11 H.T. Grind

FRICTION PRODUCTS GROUP
Winchester

December 6, 1977

Subject: Rockwell Corporation

Abex Drawings have been issued to cover the entire range of Rockwell parts in the "No Grind" and "Q" brake series.

Attached are copies of C-139C and C-140C prints which are representitive of latest Rockwell changes.

I would like to bring to everyones attention what these changes mean to production and explain new notes that have been added to the drawings, some of which are explained by symbols. All symbols shown on Abex drawings can be found on sheet No.4 of Engineering Bulletin #10.

Thicknesses have been reduced .006 (Volume is reduced slightly) because the outside rad. was revised from 8.183 to 8.177 max.

A tolerance has been added to drilled and c'bored holes. Our plug gages are not entirely accurate - New gages have been ordered, and it is suggested that you continue using present gages until new ones are provided.

1. Row of holes (X) to be parallel with edge (Z) within .015

2. Centerlines (X and Y) are to be used as datum lines, and all holes in blocks are to be within .024 dia. of true position.

3. Note No.5 on drawing.
   The customers interpetation on this note was questioned, and I have attached an excerpt from D.P. Conlon's report No.72 for your information. The only additional comment that I would like to make is that the note should not be ignored. In fact it would be a good idea to have a study made so that we can have information for future discussions. Rockwell will be checking the grind and comparing it against our competitors.

4. This applies only to C-139C & C-140C. Sales was informed that Rockwell has the special edge marking listed for all numbers shown on these drawings. As of this date, Engineering has been informed that 2240-J-3286 and 2240-K-3287 are the only two parts ordered with this marking.

One additional item which applies to Fruehauf Corporation, and not Rockwell, (My letter of 11-28-77) is that the Customer has agreed to allow a plus or minus 1/32 on the arc length instead of plus or minus 1/64. New prints will be issued today.

Walter Thomas

WT:dc

cc: BJ Iwarsson
C. B. Mallory
G. Nicholson/H. Becker
C. L. Broadstreet
E. F. Potts
J. C. Thomas III
R. Combs
A. F. Schmaltz
D. Conlon
P. Grim
J. Van Marcke

EXCERPT TAKEN FROM D.P. CONLON REPORT Nº 72
11/11/77

THICKNESS SPECIFICATION FOR Q-SERIES BRAKES

The thickness specification "thickness must not vary more than 0.0015 in./in. between any two points across the width of the lining" was discussed at length with Messrs. Courtright, Svenson and Danner. Everyone agreed that the note was vague and that an over zealous inspector could cause significant problems. The exact method of determining whether a piece of lining was in spec would vary from plant to plant, depending on the availability of gauge money. It was felt that Ashtabula would probably use some sort of a swing gauge whereas Battle Creek would probably use a caliper. It was felt that the inspection procedure would consist of measuring the thickness variation between two points, a fixed distance apart. This distance would probably encompass most of the width of the lining. No one anticipated an inspector placing a straightedge across the surface of the lining in an effort to look for ridges, etc. All parties expressed an interest in not changing the note. They preferred to see if any problems developed in the implementation of the inspection procedure and, in the event that problems did arise, the note could then be made more explicit.

At this point, I would be inclined to leave the note as it is. However, I would appreciate it if Mr. G. Nicholson would advise me if our grinding operation is such that we would have significant problems if this specification was narrowly interpreted by an inspector. If this specification is going to cause problems with thickness variations which are inherent in our production process, I think that this should be discussed with Rockwell and the specification changed.

KHALL03146

AMERICAN BRAKEBLOK DIV.
WINCHESTER, VIRGINIA
CORPORATION

KHALO3147

KAZ 003149

CUSTOMER INFORMATION AND MARKING INSTRUCTIONS

ROCKWELL STD. N°	ABB MIX & SPECIAL EDGE CODE
2240-A-2965 REV."M"	693-551D (TYPE OF BACKING OPTIONAL)
	EDGE CODE: SEE CHART CH-29E
2240-X-3300 REV."M"	80 (TYPE OF BACKING OPTIONAL)
	EDGE CODE: SEE CHART CH-29E
2240-R-3294 REV."M"	693-551C (TYPE OF BACKING OPTIONAL)
	EDGE CODE: SEE CHART CH-29E
2240-P-3292 REV."M"	693-539 (TYPE OF BACKING OPTIONAL)
	EDGE CODE: SEE CHART CH-29E
2240-M-3289 REV."M"	693-9 (TYPE OF BACKING OPTIONAL)
	EDGE CODE: SEE CHART CH-29E
2240-K-3287 REV."M"	693-551 (TYPE OF BACKING OPTIONAL)
	EDGE CODE: RI B102EF 2240 K 3287 ANC

(4)

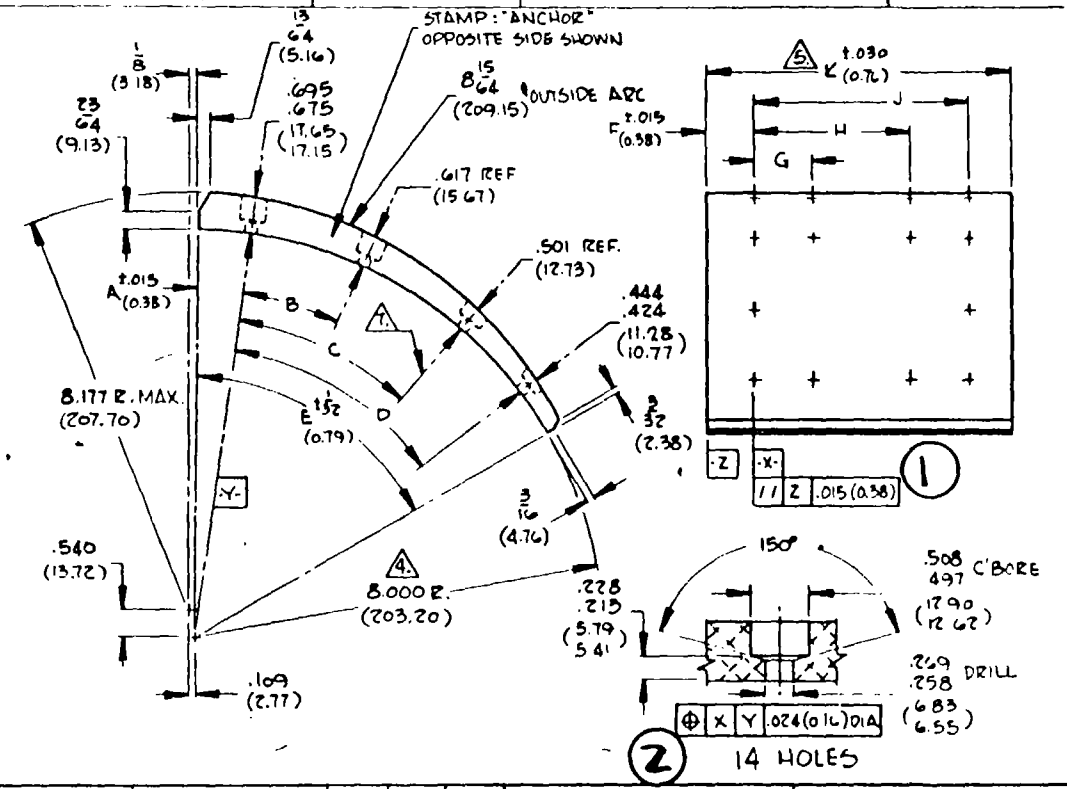
FOR ADDITIONAL MARKING SEE CH 29A

NOTES:
1. ALL INSIDE ARC DIMENSIONS CALCULATED ON 8.000 (203.20) RADIUS
2. ANGULAR DIMENSIONS REFERENCE ONLY
3. METRIC DIMENSIONS SHOWN IN PARENTHESES
4. BLOCK TO FIT 7.997 (203.00) R. SO THAT .006 (0.15) FEELER WILL NOT ENTER BETWEEN BLOCK & SHOE
5. THICKNESS MUST NOT VARY MORE THAN 0.0015 IN/IN (0.0381 MM/MM) BETWEEN ANY TWO POINTS ACROSS LINING WIDTH
6. USE WITH C-140C
7. THE TWO (2) HOLES THAT WERE REMOVED FROM 16 HOLE PATTERN WERE ON THIS ℄

(3)

	ANGLE	ARC INCH	ARC MM
A	7°53'	1.101	27.97
B	16°30'	2.304	58.52
C	33°	4.608	117.04
D	40°	5.585	141.86
E	54°53'	7 21/32	194.44
F	⊂⊃	.812	20.62
G	⊂ ⊃	1.312	33.32
H	⊂⊃	4.062	103.17
J	⊂⊃	5.315	135.53
K	⊂⊃	7.000	177.80

SUPERSEDES C-139C & 14 SEPT 1977 | DATE 30 NOVEMBER 77 | SUPERSEDED BY | DATE



(1) (2) (5)

SYM	REVISION	REV NO	DATE
F	REDRAWN & REVISED		

TOOL NO	DESCRIPTION	WIN	LIN	MEX
	USE C-980T TOOLING USE C-32 GRIND FIXT			
CT-6692A	PLUG & DEPTH GAGE	X		

BRAKING AREA 57.61 SQ.IN. 371.70 SQ.CM.

VOLUME 32.36 CU IN. 530.38 CU CM

ENGINEERING BULLETIN 10 FOR MFG TOLERANCE

FOREIGN PRINT FILE - 16565

FMS NO

DRAWN SWADLEY
TRACED
CHECKED Thomas
APPROVED

SIZE 16 1/2 N 695/444 70-7 21/32 (419.10 N 17.65/11.28 177.80-194.44)

NAME INTERNAL BRAKE BLOCK ~ "ANCHOR"

DATE 30 NOVEMBER 77

C-139C

AMERICAN BRAKEBLOK DIV.
WINCHESTER, VIRGINIA
CORPORATION

KHALL0148

KAZ 003150

CUSTOMER INFORMATION AND MARKING INSTRUCTIONS

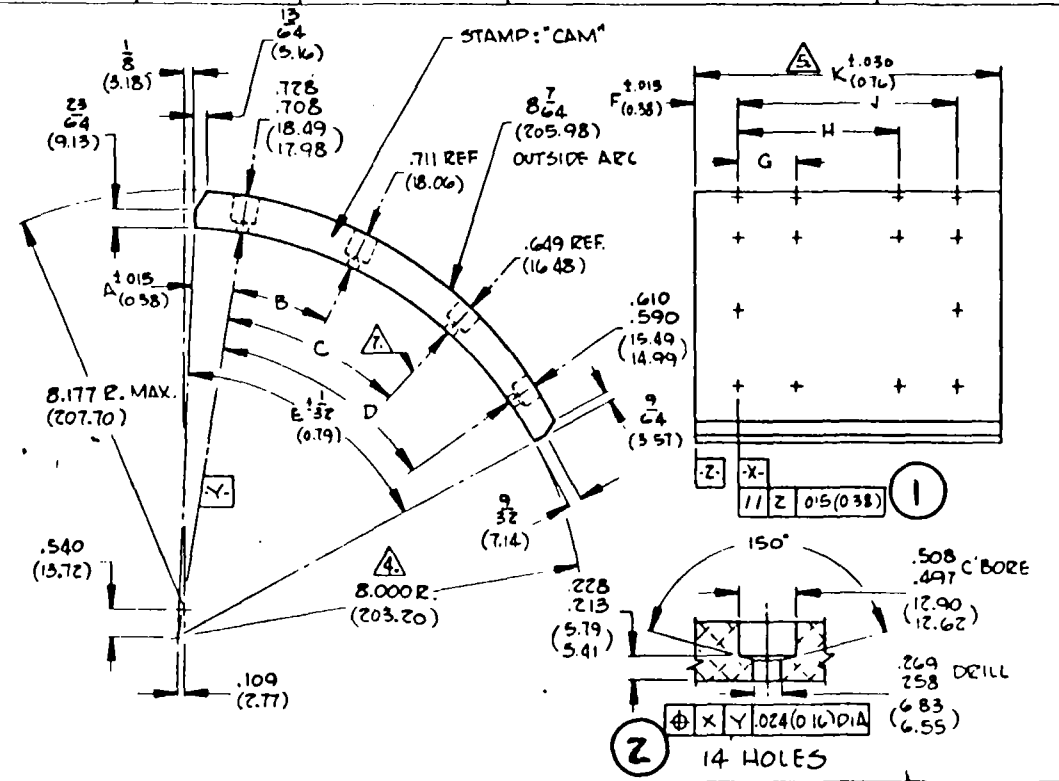
ROCKWELL STD. Nº	ABB MIX & SPECIAL EDGE CODE
2240-Z-2964 REV."M"	693-551D (TYPE OF BACKING OPTIONAL)
	EDGE CODE : SEE CHART CH-29E
2240-W-3299 REV."M"	80 (TYPE OF BACKING OPTIONAL)
	EDGE CODE : SEE CHART CH-29E
2240-Q-3293 REV."M"	693-551C (TYPE OF BACKING OPTIONAL)
	EDGE CODE: SEE CHART CH-29E
2240-N-3290 REV."M"	693-539 (TYPE OF BACKING OPTIONAL)
	EDGE CODE : SEE CHART CH-29E
2240-L-3288 REV."M"	693-9 (TYPE OF BACKING OPTIONAL)
	EDGE CODE : SEE CHART CH-29E
2240-J-3286 REV."M"	693-551 (TYPE OF BACKING OPTIONAL)
	EDGE CODE :
	RI B102EF2240J3286 CAM

(4) FOR ADDITIONAL MARKING SEE CH-29A

NOTES:
1. ALL INSIDE ARC DIMENSIONS CALCULATED ON 8.000 (203.20) RADIUS
2. ANGULAR DIMENSIONS REFERENCE ONLY
3. METRIC DIMENSIONS SHOWN IN PARENTHESES
4. BLOCK TO FIT 7.992 (203.00) R. SO THAT .006 (0.15) FEELER WILL NOT ENTER BETWEEN BLOCK & SHOE
5. THICKNESS MUST NOT VARY MORE THAN 0.0015 IN/IN (0.0381 MM/MM) BETWEEN ANY TWO POINTS ACROSS LINING WIDTH
6. USE WITH C-159C
7. THE TWO (2) HOLES THAT WERE REMOVED FROM 16 HOLE PATTERN WERE ON THIS ℄

	ANGLE	ARC INCH	ARC MM
A	6° 49'	.952	24.18
B	16° 30'	2.304	58.52
C	33°	4.608	117.04
D	40	5.585	141.86
E	53° 19'	7 1/16	188.91
F		.812	20.62
G		1.312	33.32
H		4.062	103.17
J		5.375	136.53
K		7.000	177.80

SUPERSEDES C-140C "f 14 SEPT. 1977 | DATE 29 NOV. 1977 | SUPERSEDED BY | DATE



SYM	REVISION	REV NO	DATE
F	REDRAWN & REVISED		

USE C-981T TOOLING
USE C-33 GRIND FIXT.

TOOL NO	DESCRIPTION	WIN	LIN	MEX
CT. 6692A	PLUG & DEPTH GAGE	X		

BRAKING AREA 56.73 SQ. IN. 929.80 SQ. CM.

VOLUME 37.15 CU. IN 608.89 CU CM

ENGINEERING BULLETIN 10 FOR MFG TOLERANCE

FOREIGN PRINT FILE - 16565

FMS NO

SIZE 16 1/2 N 12 8/.610 TO - 7 7/16 (419.10 N 18 49/15.49 177.80 - 188.91)

NAME INTERNAL BRAKE BLOCK ~ "CAM"

DRAWN SWADLEY
TRACED
CHECKED THOMAS
APPROVED
DATE 29 NOVEMBER 77

C-140C

ER-1507

FRICTION PRODUCTS GROUP
Winchester

September 1, 1977

RC WF CC JTT 9/2/77

R. C. Brown:

Following is a list of parts and quantities needed at Rockwell Ashtabula for September. We have deducted the shipment of August 31. Please hold shipment on all other material until we receive a revised schedule:

	PART NUMBER	QUANTITY	
	2240-J-2532	700	600 9/21 100 10/5
	2240-U-2725	1,189	800 9/28 389 10/5
	2240-V-2726	494	494 9/28
	2240-Z-2964	2,000	@ By 9/14
	2240-A-2965	2,000	@ By 9/14
	2240-W-3039	700	By 9/21
	2240-W-3091	150	9/21
*	2740-F-500	350	9/9/77
*	2740-T-1086	450	9/23/77
*	2740-F-1124	59	9/9/77
*	2740-D-1746	110	9/9/77
	2740-P-2018	150	10/5
	2740-Q-2019	150	10/20
	2740-N-3940	148	9/9/77
	2740-R-4048	100	9/21
*	2740-Y-4965	750	9/9/77
	2740-U-5065	10	9/21
	2740-N-5136	150	9/9/77
	2740-P-5164	150	9/21

cc: BJ Iwarsson
A. F. Schmaltz
C. E. Hubbard
E. F. Potts
P. H. Grim

Marjorie Beaver

KHALL03149

KAZ 003151

October 20, 1977

W. Fishel

SUBJECT: Rockwell Part 2240-J-2532

As you know, we our shipping 600 pieces on 10/21 and another 600 pieces on 10/24.

Our shipment of 11/4 should be backed up because of this. We should schedule shipments as follows:

Approx.	1200 pieces	11/11
"	1200 pieces	11/25
"	1200 pieces	12/9
"	1200 pieces	12/23

P. H. Grim

PHG/dch

cc: BJ Iwarsson
R. Cutler
A. Schmaltz
E. Potts
V. Fox
T. Thomas

KHALL03150

Rockwell International

BRAKE DIVISION
3500 NORTH RIDGE WEST
ASHTABULA, OHIO 44004

Vendor Release and Shipping Schedule

KHALL03151

KAZ 003153

VENDOR
ABEX CORP
AMERICAN BRAKEBLOK DIVISION
2410 S PAPER MILL RD
WINCHESTER VIRGINIA 22601

VENDOR CODE: A044P

DUNS NUMBER:

NOTICE
- THIS SCHEDULE SUPERCEDES PREVIOUSLY ISSUED SCHEDULES
- ALL MILITARY AND SAFETY RELATED PARTS REQUIRE VENDOR CERTIFICATION
- IN THE EVENT OF CANCELLATION OF ANY SCHEDULE COVERED BY THIS RELEASE, WE WILL BE OBLIGATED FOR MATERIAL AND FOR FABRICATION FOR THE FIRST SIXTY DAYS AND FOR MATERIAL ONLY FOR AN ADDITIONAL THIRTY DAYS. ADDITIONAL SCHEDULES SHOWN ARE FOR PLANNING PURPOSES ONLY AND THEY SHALL INCUR NO OBLIGATION ON OUR PART UNLESS WE HAVE SPECIFICALLY AUTHORIZED OTHERWISE
- EXECUTE AND PROMPTLY RETURN A COPY OF THIS SCHEDULE TO THE BUYER AND ADVISE US SAME IF YOU ANTICIPATE DIFFICULTY IN OBTAINING SUPPLIES OR RAW MATERIALS WHICH MAY AFFECT YOUR ABILITY TO COMPLY WITH THIS SCHEDULE
- EARLY SHIPMENTS AND/OR OVER SHIPMENTS MAY BE RETURNED AT VENDOR EXPENSE UNLESS THEY HAVE BEEN SPECIFICALLY AUTHORIZED BY THE APPROPRIATE CONTRACT

PART/ITEM NUMBER	GEAR RATIOS	PART/ITEM DESCRIPTION	ENG REV LVL	P.O. NUMBER	RELEASE NO	BUYER	FOLLOWUP	RELEASE DATE	PAGE
2240 J 2532	1 : 2	LINING - BRAKE		A8010429		1	1	10/12/77	1

LINE IDENTIFICATION	PRIOR BALANCE	OBLIGATION SCHEDULES											
		10-77	11-77	12-77	1-78	2-78	3-78	4-78	5-78	6-78	7-78	8-78	9-78
SCHEDULE DATE													
PRIOR SCHEDULE QUANTITY													
NET CHANGE IN SCHEDULE													
NEW SCHEDULE QUANTITY		2395	2000	1500									
CUMULATIVE ORDER QUANTITY		11594	13594	15094									
VENDOR ACKNOWLEDGEMENTS — SHIPMENT DATE	N/A	10/21	11/4	11/18	12/2	2/16	1/6						
VENDOR ACKNOWLEDGEMENTS — SHIPMENT QUANTITY	183	600	600 - 900	1200	1200	1200	911						

LINE IDENTIFICATION	PLANNING SCHEDULES											
	10-77	11-77	12-77	1-78	2-78	3-78	4-78	5-78	6-78	7-78	8-78	9-78
SCHEDULE DATE												
PRIOR SCHEDULE QUANTITY												
NET CHANGE IN SCHEDULE												
NEW SCHEDULE QUANTITY				1500	1500							
CUMULATIVE ORDER QUANTITY				16594	18094	18094	18094	18094	18094	18094	18094	18094

ADDITIONAL SHIPMENT OR ACKNOWLEDGEMENT SCHEDULES	
	SHIPMENT DATE
	SHIPMENT QUANTITY
	SHIPMENT DATE
	SHIPMENT QUANTITY
	SHIPMENT DATE
	SHIPMENT QUANTITY

LAST THREE RECEIPTS

DATE	QUANTITY	CUM
8-22	222	
9-26	1005	
10-11	600	9199

CUMULATIVE ORDER AND RECEIPT FIGURES COMPILED BEGINNING ON 08/01/75

SHIPMENTS ARE TO BE MADE AS FOLLOWS

COMMENTS: ACCUMS AS OF RELEASE DATE HERE 18094

- QUALITY CONTROL APPROVAL OF INITIAL SAMPLES IS REQUIRED PRIOR TO MAKING PRODUCTION SHIPMENTS
- RETURNS TO VENDORS WILL BE TREATED AS REDUCTIONS IN THE TOTAL QUANTITY SHIPPED AND THEY WILL BE MADE FOR FULL CREDIT AT THE PURCHASE ORDER PRICE

AUTHORIZED SIGNATURE _____