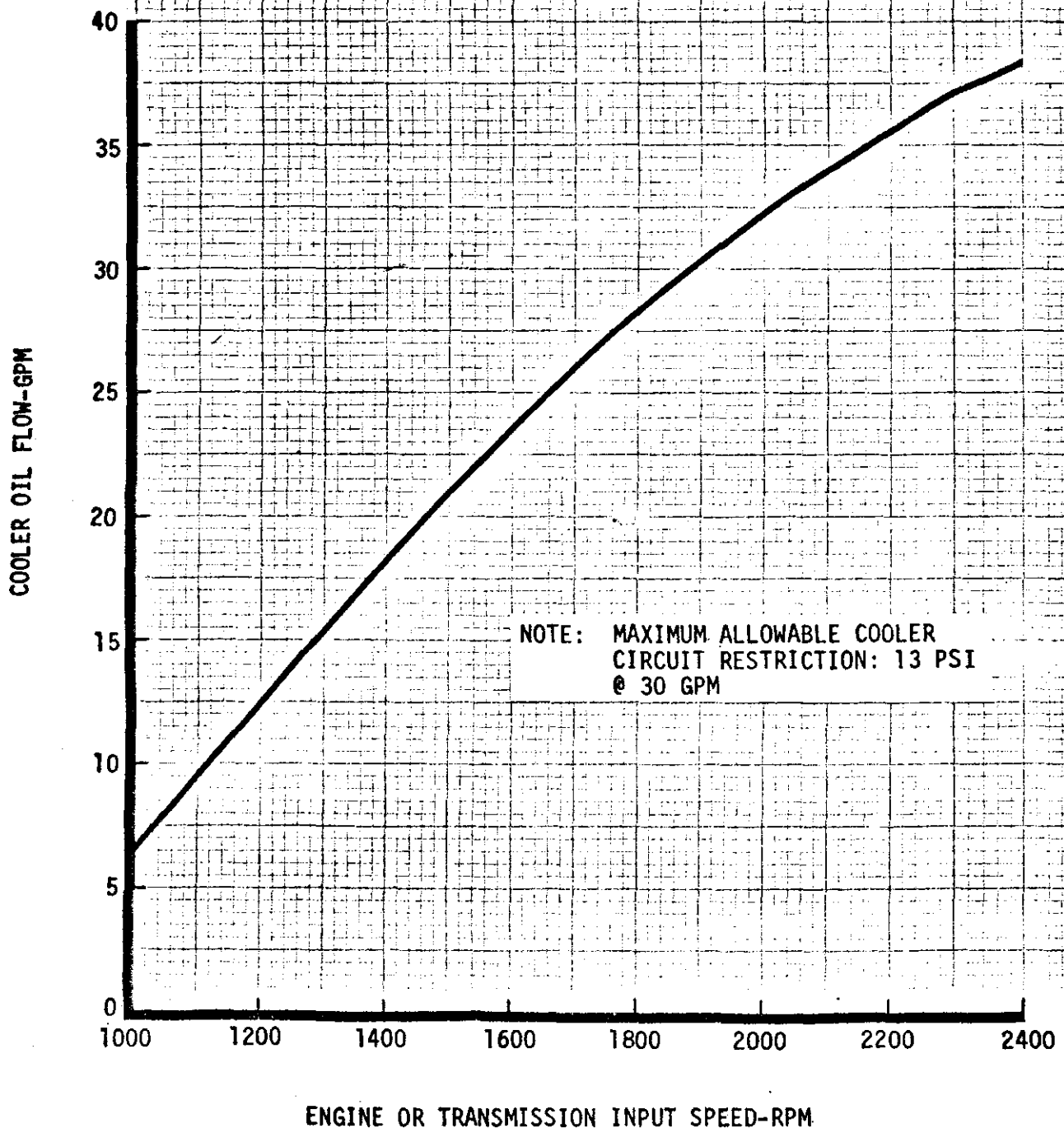


**Allison Transmissions**J. A. MEMMER
4-12-76RDR
6-16-76

AS 58-068

COOLER CIRCUIT OIL FLOW
CONVERTER OPERATION-TURBINE @ STALL AND 70% CONVERTER EFFICIENCY POINT
CLT-5860, 5960, AND 6061 TRANSMISSIONS

REF.-INSTRUCTION SHEET AS58-069



AS58-069

OBJECTIVE

- (1) TO DETERMINE THE REQUIRED COOLING CAPACITY OF THE TRANSMISSION OIL COOLER (HEAT EXCHANGER).
- (2) TO DETERMINE THE REQUIRED RESTRICTION (PRESSURE DROP) FOR THE COOLER OIL CIRCUIT.

PROCEDURE:

- (1) DETERMINE THE ENGINE SPEED AND HEAT REJECTION AT THE 70% CONVERTER EFFICIENCY POINT. THIS IS THE POINT RECOMMENDED FOR USE IN SIZING THE TRANSMISSION OIL COOLER FOR CONTINUOUS COOLING OF THE TRANSMISSION OIL IN OFF-HIGHWAY TRANSMISSIONS DURING CONVERTER OPERATION.
 - (1.1) REFER TO THE SPECIFIC TRANSMISSION-ENGINE MATCH PERFORMANCE CURVE. THE 70% CONVERTER EFFICIENCY POINT CAN BE FOUND ON THE CURVE-NOTED BY THE CIRCLE. THE ENGINE SPEED CAN BE READ DIRECTLY ABOVE THIS POINT.
 - (1.2) THE TRANSMISSION-ENGINE MATCH WILL ALSO PROVIDE THE HEAT REJECTION AT THE 70% CONVERTER EFFICIENCY POINT.
- (2) DETERMINE THE TRANSMISSION COOLER OIL FLOW AT THE 70% CONVERTER EFFICIENCY POINT. REFER TO THE FOLLOWING CURVES FOR THE PROPER TRANSMISSION CONFIGURATION.

CONFIGURATION**CURVE NO.**

CLBT
CLT

AS58-067
AS58-068

- (2.1) AT THE ENGINE SPEED DETERMINED IN PROCEDURE 1.1, READ THE COOLER OIL FLOW FOR THE PROPER TRANSMISSION CONFIGURATION.
- (3) DETERMINE THE ALLOWABLE COOLER CIRCUIT RESTRICTION IN CONVERTER OPERATION.
 - (3.1) ON CLBT MODELS REFER TO AS58-065 FOR PROPER COOLER CIRCUIT RESTRICTION USING THE OIL FLOW AS DETERMINED IN PROCEDURE 2.1.
 - (3.2) ON CLT MODELS THE PROPER COOLER CIRCUIT RESTRICTION IS NOTED ON THE CURVE AS58-068.
- (4) DETERMINE COOLER OIL FLOW IN RETARDER OPERATION.
 - (4.1) REFER TO AS58-066 AND DETERMINE THE COOLER OIL FLOW IN RETARDER OPERATION AT FULL LOAD ENGINE GOVERNED SPEED, WHICH IS GENERALLY USED FOR THIS DETERMINATION.
- (5) DETERMINE THE ALLOWABLE COOLER CIRCUIT RESTRICTION IN RETARDER OPERATION.
 - (5.1) USING THE RETARDER OIL FLOW AS DETERMINED IN PROCEDURE 4.1, REFER TO AS58-065 AND READ THE ALLOWABLE RESTRICTION FOR THAT FLOW.
- (6) DETERMINE THE RETARDER CAPACITY AND HEAT REJECTION.

REVISIONS

MICRO FILMED	LTR	DESCRIPTION	DATE	APPROVED

LOCAL SPECS (REF)

DRAWING PRACTICE

SURFACE TEXTURE

SCREW THREADS

GENERAL SPECIFICATIONS

SPEC. SUMMARY

TOLERANCES UNLESS OTHERWISE SPECIFIED		ORIGINAL DATE OF DRAWING 6/23/76		DETROIT DIESEL ALLISON DIVISION GENERAL MOTORS CORPORATION INDIANAPOLIS OPERATIONS	
ANGLES ±	DRAFTSMAN	CHECKER	TITLE INSTRUCTION SHEET, OIL FLOW CURVES		
3 PLACE DECIMALS ±	CHF. DR. <i>SCM</i>	METALLURGY			
2 PLACE DECIMALS ±	ENG 1	ENG 2	MODEL (FIRST USAGE) 5/6000 SERIES APPLICATION: SEE SEPARATE PARTS LIST		
4 PLACE DECIMAL DIMENSIONS WITHOUT TOLERANCES ARE BASIC	ENG 3	FINAL <i>Wmme</i>			
MATERIAL	REVIEW APPROVAL		SIZE	CODE IDENT.	DWG. NO.
HEAT TREATMENT			B	73342	AS58-069
FINAL PROTECTIVE FINISH			SCALE	SHEET 1 OF 2	

REF-

AS58-069

(6.1) USING THE ENGINE FULL LOAD GOVERNED SPEED FROM PROCEDURE 4.1, THE RETARDER CAPACITY CAN BE DETERMINED FROM AS58-032.

(6.2) THE RETARDER CAPACITY IS ABSORBED ENERGY WHICH IS CONVERTED INTO HEAT IN THE OIL AND IS REQUIRED TO BE COOLED.

SUMMARY:

INFORMATION HAS BEEN DETERMINED BY THIS PROCEDURE FOR THE PROPER OIL COOLER SELECTION AND FOR THE REQUIRED RESTRICTION IN THE OIL COOLER CIRCUIT, DURING BOTH CONVERTER AND RETARDER OPERATION. WITH THE PROPER HEAT EXCHANGER AND COOLER CIRCUIT RESTRICTIONS AT THESE TWO CONDITIONS, THE TRANSMISSION WILL PERFORM TO THE ADVERTISED PERFORMANCE CURVES.

NOTE:

A CHECK CAN BE MADE OF THE COOLER CIRCUIT OIL FLOW AND RESTRICTION AFTER THE INSTALLATION HAS BEEN MADE. RECORD THE COOLER CIRCUIT OIL FLOW, PRESSURE DROP, AND ENGINE SPEED AT CONVERTER TURBINE STALL. USE THE ENGINE STALL SPEED WITH THE APPROPRIATE AS DRAWING CURVES FOR THAT TRANSMISSION MODEL TO OBTAIN DESIGN VALUES TO COMPARE TO MEASURED DATA.

REVISIONS

MICRO FILMED	LTR	DESCRIPTION	DATE	APPROVED

LOCAL SPECS (REF)

DRAWING PRACTICE

SURFACE TEXTURE

SCREW THREADS

GENERAL SPECIFICATIONS

SPEC. SUMMARY

TOLERANCES UNLESS OTHERWISE SPECIFIED		ORIGINAL DATE OF DRAWING 6/23/76		DETROIT DIESEL ALLISON DIVISION GENERAL MOTORS CORPORATION INDIANAPOLIS OPERATIONS	
ANGLES =	DRAFTSMAN	CHECKER	TITLE INSTRUCTION SHEET, OIL FLOW CURVES		
3 PLACE DECIMALS =	CHF. DR.	METALLURGY			
2 PLACE DECIMALS =	ENG 1	ENG 2	MODEL (FIRST USAGE) 5/6000 SERIES APPLICATION: SEE SEPARATE PARTS LIST		
4-PLACE DECIMAL DIMENSIONS WITHOUT TOLERANCES ARE BASIC	ENG 3	FINAL			
MATERIAL	REVIEW APPROVAL		SIZE	CODE IDENT.	DWG NO.
HEAT TREATMENT			B	73342	AS58-069
FINAL PROTECTIVE FINISH			SCALE	SHEET 2 OF 2	



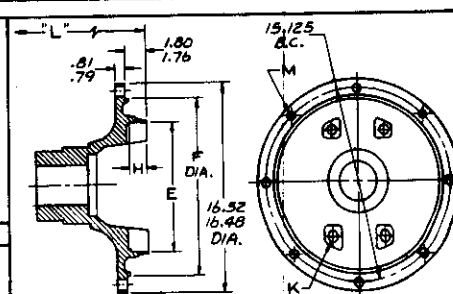


FIG. 5
PROVISION FOR MOUNTING DRUM BRAKE

POSITION	FLANGE					L DIMENSION FOR MODEL 6 BASIC INSTALLATION	FLANGE DETAIL DIMENSIONS							
	TYPE	SIZE	FIG. NO.	PART NO.	DETAIL NO.		DP-8000 AS 80-001	E	F	G	H	J	K FOR DRIVE LINE MOUNTING	M FOR PARKING BRAKE DRUM MOUNTING
A	MECH. 9-C	III	6777070	6777070	52.01		8.249 8.251	9.15 9.09				.955 .919	1 2	-20 THD.-THRU 4 HOLES
A	SPICER 1950	IV	6830651	6830651	53.24		10.043 10.040	11.19 11.13					3 4	-16 THD.-1.31 MIN - 4 HOLES
A	SPICER 1850	IV	6832251	6832251	52.61		8.093 8.091	9.12					5 15	-18 THD.-.88 MIN - 4 HOLES

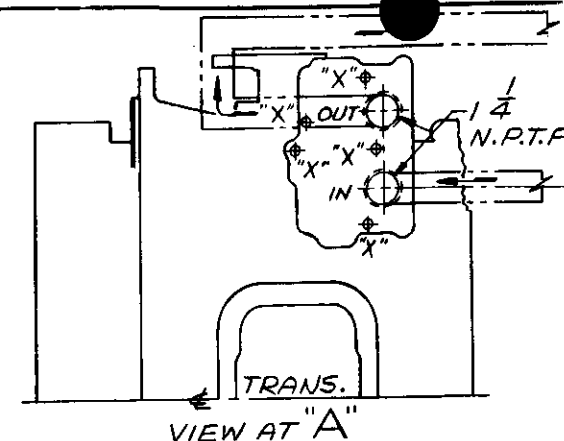
COOLER CIRCUIT PRESSURE SPECIFICATIONS

1. AT OPERATING TEMPERATURE & MAX. SPEED 6TH. GEAR, RETARDER OFF.
 - MAX. ALLOWABLE CONVERTER OIL PRESSURE ---- 65 P.S.I.
 - MAX. ALLOWABLE EXTERNAL CIRCUIT PRESSURE DROP -- 40 P.S.I.
2. AT OPERATING TEMPERATURE WITH RETARDER IN OPERATION, SEE AS 80-019 FOR EXTERNAL CIRCUIT PRESSURE DROP

COOLER OIL FLOW CHART:
AS 80-021

SAE 100R5 EXCEPT OPERATING
TEMPERATURE RANGE FROM -40°F TO +275°F

BASE & FILTER ASSEMBLY
PART NO. 5576474
REF. AS 58-004 FOR
DIM. INFORMATION.



CUSTOMER REMOVAL OF FILTER
BASE FROM TRANSMISSION FOR
REMOTE MOUNTING REQUIRES
ADDITION BY CUSTOMER OF FIVE
7/16-14 x 3 1/2 BOLTS GM P/N 179872
AND FIVE 7/16 LOCKWASHERS GM
P/N 103322 OR EQUIV. AT "X" LOCATIONS.
TORQUE TO 42-50 LB.FT.

AS 80-008

PARTS SHOWN IN PHANTOM
ARE FURNISHED BY CUSTOMER

[illegible]

Allison TORQ-MATIC Drives

EXTERNAL HYDRAULIC CIRCUIT	
MODEL DP-8000	AS 80-008

1/4 NPTF MAIN PRESSURE GAGE CONNECTION (CHECK PRESSURES AT OPERATING TEMP) PRESSURE WITH OUTPUT STALLED AND 1500 ENGINE RPM TO BE:
1ST, 2ND AND REV. 210 PSI MIN-250 PSI MAX
3RD, 4TH, 5TH AND 6TH 140 PSI MIN-155 PSI MAX
REF-GAGE PART NO. 6778592

FLANGE POSITION "A"
SEE DRAWING
AS 80-007

FRONT TRUNNION
MOUNT FOR
REMOTE INPUT
OPTION

HYDRAULIC RETARDER VALVE
A RETURN SPRING OF SUFFICIENT FORCE TO GIVE A POSITIVE RETURN OF LINKAGE AND VALVE TO THE RETARDER OFF POSITION MUST BE PROVIDED IN THE RETARDER ACTUATING MECHANISM. EXTERNAL FORCE AGAINST INTERNAL RETARDER VALVE STOPS IN BOTH ON AND OFF POSITIONS MUST NOT EXCEED 300 LBS

SAE STANDARD
2 1/2 HYDRAULIC FLANGE-
SEE DWG AS 80-008
FOR CIRCUIT REQUIRE-
MENTS

OIL TO
COOLER

OIL FROM
COOLER

FOR REMOTE FILTER OPTION
SEE DWG AS 80-004. FOR CIRCUIT
REQUIREMENTS SEE DWG AS 80-008

FOR TRANSMISSION
DRIVE ADAPTATION
DATA SEE DWG
AS 80-021

SAE NO. 10 FLYWHEEL H56
MTG FACE (MODIFIED AS SHOWN)

FOR TOP PTO OPTION
SEE DWG NO. AS 80-017

2 ALP.T.F. OIL TEMPERATURE GAGE
CONNECTION USE 2.00 X .375 DIA. BULB
SENDING UNIT (REF. 6756645 GAGE)

RANGE SELECTOR VALVE
70-90 LBS SHIFT FORCE
(OPPOSITE SIDE) FOR ELECTRIC
CONTROL OPTION SEE DRAWING
NO. AS 80-012

S.A.E. 3/8 HEAVY-SPEED DRIVE.
SHAFT SPEED = OUTPUT SPEED

FOR REMOTE BREATHER OPTION
SEE DRAWING AS 80-019

REQUIRED TO
REMOVE
BREATHER

3/8-11 UNC-2B
1.04 MIN. FULL THD.
6 HOLES (BOTH SIDES)

3/8-11 UNC-2B
1.25 MIN. FULL THD.
3 HOLES (FOR LIFTING)

.498-.502 DIA. HOLE
PARKING BRAKE
APPLY LEVER

.68 R (3 PLACES)

3/8 NPTF
REVERSE PRESSURE
(OPPOSITE SIDE)

FLANGE POSITION "B"
SEE DRAWING AS 80-007
PROVISION FOR OPT.
17 1/4 X 4 DRUM BRAKE.
ADD APPROX 150 LBS.
(CAPACITY 200,000
LB/IN AT 800 LBS.
LEVER PULL AND
2.1 MOVEMENT)

NAME PLATE
1/2 NPTF
OIL LEVEL CHECK

SEE DRAWING AS 80-007

OIL STRAINER LOCATION
(OPPOSITE SIDE)

1" NPTF OPTIONAL PROVISION FOR CUSTOMER FURNISHED
IMMERSION TYPE OIL HEATER. HEATING ELEMENT MUST BE
THERMOSTATICALLY CONTROLLED TO PREVENT SURFACE
TEMPERATURE IN EXCESS OF 250°F (OPPOSITE SIDE)

ESTIMATED CENTER
OF GRAVITY

TOTAL SYSTEM CAPACITY APPROX 21 GALLONS PLUS
EXTERNAL CIRCUIT (INITIAL FILL)

OPERATING OIL HYDRAULIC TRANSMISSION FLUID TYPE C-2
MAX OIL TEMPERATURE 250°F

DRY WEIGHT APPROX 3700 LBS.

DIRECTION OF ROTATION SHOWN FOR CLOCKWISE INPUT
ROTATION AT FLANGE POSITION "A" AND FORWARD GEAR

TRANSMISSION RANGE (SELECTOR VALVE POSITION)	RATIO
FORWARD - 6	.727 : 1
5	1.000 : 1
4	1.306 : 1
3	1.691 : 1
2	2.318 : 1
1	4.242 : 1
REVERSE	5.750 : 1

.5312 DIA. -
16 HOLES EQUALLY SPACED

REQUIRED TO REMOVE INPUT OIL PUMP

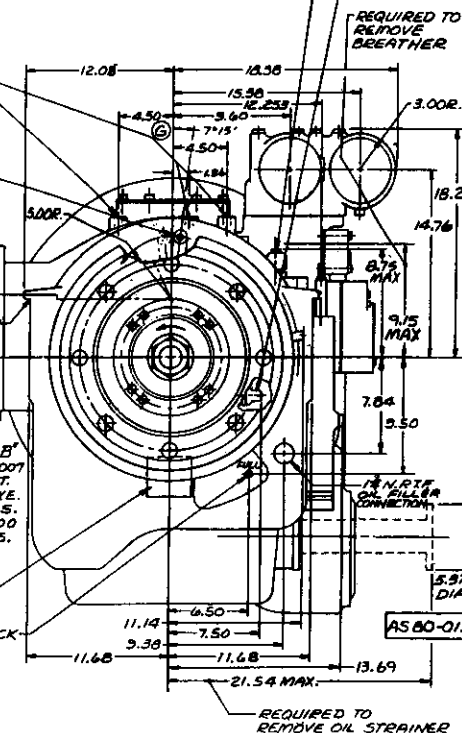
NOTE:
ALL CONTROL LINKAGES FOR TOROMATIC
TRANSMISSIONS ARE SUBJECT TO ALISON
DIVISION GMC TRANSMISSION ENGINEERING
DEPARTMENT REVIEW PRIOR TO INSTALLATION
APPROVAL.

REFERENCE DRAWINGS FOR
OPTIONS AND SPECIFICATIONS

AS 80-019 REMOTE BREATHER OPTION
AS 80-021 PHYSICAL ADAPTATION
AS 80-004 REMOTE FILTER INSTALLATION
AS 80-003 TRANSMISSION TRUNNION SUPPORT
AS 80-014 SHIFT TOWER RECOMMENDED DESIGN
AS 80-008 EXTERNAL HYDRAULIC CIRCUIT
AS 80-016 SIDE PTO OPTION
AS 80-017 TOP PTO OPTION
TC 11594 RETARDER PERFORMANCE
TC 11594 COOLER OIL FLOW
AS 80-024 SIGHT GAGE OIL LEVEL CHECK PROC

MANUAL ELECTRIC SHIFT OPTION

AS 80-031 SHIFT TOWER
AS 80-033 WIRING HARNESS
AS 80-034 SHIFT INHIBITOR SWITCH
AS 80-012 ELECTRIC VALVE BODY

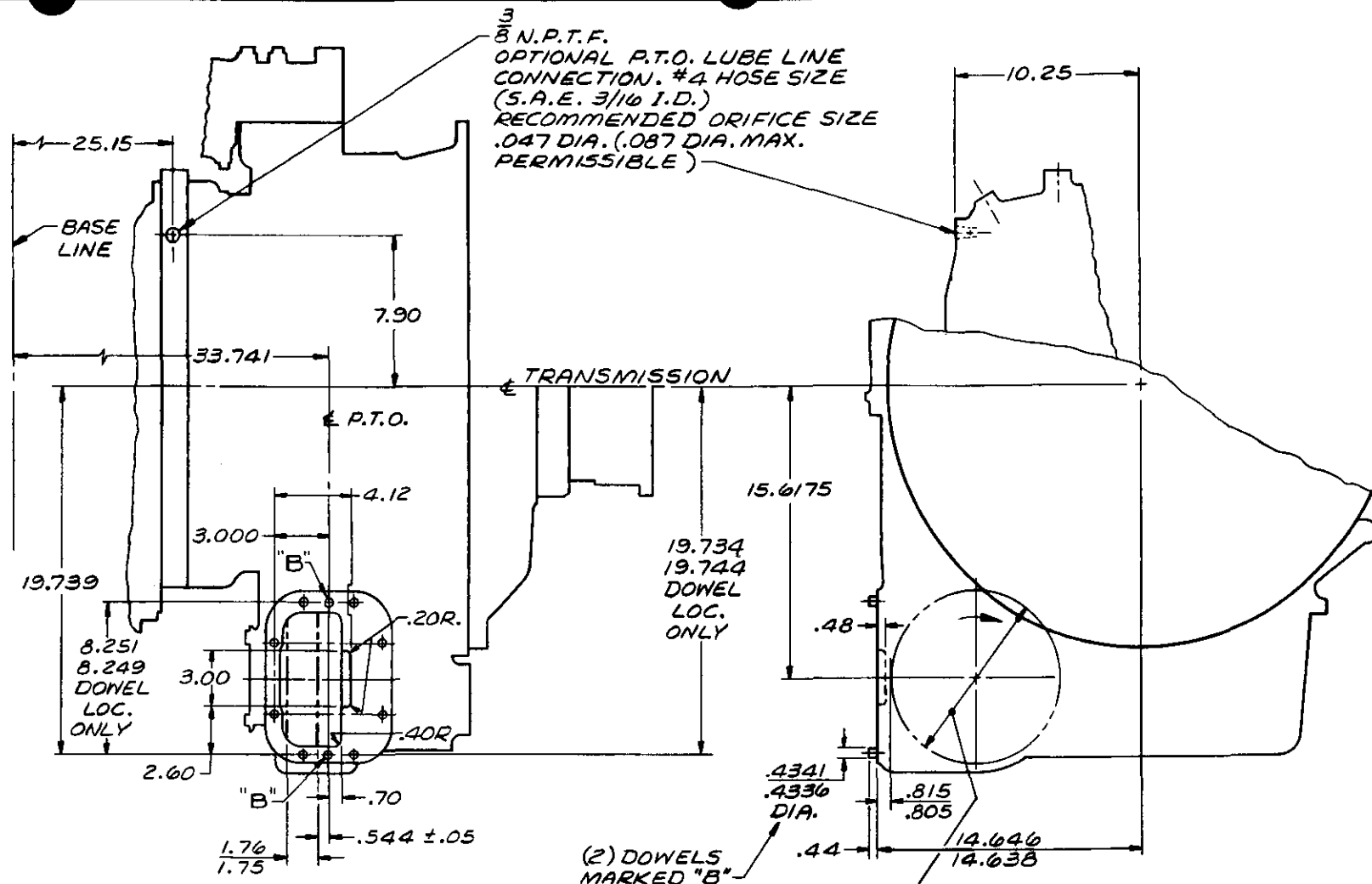


INSTALLATION DIAGRAM

DP - 254

AS 80-015

210-08 24



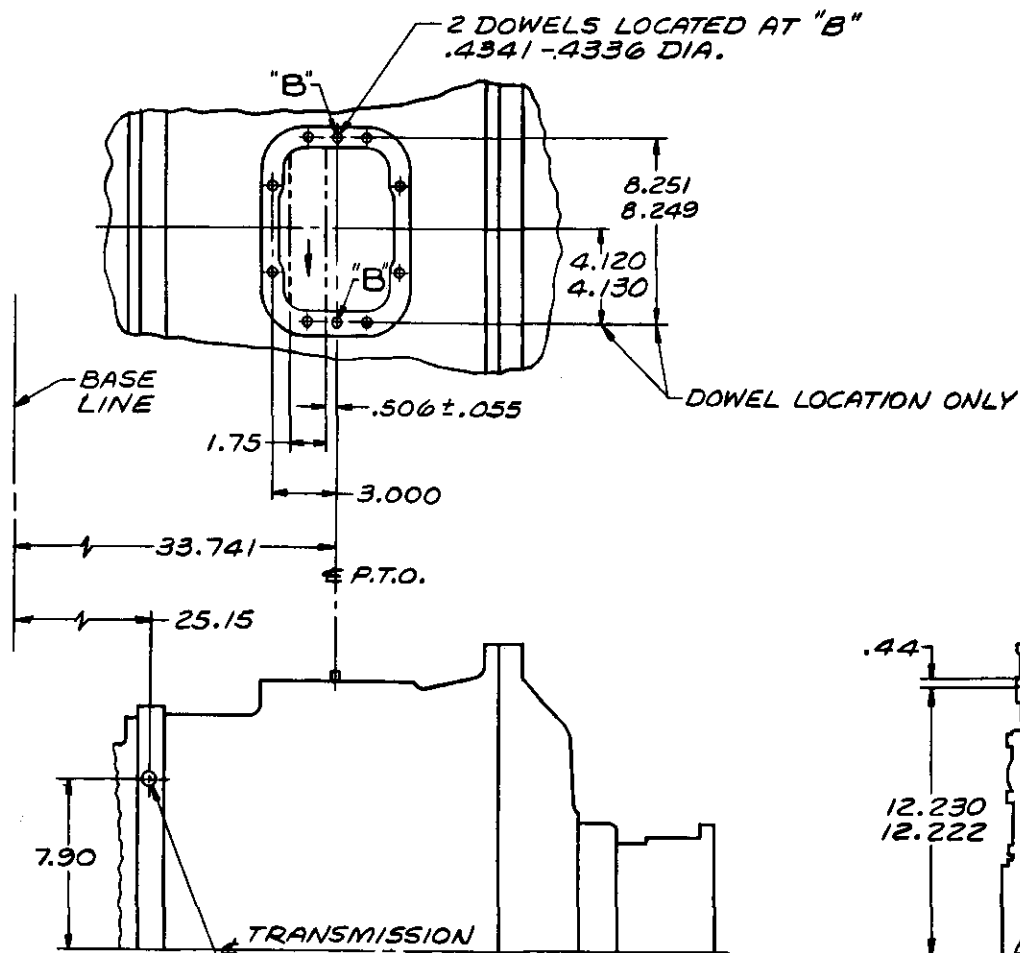
AS 80-016

DRIVE GEAR DATA:
6 PITCH - 25° PRESSURE ANGLE
8.6667 P.D. - 52 TEETH 1.135 x ENGINE SPEED
AFTER P.T.O. INSTALLATION,
BACKLASH OF .005 TO .025 IS
REQUIRED BETWEEN TRANSMISSION
DRIVING GEAR AND P.T.O. DRIVE GEAR.

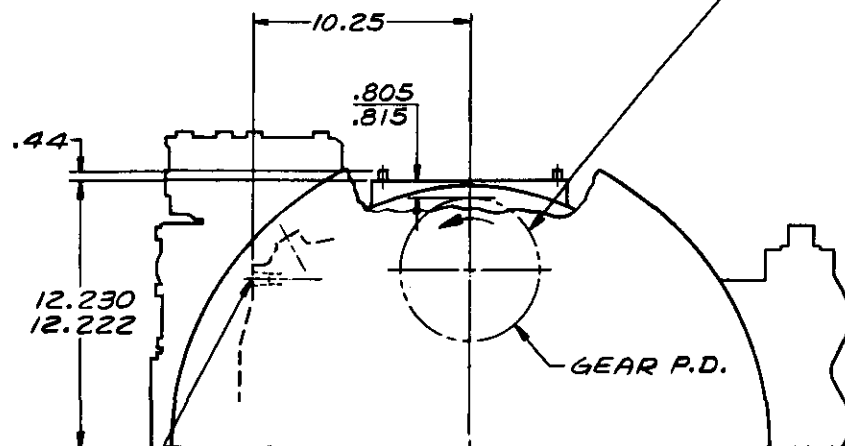
OPTIONAL SIDE P.T.O.
MOUNTING FLANGE,
S.A.E. HEAVY DUTY TYPE
(MODIFIED APERTURE)

FOR TRANSMISSION INSTALLATION
DATA NOT SHOWN SEE BASIC
INSTALLATION DRAWING AS 80-015

UNIVERSAL		GM		GENERAL MOTORS	
DESIGNED BY		CHECKED BY		DATE	
4-5-67		4-11-67		4-11-67	
SCALE		PROJ. ENGR.		APPL. ENGR.	
1		105		CRC	
BY SIZE		4-7-67		4-7-67	
TITLE					
SIDE POWER TAKE-OFF OPTION					
MODEL		DP-8861		AS 80-016	
MODEL		8961			
ALLISON DIVISION - GENERAL MOTORS CORPORATION - INDIANAPOLIS, INDIANA					



DRIVE GEAR DATA
6 PITCH - 25° PRESSURE ANGLE
6.500 P.D. - 39 TEETH
1.513x ENGINE SPEED
AFTER P.T.O. INSTALLATION, BACKLASH
OF .005 TO .025 IS REQUIRED BETWEEN
THIS GEAR & P.T.O. DRIVEN GEAR.



AS 80-017

8 N.P.T.F.
OPTIONAL P.T.O. LUBE
LINE CONNECTION.
#4 HOSE SIZE (S.A.E. 1/8 I.D.)
RECOMMENDED ORIFICE SIZE
.047 DIA. (.087 DIA. MAX. PERMISSIBLE.)

OPTIONAL TOP P.T.O.
MOUNTING FLANGE.
S.A.E. HEAVY DUTY TYPE
FOR ALL TRANSMISSION INSTALLATION
DATA NOT SHOWN SEE BASIC
INSTALLATION DRAWING AS 80-015

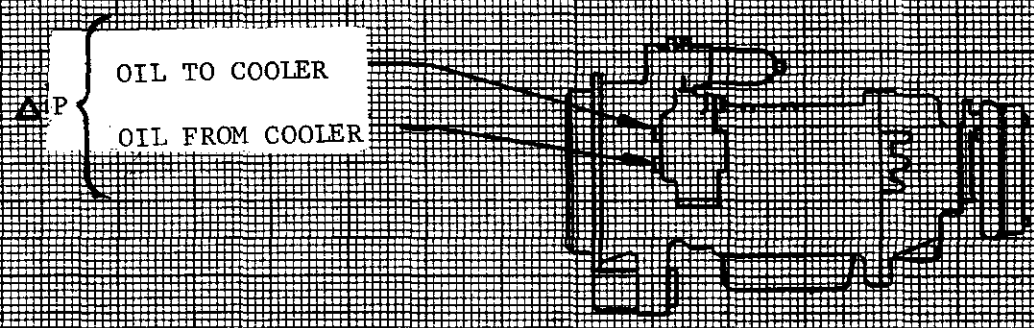
GENERAL REPORTS					
TITLE: TOP POWER TAKE-OFF OPTION					
DESIGNED BY: [Signature] DATE: 4-11-67 SIZE: 1/2	REVIEWED BY: [Signature] DATE: 4-11-67 SIZE: 1/2	APPROVED BY: [Signature] DATE: 4-11-67 SIZE: 1/2	MODEL DP- 8861 AS 80-017		



DATE	3-20-70	AS80-019
BY	REIVA	

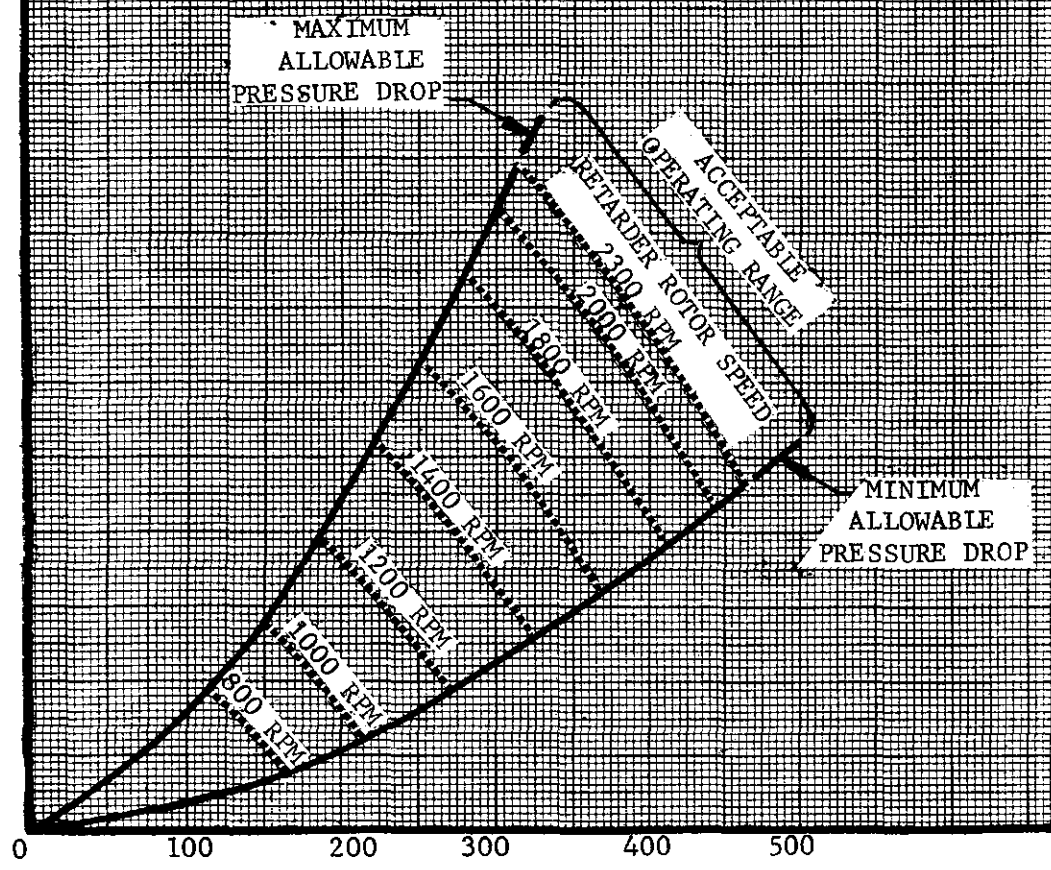
TRANSMISSION ENGINEERING DEPARTMENT

ALLISON DP-8961 TRANSMISSION
EXTERNAL COOLER CIRCUIT PRESSURE DROP
AND FLOW CHARACTERISTICS FOR RETARDER OPERATION
RETARDER OIL OUT TEMPERATURE.....250-300°F



ΔP - EXTERNAL COOLER CIRCUIT PRESSURE DROP - PSI

120
100
80
60
40
20
0



COOLER OIL FLOW - GPM



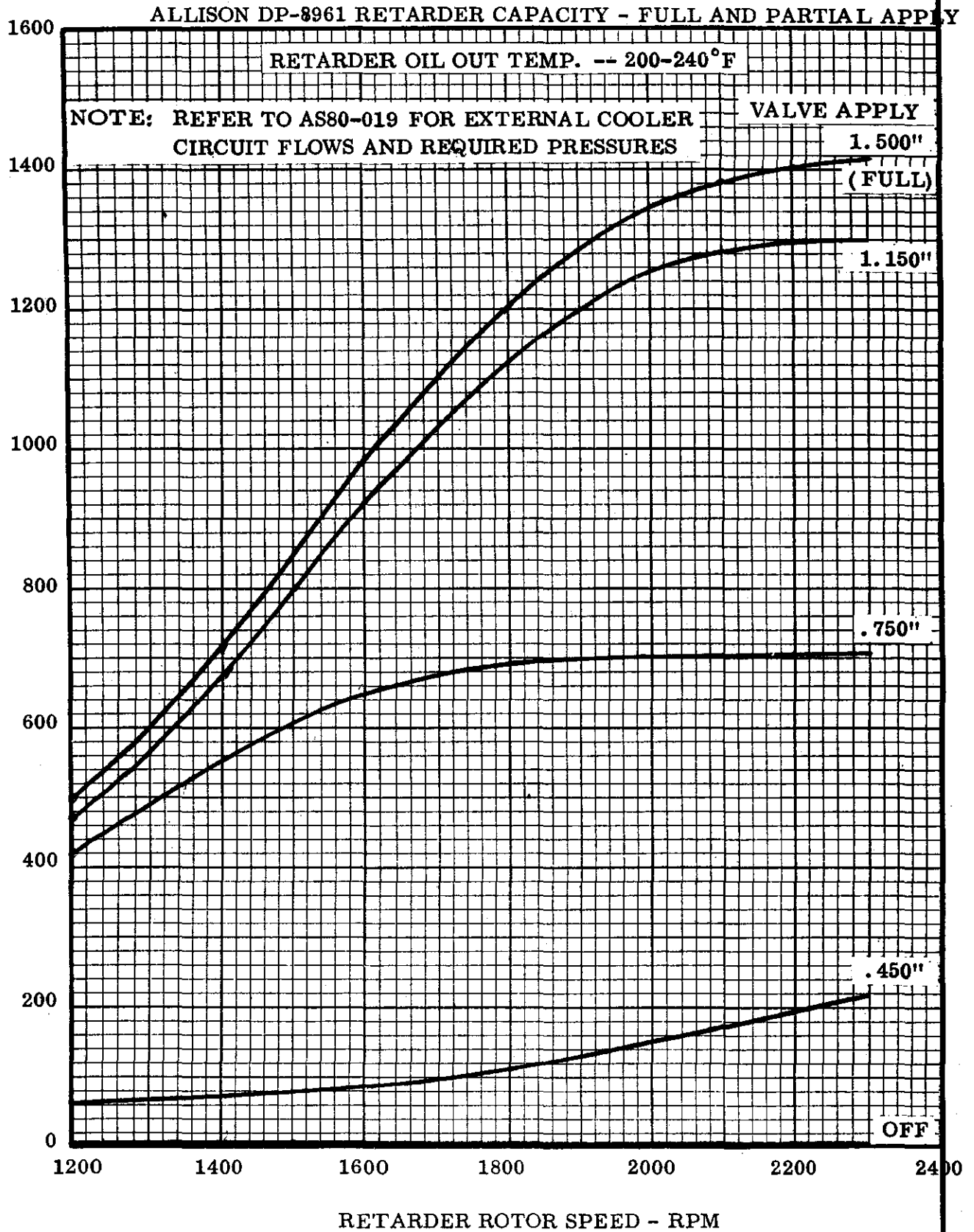
Allison Transmissions

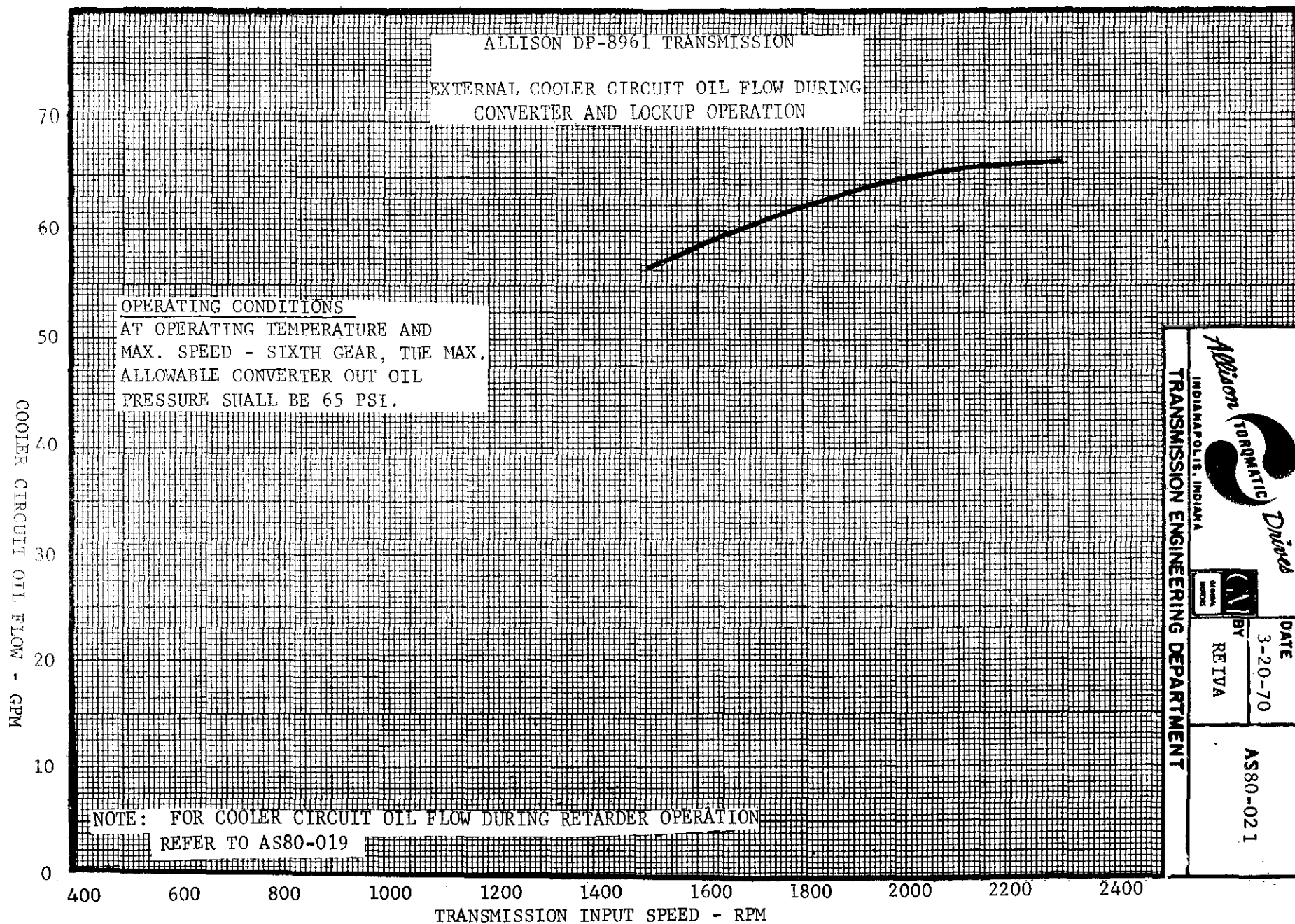
ENGINEER
REVIA
3-20-70

PERF. APPR.
~~EDR~~
2-9-73

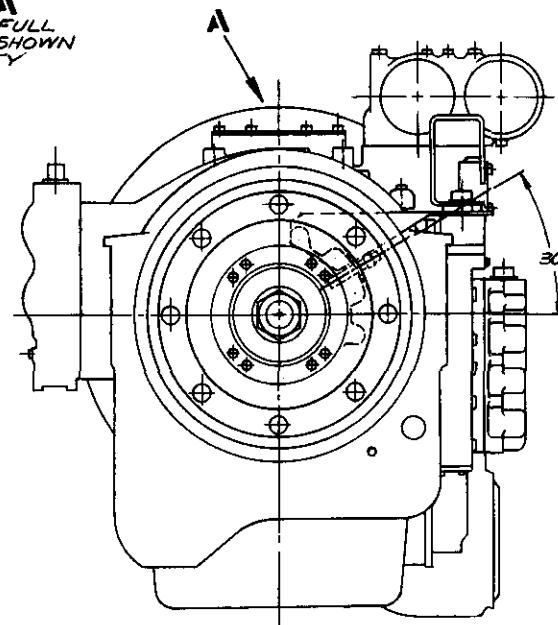
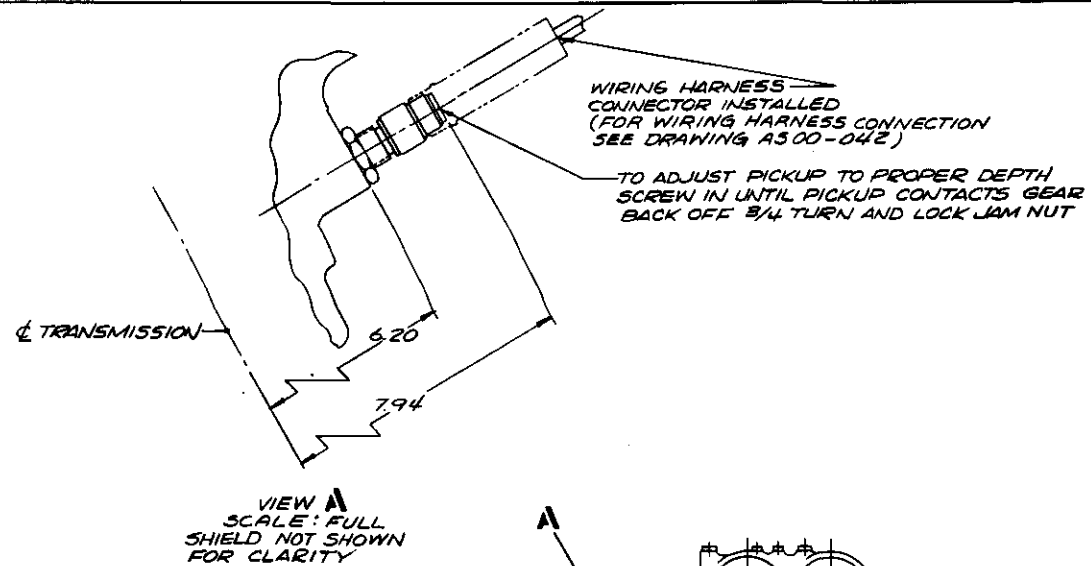
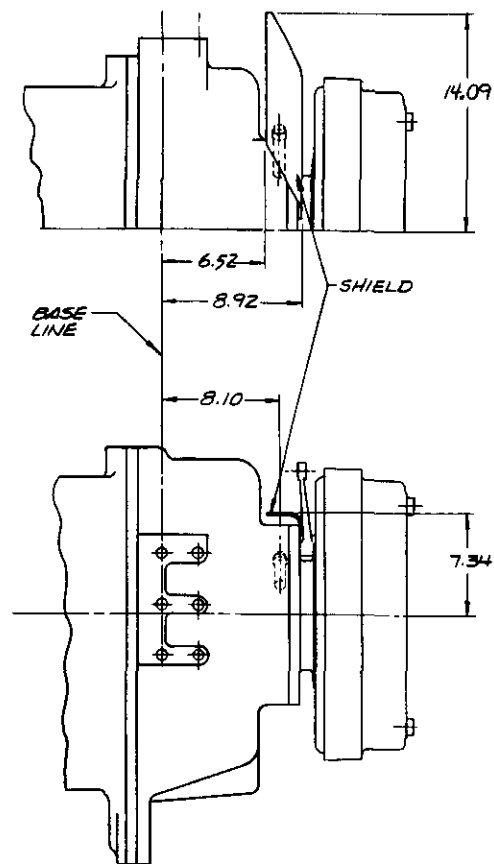
AS80-020

RETARDER HORSEPOWER





Revised - Memmer, 12-15-71



FOR ALL TRANSMISSION INSTALLATION
DATA NOT SHOWN, SEE BASIC
INSTALLATION DRAWING A580-015

A580-023

J		GM		Allison TORQMATIC Drive
H				
G				INSTALLATION REQUIRES FOR SPEED SENSING MAGNETIC PICKUP
F				
E				MODEL DP8000 A580-023
D				
C				ALLISON DRIVE - GENERAL MOTORS CORPORATION - WARREN, MI, U.S.A.
B				
A				
X		12-9-71 SEE REV NOTICE		
1		HUBBLE		
2		11-4-71		
3		11-25-71		
4		11-25-71		
5		11-25-71		
6		11-25-71		
7		11-25-71		
8		11-25-71		
9		11-25-71		
10		11-25-71		
11		11-25-71		
12		11-25-71		
13		11-25-71		
14		11-25-71		

INITIAL OIL FILL:

FILL WITH HYDRAULIC TRANSMISSION FLUID, TYPE C2.
STRAIGHT THRU TRANSMISSIONS REQUIRE APPROXIMATELY
21 U.S. GALLONS, PLUS THE ADDITIONAL AMOUNT NEEDED
IN THE EXTERNAL SYSTEM (COOLER, FILTER, EXTERNAL LINES).
DROP BOX TRANSMISSIONS REQUIRE APPROXIMATELY
34 U.S. GALLONS PLUS EXTERNAL SYSTEM.

CHECKING OIL LEVEL:

COLD CHECK

THE COLD OIL CHECK (ENGINE NOT RUNNING),
IS MADE ONLY TO DETERMINE IF THERE IS
SUFFICIENT OIL TO PERMIT SAFE STARTING
OF THE ENGINE. THE OIL LEVEL SHOULD
BE VISIBLE IN THE TOP HALF OF THE
SIGHT GAGE.

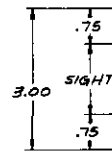
HOT CHECK

THE HOT OIL CHECK IS MADE TO DETERMINE
IF THERE IS SUFFICIENT OIL FOR WORKING
OPERATION OF THE TRANSMISSION.
THIS CHECK IS MADE WITH THE VEHICLE
STANDING LEVEL AND THE TRANSMISSION AT
NORMAL OPERATING TEMPERATURE (180-200°F).
AFTER THE ENGINE HAS BEEN RUNNING A
FEW MINUTES AT ENGINE IDLE (APPROX 650 RPM)
THE OIL LEVEL MUST BE VISIBLE IN THE RANGE
OF THE SIGHT GAGE.

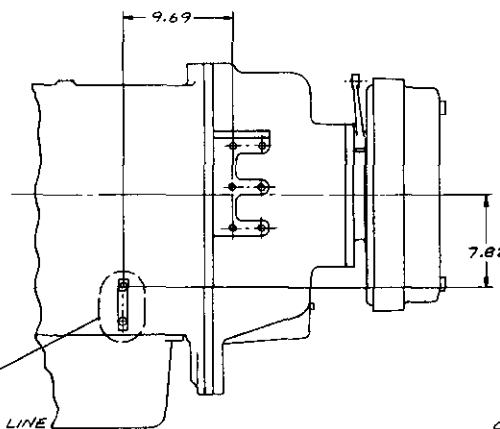
ADDITIONAL MEANS TO CHECK OIL LEVEL:

IN THE EVENT THAT VISUAL OBSERVATION OF
THE SIGHT GAGE IS RESTRICTED, AN OIL LEVEL
PLUG IS LOCATED AT THE REAR OF THE TRANSMISSION.
REMOVE THE PLUG. UNDER THE CONDITIONS OF BOTH
THE HOT AND COLD OIL CHECK, THE OIL LEVEL SHOULD
BE AT THE PLUG LEVEL. ADD SUFFICIENT OIL OR
DRAIN EXCESS OIL AS REQUIRED.

INSTALL WITH KNURLED
PLUG AT TOP



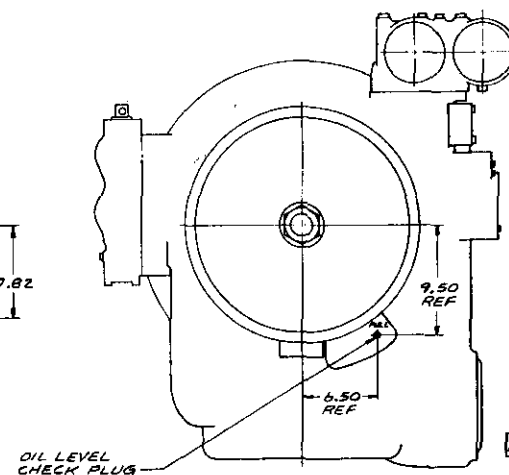
VIEW OF SIGHT GAGE
(FULL SIZE)



NO RED LINE
VISIBLE -
OVER FILLED

SAFE
OPERATIONAL
LEVEL AREA

NO OIL VISIBLE -
ADD OIL



OIL LEVEL
CHECK PLUG

AS80-024

FOR INSTALLATION DATA NOT SHOWN
SEE BASIC INSTALLATION DRAWING
AS 80-015

Revision			
1	AS80-024	1	1
2	AS80-024	2	2
3	AS80-024	3	3
4	AS80-024	4	4
5	AS80-024	5	5
6	AS80-024	6	6
7	AS80-024	7	7
8	AS80-024	8	8
9	AS80-024	9	9
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97	AS80-024	97	97
98	AS80-024	98	98
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100	AS80-024	100	100

Allison Transmission

OIL FILL AND LEVEL
CHECK REQUIREMENTS

DP-8961 AS80-024

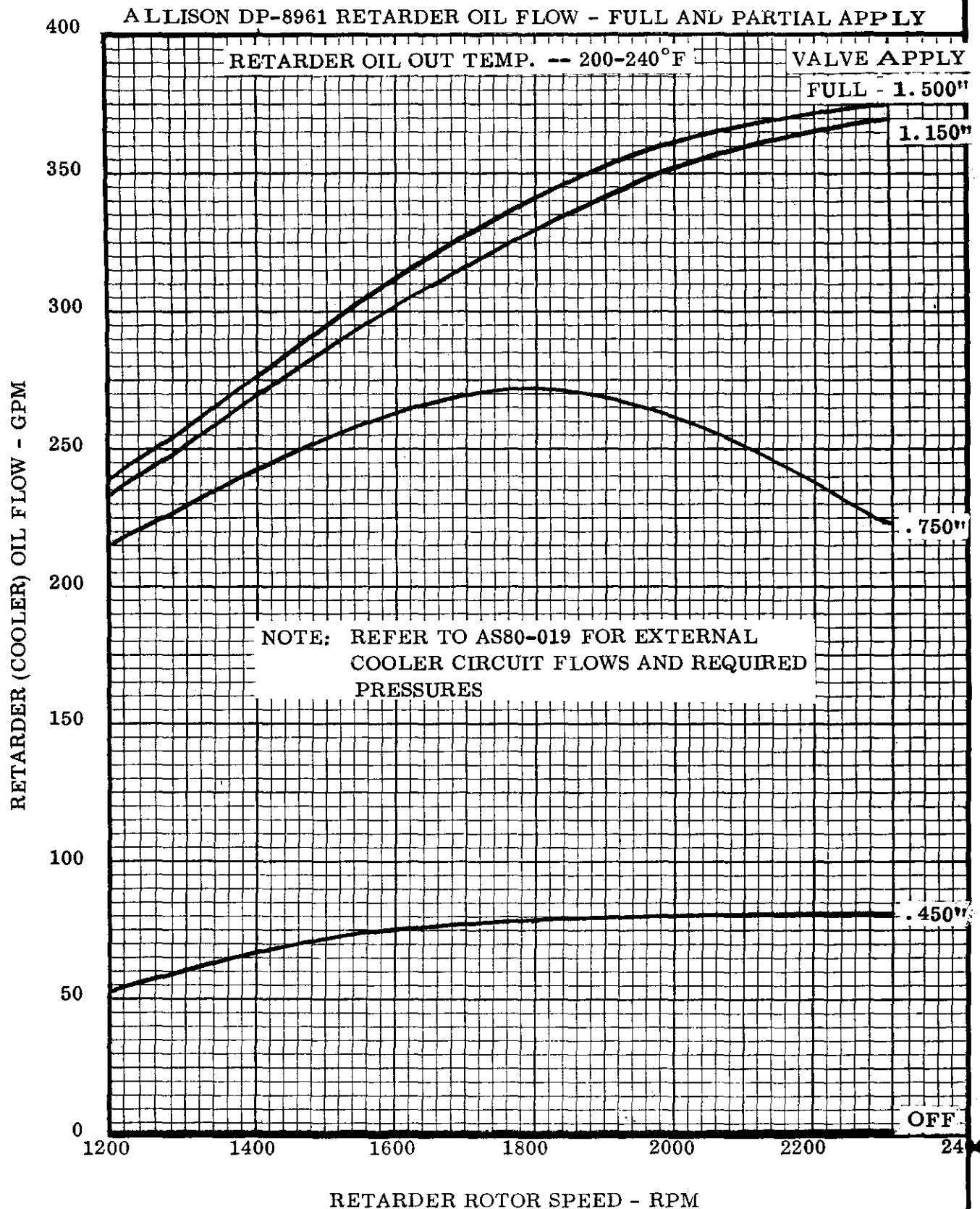


Allison Transmissions

ENGINEER
Memmer
7-3-72

PERF. APPR.
RDR
2-5-73

AS80-025

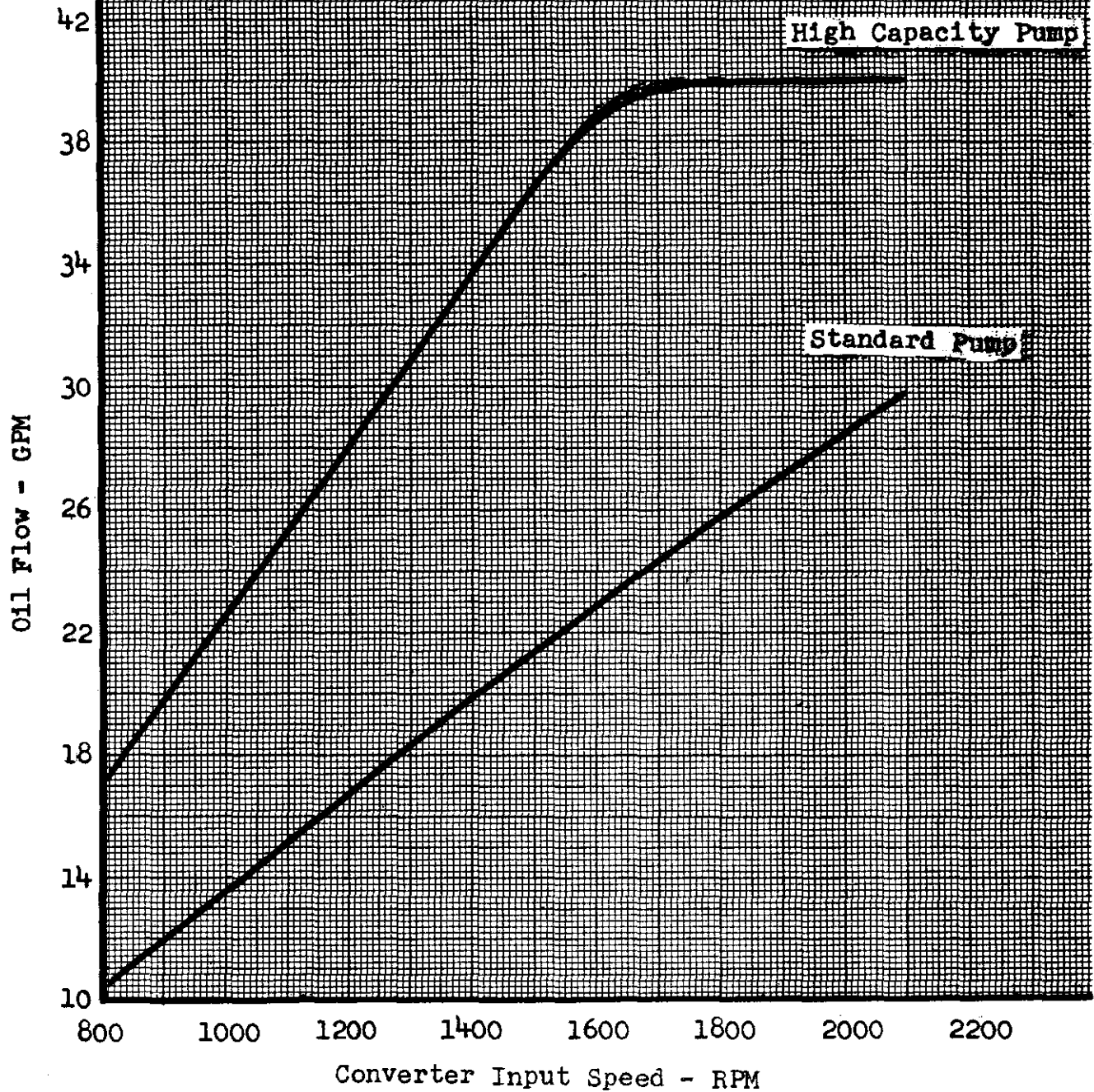




 INDIANAPOLIS, INDIANA	DATE 12-15-61	AS-81-002
	BY Ramsey	
TRANSMISSION ENGINEERING DEPARTMENT		

COOLER OIL FLOW OF THE ALLISON TC-800 AND
TC-900 SERIES TORQMATIC CONVERTERS

Oil Temperature ----- 200°F.
Oil ----- Hydraulic Transmission Fluid Type C-1



DIM."A"	PUMP OPTION
5.12	STANDARD PUMP
4.43	LARGE PUMP

NOTE:
PUMP MUST BE LOCATED AT LEAST
30° ABOVE HORIZONTAL

VENT TO TOP OF SUMP TANK (ABOVE OIL LEVEL)

"CONVERTER IN" PRESSURE TAPS $\frac{1}{8}$ N.P.T.F.
PROVIDE PERMANENT PRESSURE GAGE.
OPERATING PRESSURE CONTROLLED
BY COOLER CIRCUIT RESTRICTION
(COOLER, FILTER, LINES, AND ORIFICE
RESTRICTORS AS REQUIRED.)
PRESSURE SPECIFICATIONS
(AT OPERATING TEMPERATURE 200°F - 250°F)
60 TO 90 P.S.I. AT FULL THROTTLE STALL,
120 P.S.I. MAXIMUM AT FULL THROTTLE NO LOAD
(HIGH IDLE)

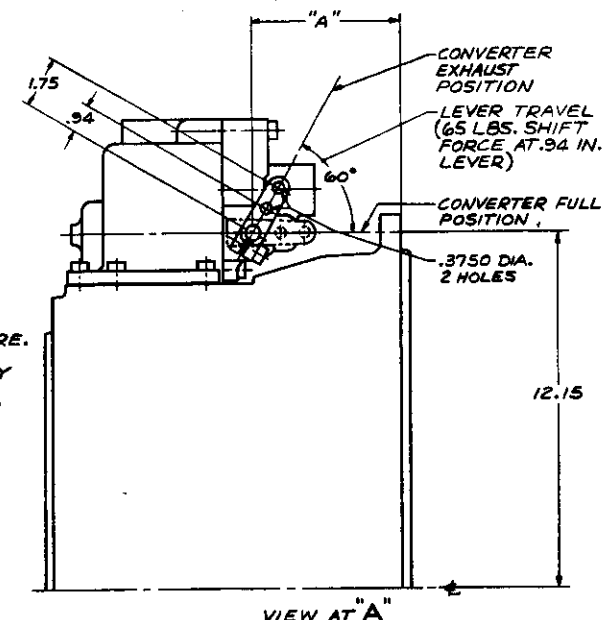
$\frac{3}{4}$ N.P.T.F.
PRESSURE TAP

FULL FLOW FILTER WITH
SUITABLE BYPASS REQUIRED.
(AC DIV. G.M.C. PART NO. 5574784
OR EQUIVALENT)

GENERAL COOLER RECOMMENDATIONS:
OIL TO WATER TYPE HEAT
EXCHANGER RECOMMENDED.
CAPACITY TO PROVIDE CONTINUOUS
COOLING WITH FOLLOWING
CONDITIONS:

A) 250°F MAXIMUM OIL INLET
(CONVERTER OUT) TEMPERATURE.

B) 70% CONVERTER EFFICIENCY
WITH FULL ENGINE POWER
(REF. TO SPECIFIC ENGINE -
CONVERTER PERFORMANCE
CURVE)



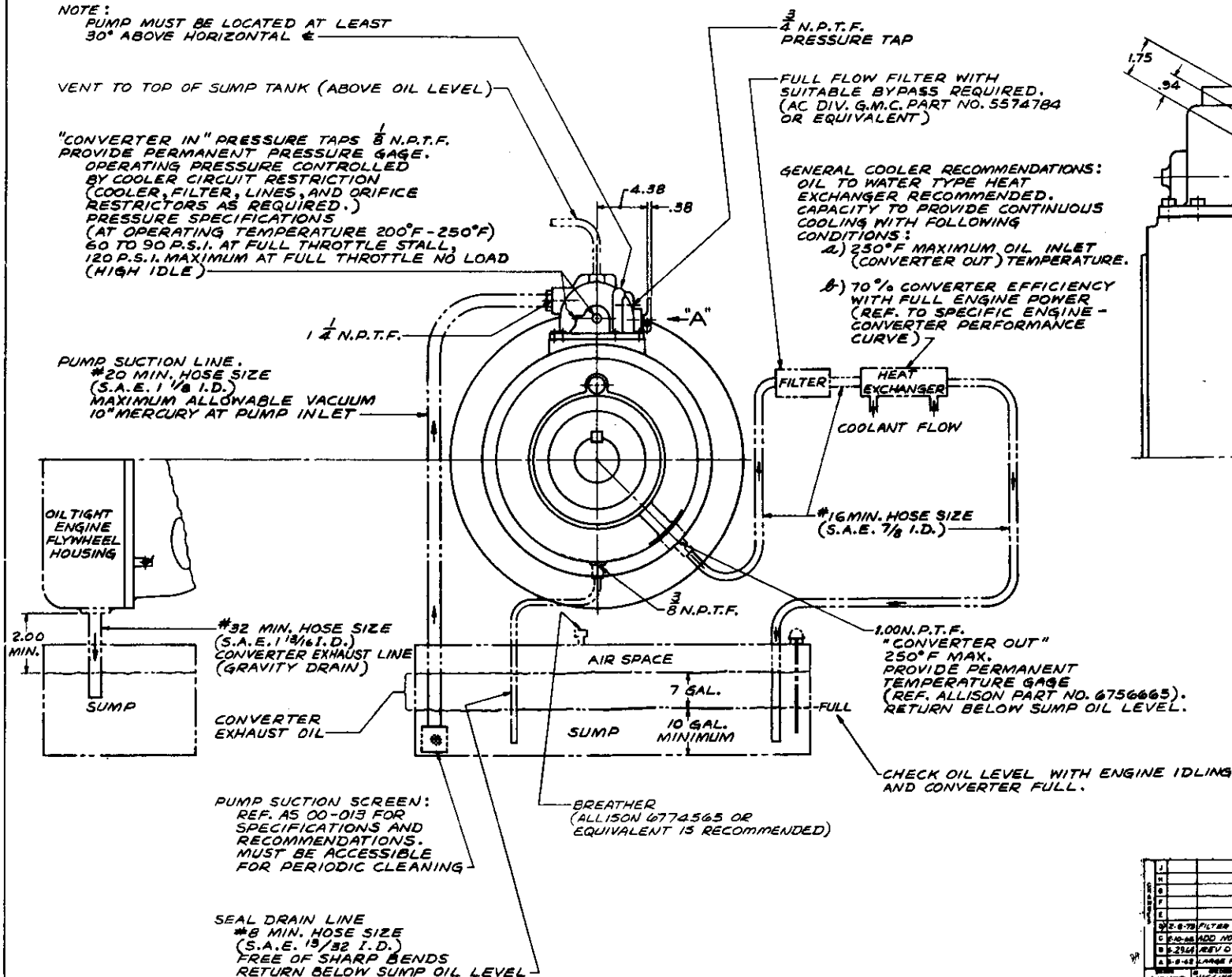
REF. AS 81-002 FOR COOLER
OIL FLOW INFORMATION AND AS 81-004
BASIC INSTALLATION DRAWING

HOSE SPECIFICATION:
S.A.E. 100 R5 EXCEPT
OPERATING TEMPERATURE
RANGE FROM -40°F. TO +275°F.

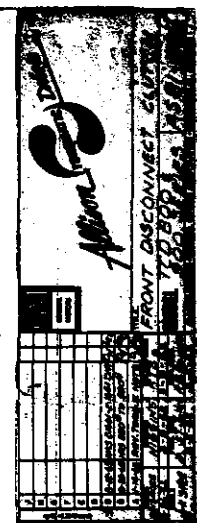
AS 81-003

NOTE:
REQUIREMENTS SHOWN ARE
FOR INDEPENDENT POWER
UNIT CONVERTER INSTALLATIONS.

PARTS SHOWN IN PHANTOM
ARE FURNISHED BY CUSTOMER



1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
										EXTERNAL HYDRAULIC CIRCUIT REQUIREMENTS MODEL TCHD 800 & AS 81-003																																																																																									

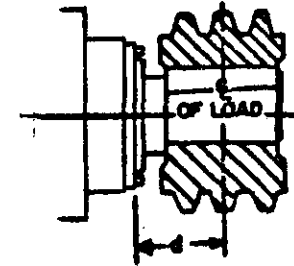


ALL PHYSICAL ADAPTATIONS ARE SUBJECT
TO ALLISON DIVISION GMC TRANSMISSION
ENGINEERING DEPARTMENT REVIEW
PRIOR TO INSTALLATION APPROVAL

TCD
OVER CENTER FRONT
DISCONNECT CLUTCH OPTION
(FOR ALL OTHER CONVERTER
INSTALLATION DATA SEE BASIC
INSTALLATION DRAWING NO. AS-10)

APPROXIMATE WEIGHT = 225 LBS
MOUNTING FOR SAE #10 ENGINE FLYWHEEL HOUSING

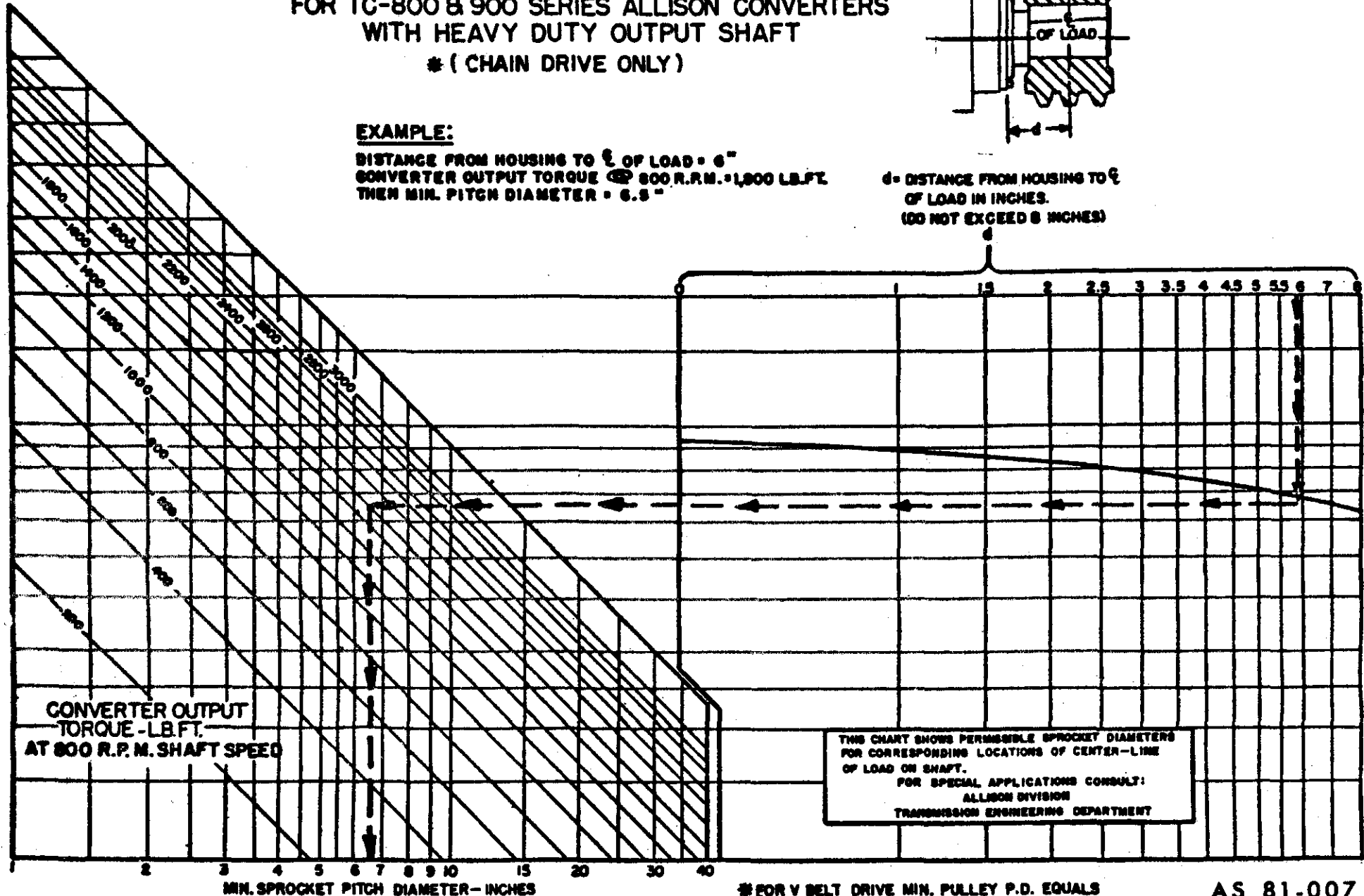
**POWER TAKE-OFF SPROCKET CHART
FOR TC-800 & 900 SERIES ALLISON CONVERTERS
WITH HEAVY DUTY OUTPUT SHAFT
* (CHAIN DRIVE ONLY)**



EXAMPLE:

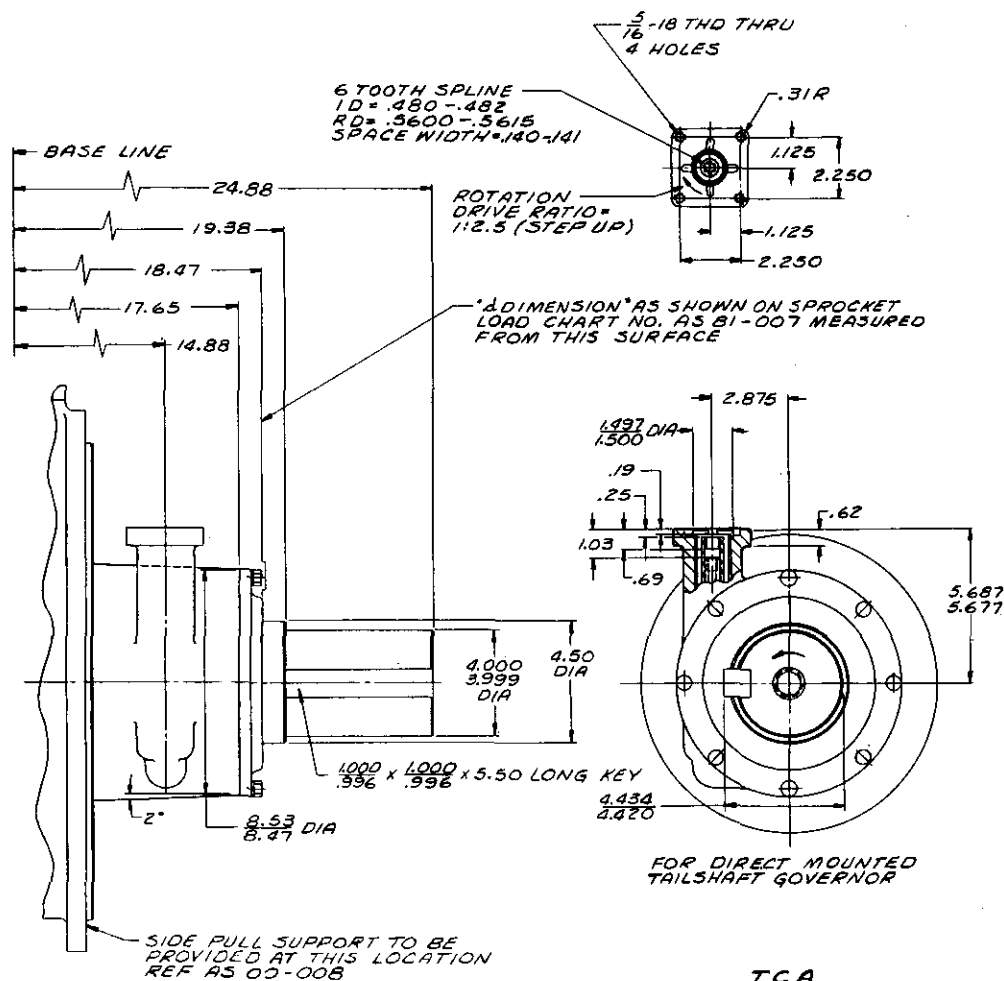
DISTANCE FROM HOUSING TO ϵ OF LOAD = 6"
CONVERTER OUTPUT TORQUE @ 800 R.P.M. = 1,800 LB.FT.
THEN MIN. PITCH DIAMETER = 6.5"

d = DISTANCE FROM HOUSING TO ϵ
OF LOAD IN INCHES.
(DO NOT EXCEED 8 INCHES)



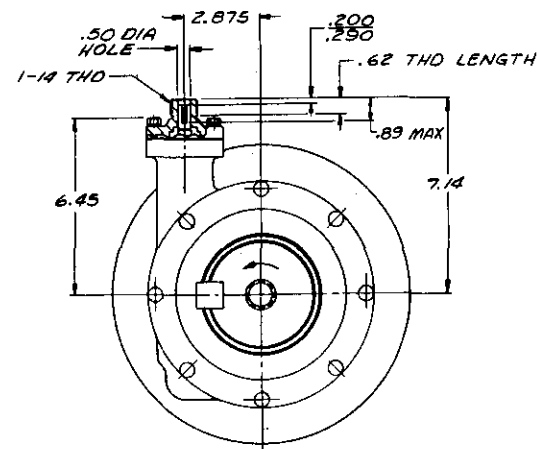
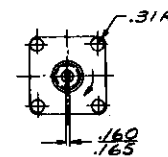
THIS CHART SHOWS PERMISSIBLE SPROCKET DIAMETERS
FOR CORRESPONDING LOCATIONS OF CENTER-LINE
OF LOAD ON SHAFT.
FOR SPECIAL APPLICATIONS CONSULT:
ALLISON DIVISION
TRANSMISSION ENGINEERING DEPARTMENT

* FOR V BELT DRIVE MIN. PULLEY P.D. EQUALS
1.5 TIMES MIN. SPROCKET P.D.



FOR DIRECT MOUNTED
TAILSHAFT GOVERNOR

TCA
SPEEDOMETER OR
GOVERNOR DRIVE OPTION
(APPROX. ADDED WEIGHT = 27 LBS)
FOR ALL OTHER CONVERTER INSTALLATION DATA
SEE BASIC INSTALLATION DWG AS B1-004



CABLE ADAPTER DRIVE
FOR REMOTE MOUNTED TAILSHAFT
GOVERNOR

ASB1-008



"CONVERTER IN" PRESSURE TAPS $\frac{1}{8}$ N.P.T.F.
 PROVIDE PERMANENT PRESSURE GAGE.
 OPERATING PRESSURE CONTROLLED
 BY COOLER CIRCUIT RESTRICTION
 (COOLER, FILTER, LINES, AND ORIFICE
 RESTRICTORS AS REQUIRED.)

PRESSURE SPECIFICATIONS:
 (AT OPERATING TEMPERATURE 200°F TO 250°F)
 60 TO 90 P.S.I. AT FULL THROTTLE STALL,
 120 P.S.I. MAX. FULL THROTTLE NO LOAD
 (HIGH IDLE)

$\frac{1}{8}$ N.P.T.F.
 SEAL DRAIN (WHEN PUMP IS BELOW HORIZONTAL $\oplus$)

NOTE:
 PUMP MUST BE LOCATED AT LEAST
 30° ABOVE OR BELOW HORIZONTAL $\oplus$

$\frac{3}{4}$ N.P.T.F. - FOR CLUTCH PRESSURE
 SUPPLY OPTION, 140-170 P.S.I.

#16 MIN. HOSE SIZE
 (S.A.E. 7/8 I.D.)

FULL FLOW FILTER W/
 SUITABLE BYPASS
 RECOMMENDED
 (A-C DIVISION PART NO.
 5574784 OR EQUIVALENT)

$\frac{1}{4}$ N.P.T.F.

PUMP SUCTION LINE.
 #20 MIN. HOSE SIZE
 (S.A.E. 1 1/8 I.D.)
 MAX. ALLOWABLE VACUUM
 10" MERCURY AT PUMP INLET

SEAL DRAIN LINE
 (WHEN PUMP IS ABOVE HORIZONTAL $\oplus$)
 #8 MIN. HOSE SIZE
 (S.A.E. 13/32 I.D.)
 FREE OF SHARP BENDS.
 RETURN BELOW SUMP OIL LEVEL

HOSE SPECIFICATION:
 S.A.E. 100 R 5 EXCEPT
 OPERATING TEMPERATURE
 RANGE FROM -40°F. TO +275°F.

8.00
 MIN.

BREATHING
 (ALLISON 6774565 OR
 EQUIVALENT IS RECD.)

$\frac{1}{8}$ N.P.T.F.

1 N.P.T.F. "CONV. OUT"
 250°F MAX.
 PROVIDE PERMANENT
 TEMPERATURE GAGE
 (REF. ALLISON PART NO.
 6756665).

RETURN BELOW SUMP OIL LEVEL.

DIPSTICK OR OIL LEVEL CHECK PLUGS
 CHECK OIL LEVEL WITH ENGINE IDLING

REF. AS 81-002 OR AS 81-010 FOR COOLER
 OIL FLOW INFORMATION AND AS 81-004
 BASIC INSTALLATION DRAWING.

PARTS SHOWN IN PHANTOM
 ARE FURNISHED BY CUSTOMER

PUMP SUCTION SCREEN
 REF. AS 00-013 FOR SPECIFICATIONS
 AND RECOMMENDATIONS.
 MUST BE ACCESSIBLE
 FOR PERIODIC CLEANING

NOTE:
 REQUIREMENTS SHOWN
 ARE FOR INDEPENDENT
 POWER UNIT CONVERTER
 INSTALLATIONS.

DA-A

DESIGNED BY	DATE	BY	DATE	BY	DATE
HUGHES	7-25-62	RTS	10-3-62		
SCALE	PROJ. ENGR.	APPL. ENGR.			
NONE	ST. JOHN	WELCHER			
	5-27-62	9-28-62			

12-8-73 FILTER WAS 5574784

2-10-65 ADD NOTE

GM
 GENERAL
 MOTORS

Allison TORQUEMATIC Drives

TITLE: EXTERNAL HYDRAULIC CIRCUIT
 REQUIREMENTS

MODEL 800 & 900 SERIES AS 81-009

ALLISON DIVISION - GENERAL MOTORS CORPORATION - INDIANAPOLIS, INDIANA