SEWING ROOM ENGINEERING MANUAL

(Incomplete)

OXFORD INDUSTRIES, INC.

by

KURT SALMON ASSOCIATES, INC.
ATLANTA, GEORGIA

September, 1970

CONSULTING ENGINEERS

OPERATION: Stay Sew to Quarter Patch SIZE: MATERIAL: All MACHINE MAKE: Praff THROAT PLATE: 48664 (1.2) ATTACHMENTS: Shop made stay guide STUDY STARTED: AVG. NO. OF THREAD CHGS.: PRESSER FINISHED: THREAD CHGS.: Schmetz 80 R.P.M.: Schmetz 80 R.P.M.	ATOR: RATOR: RES Fordham RATOR'S NO. POSITION: 4.500 RS: SS: CH. TIME PIECE: PIECE: EFI E STUDIES GM SHEET
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to Collar Run. 1. Pick up, position, sew stay to Quarter Patch A. Dispose completed box, get and open new box of 500 B. Get stays C. Stack completed quarter patches D. Coupon 20 .06031.075.064 .380 .200 .200 .250	80 .40 .15; 00 .40 .08(60 .40 .42)
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Town old	DATE:		MOTION ANALYST GM		OPERATION NO.: 1	100000000000000000000000000000000000000	RATION NAME: Ragio Sensulto Qua	rter	Patch	
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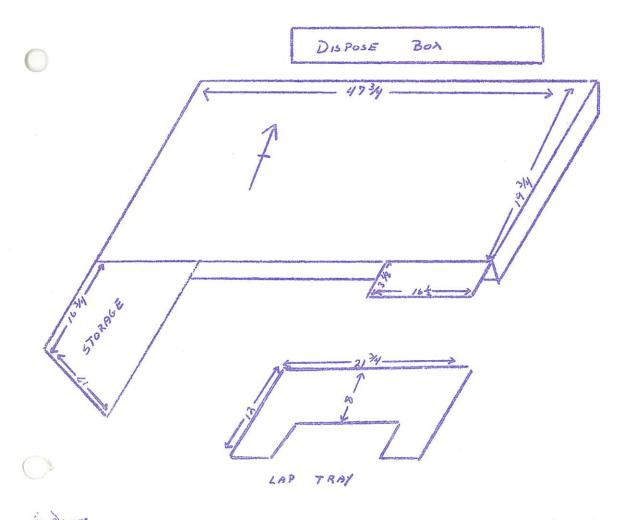
- B. RH picks up quarter patch and moves to needle as IH disposes previous assembly. RH then feeds stay between thumb and index finger into stay quide on presser foot. (Approximately 20-30 stays are held in RH and fed one by one onto quarter patches.) IH guides Q.P. while sewing. IH disposes assembly against stop block as RH reaches for next Q.P.
- C. RH picks up Q.P. as IH disposes previous assembly. 20-30 stays should be kept in RH.
- D. Stay must be positioned on quarter patch according to templates for various style collars.

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MOTION AND TIME ANALYSIS SUMMARY

CONSULTING ENGINEERS

ORM SSCP DEPT .: Collar SHEET NO .: 2 CLIENT: PLANT: CONTINUATION OF (CODE) 169 PRODUCT: Shirts (CODE) SUMMARY NO.: 2 OF 2SHEETS: MOTION OPERATION DATE OPERATION NAME: June 1970 AMK (Describe in Full) Collar Run ANALYST NO.: 2 LIST THE FOLLOWING INFORMATION BELOW FOR EVERY FLEMENT NO. 100% ELEMENT TIME PER (A) ELEMENT TITLE, CORRESPONDING WITH TITLE USED ON FORM 33. (C) KEY POINTS IN MOTION PATH. NO.: (B) COMPLETE AND DETAILED JOB BREAKDOWN AND MOTION PATH. (D) KEY QUALITY POINTS. UNIT Bundle Handling Secure bundles of lining and quarter patches for corresponding collars .016 from storage area. Until lining and place on lining shelf on machine. Place two stacks(left and right)quarter patches directly under machine. Open bundle of collars and place bottom collars to rear of lap tray, top collars to the front of the lap tray. Clip and attach coupon to gum sheet, sign ticket, and sew ticket in chain. Operation Secuence A. Pick up and position lining, top and bottom collar and first 1. quarter patch. B. Right hand moves lining into position from the lining shelf attached to the machine as left hand sews off previous collar. Right and left hand simultaneously pick up top and bottom collar from lap tray. As both hands lift both plies to the table, the right hand turns the bottom ply forward 180°, aligns and holds with both hands. Align the two plys with the lining on the machine stand. Right hand grasps quarter patch and align, with right edge of collar. C. Use both hands simultaneously. A. Sew around collar inserting second quarter patch. 2. 11.2 B. Using both hands, move collar to machine point. As both hands hold sew first side of collar. Without stopping, chain off approximately 2 inches. Left hand pivots collar 90° and quides as machine sews back of collar. Right hand grasps center of collar on right side with finger underneath and thumb on top and guides as left hand releases forward of collar, and grasps center on left side and holds in same mammer as right side. Sew approximately 3/4 down back of collar and stop. Right hand reaches across collar grasp second quarter patch and aligns collar at second edge. Sew remainder at back of collar chaining off approximately 2 inches. Left hand pivots 90° and enters into machine quiding the collar as remaining side is som, right hand reaches for next lining. C. Sew collar with one stop to apply quarter patch. Align edges as collar slides through hands. Guide off last point with left hand as right hand reaches for next lining.



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CONSULTING ENGINEERS

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7	DEPARIMENT		PRODUCTS	irts	PART:	Collar		FROM ST NOS.:	UDY		OPERATO		
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	THROAT PLATE:	Air Ope	FEED POG		PRESSER FOOT:			FOLDER:			GEARS: CAMS:		
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MOTION AND TIME KURT SALMON ASSOCIATES CONSULTING ENGINEERS ANALYSIS SUMMARY FORM SSCP Collar CLIENT: DEPT . 169 PLANT: CONTINUATION OF SHEET NO .: (CODE) (CODE) PRODUCT: SUMMARY NO .: SHEETS: DATE: MOTION OPERATION OPERATION NAME: ANALYST 3C June 70 NO .: 3 Clip Coller Points LIST THE FOLLOWING INFORMATION BELOW FOR EVERY ELEMENT NO .: ELEMENT 100% (A) ELEMENT TITLE, CORRESPONDING WITH TITLE USED ON FORM 33. (C) KEY POINTS IN MOTION PATH. TIME PE NO. (B) COMPLETE AND DETAILED JOB BREAKDOWN AND MOTION PATH. UNIT (D) KEY QUALITY POINTS. Bundle Handling Mobile box of 150 collars in chain is pulled into position at right. Collars flow from right to left into another mobile box. Idning side of collar is up. When 150 collars are completed, the full box is pushed toward Turn-

Operation Sequence

Form operation.

1. A. Position, Clip, Reposition, & Clip

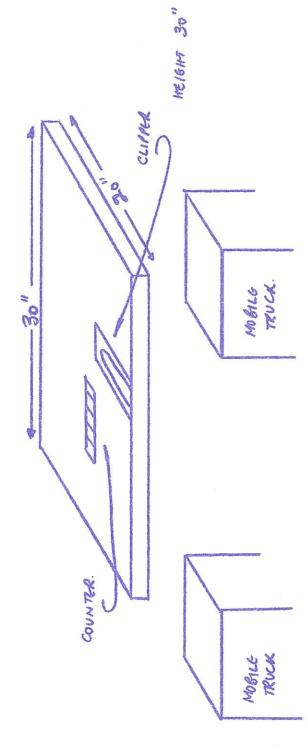
B. Clipping has just been completed on the previous collar. Right hand moves to next collar (left hand) and grasps bottom edge of collar. The fingers twist the collar open to separate the top ply and lining from the bottom ply (and Quarter Patch). Left hand assists in guiding left and of collar point on holder.

Both hands move blade down holding collar point firmly on holder; Clip collar point by activating machine with left knoo. Left hand raises blade quickly and moves to left while holding collar, removing point from blade and sliding collar to left with blade still in collar until next point (right) is on blade. Right hand slides down collar to last and.

Both hands move to right point and pull tight as before and clip.

- G. Clipper should take only one stroke per point. Separate top and bottom ply as previous point is trimmed. Keep blade between plies when moving from lat to 2nd point.
- D. Points should be evenly and cleanly trimmed.

OPERATION 3



COOR 169 COOR DEPARTMENT: Collar Try Eutten Does OPERATION: NO: 5 Topstitch Collars MACHINE MARKEURS MACHINE MARKEURS MACHINE MARKEURS TYPE: 61900 B ATTACHMENTINGEGLE PG- SITUDY STRUDY STRUCY STRUDY STRUD	FORM 33	в К	URT SALM	ON ASSOC	CIATES			CON	SUL	TIN	3 EN	IGIN	VEERS	6	
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A-C 1.51 - 1.51 7½ 12½ 20 1.81 BDLE. TOTAL - 100 25.30 1900 1900								A13, HK.	3, 11			V(13.	HK3,		
TOTAL 100 25.30 1900 1900			550							100)				da	
				18				30		10	00			7	900
Trining in the class.					TOTAL	1				100				dh	

MOTION AND TIME ANALYSIS SUMMARY

CONSULTING ENGINEERS

CLIENT: (CODE)	169	PLANT: (CODE)	DEPT.: Collar PRODUCTIVY Dre	CONTINUATION SUMMARY NO.:		China
DATE: 6/18	/70	MOTION ANALYST	OPERATION No.:	OPERATION NAME: (Describe in Full)		
ELEMENT NO.:		TITLE, CORRESPONDING	LOWING INFORMATION BELOW WITH TITLE USED ON FORM 3: EAKDOWN AND MOTION PATH.		IN MOTION PATH.	100% TIME PE UNIT

Bundle Handling

Secure tied bundle from left storage shelf and untic. Place collars in Lap with collar points away from operator and bottom side of collar face up. Place tie string across disposed well. At end of bundle tie and dispose bundle to right storage shelf.

Operation Sequence

- 1. A. Pick up, position, topstitch, cut, dispose
 - B. RH grasps right edge of collar in lap as LH controls sew off of previous collar. RH flips collar and brings collar up to needle. LH & RH guide collar into machine. Sew to collar point tolerance. Step with needle down. RH pivots collar counter clockwise for top edge stitching as LH pulls previous collar against knife to cut chain. Start stitching across top of collar with RH holding against gauge. During first stitching LH disposed previous collar to disposal well at left. LH & RH guide while sewing down top of collar. Sew to second collar point tolerance. Stop with needle down LH & RH pivot collar counter clockwise to finishing edge. LH controls sew off as RH begins pick up of next collar from lap.
 - C. RH picks up collar from lap as LH controls sew off of previous collar. RH pivots collar at first collar point as LH cuts chain from previous collar. LH disposes previous collar during stitching across top of collar.
 - D. Seam margin to.

 No cross stitches or rounding at corners.

 No gutter in points.

 Cutter on top edge not to exceed 1/16".

 No beading to front side of collar.

 Beading to underside not to exceed 1/16".

KURT SALMON ASSOCIATES CONSULTING ENGINEERS

(CODE)	69		PLANT: (CODE)				TION AN		Y ST	UDIES:	ie 70		SUMMAR No.: 5-1	0 -	OF: <u>1</u>
DEPARTM			PRODU	ст: y Col	lara	PART:	11ar		FR	OM STUD	Y		OPERATO Sym.		10
OPERATIONO.:5	1775		OPERA"	TION:	h Colla								OPERATO OR POSI		
SIZE:			MATER	IAL:	ca v warming		HES PER	noh	_ TH US	READS SED: 1.00	1/5		ASLS	21.2/1	,57
MACHINE MAKE: S			MACHI			GAUG	- Other Bridge		NE	EEDLES:	J		R.P.M.:		+
THROAT			FFFD			PRESSI FOOT:			FO	O3 DLDER:	00		GEARS: CAMS:	000	
	ventseed]		Edi	926 D ge gu	100		61320	J. A.A.	TY	PE POWER	R DN:		MACH. PER PIEC	TIME E:	
STUDY STARTED:	er shop kai		STUDY FINISH	203	5	ELAPS TIME:	ED			D. OF ECES:)		AVG. TI	ME CE:	
AVG. BUI				NO. OF D CHGS.			MATION						TIME ST	UDIES -	
CALCULA	LCULATIONS GM		100000000000000000000000000000000000000	LATIONS ED BY:		SKETC	HES		SK	OTION NALYST: ETCH			ON SHEE		
CTUDY T	CM TRANSFER			BY: B		BY:	IG CHECKE	Pr MD	IN	OS.;			DATE IN)
CHECKED	UDY TRANSFER HECKED BY:			D	UT .	BY:		JUN	BY	GM			6-18	=70	100
LEMENT NO.	MENT		OPERATI	ON SEQ	JENCE AND	JOB DESC	RIPTION			NO. OF READ- INGS	AVG. TIME	G. F.	100% TIME	occ.	PER:
	Same as Summ Bundle Handl Same as Summ														3.0
															efa O d
ELEMENT NOS.		Delay M		Pers. & Fat.	LLOWANCES Inc. F Tot	tal PER 100	T	TIMES		TANDARD PRODUCT 1 HR. 8	HRS. A	INST TIME		HR. 8	TION HRS.
	MTS/100	Delay M	BASE	Pers. & Fat.		PER	, N T DOZ.	TIMES		PRODUCT	HRS. A	TIME	S	HR. 8	TION

DISPOSE 204 SCALE S DISPOSE COLLARS NOTE: NOT TO - 48"-200 TEK UP

OPERATION S

TOPSTITCH COLLARS

1

CONSULTING ENGINEERS

B KI	JRT SA	LMON	1550	CIAT	ES			CI	JNSI	JLTI	NGE	NG	INE	ERS	i	
CLIENT: (CODE)	169	PLAN (COD						ND TII	'LL	DATES O		ie 70		SUMMAR	inj	SH OF:
DEPARTA	Collar	PROD	Shirt	38		PART:	and		F	ROM ST	UDY		- 1	OPERATO	OR:	
OPERATIONO.:	ON 7	OPER	ATION:	iem Ba	nd		W							OPERATO OR POSI	DR'S NO	
SIZE:	ALL	MAT	ERIAL:	1		STITCHES		inch	[THREADS JSED:	Cotto	n		AS	L: 18	22
MACHINI MAKE:	Singer	MAC TYPE	HINE 281			GAUGE: SEAM TY		→			55-14			R.P.M.:	5400	9
THROAT PLATE:	142060	FEED DOG:	14-9	057		PRESSER FOOT:	Flat, 1272			Six	gle I		1	GEARS: CAMS:		
ATTACH	MENTS:	- F3								TYPE PO TRANSMI	WER SSION	16		MACH. PER PIEC	TIME CE:	
STUDY STARTED		STUD	Y SHED:			ELAPSED TIME:			ļ	NO. OF PIECES:				AVG. TI	ME CE:	
AVG. BU SIZE:	NDLE 48	AVG	NO. OF	S.:		INFORMA BY:	TION		,	MOTION ANALYST	ac			TIME ST		
CALCULA BY:	TIONS	CALC	ULATION KED BY:	S JCR		SKETCHE BY:	JC			SKETCH NOS.;				ON SHEE NOS.:	Т	
STUDY T	RANSFER BY:	TYPE	D BY:	BĞ		TYPING BY:	CHECK	D		INSTALLI BY:	6		The state of the s	DATE IN	STALLED)
ELEMENT NO.		OPERA	TION SEC	DUENCE	AND JOI	B DESCRIP	TION			NO. REAL	- AV	G. G.	F.	100% TIME	occ.	100% FIME PER
20	bundles Hem in Coerati. Pick up Stack of A. Pro B. Tie	i and Qui Operate shain, br on Sequer	or hem ceaks lce older, oon	s ban , stac	d wit	h in a	ingle	turn	-				0	0473 0156 25 23 30	100 100 2.0 2.0 2.0	4.73 1.56 .50 .46
ELEMENT NOS.	TIME MTS/100 De 6-29 1:	ADJUSTEC BASE MTS/100	Pers. & Fat.	Inc. F	Total	S.A.M. PER 100	UN I T	TIME TIM MTS.	STUDY ES HRS.		RD ICTION 8 HRS.		IMES	HRS. 1	PRODUCT HR. 8	TION HRS.
A=C	1.56		7월	123	20	1.87	BDLE.								22	-
O#:	*:				TOTAL	-	100	10.40			4620	110	02	4.	4	350

MOTION AND TIME ANALYSIS SUMMARY

CONSULTING ENGINEERS

P									
CLIENT:	169	PLANT: (CODE)	DEPT.: PRODU			CONTINUATION OF SUMMARY NO.: 7	SHEET	NO.:2	
DATE:	/9/70	MOTION ANALYST 30		OPERATION NO.:	100000	RATION NAME: Describe in Full) Hom Band			
ELEMENT		LIST THE FOLL	OWING INFORM	IATION BELOW F	OR EVE	ERY ELEMENT NO.:			100%
NO.:	2 112	T TITLE, CORRESPONDING V TE AND DETAILED JOB BRE			17.	(C) KEY POINTS IN MOTE			TIME PER

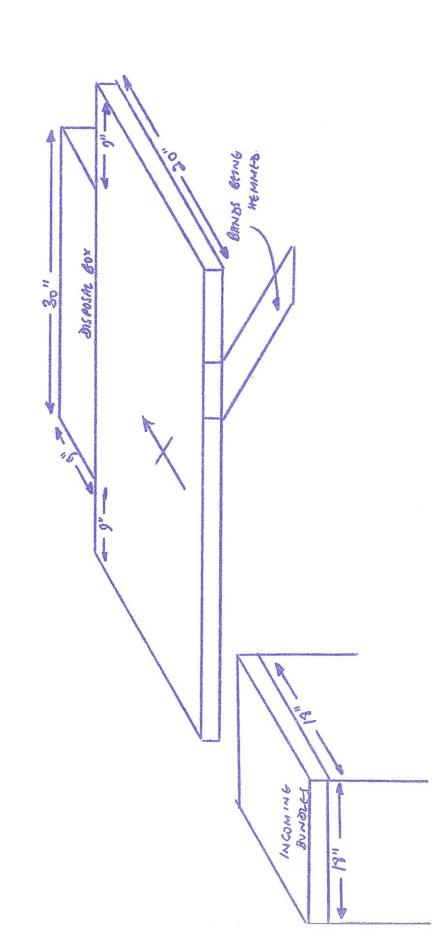
Bundle Handling

Bands are placed in tray to the left of operator by Service personnel. Operator gets one bundle, places on machine table top. Unties string and places hem band in tray protruding to the right from needle. Face side down. When bundle is complete, right hand pulls band to left hand and move hands placing band in lap and break apart simultaneously. Coupen is attached to last band hammed before stacking. The bundle along with unhammed band with string and dispose in tray to the right.

1. Operation Sequence

- A. Pick up, load folder, sew, stack out
- B. Right hand guides band & way thru folder. Left hand guides band all the way thru folder. While left hand is completing previous band, right hand reaches next band and positions to front of folder. Left hand assists right hand in loading the folder.
- C. Have next band ready to load in folder when previous band is completed.
- D. Hem should be uniform in width.

HEN BRNDS



MOTION AND TIME CONSULTING ENGINEERS KURT SALMON ASSOCIATES ANALYSIS SUMMARY FORM SSCP DEPT. Assembly SHEET NO .: CLIENT: CONTINUATION OF PLANT: 169 Shirts SUMMARY NO .: 34A PRODUCT: OF SHEETS: (CODE) (CODE) OPERATION DATE: May 1970 MOTION OPERATION NAME: Combination (Describe in Full) NO .: ANALYST LIST THE FOLLOWING INFORMATION BELOW FOR EVERY ELEMENT NO.: 100% ELEMENT TIME PEI (A) ELEMENT TITLE, CORRESPONDING WITH TITLE USED ON FORM 33. (C) KEY POINTS IN MOTION PATH. NO.: UNIT (B) COMPLETE AND DETAILED JOB BREAKDOWN AND MOTION PATH. (D) KEY QUALITY POINTS. A. Seam Right Side B. Same as 4B except as follows: (Last sentence)As the sawing approaches the bottom, take left hand to tall and follow out the last few inches as the right hand moves to lap. After finishing sewing, the left hand pushes the shirt into the trough as the right hand grasps the left front. Co Same es 4C Do Same as 4D

KI.	JRT SALM							3	
CLIENT: (CODE)	169	PLANT: (CODE)	MOTION AND TIME ANALYSIS SUMMARY	DATES OF STUDIES	e 197	O	SUMMAI NO.:	RY 1	OF:
DEPARTM		PRODUCT: Dress Shirt	PART: Gollar	FROM STUDY	Υ		OPERAT	or: Wa	lker
OPERATIONO.:	ИС	OPERATION:					OPERAT OR POS	OR'S NO	D.
SIZE		MATERIAL:	STITCHES PER SINGLE	THREADS USED: 100)/2				
MACHINE MAKE:	US	MACHINE 63900	GAUGE: SEAM TYPE	NEEDLES:	-036		R.P.M.:	5000	
THROAT PLATE:	61924B	FEED 62905B DOG:	PRESSECT 320AA	FOLDER:			GEARS: CAMS:		
ATTACHA	MENTS: Three			TYPE POWER TRANSMISSIO			MACH. PER PIEC		
STUDY STARTED:		STUDY FINISHED:	ELAPSED TIME:	NO. OF PIECES:			AVG. TI PER PIE	IME CE:	
AVG. BUI	NDLE	AVG. NO. OF THREAD CHGS.:	INFORMATION BY: 30	MOTION ANALYST:	ra.		TIME ST	TUDIES	
CALCUIA BY:	TIONS	CALCULATIONS CHECKED BY: JUR	SKETCHES BY:	SKETCH NOS.:			ON SHEI	ET	
STUDY T		TYPED BY:	TYPING CHECKED	INSTALLED BY 10			DATE IN	1970	D
ELEMENT NO.		OPERATION SEQUENCE AND		NO. OF READ-	AVG.	G. F.	100%	occ.	100
	located on collars are raw edge he bands, and and places	ands, and lining ar a work aid at oper e complete, one ban em. After matching lining, the operat the lining on left	d is hemmed with a 2 a bundle of collars or opens the bundles of table top, hemme	n 9	×	,			
	Collars, be located on collars are raw edge he bands, and and places bands and cunder the moreon metals.	ands, and lining ar a work aid at oper e complete, one ban em. After matching lining, the operat the lining on left collars on right of machine head, and t atches the parts an	ator's left. The d is bessed with a ‡ a bundle of collars or opens the bundles	in 1 1y p.	~	,			
	Collars, be located en collars are raw edge he bands, and and places bands and cunder the months of the collars are constant as the collars are collars.	ands, and lining are a work aid at oper a complete, one ban and. After matching lining, the operate the lining on left collars on right of machine head, and that the state of the parts and pushing into characters.	ator's left. The d is hemmed with a t a bundle of collars or opens the bundles of table top, hemme table top - partial he inner bands in la d sews together leav	ly p. ing s.			1369 1		
	Collars, be located on collars are raw edge he bands, and and places bands and cunder the more ration of the collars are chain as Contraction of Pick Up and Sew together A. Until a B. Until a B. Until a collars are collars and collars are constant.	a work aid at oper a work aid at oper a complete, one ban sm. After matching lining, the operat the lining on left collars on right of machine head, and tatches the parts and pushing into church position parts are and position collars and position collars and position lining	ator's left. The d is hemmed with a t a bundle of cellars or opens the bundles of table top, hemme table top - partial he inner bands in lay d sews together leav to of back of machine	ing 20		85 . 00	1257 1		
	Collars, be located en collars are raw edge he bands, and and places bands and cunder the month of the collars are constant and constant are chain as Constant are constant ar	a work aid at oper a work aid at oper a work aid at oper a complete, one ban am. After matching liming, the operat the liming on left collars on right of machine head, and tatches the parts and pushing into church position parts are and position collars or and position collars.	ator's left. The d is hemmed with a t a bundle of cellars or opens the bundles of table top, hemme table top - partial he inner bands in lay d sews together leav to of back of machine	ing 20	1479 210 1 325 1	85 . 00 00	1257 I .210	2.1	12.5
2.a	Collars, be located en collars are collars are raw edge he bands, and and places bands and collars are constant are chain as Coeration of Pick Up and	a work aid at oper a work aid at oper a work aid at oper a complete, one ban am. After matching liming, the operat the liming on left collars on right of machine head, and the atches the parts and pushing into character position parts are and position parts are and position collars and position liming liming and position bands and sign coupon	ator's left. The d is hemmed with a ‡ a bundle of cellars or opens the bundles of table top, hemme table top - partial he inner bands in la d sews together leave te of back of machine	ing 20 20 production PRODUCTION	14.79 210 1 325 1 295 1 25 2	85 . 00 00 00 00	1257 1 .210 .325 .295 .250	2.1 2.1 2.1 2.1	.59 .50
ELEMENT NOS.	Collars, be located en collars are collars are raw edge he bands, and and places bands and collars are constant are chain as Coeration of Pick Up and	a work aid at oper a work aid at oper a work aid at oper a complete, one ban am. After matching liming, the operat the liming on left collars on right of machine head, and to atches the parts am and pushing into character position parts are and position parts are and position parts are and position bands and position bands and position bands and sign coupon ADJUSTED ALLOWANCES BASE Pers. Inc. F Total	ator's left. The d is hemmed with a to a bundle of collars, or opens the bundles of table top, hemme table top - partial he inner bands in lay d sews together leav to of back of machine s, tie and dispose S.A.M. U	ing 20 20 production PRODUCTION	210 1 325 1 295 1 25 1	85 a 00 00 00 00	1257 1 .210 .325 .295 .250	2.1 2.1 2.1 2.1 2.1 1 HR. 8	.59 .50
ELEMENT NOS.	Collars, be located en collars are collars are raw edge he bands, and and places bands and conder the months of the collars are consistent of the collars are collars are collars.	a work aid at oper a work aid at oper a work aid at oper a complete, one ban am. After matching liming, the operat the liming on left collars on right of machine head, and the atches the parts am and pushing into character position parts are and position parts are and position parts are and position bands and position bands and position bands and sign coupon ADJUSTED ALLOWANCES BASE Pers. Inc. F Total	ator's left. The d is hemmed with a to a bundle of cellars or opens the bundles of table top, hemme table top - partial he inner bands in lay d sews together leave to of back of machine s, tie and dispose S.A.M. U TIME STU PER N TIMES TIMES ODZ. HE 100 HE 10	DDY STANDARD PRODUCTIONS 1 HR. 8 H	210 1 325 1 295 1 25 1	85 . 00 00 00 00	1257 1 .210 .325 .295 .250	2.1 2.1 2.1 2.1 2.1 1 HR. 8	.59 .50
1-2 2	Collars, be located en collars are raw edge he bands, and and places bands and cunder the months of the collars are consistent of the collars are collars are collars are collars are collars.	a work aid at oper a work aid at oper a work aid at oper a complete, one ban am. After matching liming, the operat the liming on left collars on right of machine head, and the atches the parts and pushing into character position parts are and position parts are and position parts are and position bands and position bands and sign coupon ADJUSTED ALLOWANCES BASE Pers. Inc. F Total Pers. Inc. F Total Position Base and position bands and sign coupon	ator's left. The d is hemmed with a to a bundle of cellars or opens the bundles of table top, hemme table top - partial he inner bands in lay d sews together leav te of back of machine s.A.M. V TIME STU TIMES TIMES TIMES DOZ.	DDY STANDARD PRODUCTIONS 1 HR. 8 H	210 1 325 1 295 1 25 1	85 . 00 00 00 00	1257 1 .210 .325 .295 .250	2.1 2.1 2.1 2.1 1 HR. 8	12.5 .42 .65 .59 .50

guide.

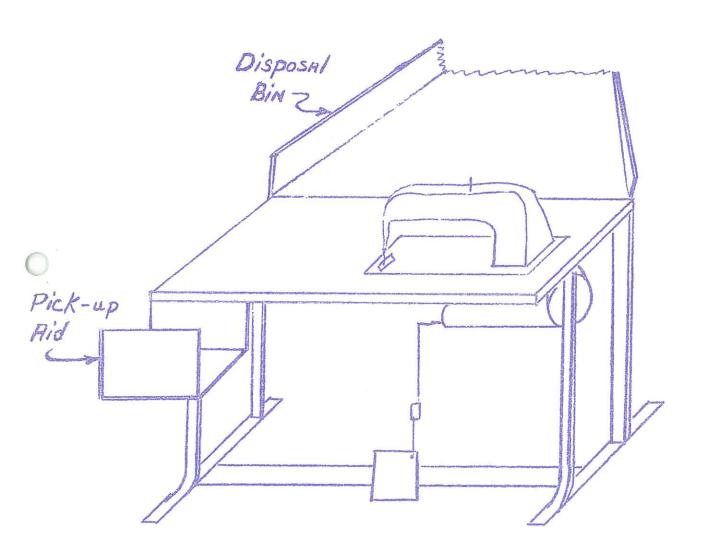
MOTION AND TIME

CONSULTING ENGINEERS

ANALYSIS SUMMARY FORM SSCP (CODE) DEPT. Parts SHEET NO.2 PLANT: CONTINUATION OF PRODUCT: Shirts SUMMARY NO.: OF2 SHEETS: (CODE) DATE. OPERATION OPERATION NAME: MOTION (Describe in Full) Band Collar June 1970 ANALYST JOR NO.: LIST THE FOLLOWING INFORMATION BELOW FOR EVERY ELEMENT NO .: 100% ELEMENT TIME PER (A) ELEMENT TITLE, CORRESPONDING WITH TITLE USED ON FORM 33. NO. UNIT (B) COMPLETE AND DETAILED JOB BREAKDOWN AND MOTION PATH. (D) KEY QUALITY POINTS. Bundle Handling Tie up excess lining from previous bundle, if another size, and dispose left. Match collar and band bundles and get lining from work aid at left. Open bundles and place lining on left of table top, collars and homed bands on right table top partially under machine head. and inner bands in lap. Clip and sign coupon. Operation Sequence 20 A. Pick Up and Position Parts. B. IH picks up and positions liming to left and front of foot as RH picks up inner band from lap. Position inner band to lining, matchine first notch, and hold ends and first notches together as RH slides back aligning notches. In positions in front of foot as Mi reaches for and picks up collar. Match collar end to first notch. Il positions in collar and holds in place until LT and L2 grasp. Fick up and position homed band with RH, match 1st notch then II helds in place while HH slides back aligning notches. Position to foot while IH, HH helps hold. C. Ili holds each part in place as Hi matches notches. D. Center notches should always be the same. Distance should be split on first and last notches. 2. Sew together. B. Entry saw to about 1" beyond first notch. Stop & realign. Grasp homed band between II and I2 and collar between IF and II. MI guides inner band lining. Sew without stops to about 3" beyond center metch. Step and realign. RH positions collar to notch on inner band and 11 and 17 positions hemed band to collar. Mi releases and IH holds ends together and sews off. C. IH guides hemmed band and collar. Ill guides inner band and lining.

D. Band extensions must be even and notches matched, keep edges against

Opertion # 8 BAND COLLAR



CONSULTING ENGINEERS

33	в К	URT 5	SALN	10N A	SSC	CIAT	ES			CI	JNS	JLTI	NGE	NGIN	IEERS	3	
	CLIENT: (CODE)	169		PLAN (CODI						ND TI	ME RY	DATES O	June	70	SUMMA NO.:		OF: 3SHE
	DEBART	MENT:		PROD	UCT: S	hirts		PART: Co	llar			ROM ST	UDY		OPERAT		<u> </u>
	OPERATI NO.:	34		OPER	ATION:	Close	Band	Ends -			ls				OPERAT OR POS	OR'S NO).
	SIZE:	All			RIALI			STITCHES 20		inch		HREADS	2 DSP		ASL .	- 3"	=
	MACHIN MAKE:	Singer	il .	MACI	251	1		GAUGE: SEAM TY	PE:			NEEDLES:) = 14		R.P.M	000	
	THROAT PLATE:	Fowler	10	FEED DOG:	14-9	057		PRESSER FOOT:				OLDER:		4	GEARS: CAMS:		
	CALICE	MENTS bol	bbin	cover ;	plate	- T2	Mler (edge o	o. Su itter	nbrand		TYPE PO TRANSMI	wer SSION:	16	MACH. PER PIE	TIME CE:	i i
	STUDY STARTED			STUD				ELAPSED TIME:				NO. OF PIECES:			AVG. T PER PIE	IME ECE:	E
	AVG. BU	NDLE		AVG. THRE	NO. OF AD CHG	S.:		INFORMA BY:	TION	==		MOTION,	FC		TIME ST	TUDIES	
	CALCULA BY:	Hons		CALC	ULATION KED BY	us JCI	?	SKETCHE: BY:	3C			SKETCH NOS.;			ON SHE	ET	
	STUDY CHECKER	TRANSFER D BY:		TYPE	D BY:	BG		TYPING BY:	CHECKE	D JCR		NSTALLE BY:	P		DATE 1	NSTALLE	D
	ELEMENT NO.			00504	TION SE	OUENCE	AND 10	B DESCRIP	TION			NO. REAL	AVC	G. G. F.	100% TIME	occ.	100% TIME PER:
	10	Sew or Bundle	ne co e Han roces et ne		on										.087 .25 .10 .20	2.0 1.0	8.70 .50 .10
	ELEMENT NOS,	8 ₀ 70	% Delay	ADJUSTED BASE MTS/100	Pers. & Fat.	ALLOWA Inc. F	Total 20	S.A.M. PER 100	U N I T	TIME TIM MTS,	STUDY ES HRS,	PRODU	RD OCTION 8 HRS.	INS TIM MTS.		PRODUC 1 HR. 8	TION
	A=C	ه70			72	121	20	084	BDLE.								
							TOTAL	-	100	12.62			3800			38	900

MOTION AND TIME ANALYSIS SUMMARY

CONSULTING ENGINEERS

FORM SSCP PRODUCT: Shirts CONTINUATION OF CLIENT: PLANT SHEET NO : 169 (CODE) OF (CODE) SUMMARY NO .: SHEETS: DATE: MOTION OPERATION OPERATION NAME: ANALYST 3C (Classi Band Ends - Wide Bands 6/17/70 NO.: Q

LIST THE FOLLOWING INFORMATION BELOW FOR EVERY ELEMENT NO.:

(A) ELEMENT TITLE, CORRESPONDING WITH TITLE USED ON FORM 33.
(B) COMPLETE AND DETAILED JOB BREAKDOWN AND MOTION PATH.
(C) KEY QUALITY POINTS.

(D) KEY QUALITY POINTS.

Bundle Handling

Collars arrive in chain from band operation — 4 chates from band operation are attached to Close Band machine (right side). Ticket is attached to first collar and remains in tact. Bundle is disposed in chain in chate to next operation.

Operation Secuence

- 1. A. Sew one collar
 - B. Previous collar is being completed with left hand. Right hand reaches let end of next collar, and positions to needle. Left hand assists in positioning to needle and guides band left hand thru needle. While left hand is completing the sewing cycle, right hand reaches for 2nd end, breaks 2nd end from next collar and positions to needle. Left hand assists in positioning to needle and guides band 2nd end thru needle. While left hand is completing this sewing cycle, right hand reaches for 1st end of next collar.
 - G. Right hand prepositions band end during sewing cycle of previous end.
 - D. Collar must be against gauge correctly so that both band ends will be some length and proper shape.

KURT SALMON ASSOCIATES CONSULTING ENGINEERS

331	B K	URT 5	SALM	10N A	550	CIAT	ES			C	DNS	ULT	IND	3 EN	IGIN	EERS		
53	CLIENT: (CODE)	169		PLAN (CODI				MOTI	ON A	ND TI	ME RY	DATES STUDIES	OF S:	une 7	0	SUMMAR NO.: 9		SHE OF: 3
	DEPARTA	ollar		PROD	ucт: Shirt	s		PART:	lar			FROM NOS.:	and the same of the same			OPERATO Syn		
	OPERATIONO.:	ON 9)		ATION: Close	Band	Ends	- DRB	R							OPERATO OR POSI	DR'S NO TION:	•
	SIZE:	All	E .	MATE	RIAL:	1		STITCHES 20	PER _	inch		THREAD USED:		DSP				
	MACHIN MAKE:	Singer		MACH	HINE 241	-1		GAUGE: SEAM TY	PE:			NEEDLE	S:			R.P.M.:	000	
	THROAT PLATE:			FEED DOG:				PRESSER FOOT:				FOLDER	:			GEARS: CAMS:		
	ATTACH	MENTS:	Bobbi	n Cove	r Pla	te -	Fowle	r Edge	Curt	er		TYPE P	OWER	NTM6	3, 32, 43	MACH. PER PIEC	TIME CE:	
	STUDY STARTED	:		STUD	Y HED:			ELAPSED TIME:				NO. OF PIECES:				AVG. TI PER PIE	ME CE:	EI
	AVG. BU SIZE:	A8		AVG. THRE	NO. OF AD CHG	S.:		INFORMA BY:	TION			MOTION	ST:	C		TIME ST BY:	UDIES	
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	STUDY 1	STUDY TRANSFER CHECKED BY:			D BY:	BG		TYPING BY:	CHECKE	PCR		INSTAL BY:	JC			DATE IN	STALLE	
	ELEMENT NO.			OPERA"	TION SEC	QUENCE	AND JO	B DESCRIP	TION			NO. RE.	OF AD- IGS	AVG.	G. F.	100% TIME	occ.	100% PER:200
	10	Same :	as Su e Han										2		8			.70
	ELEMENT	100% TIME	%	ADJUSTED BASE MTS/100	Pers.	ALLOWAN		S.A.M. PER	-zc	TIM		PROD	DUCTI		TIM		PRODUC	
	NOS.	7.50	Delay	8:45	& Fat.	1nc. F	Total	100	+	MTS.	HRS.	1 HR	36		MTS.	HRS. 1	HR. 8	HRS.
	A-C	.70	cas		73	123	20	.84	DOZ.									
					٠.۵	- G			BDLE.	0.99			43	75			1.	375
							TOTAL	-	100	689		*	100				F-St.	113

OPERATION 9

GOSE BAND ENDS.

dispose in cirrin

TO CHUTE

COLLARS MERIVE IN A CHUTE IN

C BAND OND LENGTH Solderen no Solder

CONSULTING ENGINEERS

33E	s Kl	JRT 5	IALM	DN A	550	CIAI	E5			CI	JNSL	JLTIN	1G E	IGIN	IEERS	i		
71	CLIENT: (CODE)	169		PLAN' (CODE						ND TII	ME S	ATES OF	8/26/	70	SUMMAR NO.:	10 -	SHEI OF: 3	
	Col	lars (C)2)	PRODI	ост: S hirt s	3		PART: Collar				ROM STI	YDL		OPERATOR: Helen Register			
	OPERATION: NO.: 12 OPERATION: Trim & Baste Coll								nds						OPERATOR'S NO. OR POSITION:			
	SIZE:	All		MATE	MATERIAL:				PER	In.		HREADS ISED:	100/2					
	MACHINE MAKE:	nion Sp	ecia	MACH TYPE:	634C	00 D		GAUGE: SEAM TY	PE:	-		Star	dard		R.P.M.: 4500			
	THROAT PLATE	3428		FEED DOG:	61	139		PRESSER FOOT:	634	20	F	OLDER:	A.		GEARS: CAMS:			
	Guide								Ţ	YPE POV	VER SION:		MACH, PER PIEC	TIME CE:				
	STUDY STARTED	:		STUDY	HED:			ELAPSED TIME:	7)		N P	IO. OF			AVG. TI	ME CE:	EF	
	AVG. BU SIZE:	NDLE 50		AVG. THRE	AVG. NO. OF THREAD CHGS.:				TION		٨	MOTION	REN		TIME ST BY:	TIME STUDIES		
	CALCULA BY:	TIONS PEN		CALC	CALCULATIONS CHECKED BY: REN				REN		S	KETCH IOS.;			ON SHEET NOS.:			
	STUDY T	RANSFER		TYPE	TYPED BY:				CHECKE	D	B	NSTALLE			DATE INSTALLED			
	ELEMENT NO.			OPERAT	OPERATION SEQUENCE AND JOB DESCRIPTION								F AVG.	G. F.	100% TIME	occ.	100% TIME	
	Bonded collars bundles. Bundles. Collars bundles are set left. Operation Security 1. Pick up, positive 2. Stack out Bundle Handling					are p stack Bund sew	olaced sed ba lles a	l on ma	chin er s	e stor everal	L	20		6 90	.0536 .0150	100	5.36 1.50	
	Ao		1.5%	itie, p	081.61	on bu	nare				47				.25	2.0	.50	
	B _o		erica												.25	2.0	.50	
	Co	11.	e & Q	ispose					8	-					.20	2.0	.40	
	ELEMENT NOS.	100% TIME MTS/100	% Delay	ADJUSTED BASE MTS/100	% A Pers. & Fat.	Inc. F	NCES Total	S.A.M. PER 100	H-ZC	TIME TIM MTS,	STUDY ES HRS.	PRODU 1 HR.	CTION	INST		PRODUCT		
	1_2	6.86	12½	7.71	7월	121	20	9.25	DOZ.		. 1130,		366				370	
	A-C	1.40		1.40	7월	121	20	1.68	BDLE.	200								
			2				TOTAL		100	10.93			4390			4	445	

MOTION AND TIME ANALYSIS SUMMARY

CONSULTING ENGINEERS

FORM SSCP		KOKI	DALMON ADDOCIATES	ANAL	YSIS SUMM	AKY	J CONSOLTING E	TOHITEENS		
	CLIENT: (CODE)	169	PLANT: (CODE)	DEPT.: PRODUC	A Assemble of	s	CONTINUATION OF SUMMARY NO.:	OF SHEET NO.: 2 OF 3SHEETS:		
	DATE:	3/26/70	MOTION ANALYST			(.	ERATION NAME: Describe in Full) Trim & Baste Collars	3		
	ELEMENT NO.:		LIST THE FOLLOWING WITH LETE AND DETAILED JOB BREAKDO	TITLE USE	D ON FORM 33.	OR EV	ERY ELEMENT NO.: (C) KEY POINTS IN MOTION (D) KEY QUALITY POINTS.	I PATH.	100% TIME PER UNIT	

Bundle Handling

Collars are secured from operators right on storage table. Bundle is untiled and placed under machine arm with hemmed band on top. After several bundles are seam, operator stacks out and ties bundles, clips coupon and disposes to her left.

Operation Sequence

- A. Pick up, position and sew one collar.
- B. Machine has stopped as previous collar is completed. IH & RH position next band to sexing foot and machine starts. IH guides collar as machine sews across band. RH moves to collar placed under machine arm and gets next collar and pre-positions for the next sew gyfle.
- C. Use both hands simultaneously.
- A. Stack out.
- B. LH pulls collar to RH. RH places collar in lap as LH moves to next collar. LH grasps next collar and snaps connecting thread. Operation is repeated.
- C. Bands must be seen by guide.

STORAGE

STORACI

is a

	1000/	0/	ADJUSTED	%	ALLOWAI	NCES	S.A.M.	U	1,1,155,155,55					TALLED S		
ELEMENT	100% TIME	%	BASE	Pers.	The second	factor incomes	PER	N	TIM			JCTION	TIA			JCTION
NOS.	MTS/100	Delay	MTS/100	& Fat.	Inc. F	Total	100	Ť	MTS.	HRS.	1 HR.	8 HRS.	MTS.	HRS.	1 HR.	8 HRS.
1	6.16	5	6.47	7월	121	20	7.76					439				416
			- Condition of the Cond	- 20			SALEDIAN OF	DOZ.								
A-C	1.30		1.30	7章	122	20	1.56									
8								BDLE.								
									9.32			5150				5000
						TOTAL		100								

FORM SSCP

KURT SALMON ASSOCIATES

MOTION AND TIME ANALYSIS SUMMARY

CONSULTING ENGINEERS

P				-	_	-							
CLIENT: (CODE)	169	PLANT: (CODE)		Shi wha		50-3-100 HE 200	CONTINUATION OF SHEET						
DATE:	9/21/70	MOTION ANALYST	REV		OPERATION No.:		OPERATION NAME: (Describe in Full) Notch Collar						
ELEMENT	LIST THE FOLLOWING INFORMATION BELOW FOR EVERY ELEMENT NO.:												
NO.:		TLE, CORRESPON					17/4-25	Y POINTS IN MOTI		TIME I			

Bundle Handling

Tied bundles are secured from left of machine. They are placed in operator's lap and untied. Collars are placed in lap with point toward operator and hemmed band on bottom. After notching collars are placed in hanger in the table front. At the completion of the bundle, the bundle is tied, coupon clipped and bundle disposed to the operator's left on storage table.

Operation Sequence

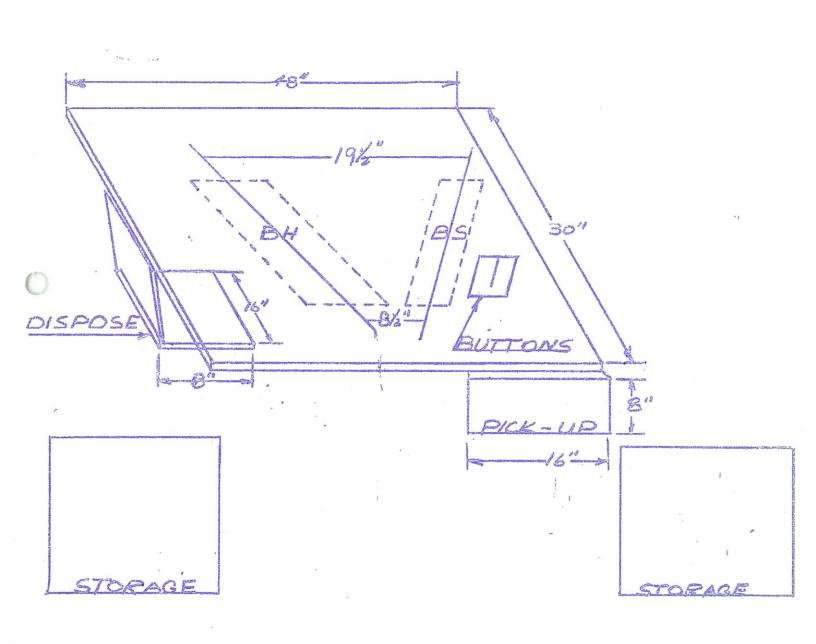
- A. Pick up, position coller, notch, and dispose
- B. Previous collar has just been dropped into the dispose hanger. RH moves to the center of the next collar. IH grasps the left end of the same collar. Index and middle fingers of the RH turn the hemmed band back toward the collar points as little finger flips right end of collar down and around so that IH grasps band right end. Collar is now folded around index finger of RH. IH is grasping both band ends. IH aligns "V" formed by the collar and band so that band is centered around index finger of RH. Collar is moved to pag on machine as center of collar is positioned around pag by RH IH places band to quarter notch wire. RH thumb flips top portion of the folded collar upward and to the right and both bands drop collar into the dispose hanger.
- C. Ends of collars are flipped with fingers and thumb for quickest results.
- D. Notches must be according to band notch template.

33B	KURT 5	SALN	MON A	\SSC	CIAT	TES			C	ONS	ULT	INI	G EN	IGIN	EERS			
(CODE)	1 54 6 7		PLAN (COD						ND TI	ME RY	DATES	OF 8	-30-	70	SUMMAR NO.:	Υ _	1 SHE 2	
CONTRACTOR (1975)	TMENT:			ouct: .irts			PART:	ar			FROM S NOS.:	TUD	Υ		OPERATOR: Sadie Tyson			
OPERA NO.:	.4		But	Buttonhole-Button Sew Band in a Part										OPERATOR'S NO. OR POSITION:				
SIZE:	5월	MAT	A1	1	HES PER BH 90 BS 16 THREADS BS-50/BH-40						/6	6						
MACHI MAKE:	Sing	MAC TYPE	BS-	271-1 114-	K1.	GAUGE: SEAM TYPE: Shop				NEEDLE	5: B	H-71 S-10	xl	R.P.M.: BS-1500 BH-2500				
THROA PLATE:	Stand	ard	FEED DOG:				PRESSER FOOT:				FOLDER				GEARS: 271642 CAMS: 271638			
ATLAC Se	HMENTS:	ched	l l								TYPE P TRANSA	OWER	N: I	M2	MACH. PER PIEC	TIME BE	I-:04	
STUDY	ED:		STUD	Y HED:			ELAPSED TIME:				NO. OF PIECES:				AVG. TIA	ME	EI	
AVG. I	BUNDLE 48		AVG. THRE	NO. OF AD CHG	S.:		INFORMA BY: RE	TION			MOTION	T: R	EN		TIME STUDIES BY: RIN			
	LATIONS	CALC	CALCULATIONS CHECKED BY: REN				EN			SKETCH NOS.:				ON SHEET NOS.:				
STUDY	TRANSFER	Á	TYPE	D BY:	LB		TYPING BY:	CHECKE CR	D		INSTALLED BY: REN				9-14-70			
ELEMEN NO.	IT		OPERA*	OPERATION SEQUENCE AND JOB DESCRIPTION							NO. REA	D-	AVG.	G. F.	100% TIME	occ.	100% TIAO	
1. A. B.	Bun Pic Cle	ek ü eton dle l k üp	ion Sep. Por Sew, Handling, Positi	Dis Dis	on, I pose Untie	9			lepos	i tio	n 3.	0	.0770112		.0867 .25 .25	2 2 2	8.67 .50 .50	
ELEMEN NOS.	8.67	% Delay	ADJUSTED BASE MTS/100 9.71	Pers. & Fat.	Inc. F	Total 20	S.A.M. PER 100	U N I T	TIME TIM MTS.	STUDY ES HRS.	STAND PROD 1 HR.	UCTI		INST. TIME MTS.		HR. 8	TION	
N-C	1.30	400	1.30	72	122	20	1.56	BDLE.										
						TOTAL	-	100	13.23			36	525				3600	

MOTION AND TIME ANALYSIS SUMMARY

KURT SALMON ASSOCIATES CONSULTING ENGINEERS FORM SSCP DEPT. Collar -02 SHEET NO .: 2 CLIENT: CONTINUATION OF PLANT! (CODE) 169 PRODUCT: Shirts SUMMARY NO.: 14 OF 2 SHEETS: (CODE) DATE: 9-16-70 **OPERATION** OPERATION NAME: MOTION ANALYST REN HI-ES Band (In a Part) LIST THE FOLLOWING INFORMATION BELOW FOR EVERY ELEMENT NO.: 100% ELEMENT TIME PER (A) ELEMENT TITLE, CORRESPONDING WITH TITLE USED ON FORM 33. (C) KEY POINTS IN MOTION PATH. NO .: (B) COMPLETE AND DETAILED JOB BREAKDOWN AND MOTION PATH. (D) KEY QUALITY POINTS. UNIT Bundle Handling Operator gets bundle from her right - places it in work aid on the right of machine. Bundle is placed with the hemmed band up high ply number on top. String is placed in the slot in the disposal work aid at operator's left. Completed work is placed to the left - hermed band down high ply number on bottom. Tie bundle - clip coupon and dispose to the left. Operation Sequence 1. A. Pick up, Position to buttonhole machine sew, reposition to button sew, sew, dispose, B. As the left hand disposes the previous collar, the right hand positions the next collar to the buttonhole gauge. The left foot lowers the clamp and left knee starts the buttonhole machine. The left hand moves to grasp the collar at the button end approximately 2" from collar point. Collar is grasped with a thumb and index finger on top. Left hand moves collar to button sew gauge as right hand gets buttom from tray at right and loads button clamp. Right foot lowers clamp and left hand starts the button sew machine. Once the button clamp is loaded, the right hand moves to get next collar at right. Button Sew completes cycle - Left hand pulls button sew end from button clamp. Left hand moves to other end of collar - unloades button hole machine and disposes to left. C. Simultaneous use of both hands is a must. D. The lead edge of the collar must be flush with the edge of the gauge with the "V" formed by the band and collar snug with the end of gauge. E. Each collar style must have a different button hole and button sew gauge.

BUTTON-HOLE - BUTTON-SEW BAND



335					Marie Company	ואוט						0.00	<u> </u>					
(CODI				PLAN (COD						ND TII		DATES O	7-24.	70	SUMMA NO.;	_	OF:	
DEPA	RTMENT:			PROD	UCT:			PART:				FROM ST	UDY	-10	OPERATOR:			
Į.	rt &	Bk I	Prep	Sh	Shirts Front								5-1		Jaqueta Grube			
OPER	ATION		The state of the s	OPER	OPERATION:								4		OPERATOR'S NO. OR POSITION:			
NO.:	15				Hem Right Fronts								· ·		OR POSITION:			
SIZE:				MATE	ERIAL:			STITCHES	PER	inch		THREADS						
	AII				AII			13				•						
MACH	HINE US			MACI TYPE				GAUGE: SEAM TYPE:				NEEDLES:	100/2		R.P.M.: 5100 GEARS:			
				FEED	5630	Ю						FOLDER:	10002					
PLAT	E: 512	24		DOG:	5120	5			5172	5.005		OLDER.			CAMS:			
ATTA	CHMENT	5:			100							TYPE PO	WER		MACH, TIME			
	Stacker										8	TRANSMI	SSION:		PER PIE	CE:		
STUDY STARTED:				STUD	Y			ELAPSED				NO. OF			AVG. T			
STAR	TED:			FINIS	HED:			TIME:				PIECES:			PER PIECE: TIME STUDIES BY:			
AVG.	BUNDLE	1		AVG.	NO. OF	ς .		INFORMA BY:	TION			MOTION						
3126.	48			111100		J		J	CR				JCR		JCR			
CALC BY:	ULATION	S		CALC	LATION	15		SKETCHES BY:		IES		SKETCH NOS.:			ON SHEET NOS.:			
	JCR				JCR			TYPING	CR			1000000			DATE INSTALLE		D	
STUD	Y TRANS	FER		TYPE	D BY:			BY:		U		NSTALLED BY:			7000000000		D	
					-		JCR					CR	1	8=1	7-70	1		
ELEME NO.				OPERA	TION SEC	DUFNCE	AND IO	B DESCRIP	TION			NO. (REAL ING	AVG	G. F.	100% TIME	occ.	100% TIME PER:	
												1110	2 11111		117716		T LK.	
.1	Đ	Ope Pos thr	eration in the cough	n fron Handii	ront in folder, push starter and sew 20 6.45 130								5 130	8.37	100	8,37		
A	0	Cou	ipon	dispos	al							3	26,	0 100	26.0	2.1	55.0	
В	e				dle and sort into left and right fronts- 3 40.0 100 eft fronts.									40.0	2.1	84.0		
С	0			of bun He and			oth I	eft an	d rig	ght fr	onts	3	22.	0 100	22.0	2.1	46.0	
		II			01	ALLOWAN	, ICES	6444	U	TIME	STUDY	STANDA	RD T	INST	TALLED ST	ANDARD		
ELEME		% NE 100	% Delay	ADJUSTED BASE MTS/100	Pers. & Fat.	Inc. F	Total	S.A.M. PER 100	1-Z0	TIM MTS,		PRODU		TIM MTS.	ES.	PRODUC 1 HR. 8	TION	
í	8.	37	7날	9.01	7날	12½	20	10.80					313				313	
A	-C I	1.70 - 1.70 7½ 12½ 20			20	2,00	BDLE.											
										12 00			3700	12.00			700	
							TOTAL		100	12.80			2/00	12.80			3700	

MOTION AND TIME

CP	KURI SA	LMON ASSOCIATES	ANALYSIS SUMM		ENGINEERS					
CLIENT: (CODE)	169	PLAN1: (CODE)	DEPT.: Shirts PRODUCT:	CONTINUATION OF SUMMARY NO.:	SHEET NO.					
DATE	-24-70	MOTION JCR	OPERATION NO.:	ight Front						
ELEMENT NO.:	(A) ELEMENT T		G INFORMATION BELOW FOR EVERY ELEMENT NO.: TITLE USED ON FORM 33. (C) KEY POINTS IN MOTION PATH. WWN AND MOTION PATH. (D) KEY QUALITY POINTS.							
1.	A. Pos	ition Front in Fold le previous front is	er, push starter a		hand					

2-3 inches behind the preceding front. Both hands are used to guide the front initially. C. The motion of fronts through the machine should be virtually

continuous. The needle should not be stopped between shirts.

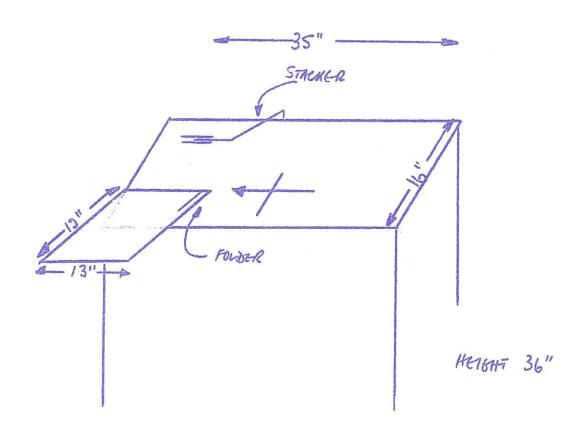
D. The hem must be made on the notch previously inserted. Both ends of the hem must be flush with the bottom of the front.

Bundle Handling

Bundle is picked up from bench beside the operator. This is unitled and sorted. The left fronts are placed to one side and the right fronts placed at the left of the operator.

At the end of the bundle, the right fronts are collected from the stacker and reunited with the left fronts, both are tied and disposed. The coupon is dealt with.

OFERATION 15 HEM RIGHT FRONT



K	URT SA	ALMO	JN AS	650C	SIAIES		LUN	ISULTI	NG E	NGI	VEERS	3	
CLIENT: (CODE)	.69		PLANT: (CODE)				ION AND TIME LYSIS SUMMARY	DATES STUDIES	OF 7-28	-70	SUMMA No.: 16	RY 2	OF:
DEPARTA	MENT: Bk Prej) a	PRODUC	ct: n irts		PART:	ronts	FROM S NOS.:	1-3		OPERAT		9
OPERATI NO.:	16		OPERAT Comto		18 - N	arrow Lin	uing				OPERAT OR POS	OR'S NO	D.
SIZE:	11		MATERI	All	e i	STITCHE	s per inch	THREAD USED:	S			ä	
MACHIN MAKE:	ie us		MACHIN TYPE:	5440	0	GAUGE: SEAM T	YPE P	NEEDLES):		R.P.M.:	5100	
THROAT PLATE:	54228		FEED DOG:	54224	0.1	PRESSER FOOT:	54220	FOLDER:			GEARS: CAMS:		
ATTACH	MENTS:							TYPE PO TRANSM	OWER IISSION:		MACH. PER PIE		
STUDY);		STUDY FINISHE	ED:	2.	ELAPSED TIME:)	NO. OF PIECES:			AVG. T PER PIE	IME CE:	
SIZE.	AVG. BUNDLE SIZE: 48 CALCULATIONS			AVG. NO. OF THREAD CHGS.:			ATION .	MOTION	TJOR.		TIME ST		
CALCULA	ATIONS		CHECKE		CR	SKETCHE BY:	ES	SKETCH NOS.:			ON SHE	ET	
STUDY T	TUDY TRANSFER TYPED HECKED BY:					TYPING BY: JOR	CHECKED	INSTALL BY:	ED		7-30	STALLE	D
ELEMENT	MENT										+	_	1000
NO.	Lining delive	tions as are se per g cons ared w	put a recensei es in t dth bu	at le l. rolls andls	oft sid	dle of fr aters.	rators by	NO. REA INC	D- AVO		. 100% TIME	occ.	PER:
NO.	Lining deliver In this sewn of Operatory	dons s are se per g cone ared w ls ope on in tion S Jp and	e put a recumel es in a sith bu wation a chai Sequence l Posit	at le i. rolls mile in in	. Dun of eq center ito a p	e of oper die of fr nters. plait wit arts box.	rators by rents is	REA	D- AVO		100% TIME		100° PER
	In this sewn of Operatory Pick I up and	tions es are es per g come ered w ls ope on in tion S lp and i posi	put a recensei es in a dith bu mation a chai	at le l. rolls andle a, a in in in in front	. Dun of co conter to a p	e of oper die of fr nters. plait wit arts box.	rators by ronts is th lining is	REA	D- AVO				
2.	In this sewn of Operatory Pick I up and	tions es are es per g come ered w Ls ope on in tion S lp and i posi enterp	put a some in a chair i fosit to i chair t	at le l. rolls andle a, a in in in in front	. Dun of co conter to a p	e of oper die of fr nters. plait wit arts box.	rators by ronts is th lining is	REA	D- AVO		11.0	100	31.0
2.	In this sewn of Operatory and Sew con Bundle	dons ss are se per g come ared w ls ope on in tion S lp and l posi anterp s Hand ss Tio	e put a recine in a sith bu retion a chair lequence lequence letion in chait t	at le l. rolls andle a, a in in in in front	. Dun of co conter to a p	e of oper die of fr nters. plait wit arts box.	rators by ronts is th lining is	REA	D- AVO		11.0	100	11. 0
2. A. B.	Ining deliver In this seem of Operator Pick I up and Sew con Bundle Process	dons as are as per g come ared w ls ope on in tion S lp and l posi anterp a Hand a Hand	e part a received in a chair in a	at le i. rolls andle a, a in in front to fr	. Bunio of equito a processive	e of oper die of fr aters. plait wit arts bex.	rents is th lining is tolder, pick	DY STAND	ARD UCTION	INS:	27.7 27.7	100 2.1 2.1	31.0 8.3 0.58
1. 2. A.	Ining deliver In this seem of Operator Pick I up and Sew con Bundle Process	dons se per g come g come ared w ls ope on in tion S lp and i pesi mterp a Hand sa Tio a Hand	put a semme in a chair to a chair	rolls mile at le rolls mile a lin in front to fr	. Bunio of equito a processive	e of operations. plait with arts box. strip in	rents is h lining is lolder, pick Times Times Times H	DY STAND	ARD	Ē INS	27.7 27.7	100 2.1 2.1 2.1 ANDARD PRODUC 1 HR. 8	31.0 6.3 0.58
2. A. B.	Dundle service Lining deliver In this sewn of Operator Pick I up and Sew con Bundle Process Bundle Process Bundle MTS/100 E	dons se per g come g come ared w Ls ope on in tion S p and i pesi anterp a Hand % AD. pelay MT	put a recipion of the put of the	% ALPers. Fat.	Bunder of conternation a property ont.	e of operations. plait with arts box. strip in per 100 0 25.20	rents is th lining is tolder, pick	DY STAND	ARD UCTION 8 HRS.	INS:	27.7 27.7	100 2.1 2.1 2.1 ANDARD PRODUC 1 HR. 8	31.0 6.3 0.58 0.58

MOTION AND TIME

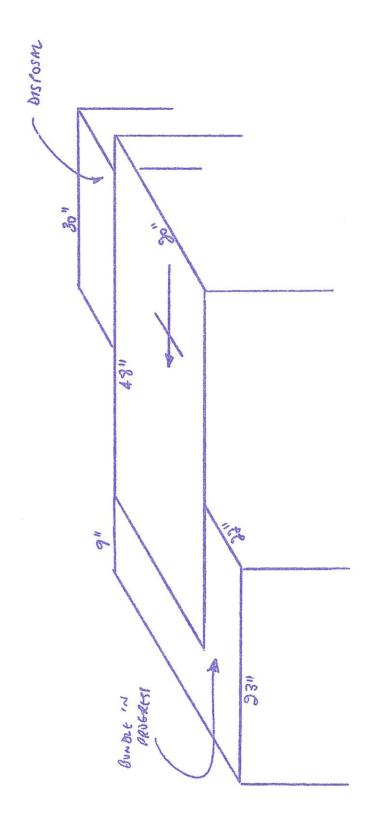
100%

UNIT

KURT SALMON ASSOCIATES CONSULTING ENGINEERS ANALYSIS SUMMARY FORM SSCP DEPT .: Fronts CLIENT: PLANT: CONTINUATION OF SHEET NO .: 2 PRODUCT Shirts SUMMARY NO.: 16A OF 2 SHEETS: (CODE) 169 (CODE) DATE: MOTION OPERATION OPERATION NAME: (Describe in Full) ANALYST NO .: 16 Sew Centerplait 7-28-70 JCR LIST THE FOLLOWING INFORMATION BELOW FOR EVERY ELEMENT NO.: ELEMENT TIME PE (A) ELEMENT TITLE, CORRESPONDING WITH TITLE USED ON FORM 33. (C) KEY POINTS IN MOTION PATH. NO . (B) COMPLETE AND DETAILED JOB BREAKDOWN AND MOTION PATH. (D) KEY QUALITY POINTS. Bundle Hangling Bundles are brought by service operators and placed on left side of operator. On taking up a bundle, the operator removes the right fronts, folds them in two, and positions them at the back of the bench with the remaining shirts of the coupon. The left fronts are placed on the left of the operator face down and the centerplaits are placed on top of these. Two to four bundles are worked at a time depending on their size. As each bundle is seen, the centerplaits are placed on the operator's lap at the bundle commencement. The bundle is seen in a chain into a disposal bin behind the machine. Operation Sequence A. Pick up and Position. Center pleat in folder, Pick up and position 10 front. B. As machine stops sewing previous front, both hands reach down, collect centerplait and position in folder. This is then aligned at the needle. Positioning of the centerplait into the folder should be one fluid movement. D. Edge of contemplait should be parallel to vertical stripes. 2. A. Sew centerplait to front. B. Left hand feeds bulk of material past the needle while the Fight hand

- insures that the folder is filled correctly.
- C. Say should be continuous from one and to the other.
- D. There must be no raw edges.

CLIENT: (CODE)	169	PLANT: (CODE)	MOTION AND TIME ANALYSIS SUMMARY	DATES OF STUDIES:	-28-7	O	SUMMO:	3	JSH
PEPARTA	ENT:	Dress Shirts	PARTYCE	FROM STUD	Υ		CERNIA.	este	OF:
OPERATIONO.:	ON	operation: Sew Centerplait	- Wide Lining		0		OPERATO OR POSI	DR'S NO).
AZI:		MATERIALL	STINGHES PER STOP	THREADS USED:					
MACHIN	tis .	MACHINE DO	GAUGE: SEAM TYPE:	NEEDLES:			R.P.M.:	5100	
THROAT PLATE:	54228	FEED 54.224 DOG:	PRESSE 54.220 FOOT:	FOLDER:			GEARS: CAMS:		
ATTACHA	MENTS:			TYPE POWE TRANSMISSI			MACH. PER PIEC	TIME CE:	
STUDY STARTED:	:	STUDY FINISHED:	ELAPSED TIME:	NO. OF PIECES:		+1	AVG, TI PER PIE	ME CE:	
AVG. BU	NDLE	AVG. NO. OF THREAD CHGS.:	INF ATION	MOTION	R		TINCH	UDIES	
CALCUIC BY:	ONS	CALCULATION CHECKED BY:	SKE TCH ES	SKETCH NOS.:			ON SHEE	Т	
STUDY T	RANSFER BY:	TYPED BY	TYPOR CHECKED	INSTORED BY:			7430	POLLE)
ELEMENT NO.		OPERATION SEQUENCE AN	ID JOB DESCRIPTION	NO. OF READ- INGS	AVG.	G. F.	100% TIME	occ.	PER:
1.	Pick Up and p	mary A. n Sequence and Position center osition front.	etrip in fold, pick				12.80		
1. 2.	Operation Pick Up a up and p Sew cent	mary A. n Sections and Position center osition fromt. orplait to front.	strip in fold, pick				12.60 8.40	100	8.4
	Operation Pick Up a up and pa	mary A. n Sections and Position center osition fromt. orplait to front.	etrip in fold, pick						8.4
	Operation Pick Up a up and p Sew cent	mary A. n Sections and Position center osition fromt. orplait to front.	strip in fold, pick						8.4
	Operation Pick Up a up and p Sew cent	mary A. n Sections and Position center osition fromt. orplait to front.	strip in fold, pick						8.4
	Operation Pick Up a up and p Sew cent	mary A. n Sections and Position center osition fromt. orplait to front.	strip in fold, pick						8.4
	Operation Pick Up a up and p Sew cent	mary A. n Sections and Position center osition fromt. orplait to front.	strip in fold, pick						8.4
	Operation Pick Up a up and p Sew cent	mary A. n Sections and Position center osition fromt. orplait to front.	etrip in fold, pick						8.4
2.	Operation Pick Up a up and p Sew cent Bundle H As in Su	ADJUSTED % ALLOWANCE	S S.A.M. U TIME STUI	DY STANDARD			8.40	100	2.1
2.	As in State Operation Pick Up a pand posent Bundle Ha As in State MTS/100 Pelay	ADJUSTED % ALLOWANCE MTS/100 & Fat. Inc. F T	S S.A.M. U TIME STUI PER I TIMES 100 I MTS. HR:	PRODUCT 5. 1 HR. 8	HRS.	INST TIM MTS.	8.40	NDARD PRODUC' HR. 8	1.1
2.	As in Sta Cremation Pick Up a up and pa Sew cent Bundle Ha As in Su	ADJUSTED % ALLOWANCE MTS/100 & Fat. Inc. F T	S.A.M. U TIME STUING OF TIME STUING OF TIMES MTS. HR:	PRODUCT 5. 1 HR. 8	ION	TIME	8.40	NDARD PRODUC' HR. 8	
2.	As in State Operation Pick Up a pand posent Bundle Ha As in State MTS/100 Pelay	ADJUSTED % ALLOWANCE MTS/100 & Fat. Inc. F T	S S.A.M. U TIME STUI PER I TIMES 100 I MTS. HR:	PRODUCT 5. 1 HR. 8	HRS.	TIME	8.40	NDARD PRODUC' HR. 8	1.1



B K	URT SALMO									
CLIENT: (CODE)		PLANT: (CODE)	MOTION AND T ANALYSIS SUMM	TIVIL	DATES OF STUDIES:	1-29-7	70	NO.:	Y -	OF: 2
Back	MENT: Front & Preparation	PRODUCT: Dress Shirts	PART: Front		FROM STUD NOS.:	Y		OPERATO M.	or: McNa	ir
OPERATI	9N		after Centerplait					OPERATO OR POSI	OR'S NO	
SIZE: A	11	MATERIAL: AII	STITCHES PER		THREADS USED:	R				
MACHIN MAKE:	E Scissors	MACHINE TYPE:	GAUGE: SEAM TYPE:	9	NEEDLES:			R.P.M.:		
THROAT PLATE:		FEED DOG:	PRESSER FOOT:	1	FOLDER:			GEARS: CAMS:		
ATTACH	MENTS:		6		TYPE POWER		MACH. PER PIEC			
STUDY STARTED):	STUDY FINISHED:			NO. OF PIECES:			AVG. TI PER PIE	ME CE:	
AVG. BL	INDLE	AVG. NO. OF THREAD CHGS.:	INFORMATION BY: JCR		MOTION ANALYST:		TIME ST			
CALCUL BY:		CALCULATIONS JCR						ON SHEE		7
	TRANSFER	TYPED BY: LB TYPING CHECKED IN BY: JCR						DATE IN	STALLE	70
ELEMENT		OPERATION SEQUENCE AND			NO. OF READ-	AVG.	G. F.	100% TIME	occ.	1000
	from centerp are pulled	moved into a dispolating. In this out in the chain	operation, the f	ronts						
I. A. B.	Fronts are from centerpare pulled clipped ever operation in the control of the control operation. Pick up from A. Put from	plaiting. In this out in the chain out in the chain only. They are this Buttonhole From ont, clip both end onts with backs of or. Dispose.	operation, the f and both ends are en stacked. The it.	ronts	20 3 3	5.48 0.29 0.28	100	7.12 0.29 0.28		7.12 0.61 0.59
Bo Bo	Fronts are from centerpare pulled clipped ever operation in the component of the component	out in the chain out in the chain out in the chain only. They are the sufficient of the sufficient out	s operation, the find and both ends are sen stacked. The stacked to stack the bundle and the bun	next ie	20 3 3 3 STANDARD PRODUCT 1 HR. 8	0.29 0.28	100	0.29 0.28	20 I 27 I ANDARD PRODUCT 1 HR. 8	0.5
Bo Bo	Fronts are from centerpare pulled clipped ever operation in the component of the component	out in the chain out in the chain out in the chain only. They are the sufficient of the chain out, clip both end onts with backs of or. Dispose. OUSTED % ALLOWANCES BASE Pers. Inc. F Tot.	s operation, the find and both ends are sen stacked. The stacked to stack the bundle and the bun	next ie ME STUDY MES HRS.	STANDARD PRODUCT 1 HR. 8	0.29 0.28	INST TIM	0.29 0.28	2.1 2.1 2.1 ANDARD PRODUCT 1 HR. 8	0.59

MOTION AND TIME ANALYSIS SUMMARY

CONSULTING ENGINEERS

SHEET NO.: 2

OF

2 SHEETS:

DEPT. Preparation CLIENT: PLANT: CONTINUATION OF 169 PRODUCT: Shirts SUMMARY NO.: 17 (CODE) (CODE) OPERATION DATE: MOTION OPERATION NAME: ANALYST JCR 7-29-70 Clip and Stack after Centerplait NO .:

ELEMENT	LIST THE FOLLOWING INFORMATION BELOW FOR	EVERY ELEMENT NO.:	100%
NO.:	(A) ELEMENT TITLE, CORRESPONDING WITH TITLE USED ON FORM 33. (B) COMPLETE AND DETAILED JOB BREAKDOWN AND MOTION PATH.	(C) KEY POINTS IN MOTION PATH. (D) KEY QUALITY POINTS.	TIME PER

- A. Pick up front, clip both ends and stack. 10
 - B. Left hand pulls front out of bin and scissors in right hand clip off leading edge. Front rests on bundle while following edge is trimmed,
 - C. Left hand is responsible for motion of front in right-handed person.
 - D. Trimming must be exactly flush with the edges of the front. No lining should remain showing.

Bundle Handling

The bundle is formed underneath the clipping operation so that no realignment is necessary to stack. At the end of each bundle, the coupon is clipped and the fronts and backs put together in one bundle.

3B k	KURI SALMI	IN ADDUCIATED							
(CODE)	T: 169	PLANT: (CODE)	MOTION AND TIME ANALYSIS SUMMARY	DATES OF STUDIES:			SUMMAN NO.:		OF: _SHE
A STATE OF THE PARTY OF THE PAR	TMENT:	PRODUCT: Sport Shirts	PART: Front	FROM STUD	L-A		OPERAT	or:	
OPERA NO.: 1	TION 8	OPERATION: Button Hole Front -	- 6 Button Hole				OPERAT OR POS	OR'S NO	
SIZE:	11	MATERIAL:	STITCHES PER inch Hole 120	THREADS USED:		*			
MACHI	INE Becs (4)	MACHINE TYPE: \$ 2	GAUGE: SEAM TYPE:	NEEDLES:			R.P.M.:		
THROA		FEED DOG: Standard	PRESSER FOOT: Standard	FOLDER:			GEARS: CAMS:		
	CHMENTS:	Arm		TYPE POWER	N: IM	6	MACH. PER PIE		
STUDY	ED:	STUDY FINISHED:	ELAPSED TIME:	NO. OF PIECES:			AVG. TI PER PIE		
AVG. E	BUNDLE	AVG. NO. OF THREAD CHGS.:	INFORMATION BY: JCR	MOTION ANALYST:	CR		TIME ST BY:		
CALCU	JEATIONS JCR	CALCULATIONS CHECKED BY: JCR	SKETCHES BY: JCR	SKETCH NOS.:		e e	ON SHE	- 12 D	
STUDY	TRANSFER	TYPED BY:	TYPING CHECKED BY: JCR	INSTALLED BY:	JCR			to 70	
FAN (2010) (2-22)	AT .	OPERATION SEQUENCE AND JO	OR DESCRIPTION	NO. OF READ- INGS	AVG.	G. F.		occ.	HOW PER:
ELEMEN NO.	outside In this	machine circle by operation 4 machin	ait and are stacked the service operator nes are progressively	7	.0 80 5	1300	.0885	1.00	8.85
	Fronts outside In this leaded arm. A Next or Operation S	e machine circle by s operation 4 machine and started. Dispose separate bundles a peration is button a	the service operator nes are progressively psal is by a stacker are worked on. sew front. front, position on	7	.0 8 05	1700	.0885	100	8.85
NO.	Fronts outside In this leaded arm. A Next or Operation S	e machine circle by s operation 4 machine and started. Dispose separate bundles a ceration is button a cequence machine, pick up a and start machine.	the service operator nes are progressively psal is by a stacker are worked on. sew front. front, position on	7	。0 805	1100	.0885	100	8°85
NO.	Fronts outside In this leaded arm. A Next of Operation S Move to indexes Bundle Hand	e machine circle by s operation 4 machine and started. Dispose separate bundles a ceration is button a cequence machine, pick up a and start machine.	the service operator nes are progressively psal is by a stacker are worked on. sew front. front, position on	7		(a.		2.].	8.85
NO.	Fronts outside In this loaded arm. A Next of Operation S Move to indexes Bundle Hand Get bur	e machine circle by s operation 4 machine and started. Dispose separate bundles a separation is button sequence o machine, pick up to and start machine.	the service operator nes are progressively psal is by a stacker are worked on. sew front. front, position on hang on rack	7	.30	(a.	.30		
NO.	Fronts outside In this loaded arm. A Next of Operation S Move to indexes Bundle Hand Get bur	e machine circle by soperation 4 machine and started. Dispose separate bundles a separate bundles a separate bundles a sequence of machine, pick up a start machine. Sequence dispose separate and a sequence dispose separate and a sequence dispose separate and a sequence dispose sequence d	the service operator nes are progressively psal is by a stacker are worked on. sew front. front, position on hang on rack	7	.30	100	.30	2.Juil	.63
A. Be	Fronts cutside In this loaded arm. A Next or Operation S Move to indexer Bundle Hand Get bur Tie up Clerica	e machine circle by soperation 4 machine and started. Dispose separate bundles a separate bundles a separate bundles a sequence of machine, pick up a start machine. Sequence dispose separate and a sequence dispose separate and a sequence dispose separate and a sequence dispose sequence d	the service operator nes are progressively psal is by a stacker are worked on. sew front. front, position on hang on rack lispose	DY STANDARD PRODUCTI	.30 .20 .25	100 100	.30 .20 .25	2.J. 2.J.	.63 .42 .53
Ao Bo Co	Fronts outside In this leaded arm. A Next or Operation S Move to indexer Bundle Hend Get bur Tie up Clerics	operation 4 machine and started. Disposeration is button started bundles a peration is button startion is button and start machine and started bundles are supposed bundles and started bundles are supposed bundl	the service operator nes are progressively psal is by a stacker are worked on. front, position on hang on rack dispose	DY STANDARD PRODUCTI	.30 .20 .25	100 100 100	.30 .20 .25	201 201 ANDARD PRODUC	.63 .42 .53
Ao Bo Co ELEMEN NOS.	Fronts cutside In this loaded arm. Next or Operation S Move to indexer Bundle Hand Get bur Tie up Clerica Time MTS/100 Delay M 8.85 20 1	operation 4 machine and started. Dispose separate bundles a separate bundles a separate bundles a separate bundles a separate bundles and start machine and	the service operator nes are progressively psal is by a stacker are worked on. front, position on hang on rack lispose S.A.M. U TIME STUD TIMES HES	DY STANDARD PRODUCTI I. 1 HR. 8	.30 .20 .25	100 100 100	.30 .20 .25	201 201 ANDARD PRODUC	.63 .42 .53

MOTION AND TIME

KURT SALMON ASSOCIATES CONSULTING ENGINEERS ANALYSIS SUMMARY CONTINUATION OF CLIENT: 169 DEPT .: PLANT: SHEET NO .: OF SHEETS: (CODE) PRODUCT: SUMMARY NO .: (CODE) DATE: OPERATION NAME: MOTION OPERATION Sept. 70 Morrow Troit - 6 Button Hole ANALYST JCR NO .: 18 LIST THE FOLLOWING INFORMATION BELOW FOR EVERY ELEMENT NO.: 100% FLEMENT TIME PEL (A) ELEMENT TITLE, CORRESPONDING WITH TITLE USED ON FORM 33. (C) KEY POINTS IN MOTION PATH. NO.: UNIT (B) COMPLETE AND DETAILED JOB BREAKDOWN AND MOTION PATH. (D) KEY QUALITY POINTS. 10 A) Move to machine, pick up front, position on indexer and start machine B) Previous machine has been started, operator moves to next machine picking up a front from the rack on her way. With one hand grasping each and of the front it is fixed under two clamps at each end. The machine is started using a foot pedal. C) Pick up should be on motion between machines as should the about motion. D) Front must be accurately placed in clamps at each end otherwise holes will be out of alignment. Bundle Handling Bundles are left outside machine circle by service operator. Bundles are picked up, sorted into left and right fronts. The left Smints are placed on the rack and the right fronts placed aside. At the end of the bundle they are joined, tied together and disposed outside the machine circle.

FORM 33B KURT SALMON ASSOCIATES

33B K	URI SALMI.	IN ASSUCIATES	LUN	SULTIN	G EN	IGIN	EERS	i		
CLIENT: (CODE)	169	PLANT: (CODE)	MOTION AND TIME ANALYSIS SUMMARY	DATES OF STUDIES: Se	ept. 7	0	SUMMAR NO.:	OD	OF:	
PERAPI	e de Back Prop	PREDUCT Shirts	PARTFront	FROM STUD	Å 1-3	3	Go K			
OPERATI	1018	Button Hole From	t - 5 Button Hole			i.	OPERATO OR POSI	DR'S NO		
SIZE:	All	MATERIAL:	STITCHES PER Inch	THREADS USED:						
MACHIN MAKE:	Reece (4)	MACHINE TYPE: \$ 2	GAUGE: SEAM TYPE:	NEEDLES:			R.P.M.:			
THROAT PLATE:	SID	FEED DOG: STD	PRESSER STD	FOLDER:			GEARS: CAMS:			
BATA	Mer, stacker	arm		TYPE POWE	TYPE POWER TRANSMISSION			TIME CE:		
STUDY STARTED	D:	STUDY FINISHED:	ELAPSED TIME:	NO. OF PIECES:			AVG. TIME PER PIECE:			
AVG. BU	UNDLE	AVG. NO. OF THREAD CHGS.:	INFORMATION BY: JCR	MOTION ANALYST:	JCR		TIME ST BY:	UDIES JCF	EF	
CALCUL. BY:	ATIPUR	CALCULATIONS CHECKED BY:	SKETCHES JCR	SKETCH NOS.;			ON SHEET NOS.:			
STUDY	TRANSFER D BY:	TYPED BY: BG	TYPING CHECKED BY:	INSTALLED BY:	JCR		DATE IN	STALLET	o	
ELEMENT NO.		OPERATION SEQUENCE AND	JOB DESCRIPTION	NO. OF READ- INGS	AVG.	G. F.	100% TIME	occ.	1 GOA	
110.	Conditions			30	.077	100	0.077	100	7.70	
1.	indexe	er and start machin	p front, position on ne.	-						
		on declaracity of starting a								
ELEMENT NOS.	MTS/100 Delay M	JUSTED % ALLOWANCES BASE Pers. Inc. F Tota 122 20	PER N TIMES			INST TIME MTS.		ANDARD PRODUCT HR. 8	TION	
A-C	1.58 - 1	.58 7½ 12½ 20	1.9 BDLE.							
		тотл	100 13.0 .2	17 37	00					

Operation # 18 Button Hole From t 5 & 6 Button Herc 4 Reece INDEXERS PINED in Check

BUNDLE IN / 107 INUKACA - STATEA - IF WIDE STACK ARK ARM PATH OF DISPOSAL

なる

338	KI KI	URT SALM	ION ASSOCIATE	S	CON	SULTIN	IG EN	VGIN	IEER!	5	
	CLIENT: (CODE)	169	PLANT: (CODE)		AND TIME SUMMARY	DATES OF STUDIES:	3-11-7	0	SUMMA NO.:		OF: 3
	DEPARTA	MENT: Front & Preparation	PRODUCT: Shirts	PART: Fron	Ť	FROM STU	IDV		OPERAT		
	OPERATIONO.:	ON	OPERATION: Button Sew	Front - 6 Bu	tton Hemme					OR'S NO	172 PARK
	SIZE:	11	MATERIAL:	STITCHES PER		THREADS USED:	3.				
	MACHINI MAKE: S	inger	MACHINE TYPE: 114-37	GAUGE: SEAM TYPE:		NEEDLES:	3		R.P.M.:		
	THROAT PLATE: S	itandard	FEED DOG:	PRESSER FOOT:		FOLDER:			GEARS: CAMS:		
		MENTS: Mitchel				TYPE POV TRANSMIS	ER SION:		MACH. PER PIE		
	STUDY STARTED		STUDY FINISHED:	ELAPSED TIME:		NO. OF PIECES:			AVG. T PER PIE	IME CE:	EI
	AVG. BU SIZE:	INDLE 48	AVG. NO. OF THREAD CHGS.:	INFORMATION BY: JCR		MOTION ANALYST:	JCR		TIME S'	TUDIES	
	CALCULA BY: JC	ATIONS	CALCULATIONS CHECKED BY:	SKETCHES BY: JCR		SKETCH NOS.:			ON SHE	ET	
	STUDY T	TRANSFER D BY:	TYPED BY:	TYPING CHEC	KED	INSTALLED BY JCR)		BATE I	7-70	D
	ELEMENT NO.		OPERATION SEQUENCE AI	ND JOB DESCRIPTION		NO. O READ INGS		G. F.	100% TIME	occ.	100% TIME PER:
		of the f	operation, buttoning a robot button it is in the second of	feeder. The dicated by a	location stop on						
	- C		on Sequence , pick up, and pos	ition					4.60	100	4.50
	2.	Sew 6 bu							15.0	100	15.00
	240	Bundle H								-A-2/-	
	A۰	Tie and							0.19	2.1	0.40
	В.	Untie ar	nd Sort						0.34	2.1	0.72
	C.	Process	Coupon						0.29	2.1	0.60
	ELEMENT	TIME	ADJUSTED % ALLOWANG	DED N	TIMES	DY STANDAF	TION	TIM		PRODUC	CTION
-	NOS.	MTS/100 Delay	MTS/100 & Fat. Inc. F	20 25.14	MTS, HR	S. 1 HR.	146.0	MTS.	HRS.	1 HR.	46.0
	A-C	1.72 -	1.72 7½ 12½ 2	20 2.06 BDI							
				TOTAL 100	27.2		764。2	27.2		9	764

FORM SSCP

MOTION AND TIME

	KURT	SALMON ASSOCIATES	ANALYSIS SUMMA		NGINEERS
CLIENT: (CODE)	169	PLAN1: (CODE)	DEPT.: Frt & Bk Pre	CONTINUATION OF SUMMARY NO.: 19A	SHEET NO.: 2 OF 2 SHEETS:
DATE:	3-14-70	MOTION ANALYST JCR	OPERATION No.: 19	OPERATION NAME: (Describe in Full) Button Sew Fronts	6 Button Unhemme
NO.:	(A) ELEMI (B) COMP	LIST THE FOLLOWING IENT TITLE, CORRESPONDING WITH TI PLETE AND DETAILED JOB BREAKDOW	INFORMATION BELOW FOR TLE USED ON FORM 33. VN AND MOTION PATH.	(C) KEY POINTS IN MOTION (D) KEY QUALITY POINTS.	PATH. 100% TIME P UNIT
ens 0	Get on Pul at A.	ndle Handling t bundle from work table table in front. Il coupon, sign and stick left. When bundle is co Dispose, Pick Up, Fold When sewing is complete hand on front edge belo disposal shelf at left, hand grasping top and a eously at the notches, the stop.	k to gum sheet. Pompleted, tie, and and Position ed, with left handow last button, die Both hands reachight hand bottom.	lace Ribbon on dispos dispose to trolley a at neck opening and spose front face up o h for next front with Both hands fold sim	al shelf t left. right n left ultan-
2.	D. A. B.	Pick Up and Fold simula i) Fold on notches ii) Front must be held Sew 6 Buttons Foot depresses pedal ar so that button is align flush with the edge of is sewn when foot depressed.	taut. nd when machine st ned in notch of ga the gauge. Machi esses pedal. d through entire b	uge. Right hand keep ne clamp descends and utton sew cycle.	s front button
	D.	Buttons must be evenly front edge.	spaced and be a u	niform distance from	The

33	R	DKI BALMU	IN ASSUCIAT	LJ			1420	LIIIVE	3 F14	UIIV	EERE)	
	CLIENT: (CODE)	169	PLANT: (CODE)	M A	MOTION A	ND TIMI UMMAR	RY STUDIES: 8-11-70				SUMMAR NO.: 9	_ 0	SHE OF:
		MENT: Frt & k Preparation	PRODUCT: Shirts	PAI	RT: Front			M STUD	111		OPERATO	7.50	
	OPERATIONO.: 19	ON	OPERATION: Button Sew Fro	ont - 6		nhermed					OPERATO OR POSI		
	SIZE:	0.8	MATERIAL:		TCHES PER b			READS D:					
		5 inger	MACHINE TYPE: 114-37	GA SEA	UGE:		NEI	EDLES:	3		R.P.M.:		
	THROAT		FEED DOG:	PRE	ESSER OT:		FOL	DER:			GEARS: CAMS:		
		MENTS Mitchell ot-Spacer Gau	30				TYI	PE POWER		MACH. PER PIEC			
	STUDY STARTED		STUDY FINISHED:	ELA	APSED ME:		NO PIE	NO. OF PIECES:			AVG. TI PER PIE		
	AVG. BU	INDLE	AVG. NO. OF THREAD CHGS.:	INF	FORMATION	MO	TION IALYST:		TIME ST	EI			
	CALCULA BY: J		CALCULATIONS CHECKED BY:	SKE	ETCHES	4 ·	SKE	ANALYST: JCR SKETCH			ON SHEI		
		TRANSFER	CHECKED BY: BY: JCR TYPED BY: TYPING CHECKED						NOS.:			ISTALLE)
		Э ВТ:	LB		JCR			JCR No. of	11/0		8-17-		100% TIME
	ELEMENT NO.		OPERATION SEQUENCE	AND JOB DE	ESCRIPTION			NO. OF READ- INGS	AVG. TIME	G. F.	100% TIME	occ.	PER:
	2.	Sew 6 But	ndling								15.0 82.0	2.1	15.0
	ELEMENT NOS.	TIME MTS/100 Delay M	JUSTED % ALLOWAN BASE Pers. Inc. F	Total F	A.M. U PER I 100 T	TIMES		10.000	HRS. A	INST TIMI MTS.		PRODUC HR. 8	HRS.
		23.3 7 24.			.94 DOZ.			125	0.0			12	25.0
	A=C	1.72 - 1.	72 7½ 12½	20 2	e06 BDLE.	20.00							
				TOTAL	100	32.00		15	500 32	2.00			500

33	CLIENT	PLANT:	MOTION AND TIME	DATES OF	SUMMARY SHE
	(CODE) 169	(CODE)	ANALYSIS SUMMARY	STUDIES: 8-14-70	NO.: 19C OF:
	Back Prepara	tion Shirts	PART: Front	FROM STUDY NOS.: 8-12	OPERATOR: Composite
	OPERATION	Buffon Sew Front	- 5 Button Unhemmed		OPERATOR'S NO. OR POSITION:
	SIZE: All	MATERIAL: All	STITCHES PER button	THREADS USED:	
	MACHINE MAKE: Singer	MACHINE TYPE: 114-37	GAUGE: SEAM TYPE:	NEEDLES:	R.P.M.:
	THROAT PLATE:	FEED DOG:	PRESSER FOOT:	FOLDER:	GEARS: CAMS:
	ATTACHMENTS: Mitcl Robot-Spacer	ne I I Gauge		TYPE POWER TRANSMISSION:	MACH. TIME PER PIECE:
	STUDY STARTED:	STUDY FINISHED:	ELAPSED TIME:	NO. OF PIECES:	AVG, TIME PER PIECE:
	AVG. BUNDLE SIZE: 48	AVG. NO. OF THREAD CHGS.:	INFORMATION BY: JCR	MOTION ANALYST: JCR	TIME STUDIES BY: JCR
	CALCULATIONS BY: JCR	CALCULATIONS CHECKED BY:	SKETCHES BY: JCR	SKETCH NOS.:	ON SHEET NOS.:
	STUDY TRANSFER CHECKED BY:	TYPED BY: LB	TYPING CHECKED BY: JCR	INSTALLED BY: JCR	DATE INSTALLED
	ELEMENT NO.	OPERATION SEQUENCE AND J	OB DESCRIPTION	NO. OF READ- INGS TIME G. F.	. 100% OCC. TIME PER:
	Bundle	Ve Buttons Handling Summary A.			12.0 100 12.0 82.0 2.1 1.72
	ELEMENT 100% % TIME MTS/100 Delay I=2 20.3 7 A=C 17.2 =	21.80 71 121 20	PER 100 TIMES MTS. HR	PRODUCTION TIM	TALLED STANDARD MES PRODUCTION HRS. 1 HR. 8 HRS.
		ТОТА	100 28.2	1700 28,2	1700
_	•	<u>_</u>			

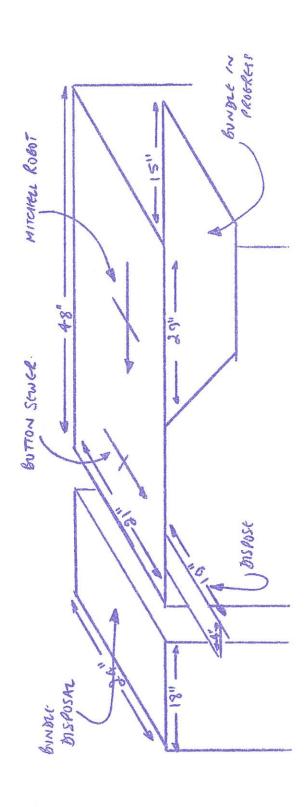
33	в К	URT S	SALN	MON	SSC	CIAT	ES			C	ONS	ULTI	NG	EN	VGIN	IEER.	S	
	CLIENT: (CODE)			PLAN (COD						ND TI	ME RY	DATES (F8-1	4-7	0	SUMMA NO.:	ARY D -	OF:
	DEPART	MENT: K Prep	arati	on PROD	Sh	Irts		PART:	ont		1	FROM S	TUDY			Com	TOR:	e
	OPERATION NO.:	ION		OBER Bu	PTION:	Sew F	ront	- 5 Bu	tton	l-lemme	d					OPERA OR PO	TOR'S N	10.
	SIZE: A	. 8 8		MATI	ERIAL:	AII		STITCHE	S PER _	butto	n	THREAD:	5					
	MACHIN MAKE:	Singer		MAC	HINE !	4-37		GAUGE: SEAM TY	PE:			NEEDLES	108			R.P.M.:		
	THROAT PLATE:			FEED DOG:				PRESSER FOOT:			1	FOLDER:				GEARS: CAMS:		
	ATTACH	METMAN Or-Spa	tche I ced G	auge								TYPE PO	WER ISSION:	1112	N	MACH, PER PI		
	STUDY	D:		STUD	Y HED:		i.	ELAPSED TIME:			1	NO. OF PIECES:				AVG. 7	EF	
	AVG.	NDLE	AVG. NO. OF THREAD CHGS.:				INFORM BY JCK	ATION			MOTION	r: JC i	2		TIME S	CRIES		
	E¢ JC tt	ATIONS						SKETCHES BY: JCR				SKETCH NOS.:				ON SHI NOS.:	EET	
	STUDY	TRANSFER D BY:		TYPE	TYPED BY: 18 TYPICE CHECKED INSTACE BY: 100						₹			DATE	N9A4	5 ^D		
	ELEMENT NO.		DPERATION SEQUEN					B DESCRIF	PTION			NO. REA ING	OF D- A	VG.	G. F.	100% TIME	осс	100% TIME PER:
	1. 2. A-C	Conditions As in Summary A. Operation Sequence Dispose, Pick Up, F Sew Five Buttons Bundle Handling					and Po	osition	1							5.00 12.00 82.0	90 100 2:1	5.00 12.00 1.72
	ELEMENT NOS.	100% % ADJUSTED % ALLOWANCES TIME BASE Pers. Inc. F Total MTS/100 Delay MTS/100 & Fat. Inc. F					The second second	S.A.M. PER 100	4-ZC	TIME TIM MTS.	STUDY ES HRS.	PRODU	RD JCTION 8 HRS	i. 1	INST TIM MTS.	ALLED ST	PRODU	
Ų.	1-2						20	21.94	DOZ.				67.0)				67.0
	A=C	1.72	a	1.72	7½	122	20	2.06	BDLE.									

TOTAL

24.00

2000 2400

2000

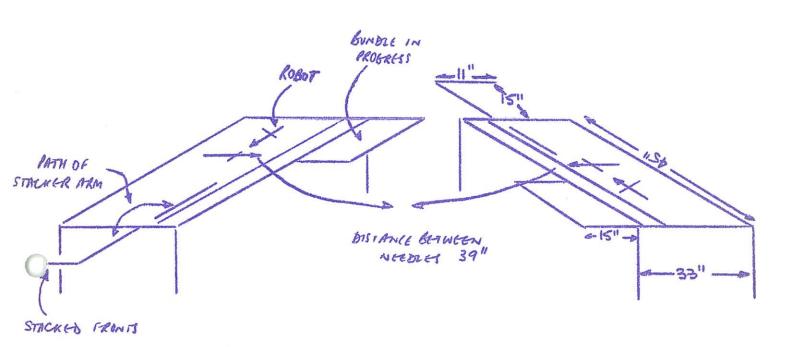


33	B K	URT S	ALM	DNA	550	CIAT	ES			CI	DNS	ULTII	VG EI	VGIN	EERS		
	CLIENT: (CODE)	169 (CODE)								ND TI	ATT	DATES O	ot 19	70	SUMMAR NO.:		SHEI OF:
	DEPARTA	PRODUCT: Reack Prep. Shirts						PART:				FROM ST	and the second second		OPERATO		Or
	Front	& Back	Prep		Shirt	S		Fron	ts			40S.:			Doris	Nix	
	OPERATI NO.:	ON								53 (75)	74				OPERATO OR POSI	R'S NO	•
	SIZE:			MATE		ew Fr	onts	5-But		1 - T		THREADS					
	AI	4		MATE	All			STITCHES	PER —			JSED:					
	MACHIN	-		MACH	IINE			GAUGE:			1	NEEDLES:					
	MAKE:	nger		TYPE:	114	-37		SEAM TY	PE:						R.P.M.:		
	THROAT PLATE:			FEED DOG:				PRESSER FOOT:			F	OLDER:			GEARS: CAMS:		
	S	TD MENTS.											A/ED		MACH.	TIME	
	ATTACH.	ell Rol	not.	Reen	a Trad	exer	50]					WER SSION	2	PER PIEC		
	STUDY		900	STUDY	,	COSTA I	ing (SE)	ELAPSED							AVG. TI	ΛE	
	STARTED	BUNDLE AVG. NO. OF						TIME:				PIECES:			PER PIEC	.E: -	EF
	AVG. BU	THREAD CHGS.:					INFORMA BY:				MOTION ANALYST	2.00		TIME ST			
	CALCULA	: THREAD CHGS.: CULATIONS CALCULATIONS						SKETCHE	JCR			SKETCH	JC	T.	ON SHEE	CR	
	BY:	CHECKED BY:						BY:	JCR			NOS.:			NOS.:		
		JCR JCR Y TRANSFER TYPED BY:					TYPING BY:		D		INSTALLE BY:	D	41	DATE IN	STALLED)	
	CHECKEL	TRANSFER TYPED BY: ED BY: BG					DT:	JCR			51.	30	R	Oct	:. 19	70	
	ELEMENT NO.			OPERAT	ION SEC	DUENCE	AND JOE	B DESCRIP	TION			NO. (REAL ING	AVG.	G. F.	100% TIME	occ.	100% T WO PER:
												1110	7		111112		P LK.
		Cond:	ition	3													
		Δ	es 499 5	Summar	7 70A												
)		-	te/ cind-6 h	a protective (, =,												
		Open	ation	Seque	nce												
	1.	Stav	t. magi	hine,	ma lk	to 2n	d mac	hine.	piak	up fr	ont.	40	.084	3 1.05	.0885	100	8.85
	Quin		tion	and a	84 Amenda	90 00	100 00000		8		0						
		-	M 45														
		Caropoladore	terasive realization in	ndling												1000000	
	Ao	Get 1	bundl	ම පුළුව	arate	and	hang	on rac	ko				.30	100	ه.30	2.1	。63
	Bo	Tie	compl	eted b	undle	e & di	eaoga.						.20	100	.20	2.1	.42
	C.	Cler	ical										.25	100	.25	2.1	.53
	ELEMENT	100% TIME	% A	ADJUSTED BASE	% / Pers.	ALLOWAN		S.A.M. PER	.ZC	TIME		PRODU		INST	ALLED STA	RODUCT	ION
	NOS.	MTS/100	Delay	MTS/100	& Fat.	Inc. F	Total	100	+	MTS.	HRS,	1 HR.	8 HRS.	MTS.		HR. 8	
	1					20	12.7	DOZ.			34.6	275					
	A-C	158		1.58	7월	12	20	1.9	BDLE.				2.7				
		- 11					TOTAL		100	14.6	.24	4.	3300			4	3300
	I.							Printed	In The								

MOTION AND TIME KURT SALMON ASSOCIATES CONSULTING ENGINEERS ANALYSIS SUMMARY FORM SSCP 169 CLIENT: CONTINUATION APE PLANT! DEPT .: SHEET NO .: (CODE) (CODE) PRODUCT: SUMMARY NO .: OF SHEETS: DATE: MOTION OPERATION OPERATION NAME: Oct. 70 JCR (Describe in Full) ANALYST LIST THE FOLLOWING INFORMATION BELOW FOR EVERY ELEMENT NO.: ELEMENT 100% (C) KEY POINTS IN MOTION PATH. TIME PER (A) ELEMENT TITLE, CORRESPONDING WITH TITLE USED ON FORM 33. (B) COMPLETE AND DETAILED JOB BREAKDOWN AND MOTION PATH. UNIT (D) KEY QUALITY POINTS. 1 Start machine, walk to second machine, pick up front and position. Having started the button-sewer with the right foot as a pedal, the operator turns and walks one page to the second machine. As she turns she picks up a front from the rack, turns the hem if necessary and positions this on the indexer table. Each end is held by a clamp. C) The distance between needles is 39". By the time the operator has turned to the second machine she should have the front ready (hemmed) to position. D) The clamps on the indexer holds the front straight allowing striped to be seen on this equipment.

	_															
	100%	%	ADJUSTED	% A	ALLOWAN	CES	S.A.M.	U		STUDY					STANDAR	
ELEMENT		70	BASE	Pers.	100000		PER	N	TIM	ES	PRODU	JCTION	TIM	1ES	PRODU	JCTION
NOS.	MTS/100	Delay	MTS/100	Pers. & Fat.	Inc. F	Total	100	1	MTS.	HRS.	1 HR.	8 HRS.	MTS.	HRS.	1 HR.	8 HRS. 250
1	10.6	10	1107	72	123	50	140-	-				250				250
								DOZ.								
A-C	1.5	<u></u>	1.58	7章	12	20	20									
				10				BDLE.		_			=1	_		2000
									160)		3000	160	U		3000
						TOTAL	-	100								

BUTTON SEW FRONT TANDEM



B K	URT SALME	IN ASSOCIATES	CON	SULTINI	G EN	IGIN	VEERS	3	
CLIENT: (CODE)	169	PLANT: (CODE)	MOTION AND TIME ANALYSIS SUMMARY	DATES OF STUDIES:	6-22-	70	SUMMAF	7.17.11	1 SH OF: 3
DEPART/	MENT: nt & Back Rep	PRODUCT: Dress/Sport Shirts	PART: Back	FROM STUD	Y 4		OPERATO	or:	site
OPERATI NO.:	21	OPERATION: Set Yokes with Cer	iter Box Pleat - Str	aight Bac	k		OPERATO OR POSI).
SIZE:	1 8	MATERIAL:	STITCHES PER inch	THREADS USED:	0/2			9	
MACHIN	Union Special	MACHINE TYPE: 51200	GAUGE: SEAM TYPE:	NEEDLES:	08GS-(036	R.P.M.:	5100	
THROAT PLATE:	51224R	FEED DOG: 51205R	PRESSER FOOT: 51220R	FOLDER:	11		GEARS: CAMS:	*	
ATTACH		2 5		TYPE POWER	R ON: IM	MACH, TIME PER PIECE: AVG, TIME PER PIECE:			
STUDY);	STUDY FINISHED:	ELAPSED TIME:	NO. OF PIECES:					
AVG. BUNDLE SIZE: 48		AVG. NO. OF THREAD CHGS.:	INFORMATION BY: JCR	MOTION ANALYST:	JCR	TIME STUDIES BY: JCR			
CALCULA BY: J	ATIONS CR	CALCULATIONS CHECKED BY: JCR	SKETCHES BY: JCR	SKETCH NOS.:	0011	ON SHEET NOS.:			
	TRANSFER	TYPED BY:	TYPING CHECKED BY: JCR	INSTALLED BY: JCR			DATE IN)
ELEMENT NO.		OPERATION SEQUENCE AND JO		NO. OF READ- INGS	AVG.	G. F.		occ.	1000 TIN
	bundles, service op sew and ar	to this operation Distribution of the erators. The yokes e distributed with	se bundles is by come from label		*				E
	Operation Pick up ba	k of the workplace.	A.S.				12.6	100	12.6
2.	Make pleat	and sew through to	end of back				14.4	100	14.4
3.		bundle remove from on side of bench.	disposal bin, clip	==			1.9	100	1.9
A		dling le, sort back and y d right. Attend to			94		0.94	2.1	1.9
B.	Reposition	semi-bundle at end	of each lay		0.0		0.11	2.1	0.2
		- % ALLOWANCES	TIME STILL	DY STANDARD	TI TI	INIST	ALLED STA	NDARD	
ELEMENT NOS.	TIME '	JUSTED % ALLOWANCES BASE Pers. Inc. F Total	S.A.M. U TIME STUI PER I TIMES 100 I MTS. HR	PRODUCTI		TIMI	ES I	PRODUCT HR. 8	TION
1-3	28.90 7½ 3	1.10 7½ 12½ 20	37.36 DOZ.		00				100
A∞B	2.20 - 2	2.20 71 121 20	2.64 BDLE.						
		TOTAL	100 40,00	12	200 40	0.00		1:	200

D. Key Quality points as above.

MOTION AND TIME ANALYSIS SUMMARY

	KURT S	SALMON ASSOCIATES	ANALYSIS SUMM		NG ENGINEER	S
CLIENT: (CODE)	169	PLANT: (CODE)	DEPT.: Frt & Bk Pr PRODUCT: Shirts	continuation of summary no.:214	SHEET NO	
DATE:	-14-70	MOTION ANALYST JCR	OPERATION NO.: 21	OPERATION NAME: (Describe in Full) Set Yokes With	Center Box Pl	eat
LEMENT	7.		G INFORMATION BELOW FO			100°
NO.:		IT TITLE, CORRESPONDING WITH 1 TTE AND DETAILED JOB BREAKDO		(C) KEY POINTS IN (D) KEY QUALITY		UNI
	Operation and dispersion of the from the gum should be a single of the from the gum should be a single of the from the gum should be a single of the from th	Handling or pulls bundle from vides yokes into outs parate piles on the operate operator with the section of the needle. Operator leet. Intermediate lay in the semi-bundle towards here	ide yoke and labe erator's right si or. The Back bun am edge towards h clips coupon, sig	I yoke. These arde with the seam die is placed at er, approximately ns it and places ched, the operator	e placed edges the left 18 inches it on her	
	the ne		stacking, the bun			
10	A. Pi B. Le an	ion Sequence ck up back and two you ft hand is completing d outside yoke from po- ading edge of back and	previous sequencesition at right.	e. Right hand gr Meanwhile, left		
	ba Th	ghtdhand drops label ck on top of this fol ese parts are aligned o inches before pleat	lowed by right ha at the needle po	nd placing outsid int and sewed app	e yoke.	
#3	th	th label and outside ye right hand. Label ye ke between the index	yoke between thum	b and index finge		
		ttom fold of pleat sho d 1/8" gap. Ends of plys should Margin should be 5/	be even. Tolera	nce ‡"	rlap	
2.	A. Mai	ke pleat and sew throu	ugh to end of yok	9 ₀		
٥	mai bai a l thi The	ft hand flicks back ourking notch. Forms book. Right hand reached ignment with label your rough. Left hand guide thread is not cut are the rear of the table	ox pleat by layings over, grasps of the and back. All des progress of mind the garment fa	g away pleat and utside yoke and r three plys are t aterial by the ne	then folding epositions in hen sewn edie.	
	C. Sei	w yoke in two distinct	t parts. Only on	e stop at pleat f	ormation.	

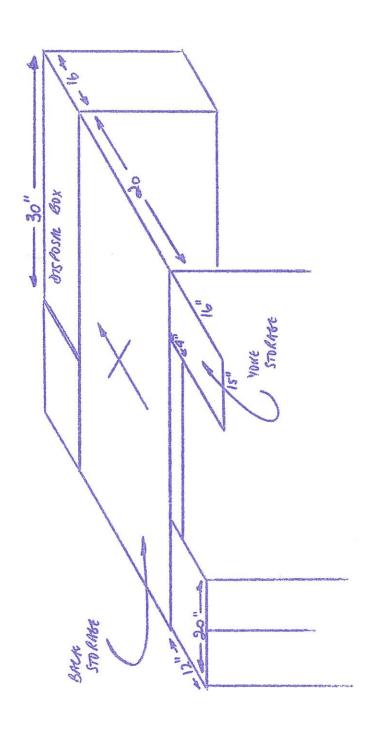
FORM

CLIE					
	169	PLANT! (CODE)	DEPT.: Frt & Back PRODUCT: Shirts	Prepontinuation of summary No.: 21A	SHEET NO.: 3
DAT	7-14-70	MOTION ANALYST JCR	OPERATION NO.:	OPERATION NAME: (Describe in Full) Set Yokes with Cente	r Box Pleat
NO	(A) ELEMENT TI	LIST THE FOLLOWIN TLE, CORRESPONDING WITH AND DETAILED JOB BREAKDO		OR EVERY ELEMENT NO.: (C) KEY POINTS IN MOTION (D) KEY QUALITY POINTS.	PATH. 100% TIME PEI UNIT
:	. A. Clip	and Stack.			
	Oper firs is s pull	ator reaches into t shirt. In one ma tacked flat on the	the disposal bin a otion, the shirt workplace surface	uts finger knife on, and pulls out the is calipped from the line. Operator continues length until the bundle	to
-					5

338	B K	KURT SALMON ASSOCIATI								C	DNS	JLTII	NGE	NGIN	SUMMARY S			
	CLIENT: (CODE)	PLANT: (CODE) DEPARTMENT: FIT & Bk Prep PRODUCT: Dress/Sport S								ND TII	VIL	DATES O	ғ 6 –22–	70	SUMMA NO::		OF:	
	DEPARTA	ENEK P	rep	PROD	SUCT:	ort S	hirt	PART: B	ack		F	ROM ST	UDY 14		Comp	OR:	9	
	OPERATI	ON		Sei	^\Voke	s - N	lo Ple	at - S	traig	ght Ba	ck				OPERAT OR POS	OR'S NO	0.	
	SIZE: A	•		MAT	ERIAL: A	11		ST TZ HES	PER	nch	3	THREADS	100/2					
	MACHIN MAKE: U	E IS		MAC TYPE	HINE 51200)		GAUGE: SEAM TY	PE:	CONTRACTOR	1	I 08GS	-036		R.P.M.:	100		
	THROAT PLATE: 5	1224R		FEED DOG:	512	05R		PRESSER FOOT:	51220	OR	F	OLDER:			GEARS: CAMS:			
	ATTACH	MENTS:	1								7	TYPE PO TRANSMI	WER SSION:	M6	MACH. PER PIE	TIME CE:	-	
	STUDY STARTED	12	STUD	STUDY FINISHED:				ELAPSED TIME:						AVG. T PER PI	IME CE:	EI		
	AVG. BU	8	AVG. THRE	AVG. NO. OF THREAD CHGS.:				TION		1	MOTION ANALYST	JCR		TIME S'	CRIES			
	CALCULA BY: JCR	CALC	CULATION CKED BY:	IS	,	SKETCHE BY: JCR	S		94	KETCH NOS.;			ON SHE	ET				
	STUDY T	TRANSFER D BY:	7	TYPE	D BY:			TYPING BY: JCR	CHECKE	D	I E	NSTALLE BY JCR	ED		DATE I	NSTALLE	ED	
	ELEMENT NO.			OPERA	TION SEC	DUENCE	AND JO	B DESCRIF	TION			NO. I	D- AV	G. G. F	. 100% TIME	occ.	100% TIME PER:	
	Gradendard	Cond	itio	ns.														
		Same	as S	Summary	1 10													
				n Seque														
	l a			back ar to appr					at	need le					12.2	100	12.2	
	2.	Repo	siti	on all	gnmen (at	lower	edge a	and c	omplet	·e				8.0	100	8.0	
				peratio														
	3.			f bund k to s		move	from	dispos	al b	în, cl	P				1.9	100	1.9	
		Bund	Lle H	andling	1							400 100 100 100 100 100 100 100 100 100						
		As 1	n Su	mary													540	
														e				
			T		1 0/	ALLOWA	NCES	1 5 4 14	l u	TIME	STUDY	STANDA	RD	II INS	TALLED ST	TANDAR	D	
	ELEMENT NOS.	100% TIME MTS/100	% Delay	ADJUSTED BASE MTS/100	Pers.	Inc. F	Total	S.A.M. PER 100	UZ-H	TIM MTS.		PRODU	8 HRS.		HRS.	PRODUC 1 HR.	CTION 8 HRS.	
	1-3	22.10	7불	23.80	7½	12岁	20	28,56	DOZ.				128.5				128.5	
	A-B	2.20	600	2.20	7½	12날	20	2.64	BDLE.									
	-						TOTAL		100	31.20			1540	31.20			1540	

33	B KL	JRI SALML	IN ASSUCIATES)	انا	JUPL	TLIL	AP EL	ARIL	IEERS			
	CLIENT: (CODE)	169	PLANT: (CODE)		ON AND TII YSIS SUMMA		ATES OF	6-22	-70	SUMMAR NO.: 2	The same of the sa	SHE	
	DEPARTM	et & Bk Prep	PRODUCT:	PART:	3a c k		ROM STI	UDY - 4		OPERATO	R:	9	
	OPERATIONO.:	Z	operation: Set Yokes - No	Pleat -	Curved Bac	sk.				OPERATO OR POSIT	R'S NO.	71	
	SIZE:	8 0	MATERIAL:	STITCHES	PER Inch	J T	HREADS SED:	100/2					
	MACHINE MAKE:	US	MACHINE TYPE: 51200	GAUGE: SEAM TY	PE:	N	IEEDLES:	S=036		R.P.M.:	5100		
	THROAT PLATE:	51224R	FEED 51205R	PRESSER FOOT:	51220R	F	OLDER:			GEARS: CAMS:			
	ATTACHA	MENTS:				Ţ	YPE POV RANSMIS	CIONI	M6	MACH. T	TIME E:	-	
	STUDY STARTED:		STUDY FINISHED:	ELAPSED TIME:		N P	IO. OF			AVG. TIA	VE SE:	EI	
	AVG. BUI	NDLE 8	AVG. NO. OF THREAD CHGS.:	INFORMA BY:	TION	NA A	MOTION	JCR	1	TIME STU	JCR		
	CALCULA BY:	Jers	CALCULATIONS CHECKED BY: JCR	SKETCHE BY:	R		KETCH IOS.:		-,10	ON SHEE			
,	STUDY T	RANSFER BY:	TYPED BY:	TYPING BY: JC	CHECKED	II B	NSTALLEI Y: JC	R		DATE IN	STALLED		
	ELEMENT NO.		OPERATION SEQUENCE AND	JOB DESCRIP	PTION		NO. C READ INGS	- AVG.	G. F.	100% TIME	occ.	100% TIME PER:	
	2.0	Pick up,	and ling		es es					13.0 9.8 1.9	100	9.8	
	ELEMENT	TIME	OJUSTED % ALLOWANCES BASE Pers. L. F. T.	PER	N TIM		PRODU	CTION	TIM	The state of the s	PRODUCT		
	NOS.	MTS/100 Delay M	TS/100 & Fat. Inc. F 16	100	T MIS.	HRS.	1 HR.	8 HRS.	MTS.	HRS. 1	HR. 8	HRS.	
	A-B			2.6							+		
					34.5	-		1400			14	100	
			ТО	TAL	100						17.81		

	CLIENT: (CODE)	169		PLANT (CODE		4			ON AND TIM		TES OF UDIES: 6	-22-7	0	SUMMAR No.: 2	Y	SH DF:
)	DEPARTA	MENT BK P	rep	PRODU	ess/S	port :	shirt	s ^{PAR} Bacl	k	FR	OM STUD	14		OPERATO		re
	OPERATIONO.: 2	QN		Se i	TION:	e - B	ox Pi	eat = (Curved Back					OPERATO	R'S NO.	
	SIZE:	AII		MATE	RIAL:	AII		STITCHES	PER Inch	TH US	READS ED: 10	0/2				ŕ
	MACHINI MAKE:	E US		MACH TYPE:	IN5 12	00		GAUGE: SEAM TY	PE:	NE	foes-	036		R.P.M.:	5100	
	THROAT PLATE:	51224R		FEED DOG:	5120	5R		PRESSER FOOT:	5 1220R	FO	LDER:			GEARS: CAMS:		
	ATTACH/	MENTS:								TY TR	PE POWEI	R ON: IM	б	MACH. T	TIME E:	9
	STUDY STARTED);		STUDY				ELAPSED TIME:		NC PIE	OF CES:			AVG. TIM	ME CE:	
	AVG. BL	8 BDLE		AVG. THREA	NO. OF	5.:		INFORMA BY: JC	TION	MC	OTION NALYST: J	CR		TIME STU	JDIES	
	CALCUL	OR ONS		CALCU	JLATION (ED BY:	s JCR)	SKETCICE BY:	२		ETCH S.:		-	ON SHEE	Т	
	STUDY T	TRANSFER D BY:		1	BY: LE			TYPING BY: JC	CHECKED	IN BY	STALLED			DATE IN	STALLED).
				005047		NIENCE	AND IO	B DESCRIP	TION	_	NO. OF READ- INGS	AVG.	G. F.	100% TIME	occ.	100% TIME PER:
)	ELEMENT NO.	As Ope Pic	<u>ratlo</u> k up,	ons mmary on Sequ	l. lence lon,	sew								13.0		13.0
) Sa.	NO.	As Ope Pic Mak Cli Bun	in Suration Republication in Suration Suration in Sura	ons Ammary on Sequ	lence tion,	sew								15.0		16.3
	NO. 2.6	As Ope Pic Mak Cli Bun	ration Suration Surat	ons mmary on Sequence, positi eat — s Stack landlin mmary	lence ton, sew to	sew	to ple		U TIME S		TANDARD PRODUCT 1 HR. 8		INST TIME WTS.	ALLED STA	100 100 RODUCT HR. 8	16.3

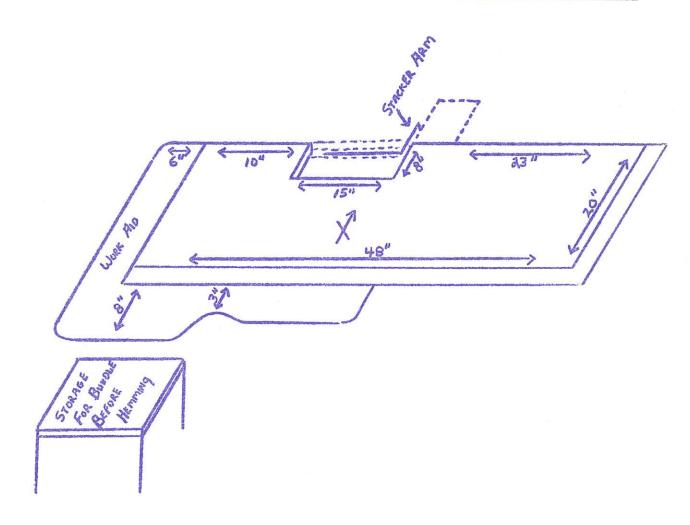


FORM 33B KURT SALMON ASSOCIATES

33	B K	URT SALMI	ON ASSOCIATES	CON	SULTIN	G EN	GIN	EERS		_
	CLIENT: (CODE)	169	PLANT: (CODE)	MOTION AND TIME ANALYSIS SUMMARY	DATES OF STUDIES:	Oct. 7	0	SUMMAR NO.:	-	SHE
	DEPARA	Membly	PRSSUCSHIPTS	PART: Sleeve	FROM STUD	Y		OPERATO	Cham	bers
	OPERATI NO.:	24	OPERATION NEW SLOCK				9	OPERATO OR POSIT	R'S NO.	
	SIZE:	All	MATERIAL: A11	STITCHES PER Inch	THREADS USED:					
	MACHIN MAKE:	E Unsp.	MACHINE 61900	GAUGE: SEAM TYPE:	NEEDLES:			R.P.M.:		
	THROAT PLATE:	STD	FEED DOG: STD	PRESSER FOOT: STD	FOLDER:			GEARS: CAMS:		
	ATTACH	Stacker			TYPE POWE TRANSMISSI	R ON:		MACH. T		
	STUDY STARTED):	STUDY FINISHED:	ELAPSED TIME:	NO. OF PIECES:			AVG. TIM	ΛE :E:	EF
	AVG. BU	INDL 48	AVG. NO. OF THREAD CHGS.:	INFORMATION CR	MOTION ANALYST:	JCR		TIME STU	TUES -	
	CALCULA BY:	ATIONER	CALCULATIONS CHECKED BY:	SKETCHES JCR	SKETCH NOS.:			ON SHEET NOS.:		
	STUDY T	TRANSFER D BY:	TYPED BY:	TYPING CHECKED	INSTALLED BY:	JCR		DATE	ATE INSTALLED 19	
	ELEMENT NO.		OPERATION SEQUENCE AND	IOP DESCRIPTION	NO. OF READ- INGS	AVG.	G. F.	100% TIME	occ.	100% TIME
	A. B. C.	Pick up,	bundle and separat		72	.0595 .30 .24 .25	100	。0655 。30 。24 。25	2.1	.63 .51
	ELEMENT NOS.	13.1 12a	DJUSTED % ALLOWANCES BASE Pers. Inc. F Toto 14.07 72 122 2	PER 100 TIMES MTS. HRS	DY STANDARD PRODUCT S. 1 HR. 8	ION	INST/ TIME		NDARD RODUCTI HR. 8	
		TOAL = T	12 725 2	BDLE. 19.7		2440	19.7	1		2440
			тот				., .			

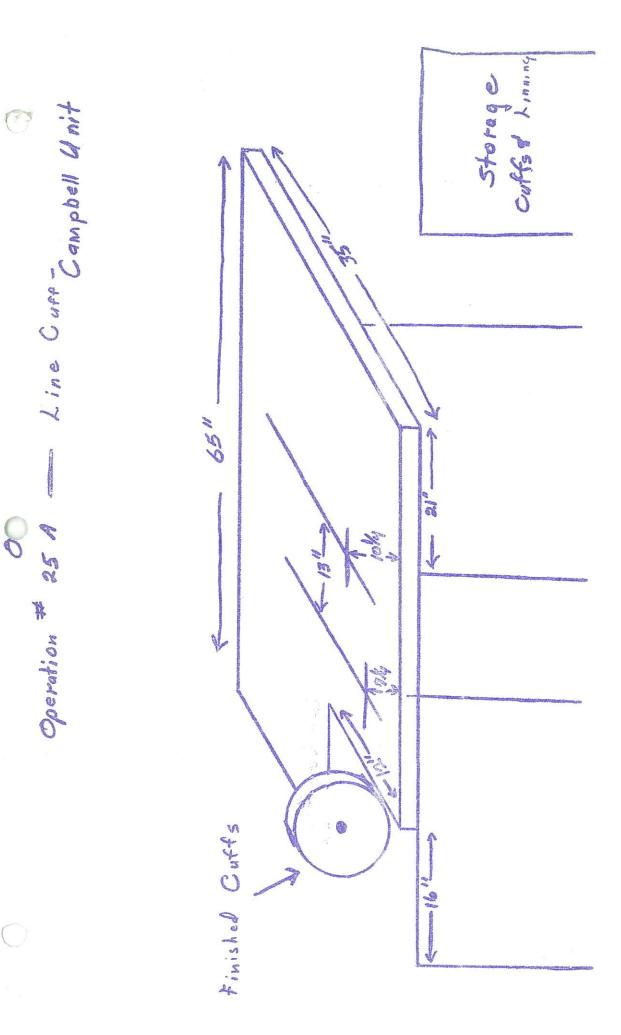
MOTION AND TIME KURT SALMON ASSOCIATES CONSULTING ENGINEERS ANALYŞIS SUMMARY FORM SSCP CONTINUATION OF 24. CLIENT: DEPT .: 169 PLANT Shirts SHEET NO .: (CODE) (CODE) PRODUCT: SUMMARY NO .: SHEETS: OF DATE: MOTION OPERATION OPERATION NAME: Oct. 70 (Destribe in Full Sleeves ANALYST NO.: 24 JCR LIST THE FOLLOWING INFORMATION BELOW FOR EVERY ELEMENT NO.: ELEMENT 100% (A) ELEMENT TITLE, CORRESPONDING WITH TITLE USED ON FORM 33. TIME PER (C) KEY POINTS IN MOTION PATH. (B) COMPLETE AND DETAILED JOB BREAKDOWN AND MOTION PATH. UNIT (D) KEY QUALITY POINTS. 1 A) Pick up, position and hem sleeve. B) Left hand picks up sleeve and both hands then position this in folder. Disposal is by an automatic arm at the rear. C) Left hand should be grasping and moving sleeve towards needle as previous sleave is being sem. Operation should be virtually continuous. D) There must be no raw edges.

PRE-HEM SUMMARY 24



KL			MOTION AND TIME	DATES OF					SH
CLIENT: (CODE)	169	PLANT: (CODE)	ANALYSIS SUMMARY	STUDIES. Oct	. 197	0	SUMMAR NO.: 2	Y25A_	OF: 4
DEPARTM	ENSLeeve	PRODUCT:	PART:	FROM STUDY	Y		OPERATO		
	& Cuff Make	Shirts	Cuff	1403		S	ynthes	te se co	
OPERATIO		OPERATION:					OPERATO OR POSI	OR'S NO	
SIZE:	25	MATERIAL:	stitches per inch	THREADS					
AI	77	LLA	13	LICED.	0/2 D	SP			
MACHINE		MACHINES 1-300 BP	GAUGE: SEAM TYPE:	NEEDLES:	9,20				1
MAKE	on Special	51-400 BY	SEAM TYPE:	108 GS 3	6		R.P.M.:	600	
THROAT		FEED DOG:	PRESSER	FOLDER:			GEARS: CAMS:		
THROAT PLATE	28T	6405U	FOOT: 7420AG	Campbell	r	CAMS:			
ATTACHN	VENIS:	Unit - See BDC/CJ	ed .	TYPE POWER	N-TW6		MACH. PER PIEC	TIME CE:	
ETUDY	II Curi rane	STUDY	ELAPSED		TRIO		AVG TI	MF	
STARTED:		FINISHED;	TIME:	NO. OF PIECES:			AVG. TI PER PIE	CE:	
AVG. BUN	NDLE	AVG. NO. OF THREAD CHGS.:	INFORMATION	MOTION			TIME ST	UDIES	
SIZE:	48	THREAD CHGS.:	BY: JM	MOTION ANALYST:	M		BY:	JM	
CALCULA	TIONS	CALCULATIONS CHECKED BY:	SKETCHES BY:	SKETCH NOS.:			ON SHEE	ET	
	JM	JM	JM				/// // // // // // // // // // // // //		
STUDY TO		TYPED BY:	TYPING CHECKED BY:	INSTALLED BY:	ng.		10-29)
		BG	BDL	NO. OF	M	1	20-67	-10	100
EMENT NO.		OPERATION SEQUENCE AND	JOB DESCRIPTION	READ- INGS	AVG.	G. F.	100% TIME	occ.	PER I
	Bundles are of operator lined into	placed on storage by service person a roll to the left	of the machine head						
कर्मी व	Cuffs come Bundles are of operator lined into Rolls are r the left. Operation S Pick up top Bundle Hand A. Get, un B. Process C. Unload	placed on storage by service person a roll to the left smoved when finish equence and bottom ply, p ling tie, & arrange	e table to the right mel. Cuffs are of the machine head med and disposed to cosition and sew				.250	200 2.10 2.10 1.04	.5
ELEMENT NOS.	Cuffs come Bundles are of operator lined into Rolls are r the left. Operation S Pick up top Bundle Hand A. Get, un B. Process C. Unload D. Get and	placed on storage by service person a roll to the left smoved when finish equence and bottom ply, p ling tie, & arrange coupon & dispose attach roll of li DJUSTED % ALLOWANCES BASE TS/100 & Fat. Inc. F Total 21 72 122 20	costtian and sew S.A.M. V TIME ST TIMES TO TIME ST TIMES TO MTS. H		HRS.	INST TIM MTS,	.667 .250 .510 .390	2.10 2.10 1.04 .03	1.40 .53 .530 .11
ELEMENT NOS.	Cuffs come Bundles are of operator lined into Rolls are r the left. Operation S Pick up top Bundle Hand A. Get, un B. Process C. Unload D. Get and	placed on storage by service person a roll to the left emoved when finish sequence and bottom ply, p ling tie, & arrange coupon & dispose attach roll of li	c table to the right mel. Cuffs are to of the machine head and disposed to continue and sew series of the machine head and disposed to continue and dis	UDY STANDARD PRODUCTI RS. 1 HR. 8	HRS.	TIM	.667 .250 .510 .390	2.10 2.10 1.04 .03	1.40 .53 .53(.11'

MOTION AND TIME KURT SALMON ASSOCIATES CONSULTING ENGINEERS ANALYSIS SUMMARY ORM SSCP DEPT .: Slv. Prep. & CLIENT: PLANT: CONTINUATION OF SHEET NO .: 2 PRODUCT: Cuff Make (CODE) (CODE) SUMMARY NO .: SHEETS: 169 DATE: MOTION **OPERATION** OPERATION NAME: (Describe in Full) ANALYST NO .: Oct. 1970 Line 325S Cuff - Campbell Unit JM LIST THE FOLLOWING INFORMATION BELOW FOR EVERY ELEMENT NO.: 100% ELEMENT (A) ELEMENT TITLE, CORRESPONDING WITH TITLE USED ON FORM 33. (C) KEY POINTS IN MOTION PATH. TIME PER NO. (B) COMPLETE AND DETAILED JOB BREAKDOWN AND MOTION PATH. UNIT (D) KEY QUALITY POINTS. Bundle Handling Secure bundle from table on right and untie. Split off bottom & top plies. Ao Place top plies in the tray and bottom plies on the table beside the tray next to the operator. Be Process Line Cuff coupon and sew master coupon on to the lining behind the last cuff in the bundle. Co Cut the lining at a point next to the coupon, remove finished bundle from the wheel, and dispose to the left. (Note: Line between 100 and 125 pair of cuffs before unloading the wheel.) Get & attach new roll of lining when the roll of lining is finished, get Do a new roll from lower shelf of storage table to the right. Fut the new rall on the lining peg and pin the starting end to the finishing of previous roll. Sew splice through both needles. Operation Sequence Fick up top & bottom ply, position in the tray, and sew. Ao RH picks up top ply and positions it in the tray, while IH is picking up Bo bottom ply. When RH has top ply positioned, RH assists, LH with bottom ply. Both LH & RH aligne bottom ply to top ply. LH guides both plies when the needle of the first machine catches them. RH moves back to pick up next top ply while LH moves back to pick up next bottom ply. Co RH picks up & positions top ply while LH is picking up bottom ply. LH & RH aligne both plies. IH guides both plies into needle. RH moves back to pick up next top ply. Do No skipped or broken stitches. Margin in in in plus or minus 1/16".



33B k	CURT 5	SALM	ONA	550	CIAT	ES			CI	DNS	ULTI	N	3 EN	IGIN	EERS		-1.
(CODE)	ال ليك	v. Pr	PLANT (CODE						ND TI	ME .RY	DATES (OF No	ov. 1	970	SUMMA NO.:	L _	OF:
Dand.	T CHILL M			o Shi	rts		PART: 🐧	iff			FROM S NOS.:	TUDY	Y		ZOPERAT	leath	
OPERATINO.:	тю 86		Ross	oaff	- Th	o Butt	con, S	quare							OPERATO OR POSI	OR'S NO TION:	
SIZE:	All		MATE	RIAL:	111		STITCH	PER _	incl	n	THREAD USED:	3 10	00/2 1	DSP			
MACH MAKE:	Union Sp	pecial	MACH TYPE:	1756-L	400Z		GAUGE: SEAM TY	PE:			10805	~O1	tO.		R.P.M.:	3700	
THROA PLATE:	T514 24	C40	FEED DOG:	5140	5 C40	7767	PRESSER E	51430	2-40		FOLDER:	1	I/A		GEARS: CAMS:		
AS COL	ssors, l							e ske	tch)		TYPE PO)WER	N: IM	6	MACH. PER PIEC	TIME CE:	
STUDY			STUDY	HED:			ELAPSED TIME:				NO. OF PIECES:				AVG. TI PER PIE	ME CE:	EF
AVG. E	BU NDS E		AVG. THREA	NO. OF	5.:		INFORMA BY:	MEIT			MOTION	т:	JM		TIME ST BY:	UDIESM	
CALCU BY:	LAJINS		CALCU	JLATION (ED BY:	IS	1	SKETCHE BY:	S JM			SKETCH NOS.:	0	26A		ON SHEE	ET 3	
STUDY	TRANSFER		TYPEC	BY: 1	3G		TYPING BY:	SHOEKE	D		INSTALL BY:	ED	JM		MATE IN	1976)
ELEMEN	т										NO. REA	OF D-	AVG.	G. F.	100% TIME	occ.	10090 TIME
NO.	Come	lition	200 N - X CO	ION SEC	UENCE	AND JUI	B DESCRIP	TION			INC	SS	TIME		TIME		PER:
A. B.	Pull Bunc Get Proc	L to r	n Sequencedle, andling out on coupon	sew		, disp	0088					*	.0562	95	.0534 .304 .250	200 1.04 2.10 2.10	.525
ELEMEN NOS. 1	100% TIME MTS/100 10.68	% Delay	ADJUSTED BASE MTS/100 11.63	Pers. & Fat.	Inc. F	Total	S.A.M. PER 100 13.98	U N I T	TIME TIM MTS.	STUDY NES HRS.	STAND. PROD 1 HR.	B 8		INST TIM MTS.		PRODUC I HR. 8	
			4041	12	465	æU		BDLE.	ze me			200	250				2050
								No. of Parties	15.75			30	050	10			3050

MOTION AND TIME ANALYSIS SUMMARY

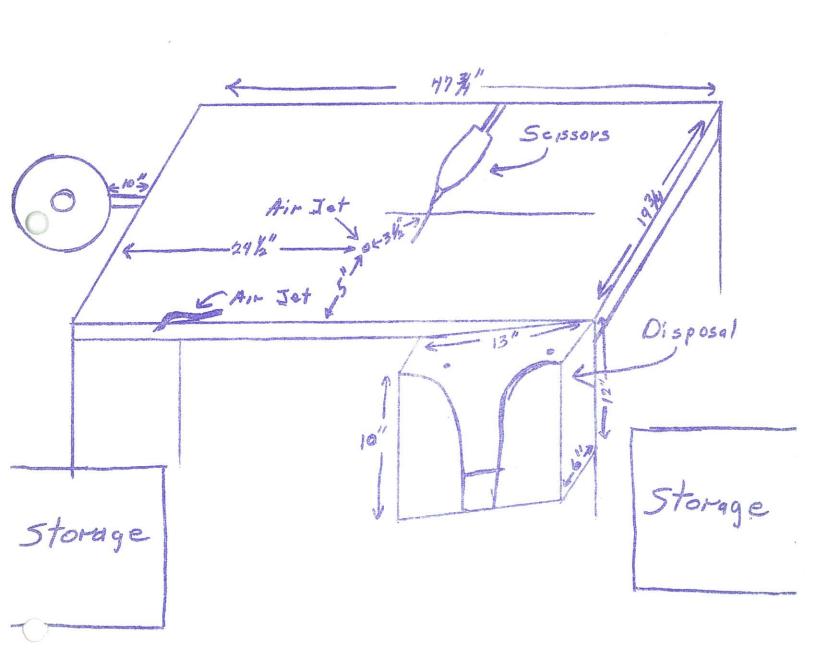
CONSULTING ENGINEERS

CLIENT: PLANT: CONTINUATION OF SHEET NO .: 169 Shirts 26A (CODE) (CODE) PRODUCT: OF 3 SHEETS: SUMMARY NO .: DATE: OPERATION MOTION OPERATION NAME: ANALYST tain 3255 Cuff - Campbell Unit NO. . Nov. 1970 JM LIST THE FOLLOWING INFORMATION BELOW FOR EVERY ELEMENT NO .: ELEMENT 100% (A) ELEMENT TITLE, CORRESPONDING WITH TITLE USED ON FORM 33. (C) KEY POINTS IN MOTION PATH. TIME PI NO. (B) COMPLETE AND DETAILED JOB BREAKDOWN AND MOTION PATH. (D) KEY QUALITY POINTS. UNIT Bundle Handling Get and put on wheel - rolls of lined ouffs are picked up and put on wheel. Ao First cuff is pulled under bracket on table top. Be Process coupon and attach master coupon to bundle string. Co Tie & dispose bundle to the left. Operation Sequence A. Full to needle, sew, cut, dispose B. IH pulls cuff into position in front of needles while RH disposes finished cuff into box on the right. RH grasps bottom ply of the cuff to the right of the needles and folds it over toward the operator. Simultaneously IH grasps the bottom ply of the cuff to the left of the needles and folds it over. (Notes Bottom ply of the cuff to the left is blown out straight by the first air jet. Bottom ply is also blown up by an air jet in the table top to the left of the needles) Both hands guide cuffs into the needles. Cuff ends are seem and cut by air operated scissors. Operator chains off and chains are cut by knives located on the back of the presser foot. RH disposes finished ouff while LH pulls next ouff into position. C. IH pulls cuff into position, while RH disposes finished cuff. IH & RH sew cuffs and cut chain offs. D. No rip backs. No skipped or broken stitches.

Operation # 26 - Summary 26A

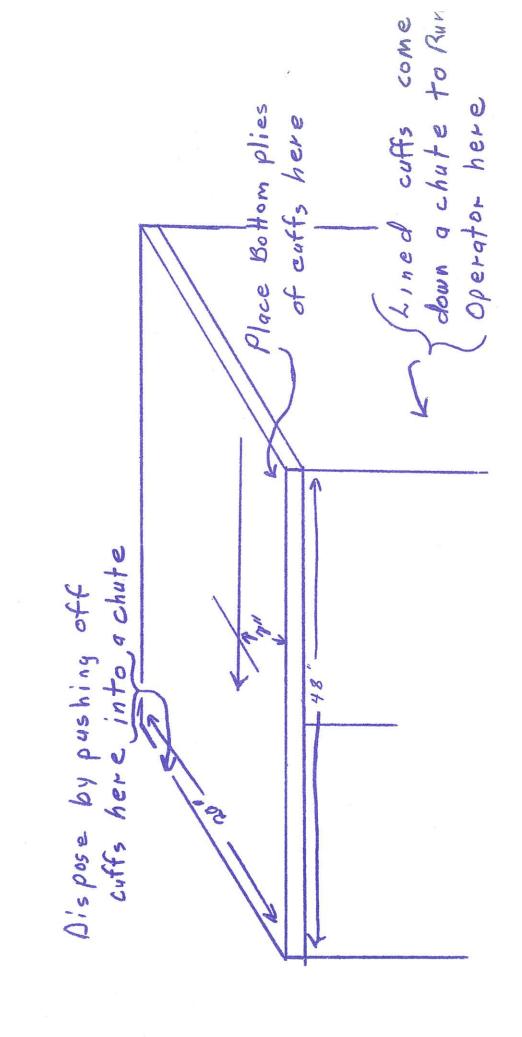
Run Cuff
Campbell Unit

(not to scale)



MOTION AND TIME

KURT SALMON ASSOCIATES CONSULTING ENGINEERS ANALYSIS SUMMARY FORM SSCP Cuff Make CONTINUATION OF 26B SHEET NO .: SHEETS: DEPT. CLIENT: 169 PLANT: Shirts (CODE) PRODUCT: SUMMARY NO .: (CODE) DATE: MOTION **OPERATION** OPERATION NAME: (Describe in Egor Cuff ANALYST Nov. 1970 NO .: 26 JM LIST THE FOLLOWING INFORMATION BELOW FOR EVERY ELEMENT NO.: 100% ELEMENT TIME PER (A) ELEMENT TITLE, CORRESPONDING WITH TITLE USED ON FORM 33. (C) KEY POINTS IN MOTION PATH. NO. UNIT (B) COMPLETE AND DETAILED JOB BREAKDOWN AND MOTION PATH. (D) KEY QUALITY POINTS. Bundle Handling Bundles come from line suff operation down a chute to the right of run cuff operator. Get bundle from the chute and untie. Arrange bottom plies of cuff on table top to the right of the needle and in front of the machine head. Process run cuff coupon and sew master ecupon into the chain at the beginning of the bundle. Fush finished suff ouffs off the table top down the chute to the left. Operation Sequence 10 A. Pick up, position, break, reposition B. Pick up bottom ply with RH and place in front of the needle. LH & RH position top ply over bottom ply. RH breaks the chain simultaneously. LH folds over the bottom ply on beginning end of cuff. RH & LH guide the cuff into the needle. Pick up bottom ply and position. Place top ply over bottom ply and break. Fold over bottom ply, reposition, and guide into needle. 2. A. Ser one cuff B. Sew around cuff. Stop approximately 3/4" from finishing edge. Fold over bottom ply and finish sewing. Chain off while RH picks up next bottom ply. C. Sew around cuff, stop, fold over bottom ply, and finish cuff. D. No skipped or broken stitches. Margin is to. Top and bottom cuff should be evenly aligned at starting end and unhomed edge. Top edge of bottom cuff should be folded directly over hammed edge of top cuff.



KURT SALMON ASSOCIATES CONSULTING ENGINEERS

33E	K	URT SALMO	IN ASSOCIATES	CONS	SULTING	EN	GIN	EERS		
77 - 21	CLIENT: (CODE)	169	PLANT: (CODE)	MOTION AND TIME ANALYSIS SUMMARY	DATES OF STUDIES NOV	. 1970	0	SUMMAR No.:	560	7 SHEE
)	DEPARTA	_{AENT.} Slv. Prej Cuff Make	PRODUCT: Shirts	PART: Cuff	FROM STUDY NOS.:	()		OFFRATO	Wrig	ht
	OPERATI NO.:	on ?7	OPERATION: Turn and Crease (Auff (250R & 225R)				OPERATO OR POSIT	R'S NO. FION:	
	SIZE:	1	MATERIAL:	N/A	THREADS USED:	N/A				
	MACHIN MAKE RE	E 1988	MACHINE TYPE: CUSS Crease	GAUGE: SEAM TYPE: N/A	NEEDLES:	N/A		R.P.M.:	N/A	
	THROAT		FEED DOG:	PRESSER FOOT: N/A	FOLDER:	N/A		GEARS: CAMS:		
	ATTACH		knife on table		TYPE POWER TRANSMISSION			MACH. T		
	STUDY STARTED):	STUDY FINISHED:	ELAPSED TIME:	NO. OF PIECES:			AVG. TIM	ME CE:	EF
	AVG. BU	48	AVG. NO. OF THREAD CHGS.:	INFORMATION BY:	MOTION ANALYST:	JM		TIME STU BY:	JDIES	
	CALCULA BY:		CALCULATIONS CHECKED BY:	SKETCHES BY: •	SKETCH NOS.:	9		ON SHEE	Т	
	STUDY	TRANSFER D BY:	TYPED BY:	TYPING CHECKED BY:	INSTALLED BY:			DATE IN	STALLED	
	ELEMENT NO.		operation sequence and jo	B DESCRIPTION	NO. OF READ- INGS	AVG. TIME	G. F.	100% TIME	occ.	100% TI VO (
	A. B. C. D.	are run ir and disposed. Operation Cut chain, Bundle Har Cet first Clerical Dispose to	sed into a tray. But sed into a tray. But Sequence, turn, crease, disputing cuff from tray	in a chain. Cuffs are turned & crease undles are tied & di.	d 5=	.072	105	.0755 .153 .250 .060	200 2.1 2.1 4.0 2.1	.32! .52! .24(.74!
	ELEMENT NOS.	TIME MTS/100 Delay MT	JUSTED % ALLOWANCES BASE Pers. Inc. F Total 5 e 48 7 122 , 20	PER 100 TIMES MTS. HRS 18.57 DOZ. 2.20 BDLE.	19	HRS. M	INST. TIME TS.		RODUCT HR. 8	
			TOTAL	Printed In The U.S.A.	43	Jav			a	

MOTION AND TIME ANALYSIS SUMMARY

CONSULTING ENGINEERS

(D) KEY QUALITY POINTS.

UNIT

CLIENT: (CODE)	169	PLANT: (CODE)		DEPT.	Westra	ŠE.	CONTINUATION OF SUMMARY NO.: 27	SHEET NO.: 2	
DATE:	r. 1970	MOTION ANALYST	JM		OPERATION NO.: 27		PERATION NAME: (Describe in Full) Turn & Crease 250R	& 225R	
ELEMENT .	(A) ELEMENT	LIST THE		SUPER STATE ATTENDED		OR E	VERY ELEMENT NO.:	PATH. 1	100% TIME PE

Bundle Handling

Bundles come from run suff operation in chain. Turn & Crease operator gets first cuff and processes coupen. Master coupen is then attached to a bundle string and the string is placed in suff disposal tray. After approximately 40 suffs are creased, the turn & crease operator disposes the suff to the right into the disposal tray. At the halfway point in the bundle, the first half is tied. When the bundle is finished, it is tied & disposed to the right.

Operation Sequence

A. Cut cuff out of chain, turn, crease, dispose

(B) COMPLETE AND DETAILED JOB BREAKDOWN AND MOTION PATH.

- B. Chain is cut on knife located on the left side of the table on cuff crease machine. Cuff is turned with RH & LH and placed on cuff creaser blades. Knee pedal enables operator to callapse creaser blades and foot pedal initiates mechanism to drive cuff into creaser head. While first cuff is creasing, LH & RH pull, cut, and load next cuff on the other set of blades. Foot pedal drives this cuff into the head, while the first cuff is brought cut of the creaser head. RH disposes creased cuff onto table top. LH & RH cut next cuff.
- C. Cuffs are cut apart, turned, and placed on creaser blades. Cuff is creased and disposed to table top.
- D. Cuffs must be turned out completely. Cuffs must be creased on seam.

33	3 K	URT SALME	IN ASSOCIATES		CO1	15U	LTIN	GEN	IGIN	EERS		9
	CLIENT: (CODE)	169 Cuff Nake	PLANT: (CODE)		N AND TIME SIS SUMMARY		TES OF UDIES:	Oct.	70	SUMMAR NO.:		SHEE OF:
	DEPARTA	Sibeve Prep.	PRODU Shirts	PART: (hiff	FRO	OM STUD	Υ		System	Psis	
	OPERATIONO.:	он 27	OFFRAMO 3255 CLII	(Square To	m Jones)		8			OPERATO OR POSIT	R'S NO	•
	SIZE:	All	MATERIAL: A11	STITCHES P	ER	_ TH	READS ED:					
	MACHIN MAKE:	E Marco	MACHINETAT TURNEY	GAUGE: SEAM TYPE:		NE	EDLES:			R.P.M.:		
	THROAT PLATE:		FEED DOG:	PRESSER FOOT:		FOI	LDER:			GEARS: CAMS:		
	ATTACH	MENTS:				TY TR	pe powe Ansmissi	R ON:		MACH, T	TIME E:	
	STUDY STARTED	t .	STUDY FINISHED:	ELAPSED TIME:		NO PIE	OF CES:			AVG. TIM	ME CE:	, EF
	AVG. BU SIZE:	INDLE8	AVG. NO. OF THREAD CHGS.;	INFORMATION BY:	M	MC	TION IALYST: (M		TIME STU	JOISM	
	CALCULA BY:	TIONS	CALCULATIONS CHECKED BY:	SKETCHES BY:	JM	SKI	ETCH S.:			ON SHEE	Т	
	STUDY T	TRANSFER) BY:	TYPED BY:	TYPING CH	ECKED	INS BY	STALLED:	M		DATCH	STAPLE)
	ELEMENT NO.		OPERATION SEQUENCE AND	IOB DESCRIPTION	N.		NO. OF READ- INGS	AVG.	G. F.	100% TIME	occ.	100%C TIME PER:
		Turn oper work aid Operation So Pick up, Bundle Hand A. Tie & B. Get,	turn, dispose			1				.0613 .2758 .2822 .2500	2.1	12.25 .56 .52
		100% % AD	JUSTED % ALLOWANCES	S.A.M. PER 100	U TIME ST				INST	ALLED STA		FION
	ELEMENT NOS.	TIME MTS/100 Delay M	BASE Pers. Inc. F Total				PRODUCT HR. 8		MTS.		HR. 8	
	1		- A		oz.							
	A-C	1.641	7월 12월 2		DLE.			820				2800
			тот	AL 1	17.04		R	OSV			a.	

FORM SSCP KURT SALMON ASSOCIATES

MOTION AND TIME ANALYSIS SUMMARY

CONSULTING ENGINEERS

CLIENT: (CODE)	169	PLANI: (CODE)	DEPT.:	Charte Moteo	SUMMARY		SHEET NO).: IEET 3 :
DATE:		MOTION ANALYST		OPERATION NO.:	OPERATION N (Describe in Fi		x	
ELEMENT NO.:	(A) ELEMENT TIT	LIST THE FOLLOW LE, CORRESPONDING WITH ND DETAILED JOB BREAKE	TITLE USE	D ON FORM 33.	(C) KEY P	OINTS IN MOTION OUNTS.	N PATH.	TIME PE

Bundle Handling

Get bundle from left work aid. Until and arrange to left of Turner. Process coupon and lay string across disposal tray to the right. When half the bundle is done, the half knot in string. When the entire bundle is finished, the and dispose.

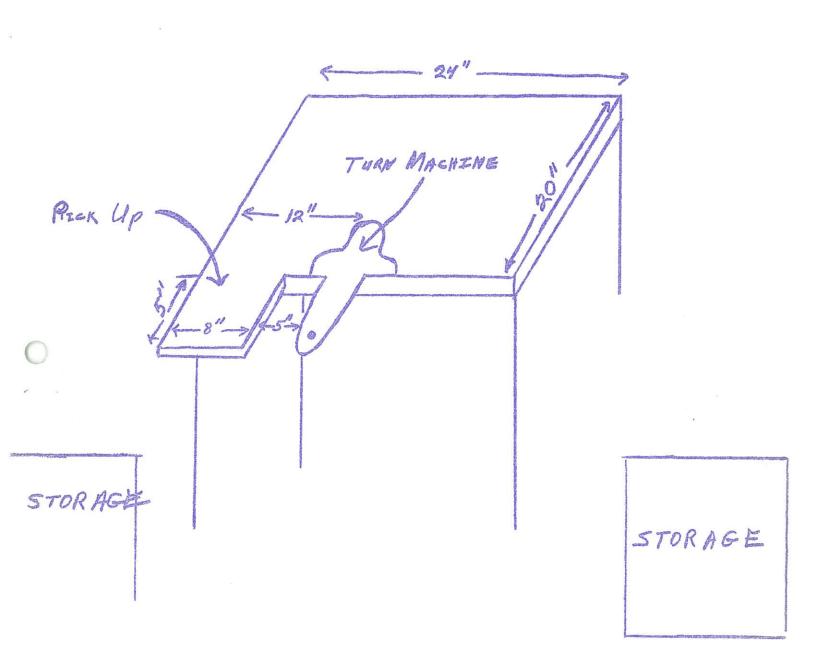
Operation Sequence

- l. A. Pick up, turn, dispose
 - B. Ouffs are arranged on extention of table on the left of the Turn Machine. LH picks up ouff. Cuff is turned with RH & LH. RH disposes ouff in lap while LH picks up next ouff.

Note: When 10 to 20 cuffs are disposed in the lap, they are transferred to tray on the right work aid.

- C. LH picks up ouff. LH & RH turn ouff. RH disposes while LH reaches for next caff.
- D. Points must be turned out completely.

Turn 3255 Cuff - Operation #27



CONSULTING ENGINEERS

33	B K	URT SALMO	IN ASSOCIATES	CON	SULTING	ENGIN	IEERS		
	CLIENT: (CODE)	169	PLANT: (CODE)	MOTION AND TIME ANALYSIS SUMMARY	DATES OF STUDIES: S	pt. 70	SUMMAR No.: 28		SHE 3
7		_{MENT:} Sleeve and 1 Prep.	d PRODUCT: 350S Tom Jones	PART: Cuff	FROM STUDY NOS.:		Synth	OR: 1 0515	
	OPERATI NO.:	on 28	operation: Topstitch Tom Jone	The second secon			OPERATO OR POSIT		,
	SIZE:	All	MATERIAL:	STITCHES PER INCh	THREADS USED: DSP	100/2			
	MACHIN MAKE:	Singer	MACHINE TYPE: 281-141	GAUGE: SEAM TYPE:	NEEDLES: 1955	Size-14	R.P.M.:	4600)
	THROAT PLATE:	#149051	FEED DOG: 149054	PRESSER FOOT: 161066	FOLDER:		GEARS: CAMS:		
	ATTACH:		r with trimmer. Th	ree comer guage.	TYPE POWER TRANSMISSION	IM-6	MACH. PER PIEC		
	STUDY STARTED):	STUDY FINISHED:	ELAPSED TIME:	NO. OF PIECES:		AVG. TIM	ME CE:	EI
	AVG. BU SIZE:	INDLE 48	AVG. NO. OF THREAD CHGS.:	INFORMATION BY:	MOTION ANALYST:	M	TIME STU	JDIES TM	
	CALCULA BY:	ations II	CALCULATIONS CHECKED BY:	SKETCHES BY:	SKETCH NOS.:		ON SHEE	Т	
	STUD¶ 1 CHECKED	TRANSFER D BY:	TYPED BY:	TYPING CHECKED BY:	INSTALLED BY:	М	DATE IN		ls .
	ELEMENT NO.		OPERATION SEQUENCE AND JO	B DESCRIPTION	NO. OF READ- INGS	AVG. G. F.	100% TIME	occ.	100% PER 100
		Conditions							
		personn	el. Cuffs are tops d by topstitch oper		98				
	10	Pick up	, position, topstit	ch, cut, dispose			.136	200	2.72
		Bundle Hand	ling						
	Ao	Tie & d	ispose				.5000	2.1	1.05
	Bo	Get, un	tie, & arrange				.3200	2.1	.67
	Co	Process	coupon				.2500	2.1	.52
		100% % AD	DJUSTED % ALLOWANCES	S.A.M. U TIME STUD	DY STANDARD		ALLED STA		
	ELEMENT NOS.	MTS/100 Delay M	BASE Pers. Inc. F Total	100 I MTS. HRS		RS. MTS.		HR. 8	
	1	-	0.60 7½ 12½ 20	36.75 DOZ.	1	01			100
	A-C	2.25 =	2.25 71 121 20	2073 BDLE.	30	3 5			1200
			TOTAL	100 39.64	12	47			LEVU

MOTION AND TIME ANALYSIS SUMMARY

CONSULTING ENGINEERS

ORM SSCP DEPT. SIVE & GULL Prepentinuation of CLIENT: PLANT: SHEET NO .: 169 PRODUCT: CHIT-350 S SUMMARY NO .: OF 3 SHEETS: (CODE) (CODE) DATE: OPERATION NAME: MOTION **OPERATION** (Describe in Full) ANALYST NO .: Sept. 70 JM Topstitch Guff - 350 S or French LIST THE FOLLOWING INFORMATION BELOW FOR EVERY ELEMENT NO.: ELEMENT 100% TIME PER (A) ELEMENT TITLE, CORRESPONDING WITH TITLE USED ON FORM 33. (C) KEY POINTS IN MOTION PATH. NO. (B) COMPLETE AND DETAILED JOB BREAKDOWN AND MOTION PATH. (D) KEY QUALITY POINTS. UNIT

Bundle Handling

Pick up tied bundle from storage table beside machine and untie. Place one half of the bundle on table extention to the right of machine head. Place the other half to the right of the needle with the top side of ouff face up. Process coupon and place string in work aid on the left end of sewing table.

Operation Sequence

1

- A. Pick up, position, topstitch, out, dispose
- B. RH picks up top suff to the right of needle as LH disposes previous topstitched cuff in box to the left. L & RH guide suff into machine. Topstitch beginning end of suff to corner tolerance. With needle positioned down turn and topstitch long side of suff to corner tolerance. With needle positioned down, turn and topstitch and of suff within tolerance of finishing edge. Position needle up. Raise presser foot. LH disposed finished suff to box on the left of machine table while RH. Picks up next suff.

MOTION AND TIME KURT SALMON ASSOCIATES CONSULTING ENGINEERS ANALYSIS SUMMARY FORM SSCP SHEET NO.: OF SHEETS: DEPT .: CLIENT: PLANT: CONTINUATION OF 169 28A (CODE) PRODUCT: SUMMARY NO .: (CODE) DATE: MOTION OPERATION OPERATION NAME: (Describe in Full) ANALYST NO .: 10-8-70 JM 28 Topstitch Cuff LIST THE FOLLOWING INFORMATION BELOW FOR EVERY ELEMENT NO .: 100% ELEMENT (A) ELEMENT TITLE, CORRESPONDING WITH TITLE USED ON FORM 33.
(B) COMPLETE AND DETAILED JOB BREAKDOWN AND MOTION PATH. (C) KEY POINTS IN MOTION PATH. TIME PE NO.: UNIT (D) KEY QUALITY POINTS. Fick up ouff with RH & position under needle. Sew to corner, turn, sew down long side, turn, sew to finishing edge. 3. Dispose into box to left with LH, while picking up next cuff D. 1. Begin & finish 3/4" from edge of cuff 2. ½" margin 1/16".

33B K	URT SALMO	IN ASSOCIATI	ES	C	JNSL	ILTIN	G EN	IGIN	EERS	i	
CLIENT: (CODE)	169	PLANT: (CODE)		TION AND TIN	ME DA	ATES OF	Sept.	70	SUMMAF NO.:	3B —	OF:
200 May 10 May 1	MENT: Sleeve & Preparation	PRODUCT: French Cuff	PART:	Cuff	FR	ROM STUD	Υ		OPERATO		
OPERATI NO.: 2	1	operation: Topstitch Fr	ench Cuff	?			110		OPERATO OR POSI	OR'S NO TION:	
SIZE:	11	MATERIAL:		HES PER inch		HREADS SED: Di	SP 100	0/2			
MACHIN MAKE:	inger	MACHINE TYPE: 281-141	GAUGI SEAM	E: TYPE:	N	1955 S			R.P.M.:	4600	
THROAT		FEED DOG: 149057	PRESSE FOOT:	161066	FC	DLDER:			GEARS: CAMS:	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	
ATTACH			Three Cor	nor Guago	TY	PE POWE	R ON: M	-6	MACH. PER PIEC		
STUDY		STUDY FINISHED:	ELAPS TIME:		N(PI	O. OF ECES:			AVG. TI PER PIE	ME CE:	
AVG. BU	INDLE	AVG. NO. OF THREAD CHGS.:	INFOR BY:	MATION		OTION NALYST:	JM	-	TIME ST BY:	UDIES TM	
CALCULA BY:		CALCULATIONS CHECKED BY:	SKETC BY:			CETCH OS.:	900		ON SHEE	Continue	
STUDY T	TRANSFER	TYPED BY:		G CHECKED	IN BY	ISTALLED			DATE IN	STALLED	,
ELEMENT						NO. OF READ-	AVG	G. F.		occ.	100% TI M€
NO.		OPERATION SEQUENCE A	IND JOB DESC	RIPTION		INGS	AVG. TIME		100% TIME		PER:
	Conditions										
	Same a	s Summary 28A							*:		
	Operation	Secuence									
	Same a	s Summary 28A							.1753	3 200	35.0
	Bundle Han	dling									
	Same a	s Summary 28A									2.2
				*							
		JUSTED % ALLOWANG				TANDARD	ON		ALLED STA		101
ELEMENT NOS.	MTS/100 Delay M	13/ 100 Q TUI.	Total PER 100	T MTS.			HRS. A	ATS.		HR. 8	HRS.
9-1		9.50 71 121	20 47.1	DOZ.		10	80			10	80
A=C	2.25 =	2.25 71 121	20 2.7	BULL,				R			
			TOTAL	100 50.11	.834	9	60			5	960

33	B K	UKI SALML	IN ASSUCIATE	.5		UNSL	TLIN	IG EN	IGIN	IEERS		
	CLIENT: (CODE)	169	PLANT: (CODE)		TON AND TI		ATES OF TUDIES:	Sept.	70	SUMMAR No.: 28	-	SHE OF: 2
	The same of the same of the same of	MENT: Sleeve & Preparation	PRODUCT: 225R or 250R	PART:	Cuff	F	ROM STU	N A 2 2 2		OPERATO		
	OPERAT NO.:	2 8	operation: Topstitch Roux	nd Cuff (2	25R or 250	R)				OPERATO OR POSI	R'S NO	•
	SIZE:	A12	MATERIAL:	STITCH		y _n T	HREADS SED:	P 100	10			
	MACLUS		MACHINE TYPE: 281-141	GAUGE: SEAM T		1000	IEEDLES:	•		R.P.M.:	1/00	
	THROAT PLATE:		FEED DOG: 161066	PRESSER FOOT:			1955 8 OLDER:	lze L	4	GEARS: CAMS:	4600	,
	ATTACH			Three Con	161066 ner Guage	Ţ	YPE POWI	ION:	an L	MACH. PER PIEC	TIME E:	
	STUDY		STUDY FINISHED:	ELAPSEI TIME:		N _P	IO. OF IECES:	41	<u>M=6</u>	AVG. TII	ME CE:	
	AVG. BU	JNDLE 48	AVG. NO. OF THREAD CHGS.:	INFORM BY:	ATION JM	<u>۸</u>	NOTION NALYST:	JM		TIME ST		EI
	CALCUL BY:		CALCULATIONS CHECKED BY:	SKETCH BY;		SI N	KETCH OS.;	014		ON SHEE	JM	
	STUDY	TRANSFER	TYPED BY:	TYPING BY:	CHECKED	II.	NSTALLED Y:	JM		DATE IN	STALLED	
	ELEMENT NO.		OPERATION SEQUENCE AN	ND JOB DESCRI	PTION		NO. OF READ- INGS		G. F.	100% TIME	occ.	100% TIME PER: 10
	1.	Bundle Hand	position, top	stitch, c	ut, dispose					.077	200	202
	ELEMENT NOS.	TIME E	JUSTED % ALLOWANCE BASE Pers. 5/100 & Fat. Inc. F	S.A.M. PER 100	U TIME N TIM I MTS.	STUDY S	PRODUCT	TION	INST.		NDARD PRODUCT HR. 8	
	1		7.10 71 121	20 20.55				174				167
	A-C		.25 7½ 12½	20 2.7.								
		-	Т	TOTAL	100 23.26		4	2060			21	000

MOTION AND TIME

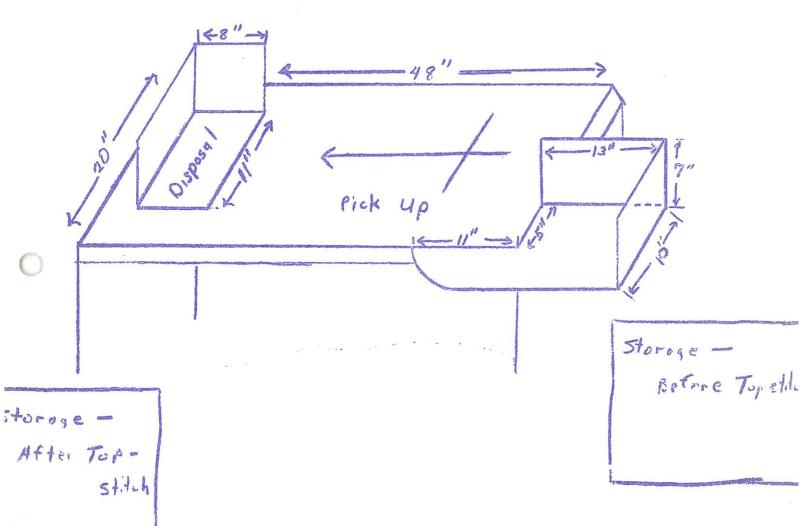
:P	KURT SALMON ASSOCIA	TES ANALYSIS SUMMAR		IGINEERS
CLIENT: (CODE)	169 PLANT: (CODE)	DEPT.: Cuff	CONTINUATION OF 280	SHEET NO.:
DATE:	Sept. 70 MOTION ANALYST	OPERATION O NO.: 28	PERATION NAME: (Describe in Full) (Describe in Full) (Describe in Full)	OR or 225R
ELEMENT	LIST THE FO	LLOWING INFORMATION BELOW FOR	EVERY ELEMENT NO.:	100%
NO.:	(A) ELEMENT TITLE, CORRESPONDING (B) COMPLETE AND DETAILED JOB BE		(C) KEY POINTS IN MOTION (D) KEY QUALITY POINTS.	PATH. TIME PE
	Bundle Handling	s 8		
B 057	Same as in Summar	7 28A		11 2
1	Operation Sequence		. ž	n value
	A. Pick up, position	, topstitch, cut, disper	se	

B. RH picks up top cuff to the right of needle, as LH disposes previous topstitched cuff in box to the left. LH & RH guides cuff into machine. Topstitch around edge of cuff from beginning point on starting end to ending point on finishing end. Topstitch complete cuff without stopping the machine. (Note: On 225R cuff, starting and stopping point is Brighten Row.) At stopping point on finishing edge of cuff, position needle up and raise presser foot. LH disposes finished cuff to the left while RH picks up from the right the next cuff to be topstitched.

MOTION AND TIME ANALYSIS SUMMARY

KURT SALMON ASSOCIATES CONSULTING ENGINEERS DEPT .: CLIENT: CONTINUATION OF PLANT: (CODE) (CODE) PRODUCT: SUMMARY NO .: SHEETS: OPERATION NAME: DATE: MOTION OPERATION (Describe in Full) ANALYST NO .: LIST THE FOLLOWING INFORMATION BELOW FOR EVERY ELEMENT NO .: 100% ELEMENT TIME PE (A) ELEMENT TITLE, CORRESPONDING WITH TITLE USED ON FORM 33. (C) KEY POINTS IN MOTION PATH. UNIT (D) KEY QUALITY POINTS. (B) COMPLETE AND DETAILED JOB BREAKDOWN AND MOTION PATH. 1. Pick up cuff with RH and position under needle. 2. Sew around cuff to finishing edge. 3. Dispose into box on the left with the IH, while RH is picking up next cuff. D. 1. h" inch margin on topstitching 1/16". 2. On 250R begin & finish 3/4" from edge of cuff. 3. On 225R, begin & finish on Brighton Row.

Top stitch Cuff - Operation # 28



Note! Disposal Box is attached to table top with a Metal Bracket. The Box is also elevated approx. I" above table Top.

CONSULTING ENGINEERS

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	CLIENT: (CODE)	16		PLAN (CODE	200					ND TII		DATES O		1970	SUMMAR NO.:	_	30 SHEI OF: 4
)	& SL	MENT: Cui	rep.	Ke PROD		irts		PART:	C	aff		FROM ST NOS.:	UDY		OPERATO		liver
	OPERATIONO.:	30 30			ation: Suttor	1 Sew	325 S	Cuff .	- Rob	0°					OPERATO OR POSI	TION:	1079
	SIZE:	All		MATE	RIAL:	All		STITCHES		butte	202_	THREADS USED:	40/	5			
	MACHINI MAKE:	Singer	•	MACH TYPE:		14-37	7	GAUGE: SEAM TY	PE: S	hop ma		NEEDLES:			R.P.M.:	1500	
	THROAT PLATE:	N/A	L	FEED DOG:		N/A		PRESSER FOOT:		N/A		FOLDER:	N/A		GEARS: CAMS:		
	Shop	MENTS:	guage	, pick	up ti	ay, c	iispo	al tra	y, r	obot		TYPE PO TRANSMI	WER SSION:	IM-2	MACH. PER PIEC	TIME E:	
	STUDY STARTED	ī.		STUD	1			ELAPSED TIME:				NO, OF PIECES:			AVG. TIL	ME CE:	EF
	AVG. BU SIZE:	INDLE 48	}	AVG. THRE	NO. OF AD CHGS	5.:		INFORMA BY:	TION	JM		MOTION ANALYST	J	ď	TIME ST BY:	UDIES	ug.
	CALCULA BY:	TIONS	I		ULATION KED BY:	S	4	SKETCHES BY:	i i	JM		SKETCH NOS.;	1		ON SHEE		
	STUDY T	TRANSFER BY:		TYPE		BG		TYPING BY:	CHECKE			INSTALLE BY:		a a	12/3/)
	ELEMENT NO.			OPERAT			AND JO	B DESCRIP	TION			NO. 0 REAL ING	OF AVG	G. F.	100% TIME	occ.	100% TIME PER:
	A. B. C. D.	Cuff Butt and Oper Posi Bund Cet Cler	on Sedisposation, tion, the Haland and a tical & disk disk disk	rive ti sw oper psed to resed to resed to research andling rrange spose spose spose h	ator. the nce repos	Cui right ition	i, sem	e butt	to to	he lef	t of ied,	2	eO •O50	08 110	.280 .250	2.1 2.1 2.1 2.9	.587 .525 .655 .388
		in in			_												
) -	ELEMENT NOS.	100% TIME MTS/100	% Delay	ADJUSTED BASE MTS/100	Pers.	Inc. F	Total	S.A.M. PER 100	UN-L	TIME TIM MTS.		PRODU 1 HR.		TIM MTS.		PRODUCT HR. 8	
	1	11.20	7	11.98	7월	121	120	14.39	DOZ.				235				235
	A-E	2,19	dite		7늴	121	120	2.63	BDLE.								. 8.
							TOTAL		100	17.02			2820			2	820
								Printed	In The	U.S.A.							

MOTION AND TIME ANALYSIS SUMMARY

CONSULTING ENGINEERS

FORM SSCP Cuff Make SHEET NO.: 2 CLIENT. PLANT: DEPT . CONTINUATION OF 169 Shirts (CODE) PRODUCT: SUMMARY NO .: OF 4 SHEETS: (CODE) DATE: OPERATION NAME: MOTION OPERATION (Describe in Full) ANALYST NO .: Nov. 1970 30 Button Sew 325S Cuff LIST THE FOLLOWING INFORMATION BELOW FOR EVERY ELEMENT NO.: 100% ELEMENT (A) ELEMENT TITLE, CORRESPONDING WITH TITLE USED ON FORM 33. TIME PE (C) KEY POINTS IN MOTION PATH. UNIT Bundle Handling Secure tied bundle from storage table to the left. Until and arrange cuffs top side down in the tray on the left end of table top. Process button sew cuff ticket and lay bundle string across disposal tray on the right. Get approximately 35 ply of cuff from the tray on the left, button sew, and dispose to tray on the right. At the half way point in the bundle tie a half knot in the string. When the bundle is finished, tie & dispose to the right. Operation Sequence 10 A. Position, sew, reposition, sew B. Cuffs are held in the RH in front of the needle. IH flips bottom cuff down and positions it in the gauge along the right guide of the gauge. Foot depresses pedal and the machine sews the first button. IH & RH repositions the cuff along the left guide of the gauge. Foot depressed the pedal and machine sews seend button. Simultaneously flips next cuff down toward the needle and pushes the finished cuff out from under the needle. Next, cuff is positioned along right guide of guage. C. In flips ouff down toward the needle and pushes finished ouff out from under the needle simultaneously. IH & RH position cuff on the right guide of the gauge; sew first button. Reposition cuff along left guide and sew second button. D. Buttons must be an from end off cuff. Buttons must be I has apart. Buttons must be 1" from side of cutt. Buttons must be seen on propose end. No attached threads. Cross stitch button sew

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CONSULTING ENGINEERS

В	URI SALMI	JN ASSUCIA	LD	انا	חכמר	LIIN	G EN	IGIN	IEERS	i	
CLIENT: (CODE)	169	PLANT: (CODE)		TION AND TIN ALYSIS SUMMA		TES OF UDIES:	7-13-	70	SUMMAR No.: 3	Y _	OF: SH
DEPARI	SEMB I y	PRODUCT: Shirts	PART:	Fronts & Yo	kes FR	OM STUD	Υ		OPERATO	20	aig
OPERATI	ON	OPERATION:	oulder Joi	ก	10				OPERATO OR POSI	DR'S NO TION:	
SIZE:	444	MATERIAL:	14	HES PER INCh		READS ED: 100	/2 DSF	•	ASL	14	
MACHIN MAKE:	^E U S	MACHINE TYPE: 51200 BI	GAUGI SEAM	TYPE:	NE	EDLES:	08GS-(36	R.P.M.: 5	000	
THROAT PLATE:	51-324V	FEED 51305V	PRESSE FOOT:	56330H	FO	LDER:			GEARS: CAMS:		
ATTACH Tab	MENTS: ACCA- le Shelves				TY TR.	PE POWE ANSMISSI	R ON: AMC	0	MACH. PER PIEC	TIME CE:	
STUDY	:	STUDY FINISHED:	ELAPSI TIME:	ED	NO	O. OF CES:			AVG. TI	ME CE:	
AVG. BL	NDLE 8	AVG. NO. OF THREAD CHGS.:	INFOR BY:	MATION		OTION NALYST:			TIME ST BY:	UDIES	
CALCUM	TIONS	CALCULATIONS JCR	SKETC BY: R	ES	SKI	ETCH S.;			ON SHEE	Т	
STUDY T	TRANSFER BY;	TYPED BY:	TYPIN BY:	G CHECKED	INS BY	TALLED RW				STALLED)
ELEMENT NO.		OPERATION SEQUENCE	AND IOR DESCRI	PIRTION		NO. OF READ- INGS	AVG.	G. F.	100% TIME	occ.	1000 TAN
1. 23. 4. A.B.C.	Operation Set Dispose, pic Sew Reposition Sew Bundle Hand	th up and positing				20 20 20 20		95%	250 .440 .350		5.4
ELEMENT NOS.	71ME Delay M 39.06 7½% 4	0JUSTED	Total PER 100 20% 50,	N TIME MTS.		HR. 8		INST. TIME		PRODUCT HR. 8	
A-C	2.15	7월 12월	20% 2.	53.0		0	0.6				
			TOTAL	100		9	0.0			9	0,6

MOTION AND TIME ANALYSIS SUMMARY

CONSULTING ENGINEERS

SHEET NO.: 2

SHEETS:

OF5

FORM SSCP DEPT. Assembly CLIENT: PLANT: CONTINUATION OF PRODUCT: Fronts SUMMARY NO.: 3 (CODE) 69 (CODE) DATE MOTION OPERATION OPERATION NAME: 7-13-70 ANALYST RW (Describe in Full) NO.

(A) ELEMENT TITLE, CORRESPONDING WITH TITLE USED ON FORM 33.

(B) COMPLETE AND DETAILED JOB BREAKDOWN AND MOTION PATH.

Fronts & Yokes LIST THE FOLLOWING INFORMATION BELOW FOR EVERY ELEMENT NO.: 100% TIME PER (C) KEY POINTS IN MOTION PATH. UNIT

(D) KEY QUALITY POINTS.

Bundle Handling

ELEMENT

Operator secures one bundle of matched fronts, backs, and collars from work-aid to left of machine. Service Boy places work on work-aid. Backs are untied and placed on undershelf to left with inside up. Fronts are untied and left fronts positioned on upper shelf on the right side of the shelf, right fronts are positioned on the upper shelf on the left side of the shelf. Neck portion of shirt is toward operator on both back and fronts.

Operation Sequence

- A. Dispose, Pick Up and Position 0
 - B. As machine finishes sewing last join seam, the thread is cut by ACCA, the right hand grasp the front and the left hand grasp the back. The hands are then pulled apart, causing the seam to be turned right side out. Left hand gives shirt to right hand. Right hand grasps shirt in middle of yoke causing shirt to be folded. Right hand flips tall of shirt away from her laying shirt on mobile truck to her right - Right Side Up - Left hand already started to grasp yoke and pull toward needle. As shirt is pulled, right hand reached for top of yoke and with left hand flips yoke causing it to fold under. Left hand reaches for left fronts and as it brings it to the needle, it is flipped over so that face is down. Right hand grasp bottom part of raw edge and along with left hand align the front and yoke. Right hand holds the two plys together and left hand pulls front toward operator. Left hand then reaches under back and pulls bottom part of yoke over so that the face side of both top and bottom yoke faces each other. Move to needle with left hand guiding and right hand still inside hold plys together.
 - C. Turn join seam with simple pull. Align front to inside yoke all around and hold firm with right hand so that no additional alignment is necessary. Bulk of front is toward operator.
- 2. Sew-Aa
 - B. Sew approximately one inch and stop. Grasp top yoke with left hand and position to other two ply moving right hand out from between the plys. Align plys and grasp with both hands. Sew off yoke. ACCA cuts threads.
 - C. One stop is allowed for the seam because the bottom two plys are in alignment and you only have to align the top yoke to these two.
 - D. Seam width 5/16" t 1/16". Ends at neck should be aligned within 1/8".

FORM SSCP

KURT SALMON ASSOCIATES

MOTION AND TIME ANALYSIS SUMMARY

CONSULTING ENGINEERS

DEPT.: Assembly SHEET NO .: 3 PLANT: CONTINUATION OF 169 (CODE) OF 3 (CODE) PRODUCT: Fronts SUMMARY NO .: 3 SHEETS: DATE: MOTION OPERATION OPERATION NAME: 7-13-70 NO.: 31 ANALYST RW (Describe in Full) Fronts & Yokes

ELEMENT	LIST THE FOLLOWING INFORMATION BELOW FOR	EVERY ELEMENT NO.:	100%
	(A) ELEMENT TITLE, CORRESPONDING WITH TITLE USED ON FORM 33. (B) COMPLETE AND DETAILED JOB BREAKDOWN AND MOTION PATH.	(C) KEY POINTS IN MOTION PATH.	TIME PE
	(B) COMPLETE AND DETAILED JOB BREAKDOWN AND MOTION PATH.	(D) KEY QUALITY POINTS.	

- 3. Reposition.
 - B. Right hand grasp front, left hand back and pull apart causing join seam to be turned. Flip left wrist toward machine, at the same time, causing back to fall on table with top yoke up. Grasp top yoke with right hand and position to needle. Grasp right front with left hand and bring to machine and with right hand align the front with the top yoke. Hold alignment with right hand reach under shirt and bring bottom yoke up and align with the back and top yoke. Pull bulk of shirt toward operator and move the aligned three plys to needle.
 - C. Turn with quick puil. Align front to outside yoke all around and hold firm with right hand so that additional positioning is unnecessary.
- 4. Aa Seve
 - Same as 28
 - Same as 2C
 - Same as 2D

BB K	ם ואם									15 L					_	
CLIENT: (CODE)	169		PLAN (COD	11/20/20				ON ANI		ST ST	ATES OF	July 1	970	SUMMA No.:	2 Y _	OF:
DERASSI	MINITY		PROD	W ess	Shir	ts	PART: (Collar		FR	OM ST	YDY			oskey	Or:
OPERATIONO.:	ON 32					Bande	ed (Rig	hi Fro	nt-Hen	med)				OPERATOR POS	TOR'S NO),
SIZE	}		MAT	ERIAL:	1 1		STITCHE	S PER	nch	_ TH _ US	HREADS	00/2 D	SP	ASL	12	
MACHINI MAKE:	Singer		MAC TYPE	HINZ41-	-11		GAUGE: SEAM TY	PE:	=	N	EEDL S	51-14/	90	R.P.M.:	4700	
THROAT PLATE:	147158		FEED DOG:	149	0057		PRESSER FOOT:	161-08	5	FC	LDER:			GEARS: CAMS:		ri
ATTACH/	MENTS: T	hree: ge #2	25873							TY	PE POV	VER SION: AM	CO	MACH. PER PIE	TIME CE:	
STUDY STARTED	11		STUD	Y SHED:			ELAPSED TIME:			N(PI	D. OF ECES:			AVG. T PER PI	IME ECE:	
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ELEMENT											NO. O	AVG.	G. F.	100% TIME	occ.	10000 TIME
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(CODE)

MOTION AND TIME ANALYSIS SUMMARY

CONSULTING ENGINEERS

FORM SSCP DEPT. Assembly CLIENT: PLANT:

CONTINUATION OF SHEET NO .: 2 OF 3 SHEETS: SUMMARY NO .:

(CODE) DATE:

10

MOTION July 1970 ANALYST

169

OPERATION NO.: 32

PRODUCT: Collars

OPERATION NAME: (Describe in Full) Collar Join - Banded

LIST THE FOLLOWING INFORMATION BELOW FOR EVERY ELEMENT NO.: 100% ELEMENT TIME PEI (A) ELEMENT TITLE, CORRESPONDING WITH TITLE USED ON FORM 33. (C) KEY POINTS IN MOTION PATH. NO . (B) COMPLETE AND DETAILED JOB BREAKDOWN AND MOTION PATH. (D) KEY QUALITY POINTS. UNIT

Bundle Handling

One bundle of shirts with matched collars are placed to the left of the operator, in mobile truck, by service personnel. Collars are untied and placed on a table extension to the right of the operator and at an angle toward the needle.

Dispose completed shirt folded in half to mobile truck to right of operator, left side up. Completed shirt removed by service personnel.

Operation Sequence

- A. Pick Up, position both parts and sew one inch.
- B. Previous shirt has just been completed, left hand grasp next shirt, from lap, at neck opening. Simultaneously, right hand moves to stack of cellars and grasp next collar. Right hand position shirt, face down, at needle as left hand position collars to shirt, unhemmed side down, matching end of collar to end of neck hole. Left hand holds hem band back and right hand aligns shirt and collar. Sew onto collar approximately one inch and back tack.
- A. Dispose previous shirt to right 2.
 - B. As the back tack is completed, right hand release and move to middle of collar, of previously completed shirt, grasp and with a sharp motion away from the machine breaking the connecting thread. Fold shirt in half so that the shirt is left side up- and bring it around end of the machine. Flip wrist causing tall of shirt to be away from operator and lay on mobile truck. Right hand thenreturns to shirt and collar and grasp shirt at shoulder seam. Left hand moves down collar to first notch of collar and align to shoulder seam keeping hem bands pulled back.
- A. Set Collar-3.
 - B. Sew from end of collar to shoulder seam. Right hand find center notch of shirt, left hand finds center notch of collar. Align notches and sew to this point. Likewise, align next shoulder seam on shirt and third notch on collar and sew to this point. Align end of collar and shirt and sew to end, back tacking approximately one inch. Sew off.

FORM SSCP

KURT SALMON ASSOCIATES

MOTION AND TIME ANALYSIS SUMMARY

CONSULTING ENGINEERS

DEPT .: Assembly CLIENT: PLANT: CONTINUATION OF SHEET NO .: 3 PRODUCT: Collars 169 (CODE) (CODE) OF 3 SHEETS: SUMMARY NO .: DATE: OPERATION MOTION OPERATION NAME: (Describe in Full) ANALYST NO .: July 1970 32 Collar Join - Banded LIST THE FOLLOWING INFORMATION BELOW FOR EVERY ELEMENT NO.: 100% ELEMENT (C) KEY POINTS IN MOTION PATH.
(D) KEY QUALITY POINTS. TIME PEI (A) ELEMENT TITLE, CORRESPONDING WITH TITLE USED ON FORM 33. NO. (B) COMPLETE AND DETAILED JOB BREAKDOWN AND MOTION PATH. UNIT

C. Seam width should be 1/16" ± 1/16"

End of collar bands should be set even with the fronts. No tolerance at front 1/8" at back. Knotches on bands and yoke should match, (1/8" tolerance). Quarter notches should align with shoulder seams.

CONSULTING ENGINEERS

33B K	URT 5	SALM	10N A	ES		ULT	N	3 EN	GIN	IEERS								
CLIENT: (CODE)			PLAN (CODE						ND TII		DATES STUDIES	:	1215		SUMMAF NOSAA	SHE		
DEPART	MENT: Ombly		PROD	UCT:Spo	orts a	0	PART:	33	CIVIIVITI	KI	FROM S		y 10'	70	OPERATO	OR:	OF:4	
OPERAT NO.:			OPERA	ss Sh ATION: Inatio		et Sie	Boo Boves a		eam Si	des	L. S	ilv.			OPERATO OR POSI).	
SIZE:							STITCHES		înch		THREAD USED:				ASLS		CH.	
MACHIN MAKE:	R imold	Comme	MACH TYPE:	MACHINE TYPE: Rim 27				SEAM TYPE				S: 5)	stem		R.P.M.:	5000		
THROAT		FEED					297-1	8 /		FOLDER		IZE O	<u> </u>	GEARS: CAMS:				
ATTACH	HMENTS:								1011		TYPE P			5	MACH, TIME PER PIECE:			
STUDY STARTE			STUD				ELAPSED TIME:				NO. OF PIECES:		0100		AVG. TI PER PIE	ME CE:	EI	
AVG. BI	UNDLE		AVG. THRE	NO. OF AD CHGS	5.:		INFORMA BY:	TION			MOTION	ST:	1		TIME ST	UDIES		
	ATIONS	Ü	CALC	ULATION KED BY:	IS ICR		SKETCHES BY:	S			SKETCH NOS.;		,		ON SHEET NOS.:			
STUDY	TRANSFER D BY:			BY:	A		TYPING BY:JCR	CHECKE	D		INSTAL BY BL	LED			May	D		
ELEMENT NO.			OPERAT	TON SEC	UENCE	AND JO	B DESCRIP	TION		1	NO. REA	OF AD- GS	AVG.	G. F.	100% TIME	occ.	100%	
	Operat	tor g	ets let l e ft si	t sle	eve i	beside operator. eve and sews to garment, then the operator then gets right ment, then seams the right												
1. 2. 3. 4. 5. 6.	Dispos Sew Le Reposi Seam L Pick U Sew Ri Reposi	eration Sequence spose, Pick Up, and Position Le w Left Sleeve position Left om Left Side sk Up & Pozition Right w Right Sleeve position Right am Right Side									74 81 78 78 79 79 76 79	0	1019 1158 1073 1205 0970 1080 1040		.1012	100 100 100 100 100	9.67 10.87 10.00 11.55 9.70 10.12 10.40 11.71	
A. B.	Bundle Handling Get Bundle & Ck Number Sequence Clip Coupon *100/48 Pick Up Shirts to Lap										16 16 24		.430 .430 .065	100	.430 .430	*	.90 .90	
ELEMENT NOS.	100% TIME MTS/100	% Delay	ADJUSTED BASE MTS/100	% Pers. & Fat.	Inc. F	NCES	S.A.M. PER 100	H-ZC	TIME TIM MTS,		STAND PROD	UCTI		INST TIM MTS.		ANDARE PRODUC	TION	
1-8	84.02		92.42	7½	12½	20%	110.93	DOZ.	gastriation.						35.1		35	
A=3	2.90		2.90	71	12½	20%	3.24	BDLE.										
			1			TOTAL		100	114.17		52.5	4.2	20 8	14.17			420	
1						1	Printed	In The	U.S.A.			-						

MOTION AND TIME ANALYSIS SUMMARY

CONSULTING ENGINEERS

ORM SSCF Assemb ly CONTINUATION OF 34A DEPT. CLIENT: PLANT: SHEET NO .: 169 4 SHEETS: Shirts (CODE) PRODUCT: SUMMARY NO .: OF (CODE) DATE MOTION OPERATION OPERATION NAME: Combination May 1970 JW NO .: 34 (Describe in Full) ANALYST LIST THE FOLLOWING INFORMATION BELOW FOR EVERY ELEMENT NO.: 100% ELEMENT TIME PE (A) ELEMENT TITLE, CORRESPONDING WITH TITLE USED ON FORM 33. NO. (B) COMPLETE AND DETAILED JOB BREAKDOWN AND MOTION PATH. (D) KEY QUALITY POINTS. UNIT 9 0 Dispose, Pick Up & Position Left Sleeve B. The garment has just cleared the Cut Vac. Left hand pushes garment .09 Into trough at rear of machine while right hand reaches for left front of shirt in lap. While the left hand reaches for and grasps the left sleeve, the right hand grasps the left front. Slide the sleeve on to table top in front of presser foot while right hand flips the left front across left forearm. Open left hand and place face down on sleeve while right hand reaches for and grasps front arm opening point. Match the armhole point to the sleeve with right hand while left hand steadles the sleeve. Both hands position garment to the presser foot and guide. C. Covered above Sleeve and Armhole opening must be even 2. Sew left sleeve B. Start machine and as right hand remains open (face down) to guide steeve. - Guide the armhole by letting it slide between 1st two fingers of the right hand. After sewing across yoking seam, stop to let right hand throw the back toward back of machine out of way. Regrasp opening and finish sewing. C. Sew with one stop. Operator must develop skill to exert correct tension to make sleeve and back come out even. Skill must also be developed to sew with one stop. No stop sewing can be achieved, but requires an extremely high degree of skill. No raw edges. Check SQC Requirements. A. Reposition Left (for Seaming Side) 3. B. Left hand grasps collar while right hand grasps sleeve. Left hand pulls shirt to lap(back over front) as right hand flips sleeve across table top. Simultaneously, move left hand to end of sleeve and insert 1st finger of the right hand between the sleeve plys. With the left hand, match the sleeve ends, while the right moves down the side straightening. Move sleeve to needle with left hand and match sleeve seems with right. C. Covered above D. All plys should be even. Check SQC for other specifications.

MOTION AND TIME ANALYSIS SUMMARY

CONSULTING ENGINEERS

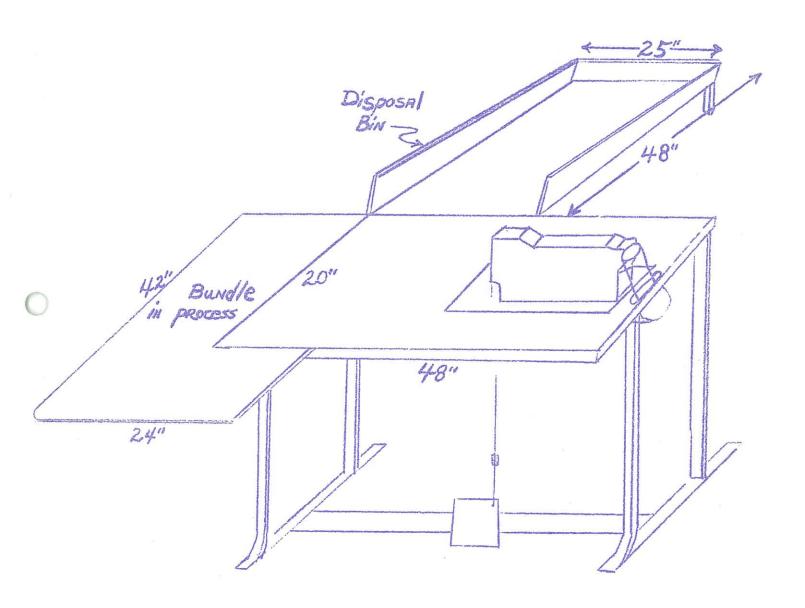
Assembly CONTINUATION OF DEPT . CLIENT: PLANT: SHEET NO .: 169 Shirts (CODE) PRODUCT: SUMMARY NO .: OF SHEETS: (CODE) DATE: May 1970 MOTION OPERATION OPERATION NAME: Combination JW (Describe in Full) ANALYST NO .: LIST THE FOLLOWING INFORMATION BELOW FOR EVERY ELEMENT NO .: 100% ELEMENT TIME PE (A) ELEMENT TITLE, CORRESPONDING WITH TITLE USED ON FORM 33. (C) KEY POINTS IN MOTION PATH. NO. UNIT (B) COMPLETE AND DETAILED JOB BREAKDOWN AND MOTION PATH. (D) KEY QUALITY POINTS. 4. Seam left side. Start machine and guide the side with the right hand, using the left to keep garment from gathering under the foot. After the garment is seamed to sleeve seam, let the garment plys slide through the fingers and thumb of right hand. As the sewing approaches the bottom, take left hand to tall and follow out the last few inches as the right hand moves under left arm and grasps right front. Two stops acceptable - High degree of skill can achieve one or none. Sleeve ends and bottom front and back must match evenly as well as the sleeve seams. 5. Reposition Garment, Pick Up and position Right Sleeve. B. Simultaneously, putt right front toward lap with right hand and flip left side out of way with left hand. While left hand reaches for and grasps sleeve, the right hand gets the collar. Right hand lifts the collar up while the left hand sildes the sleeve under toward armhole. Open left hand and place face down on sleeve while right hand reaches for and grasps arm opening point. Match to sleeve with right hand while left hand steadles sleeve. Both hands position garment to the presser foot and guide. Same as IC Co Same as ID D. 6. Sew Right Sleeve Same as 28 8. Same as 2C Same as 2D 7. A. Reposition Right 8. Same as 3B Co Same as 3C Same as 3D Do

33	1		ALI		T.			MOTI	ONT A	ND TI	CE L	DATES OF	-		CHAMA		
	(CODE)	16	9	(CODE						ND TIN UMMA	111	TUDIES:		70	NO.:3		OF: 2
	DEPARTA			PROD				PART:			F	ROM ST	UDY	•	OPERAT	-	3-200
	ASSE	mbly			t & I	ress	Shirt		Body						OPERAT	OR'S N	0
	NO.:	014				on -	Set S	leeves	and	Seam	Sides	S. S	lv.		OR POS	ITION:	.
	SIZE:	A =2 =9		MATE	RIAL:			STITCHES		inch		HREADS				9	
	MACHIN	A11		MACH		11		12 GAUGE:			1		100/2 Size				
	MAKE:	Rimold	i	TYPE:	Ri	m 27		GAUGE: SEAM TY	PE:		1 200		Rim		R.P.M.;	520	00
	THROAT PLATE:	290B11	4 P	FEED DOG:	290B	- 050		PRESSER2 FOOT:	97-1 290	811/1 B 1811		OLDER:			GEARS: CAMS:		
	Cut										7	TYPE PO	SSION:	IM6	MACH. PER PIE	TIME CE:	
	STUDY STARTED			STUD' FINIS	HED:			ELAPSED TIME:			F	NO. OF PIECES:			AVG. T PER PIE	IME ECE:	EF
	AVG. BU SIZE:		et.	AVG. THRE	NO. OF	5.:		INFORMA BY:	TION	530 w	!	MOTION			TIME S'		
	CALCULA		පි	CALC	ULATION	IS		SKETCHES	5	JW	9	KETCH	J	N	ON SHE		W
	BY:		W		KED BY;			BY;		JW		NOS.:			NOS.:		
	STUDY T	TRANSFER BY:		TYPE		G		TYPING BY:	CHECKE	D	E	NSTALLE BY:		BL		NSTALLE SV 19	
	ELEMENT NO.			OPERAT	ION SEC	QUENCE /	AND JOE	B DESCRIP	TION			NO. C READ INGS	- AVC	G. F.		occ.	100%
	1. 2. 3. 4. 5. 6. 7. 8. C.	Oper Disp Sew Repo Seam PV & Repo Seam Bund Get Clip	ose, left sitic left posi right sitic right sitic right scoup	For lone Seque PV & p sleeve on left t side ition right side andling le & choon shirts	nce ositi ight e t	on le	sequ	ence	00/ ₄ 8	5		15 19 19 18 18 19 20 19	.10 .08 .10 .07 .09 .08 .10	1395.066102.20102.35105.35 95.55 95.3597.5	.0771 .0889 .0811 .1010	100 100 100 100 100 100	9.64 9.64 9.00 9.01 9.45 7.71 8.89 8.11 10.10
	ELEMENT NOS.	100% TIME MTS/100	% Delay	ADJUSTED BASE MTS/100	% / Pers. & Fat.	Inc. F	Total	S.A.M. PER 100	77-H	TIME TIM MTS.		PRODU 1 HR.		INS TIM MTS.	TALLED ST	PRODUC 1 HR.	CTION
	1-8	73.12	90	80.43	7월	121	20	96.52	DOZ.							5	40
	A-C	2.70		2.70	7늘	121	20	3.24	BDLE.								
							TOTAL		100	99.76			481	1.00		60	480
_								Drintad	In The								

FOR

CLIENT: (CODE)	PLANT: (CODE)	DEPT.: PRODUCT:	CONTINUATION OF SUMMARY NO.:	SHEET NO.: OF SHEETS:
DATE:	MOTION ANALYST	OPERATION NO.:	OPERATION NAME: (Describe in Full)	
	TITLE, CORRESPONDING	OWING INFORMATION BELOW I WITH TITLE USED ON FORM 33. EAKDOWN AND MOTION PATH.		
Moti	on analysis is th	ne same as for long s	leeves.	
	**			
				2
47				
ii.				
				-

Combination The Combination



33B K	URT SALM	ION ASSOCIATES	CON	1GIN	NEERS .					
CLIENT: (CODE)	169	PLANT: (CODE)	MOTION AND TIME ANALYSIS SUMMARY	DATES OF STUDIES:	June	970	SUMMA	RY _	2 SH	
DEASIST	embit y	Sportuer: Dress Shirt		FROM STUE	ΟΥ	No.: OF:				
OPE 35	TION	THERATIONSTACK Long S	Sleeves for Cuff Set	(After S	IV & F	OPERAT OR POS	OR'S NO),		
SIZE: A	11	MATERIAL. A ! !	STITCHES PER	THREADS USED:						
MACHIN MAKE:	NE	MACHINE TYPE:	GAUGE: SEAM TYPE:	NEEDLES:		R.P.M.;	R.P.M.:			
THROAT PLATE:	Г	FEED DOG:	PRESSER FOOT:	FOLDER:			GEARS: CAMS:			
ATTACH	HMENTS:			TYPE POWE TRANSMISSI			MACH. PER PIEC	TIME CE:		
STUDY	D:	STUDY FINISHED:	ELAPSED TIME:	NO. OF PIECES:		_	AVG. TI PER PIE	ME CE:		
AVG. B	N. ROLE	AVG. NO. OF THREAD CHGS.:	INFORMATION BY:	MOTION ANALYST: W			TIMENTUDIES BY:			
CAROUL BY:	ATIONS	CALCULATIONS CR CHECKED BY:	SKETCHES BY:				ON SHE			
STUDY	TRANSFER D BY:	TYPED BY: LB	TYPINGRCHECKED BY:	INSTRALED BY:			SALE NI	13/270)	
ELEMENT NO.		OPERATION SEQUENCE AND JO	B DESCRIPTION	NO. OF READ- INGS	AVG.	G. F.	100% TIME	occ.	1009 TIME PER:	
l.	Operation Turn & Sta Bundle Han Add up Pro turn in	nck	Fell operators and	20	.0935 2.90		.09 3 5		9,35	
8.	Walk from	one stack out station	n to next	17	.072	100	.072	8,3	,600	
C.	Get truck			5	.368	95	.350	2	.700	
D.	Measure dr	ess shirt sleeve leng	gth	9	. 150	100	, 150	1,33	.200	
). -								
ELEMENT	100% %	ADJUSTED % ALLOWANCES BASE Pers. Log 5 Total	PER N TIMES	OY STANDARD PRODUCT		INST	ALLED STA	ANDARD	ION	
NOS.	MTS/100 Delay	MTC/100 8 Fot Inc. F 10101	100 LATE LIDE			ATS.			HPS.	
	9000 22	7½ 12½ 20	11.50 T MIS. HKS	23						
A=D	1.58	20	DOZ.							

TOTAL

MOTION AND TIME ANALYSIS SUMMARY

CONSULTING ENGINEERS

FORM SSCP PRODUCT: Chiefe SHEET NO .: CLIENT: PLANT: CONTINUATION OF (CODE) 169 SUMMARY NO.: 35 (CODE) OF 2 SHEETS: Shirts DATE: MOTION OPERATION OPERATION NAME: (Describe in Full) NO.: 35 June 1970 ANALYST JW Stack for Cuff Set

LIST THE FOLLOWING INFORMATION BELOW FOR EVERY ELEMENT NO.:

(A) ELEMENT TITLE, CORRESPONDING WITH TITLE USED ON FORM 33. (C) KEY POINTS IN MOTION PATH.

(B) COMPLETE AND DETAILED JOB BREAKDOWN AND MOTION PATH. (D) KEY QUALITY POINTS.

Bundle Handling

Push truck with completed bundle out of way into cuff set department. Bring back empty truck. After clearing one operator's chute, move to next. This should average turning 12 to 15 shirts per move. Check sleeve length of every let shirt of every dress shirt bundle. Get the production of every operator worked for, add up, and turn in.

Operation Sequence

A. Turn & Stack

1 .

- B. Pick up shirt with eigher hand and insert the other into sleeve, Hold shirt with hand that is in sleeve and insert the other arm and hand into the other sleeve. Turn one sleeve right side out with one hand while the other holds shirt. Grasp the shirt at the shoulder with the hand that turned the first sleeve and hold while the other hand turns the other sleeve right side out. Grasp shirt at the other shoulder, with both hands, flip shirt on to truck.
- C. Right hand must work on right sleeve and left hand on left sleeve.
- D. Stack neatly with label facing up and highest ply number on top.
 Use shoulders as quide for stacking.

C Operation # 35 TURN & STACK 180 132" Short Sleeve Bin 20 Combination Operations Long Sleeve TABLE 22

Kl	URT SALME	N ASSUCIATE		ONSL			40114	4			
CLIENT: (CODE)	69	PLANT: (CODE)	MOTION AND T ANALYSIS SUMM		ATES OF	10 197	70	SUMMAF NO.: 36	RY 2	OF: 4	
DEPARTM Assem		PRODUCT: Shirts	PART:	FF	ROM STUD	M STUDY			or:		
OPERATIONO.:	0N	OPERATION: Cuff Set	3						OR'S NO	-	
SIZE:	11	MATERIAL: 65/35	STITCHES PER 1nch		HREADS SED:					-	
MACHINE MAKE:	Pfaff	MACHINE TYPE: 463	GAUGE: SEAM TYPE:	, N	EEDLES:	84-80		R.P.M.: 4900			
THROAT PLATE: 486643 FEED DOG: A47298			PRESSER FOOT: 22 Sumbran	FC	OLDER:		GEARS: CAMS:				
	MENTS: Wilderbed			T	ype powe Ransmissi			MACH. PER PIEC	TIME CE:		
STUDY STARTED:		STUDY FINISHED:	ELAPSED TIME:	N PI	O. OF IECES:			AVG. TI PER PIE	ME CE:		
AVG. BUI	NDLE	AVG. NO. OF THREAD CHGS.:	INFORMATION BY: ANK	M	OTION NALYST AL		TIME STUDIES BY: AMC				
CALCULA BY: AM	tions K	CALCULATIONS CHECKED BY:	SKETCHES BY: AMK		CETCH OS.:			ON SHEET NOS.:			
STUDY T	RANSFER	TYPED BY:	TYPING CHECKED BY: JOR	IN B	STALLED			DATE INSTALLED			
ELEMENT NO.		OPERATION SEQUENCE AN			NO. OF READ- INGS	AVG.	G. F.	100% TIME	occ.	10 TI PER:	
	Gonditions One bundle truck is se pulled into	of matched shirt cured from sleet position. The	is and cuffs on a m re-fell combination cuff is attached to is forwarded to be	and o the					,	*	
La	Gonditions One bundle truck is se pulled into sleeve and hem. Operation S	of matched shirt cured from sleet position. The completed shirt	is and cuffs on a m re-fell combination cuff is attached t is forwarded to be	and o the	20	.079	5110		1.00	8.7	
1.	Gonditions One bundle truck is se pulled into sleeve and hem. Operation S	of matched shirt cured from sleen position. The completed shirt sequence	is and cuffs on a m re-fell combination cuff is attached t is forwarded to be	and o the							
2.	Conditions One bundle truck is se pulled into sleeve and hem. Operation S Pick Up and Sew Right 6	of matched shirt cured from sleen position. The completed shirt sequence	is and cuffs on a m re-fell combination cuff is attached to is forwarded to be	and o the	20	.079	115	.0875	100	16.2	
2. 3.	Conditions One bundle truck is se pulled into sleeve and hem. Operation S Pick Up and Sew Right 6	of matched shirt cured from sleet position. The completed shirt sequence i position for richtf	is and cuffs on a m re-fell combination cuff is attached to is forwarded to be	and o the	20	.079	115	.0875	100	26.	
2. 3. 4.	Conditions One bundle truck is sepulled into sleeve and hem. Operation S Pick Up and Sew Right C Pick Up and Sew Left Cu Bundle Hand	of matched shirt coured from sleen position. The completed shirt completed shi	is and cuffs on a m re-fell combination cuff is attached to is forwarded to be	and o the	20 20 20 20	.079	115	.0875 .161 .0875	100 100	16.: 8.: 16.:	
2. 3. 4.	Conditions One bundle truck is sepulled into sleeve and hem. Operation S Pick Up and Sew Right C Pick Up and Sew Left Cu Bundle Hand Clerical	of matched shirt coured from sleen position. The completed shirt completed shirt is position for richtf is Position for leaff	is and cuffs on a m re-fell combination cuff is attached to is forwarded to be	and o the	20 20 20 20 20	.079	115	.0875 .161 .0875 .161	100 100 100 2.1	16.: 26.:	
2. 3. 4.	Conditions One bundle truck is sepulled into sleeve and hem. Operation S Pick Up and Sew Right C Pick Up and Sew Left Cu Bundle Hand Clerical	of matched shirt coured from sleen position. The completed shirt completed shi	is and cuffs on a m re-fell combination cuff is attached to is forwarded to be	and o the	20 20 20 20	.079	115	.0875 .161 .0875	100 100 100 2.1	16.: 26.:	
2. 3. 4. A. B.	Conditions One bundle truck is sepulled into sleeve and hem. Operation S Pick Up and Sew Right C Pick Up and Sew Left Cu Bundle Hand Clerical	of matched shirt cured from sleet position. The completed shirt sequence i position for right ling into position	is and cuffs on a m re-fell combination cuff is attached to is forwarded to be	and o the	20 20 20 20 20	.079	115	.0875 .161 .0875 .161	100 100 100 2.1 2.1	16.: 26.: .52:	
2. 3. 4. A. B. C.	Gonditions One bundle truck is sepulled into sleeve and hem. Operation S Pick Up and Sew Right G Pick Up and Sew Left Cu Bundle Hand Clerical Pull truck Until cuffs	of matched shirt cured from sleet position. The completed shirt sequence position for ri tuff Position for le tuff ling into position	s and cuffs on a more-fell combination cuff is attached to be is forwarded to be ght cuff	e study s	20 20 20 20 20 20 20	.0799 .140 .0799 .140	115 110 115	.0875 .161 .0875 .161 .250 .047 .750	100 100 100 2.1 2.1 2.1	16.: 26.: .52: .100	
2. 3. 4. A. B. C.	Conditions One bundle truck is sepulled into sleeve and hem. Operation S Pick Up and Sew Right C Pick Up and Sew Left Cu Bundle Hand Clerical Pull truck Until cuffs 100% % AD TIME MTS/100 Delay MT	of matched shirt coured from sleet position. The completed shirt sequence position for re fulf Position for le aff ling into position JUSTED % ALLOWANCE BASE Pers. Inc. F T. TS/1000 & Fat. Inc. F T.	s and cuffs on a more-fell combination cuff is attached to be is forwarded to be ight cuff	e study s	20 20 20 20 20 20 20 TANDARD PRODUCT 1 HR. 8	.0799 .140 .0799 .140	115 210 115	.0875 .161 .0875 .161 .250 .047 .750	100 100 100 2.1 2.1 2.1 ANDARD PRODUCT	.100 1.52	
2. 3. 4. A. B. C.	Gonditions One bundle truck is sepulled into sleeve and hem. Operation S Pick Up and Sew Right C Pick Up and Sew Left Cu Bundle Hand Clerical Pull truck Until cuffs 100% % AD TIME MTS/100 Delay MT 49.7 122 5	of matched shirt coured from sleet position. The completed shirt sequence position for re inff Position for le inff ling into position JUSTED 9/6 ALLOWANCE BASE Pers. TS/100 & Fat. Inc. F T. 16.0 72 123 2	s and cuffs on a more-fell combination cuff is attached to be is forwarded to be get cuff S S.A.M. U TIM PER N TIM TIM OTAL 100 T MTS.	e study s	20 20 20 20 20 20 20 TANDARD PRODUCT 1 HR. 8	.0799 .140 .0799	115 110 115	.0875 .161 .0875 .161 .250 .047 .750	100 100 100 2.1 2.1 2.1 ANDARD PRODUCT	16.3 8.5 16.3 .529 .100 1.53	

TOTAL

33B KL	KURT SALMON ASSOCIATES				CI	JLTII	VG EI	VEERS	ERS				
CLIENT: (CODE)	169	PLANT: (CODE)			ON AND TI	ME D	ATES OF	June 1	1970	SUMMAF No.: 3	1	SHE OF:	
DEPARTME		PRODUCT: Shirts		PART:	-		ROM ST	UDY		OPERAT			
OPERATION	7	OPERATION: Cuff Set			×	1		£1			OR'S NO	-0	
SIZE:	1.	MATERIAL: 65/35		STITCHE	S PER inch		HREADS SED:						
MACHINE MAKE:	Pfaff	MACHINE TYPE: 463	SEAM TYPE:			IEEDLES:	134-80)	R.P.M.: 4900 GEARS: CAMS:				
THROAT PLATE:	86643	FEED A 47298				OLDER:							
ATTACHM	ENTS: Underbod						YPE POV			MACH. PER PIEC	MACH, TIME PER PIECE:		
STUDY STARTED:		STUDY FINISHED:		ELAPSED TIME:		N P	IO. OF IECES:			AVG. TIME PER PIECE:			
AVG. BUN	IDLE	AVG. NO. OF THREAD CHGS.:			INFORMATION A			AMK		TIME STUDIES BY: AMK			
CALCULAT BY: AN	TIONS	CALCULATIONS CHECKED BY: JCR		SKETCHE BY: AM	S		KETCH IOS.;			ON SHEET NOS.:			
STUDY TR	ANSFER BY:	TYPED BY:		TYPING BY: JO	CHECKED		VSTALLEI Y: AM			DATE INSTALLED			
ELEMENT NO.		OPERATION SEQUENCE	AND JO	B DESCRIF	PTION		NO. C READ INGS	- AVG.	G. F.		occ.	100% THE	
	D. Revolve	truck					20	1,111,2		.017	2.3	-	
	E. Dispose									400	2.1	.035	
	n. nrabose						20			.15	2.1	.315	
							2	21					
	100% % ADJ	USTED % ALLOWAN	NCES	S.A.M.		STUDY S				ALLED STA			
ELEMENT NOS. A	TIME B	ASE Pers. S/100 & Fat. Inc. F	Total	PER 100	N TIME		PRODUC 1 HR.		MTS.		PRODUCT HR. 8		
					DOZ.								
).		BDLE.								
			TOTAL		100								

MOTION AND TIME ANALYSIS SUMMARY

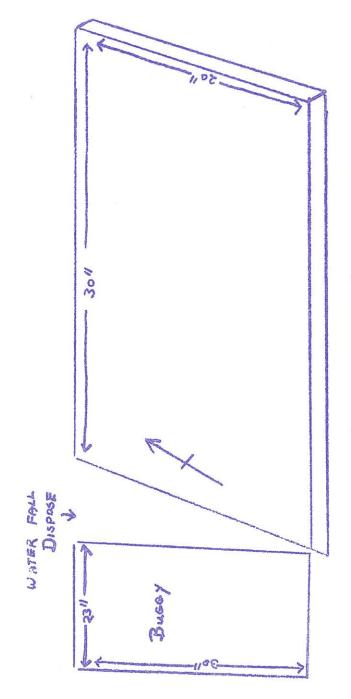
CONSULTING ENGINEERS

FORM SSCP CLIENT: 169 SHEET NO.: 3 DEPT .: Assembly PLANT: CONTINUATION OF PRODUCT: Shirts OF 4 SHEETS: SUMMARY NO.: 36 (CODE) DATE MOTION OPERATION OPERATION NAME: June 1970 ANALYST AM NO.:36 (Describe in Full) Cuff Sat LIST THE FOLLOWING INFORMATION BELOW FOR EVERY ELEMENT NO.: ELEMENT 100% (A) ELEMENT TITLE, CORRESPONDING WITH TITLE USED ON FORM 33. (C) KEY POINTS IN MOTION PATH. TIME PER NO.: (B) COMPLETE AND DETAILED JOB BREAKDOWN AND MOTION PATH. (D) KEY QUALITY POINTS. UNIT Bundle Handling Operator gets bundle truck with shirts and ouffs and puts to the left of the machine, removes ouffs from bundle truck, clips string and places ouffs on machine stand. Operator flips sleeves over top of the shirts and sees from bottom to top in sequence. Operator pulls coupon, signs ticket, and attaches to gum sheet. 1. A. Pick up lst(right)sleeve and cuff. B. Pick up right sleeve with left hand at facing with vent down and moves to front of machine, helding sleeve at facing with thumb on top. With right hand, grasp right ouff with first finger and thumb on top, remaining fingers on bottom. Opening of cuff is to the left. Move cuff to sleeve, operator them takes her thumb and first finger of the left hand, still helding sleeve, and grasps the bottom ply of the cuff, letting the sleeve facing rest on the top ply. With an upward motion of the left hand and a twisting motion of the of the right hand she opens the cuff and inserts the thumb of the right hand to keep the cuff open. With the thumb of the left hand, she pushes sleave downard and into cuff opening, 3/8", she then removes right thanb and positions cuff and sleeve to needle. Simultaneously, pick up right sleeve and ouff. D. Sleeve should not be inserted mere than $3/8^{\circ} + 1/8^{\circ}$. 2. A. Sew right cuff (with one pleat). B. With both hands, back tack 4-5 stitches and stop. Insert thumb of right hand inside cuff and sew about 5 inches, stop. Grasp and of sleeve at facing and with thumb of right hand open ouff and insert sleeve with facing turned under. Holding ouff and sleeve at end with right hand, the left hand then grasps excess material with thumb and first finger and forms a pleat about le" from end of ouff. Folding pleat toward the operator, sew to end of cuff and back tack. C. Only 2 stops including end of back tack. D. Maintain 1" insert of sleeve. Tolerance 3/8" + 1/8"

FORM SSCP

MOTION AND TIME

KURT SALMON ASSOCIATES CONSULTING ENGINEERS ANALYSIS SUMMARY SHEET NO .: 4 DEPT .: Assembly CLIENT: PLANT: CONTINUATION OF 169 PRODUCT: Shirts (CODE) (CODE) SUMMARY NO .: 36 OF & SHEETS: DATE: MOTION OPERATION OPERATION NAME: June 1970 ANALYST AM NO.: 36 (Describe in Full) Cuff Set LIST THE FOLLOWING INFORMATION BELOW FOR EVERY ELEMENT NO.: ELEMENT 100% (A) ELEMENT TITLE, CORRESPONDING WITH TITLE USED ON FORM 33.
(B) COMPLETE AND DETAILED JOB BREAKDOWN AND MOTION PATH. TIME PE (C) KEY POINTS IN MOTION PATH. NO.: UNIT (D) KEY QUALITY POINTS. A. Pick Up and position 2nd (left) alcove and ouff 3. B. Same as 1B except with left sleave and ouff C. Same as 1C A. Sew left cuff (with one Pleat) 40 B. Same as 2B C. Same as 20



Cut-off TABLE

Ch he

- 1 -

3B K	URT !	SALN	MON	4550	CIA	TES			C	ONS	ULTI	NG E	ENG	INEE	RS		
CLIENT: (CODE)	169		PLAN (COD						ND TI	ME	DATES (7-1	5-70		MAR'		OF: 3
DEPART	MENT: Assen	bly	Spo	rt S	Pres	3 &	PART:	Back			FROM S NOS.:	TUDY			RATO	R:	site
OPERAT NO.:	10N 37			otto	m He	m - F	light	From	nt Un	hemm	ed			OPER OR	RATO	R'S NO	21 Chr
SIZE:	All			ERIAL:			STITCHE 12		inch	ik 1	THREAD USED:	100/	/2				-
MACHIN MAKE:	NE US		MAC	HINE3	400	rs .	GAUGE: SEAM T	YPE:	+		NEEDLES 180G	XS-03	6	R.P.A	v.: 1	5100)
THROAT	240-0	63	FEED DOG:	613	05D		PRESSER FOOT:	Ada	sted 305		FOLDER:	incl	ude	d GEAR			
att	ments: k	nife to	rear	of p	resse	er fo					TYPE PO	WER	IM6		H. T		
STUDY STARTE	D:		STUD	Y SHED:			ELAPSED TIME:	8			NO. OF PIECES:			AVG	PIEC		E
AVG. BI SIZE:	UNDLE 48			NO. OF			INFORMA BY: J	CR			MOTION	T: JCH		TIME BY:		JDIES CR	
	JCR		CALC	CULATION	JCR		SKETCHE	c CR			SKETCH NOS.:			ON S	SHEET	Barrier C.	
STUDY	TRANSFER D BY:		TYPE	D BY:	LB		TYPING BY: J	CHECK	ED		INSTALL BY: JC	ED .				TALLET	
ELEMENT NO.	1		OPERA	TION SE	OUENCE	AND JO	B DESCRI	PTION			NO. REA	OF AV	G. G.	F. 100	· T	occ.	100% TIME PER:
2.	Control of the contro	pratich ider throposition the through the through the throught the transfer through the transfer transfer through the transfer transfer through the transfer	ion Selon Se	equentirt, edle bott evio	ce o	k up em wi hirt. t and	tor. , and hile of Ati	pos cutt end thr	ition ing a of h ough.	in in and nem,		The first section of the section of			4		9.6 25.4 0.38
B.	Cli	p 00	upon,	sig	n, a	nd st	tick t	to g	um sk	eet,				0.1	.9	2.1	0.38
C.	Mov	e fu us t	ll tr rolle	olle y.	y to	side	and	rem	ove i	re-		= 1		0,3	8	2	0,80
	100% TIME	%	ADJUSTED BASE	% Pers.	ALLOWA	1	S.A.M. PER 100	22.	TIME	STUDY		ARD		NSTALLED TIMES		NDARD RODUC	
ELEMENT NOS.	MTS/100	Delay	MTS/100	8 Fat.	Inc. F	Total	47.3	+	MTS.	HRS.	100 100 100 100 100	8 HRS.	MTS.	HRS.		HR. 8	
	1,56		1.56	7출	121		1.87	DOZ.				O E			+		- do 0 4
200	£9 JU		یر ه یا	13	763	20	7,01	BDLE.	40.0			075	0 0)7E
						TOTAL		100	49.2			975	1906			1	975

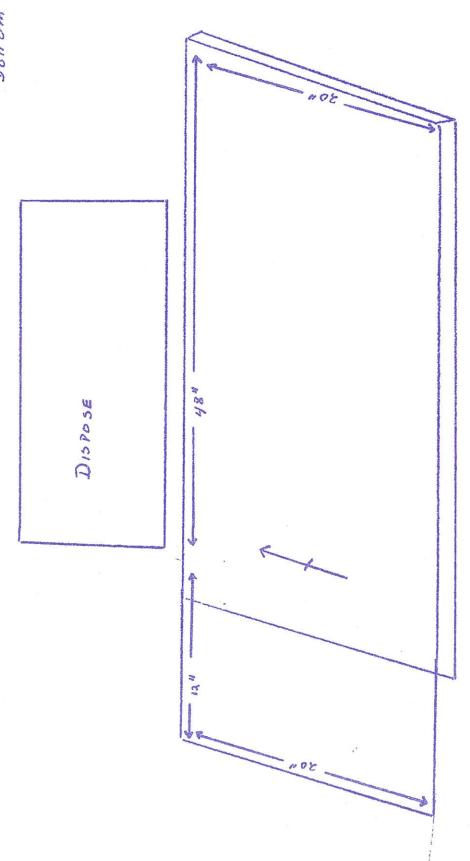
MOTION AND TIME ANALYSIS SUMMARY

CONSULTING ENGINEERS

FORM SSCP DEPT. Assembly CLIENT: PLANT CONTINUATION OF SHEET NO .: 2 169 OF 2 SHEETS: (CODE) PRODUCT: (CODE) Shirts SUMMARY NO .: 37A DATE: MOTION OPERATION OPERATION NAME: ANALYST JCR 7-16-70 NO.: 37 (Describe in Full) Bottom Hem LIST THE FOLLOWING INFORMATION BELOW FOR EVERY ELEMENT NO.: ELEMENT 100% TIME PER (A) ELEMENT TITLE, CORRESPONDING WITH TITLE USED ON FORM 33. (C) KEY POINTS IN MOTION PATH. UNIT (B) COMPLETE AND DETAILED JOB BREAKDOWN AND MOTION PATH. (D) KEY QUALITY POINTS. Operation Sequence Reach for shirt, pick up and position in folder. 1. Right hand reaches back to grasp top shirt in bundle while la left hand completes previous sequence. Both hands are required to place hem into folder. Hem with 3/16" + 1/16". The hem should be even with the front and ends. 2. Sew through bottom hem. Fold over right front hem at end of cycle and sew through. After the first stitches, the cut thread attached to previous shirt. As hem comes by the needle, the left hand picks up the previous shirt and pulls the connecting thread over the the knife situated on the back of the presser foot -Left hand disposes shirt to rear. Right hand controls bulk of material until sewing is nearly complete. Bundle_Handling After the shirt to which the ticket is attached is sewn, it is placed on top of bundle. When this is done, the coupon is signed, clipped, and placed on the gum sheet. At the end of each bundle, the empty trolley is pushed away and the full one pulled in.

33B K	UKI SALMI	JN ASSUCIATES	LUN	SULTIN	16 EV	IGIN	EERS	1	
CLIENT: (CODE)		PLANT: (CODE)	MOTION AND TIME ANALYSIS SUMMARY	DATES OF STUDIES:		70	SUMMAR NO.: 37	B —	1 SHE
ASS	embly	Dress/Sport Shir	t Back	FROM STU	JDY		OPERATO		
OPERAT NO.: 3	10N	OPERATION: Bottom Hem - Ri	ght Front Hemmed	-			OPERATO OR POSI	R'S NO	
SIZE: A	11	MATERIAL:	STITCHES PER inch	THREADS USED:	00/2				19
MACHIN MAKE:	US	MACHINE TYPE: 63400	GAUGE: SEAM TYPE:	NEEDLES:	XS-036	5	R.P.M.:	5100	
THROAT	24 D-0 63	FEED DOG: 61305D	PRESSER adapted FOOT: 121805	FOLDER:			GEARS:		
		ar of presser fo	ot	TYPE POW TRANSMIS	ER SION: IM	5	MACH. PER PIEC	TIME E:	
STUDY		STUDY FINISHED:	ELAPSED TIME:	NO. OF PIECES:			AVG. TIP	ME CE:	
AVG. BU	undle 4.8	AVG. NO. OF THREAD CHGS.:	INFORMATION BY: JCR	MOTION ANALYST:	JCR		TIME ST	UDIES CR	
CALCUL BY: JC	ations R	CALCULATIONS CHECKED BY:	SKETCHES BY: JCR	SKETCH NOS.;			ON SHEE		
1000	TRANSFER	TYPED BY:	TYPING CHECKED BY: JCR	INSTALLED BY: JCI	?		7-2	STALLED	
ELEMENT NO.		OPERATION SEQUENCE AND JO	DE DESCRIPTION	NO. OI READ- INGS		G. F.	100% TIME	occ.	100% TIME PER:
2.	disposin	ough bottom hem wag previous shirt andling evious Summary.	hile cutting and				2 4.6	100	24.6
ELEMENT NOS.	100% % AI TIME MTS/100 Delay M	DJUSTED % ALLOWANCES BASE Pers. TS/100 & Fat. Inc. F Total	S.A.M. U TIME STU PER I TIMES 100 T MTS. HR	DY STANDAR PRODUC S. 1 HR. 8	TION	INST TIME		NDARD PRODUCT HR. 8	
1-2		8.4 7½ 12½ 20	46.13 _{DOZ.}	8	33.5			83	3.5
A-B	1.56 - 1	.56 7분 12분 20	1.87 BDLE.						
		TOTAL	48.00]	.000 4	8.0	0	10	000

BOTTOM HEM



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33B	KI	URT SALMO	IN ASSU	CIATES			CONE	BULTIN	1G EV	IGIN	IEERS	Ů.	
	CLIENT: (CODE)	169	PLANT: (CODE)			ON AND YSIS SUM		DATES OF	lov. 19	770	SUMMAR NO.:		SHE F:
-	DEPARTA	MENT:	PRODUCT:	irts	PART:	y Button		FROM STU	JDY		OPERATO B111	or: ie War	ren
	OPERATIONO.:	ON	OPERATION:	Button Sev	lvy						OPERATO OR POSIT	DR'S NO.)
3	SIZE:	All	MATERIAL:	All	STITCHE:	6 —	tton	THREADS USED:	50/3				
	MACHINI MAKE:	Singer	MACHINE TYPE:	14-54	GAUGE: SEAM TY	PE: Mad	P. 1	NEEDLES:	x 1_1	16	R.P.M.:	1600	<u></u> /\
	THROAT PLATE:	N/A	FEED DOG:	N/A	PRESSER FOOT:	N/A		FOLDER:	N/A		GEARS: CAMS:		1
,	Butt	MENTS: Robot on Feed Unit	FAD	Unit				TYPE POW TRANSMIS	YER SION: TM	Œ	MACH. PER PIEC		e02
9	STUDY	-	STUDY FINISHED:		ELAPSED TIME:			NO. OF PIECES:			AVG. TI/ PER PIEC	ME CE:	EF
	AVG. BU	NDLE 48	AVG. NO. OF THREAD CHGS	5.:	INFORMA BY:	TION		MOTION ANALYST:	KWA		TIME STI	UDIES KWA	
	CALCULA BY:	KWA	CALCULATION CHECKED BY:	REN	SKETCHE BY:	s KIVA		SKETCH NOS.:			ON SHEE	Т	
	STUDY T	RANSFER BY:	TYPED BY:	BG	TYPING BY:	CHECKED	-	INSTALLED BY:	WA		DATE IN	STALLED 1970	,
EI	LEMENT NO.		OPERATION SEC	QUENCE AND JO	B DESCRIF	TION		NO. O READ- INGS	AVG.	G. F.	100% TIME	occ.	100% TIME
	1.	per positi operator's warded to Operation Dispose, p	left in Final Tri Sequence	buggies. m by servi	Comple .ce per	ted bugg somel.	y is f				•062	0 100/	6.20
	2.	Reposition		ton on lei	ft from	t					.060	5 1.00/ 1	6.05
	Ao	Coupon									.25	100/	.52
	Bo	Remove con	pleted bu	ggy, get a	nd pos	ition ne	w bugg	y			.40	100/	04C
	C.	Refill rok	oot unit w	ith buttor	18						.15	200/	.01
	D.	Dispose of	ticketed	shirt and	repos	ition					.08	100/	.17
EL	EMENT NOS.	TIME	JUSTED % A BASE Pers. TS/100 & Fat.	Inc. F Total	S.A.M. PER 100		IMES	STANDAR PRODUC 1 HR. 8	TION	INST TIM MTS.		NDARD PRODUCTION HR. 8 F	
	1 &	212.25 7%	13.10 7½	122 20	15.7	DOZ.	2		233.3	3		2	33.3
	A-D	1.20 =	1.20 72	121 20	1.4	4 _{BDLE}							
				TOTAL		100 17	.15		2800			2	800

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CLIENT: (CODE)		PLANT: CODE)					ND TII UMMA		DATES C			SUMMA NO.:	RY _	SF OF:	-IE
DEPARTMENT;	£	PRODUCT:			PART:				ROM ST	TUDY		OPERAT	OR:		
OPERATION NO.:	(OPERATION:							- will be a self			OPERAT OR POS	OR'S NO).	
SIZE:	,	MATERIAL:			STITCHES	PER			THREADS				- 1	-	_
MACHINE MAKE:		MACHINE TYPE:			GAUGE: SEAM TY	PE:		1	NEEDLES:			R.P.M.:			
THROAT PLATE:		EED DOG:	ξ)		PRESSER FOOT:	-		F	OLDER:			GEARS: CAMS:			
ATTACHMENTS:									TYPE PO			MACH, PER PIE	TIME CE:		_
STUDY STARTED:	S	TUDY INISHED:			ELAPSED TIME:			l P	NO. OF PIECES:			AVG. T PER PIE	IME CE:		-
AVG. BUNDLE SIZE:	4	AVG. NO. OF THREAD CHG	S.:		INFORMA BY:	TION		2	MOTION	 Г:		TIME ST	TUDIES		E
CALCULATIONS BY:		CALCULATION CHECKED BY:	15		SKETCHE BY:	S			KETCH NOS.:			ON SHE	ET		
STUDY TRANSFER	1	TYPED BY:			TYPING BY:	CHECKE	D		NSTALLI BY:	ED		DATE II	NSTALLE	D	
ELEMENT NO.	OP	ERATION SEG	OLIENICE	AND IO	B DESCRIE	TION			NO. REAL	D- AVO	6. G. F	. 100% TIME	occ.	1009 TIM	6 E
	11 tape o					1000000			ING	3 11M	-	1.050		PER:	-
ELEMENT TIME	% ADJUS	E Pers.	ALLOWAN	NCES Total	S.A.M. PER 100	-ZC	TIME		PRODU	ICTION	TIN		PRODUC	TION	=
NOS, MTS/100	Delay MTS/	100 & Fat.	me. F	· Juli	100	Т	MTS.	HRS.	1 HR.	8 HRS.	MTS.	HRS.	1 HR. 8	HRS.	
						DOZ.									_
						BDLE.									_

	KURT	SAL	MON ASSOC	IATES	ANALYS	SIS SUMM	ARY	CONSULTING E	NGINEERS	2
CLIENT: (CODE)	169		PLANT: (CODE)		DEPT.: PRODUCT	Shir	58	CONTINUATION OF SUMMARY NO.:	SHEET NO.	: EETS:
DATANO	v. 1, 19	70	MOTION ANALYST	KWA		PERATION 10.:	OPE (ERATION NAME: Sow Tvy		
LEMENT			LIST THE	FOLLOWIN	G INFORMAT	ION BELOW F	OR EV	ERY ELEMENT NO.:		10
NO.:			TLE, CORRESPOND					(C) KEY POINTS IN MOTION (D) KEY QUALITY POINTS.	PATH.	TIME
10	has lar at rei fir pla * eda	is cent cent lease ger lees RH,	st been sewn away from o ter of colla ed previous of LH at ou adge of bot meanwhile, uide portion	o Oper perator r and m shirt a termost tom of release of gau	ator dis Simul oves to nd moves point o band flu s collar ge. Mac	poses shitaneously left side to posit a left si sh agains and oute hine is t	irt i 7, R ¹ 2 of tion ide o tion then	B. Frevious left to left with left he picks up top shir guide on machine. right front by plant of guage while thum rojecting portion odge of centerplait started by depress achine begins.	and — colt in bugg LH has cing inde b at LH f gauge. even with	Ty or
20	of RH on ver of rel of sts ags * C. dir to	buti then RH p tex band centi rection. Remains Buti centi	ton sew cycle grasps collositions ou of triangle of flush agained collar and terplait flush sequence is siming finger tons must be above but ter of butter	e of pr lar onc termost on rig nst pro d repos sh with ing foo s now c rs of h e sewn ton. M n once	evicus, e shirt point o ht side jecting itions o edge-gu t pedal completed and gnas such tha ust also shirt ha	shirt is is cleared f collar of gauge, portion of n hemmed ide porti with righ o p collar t they an be a dis s been for	remed from the from t	mediately, upon composed from position from machine. Index i junction of left ali lie thumb of RH ali lauge. * Meanwhile it where it places of gauge. Machine bot - button sew cy tion to hold shirt quidistant from bot e of at least 3½ left but not more than I buttons. No atta	with LH. finger front at gnes bott LH has cuter edg is then cle begin in positi tom of ba from cent	se.on.
	Bundle A. Cou	pon	Condendarion Condendario	leting	previous	bundle o	of s	irts, operator rem	oas cor-	•
=	B. Rem bug Tri	ove gy h m ax of s	completed by less been complete. Empty 1	lggy, g pleted, buggy t	et and p filled hen is p	osition n buggy to laced whe	left	ouggy - When last s t is pushed towards filled buggy was lo empty byggy was, w	Final cated. B	ng_
	C. Ref	ill ls x	robot with lobot feed w	outtons nit com	- Opera	tor retri	ever	s filled box of but	tons and	
	bee len tic	n se gth kete	um, shirt is dse. When l	s places Last sh same fas	d across art of b	edge of undle has	bed i	m shirt with coupon my, instead of bein m seem, operator r lirts from bundle,	g placed	125
	Rep	Lcas	on FAD unit es roll on to o out and ad	mit and	i thread	s through	teris i	l of tape from bone it. Recyles FAD un ion.	ath machi it severa	ne. 1

Were the second ROBOT DUTANTED Thread -> DEPTON SEED のをもる所 TRIAMPLY 187 FIND OFF N

Bussyl-Pick up

Buckey-Dispose

33	B K	URI SALI	A NUN	550	ICIA	LS			C	UNS	ULTI	NE	EN	VGIN	IEER!	5	
	CLIENT: (CODE)	169	PLANT (CODE)						AND TI		DATES (OF : JU	ne l	.970	SUMMA NO.: 3		I SH
	DEPART	MENT:	PRODU		Sport	. Shir	PART:	Compi	Lete Si		FROM S NOS.:	TUDY			OPERAT		01
	OPERATI	ION S	OPERA		n and	Fina	l Trim								4 5000004 - 2 2	TOR'S NO	4117
	SIZE:	LIA.	MATER	RIAL:		5' 1	STITCHE	S PER _			THREAD USED:	S					
	MACHIN MAKE:		MACH TYPE:	TO CAME			GAUGE: SEAM TY	PE:			NEEDLES	:			R.P.M.:		
	THROAT PLATE:		FEED DOG:				PRESSER FOOT:		111		FOLDER:				GEARS: CAMS:		
	Board	MENTS: Specia	1								TYPE PO		۷:		MACH, PER PIE	TIME ECE:	
	STUDY STARTED		STUDY				ELAPSED TIME:				NO. OF PIECES:				AVG. T PER PI	IME ECE:	
	AVG. BL	JNDLE	AVG. I THREA	NO. OF	S.:		INFORMA BY:	MOITA			MOTION	T:JW			TIME S	TUDIES	
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	ELEMENT NO.					AND JO	B DESCRIF	PTION			NO. REA	D-	AVG.	G. F.	100% TIME	occ.	100% TIME PER:
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	gradia o		front bi n Seque	nce	190						20		911	. 105	5 m 5	500	St. at. 12 cc.
		strings	The second secon	The state of the s		(A) ella (A) ella (A).	S AGONG	fight deligeth	00 200	WILLS & CO.	Enter S		a mytet	dalla d	.151	and	25.10
	20	Button f	rent but	ttons	3.						20		.110	110	.121	100	12.10
	A.	<u>Bundle</u> H Get Work	MEDINE PROPERTY OF THE PROPERTY OF									4	.236	200	.25	2.1	.60
	B.	Clip and	Sign of	oupor	lo								.238	100	.238	2.1	.50
	C.	Dispose l	Bundle.										.095	200	095ء	2.1	.20
	D.	Pull wor	k to tor	າ ຄະ	cart								.050	200	.050	6.0	1.00
	ELEMENT	100% % TIME MTS/100 Delay	ADJUSTED		ALLOWA		S.A.M. PER 100	77-1	TIME		STAND	ARD			ALLED ST		
	NOS.		BASE MTS/100		Inc. F	Total 20	33.48	1	MTS.	HRS.	1 HR.	8 H		MTS.	HRS.	1 HR. 8	HRS.
	A-D	1.60		7월	121	30	1.92	DOZ.	1.92								
								BDLE.	35.40	,		13!	56			•	1356
	I					LATOTAL	_	100	Sec. Sec. Acres		1	100					and the

MOTION AND TIME ANALYSIS SUMMARY

CONSULTING ENGINEERS

DEPT.: Assembly CLIENT: 169 SHEET NO.: 2 OF SHEETS: CONTINUATION SE PLANT: PRODUCT: (CODE) (CODE) DATE: June 1970 NO.: MOTION OPERATION NAME: ANALYST W (Describe in Full)
Button and Final Trim LIST THE FOLLOWING INFORMATION BELOW FOR EVERY ELEMENT NO .: 100% ELEMENT (A) ELEMENT TITLE, CORRESPONDING WITH TITLE USED ON FORM 33. TIME PE (C) KEY POINTS IN MOTION PATH. NO.: (D) KEY QUALITY POINTS. (B) COMPLETE AND DETAILED JOB BREAKDOWN AND MOTION PATH. UNIT Bundle Handling Push completed bundle through hole in wall. Get work from trucks located on sewing room side of work stations. Check bundle against work sheet chart, clip, and sign coupon. Pull from truck about 15 shirts at a time, rest on trucks raised side (used as a work aid). Operation Sequence L A. Dispose, Pick Up, and remove strings from collar. B. Both hands pull shirt from under clamp and dispose on shalf with label up. Fold sleaves across shirt. Both hands grasp next shirt on collar and position under clamp with label out. Both hands remove all strings from collar. C. Use both hands. Stack neatly. 2. Button front buttons. Take both from collar to fronts and button bottom 4 buttons. Ill pushes button through buttonhole which RH is holding. D. Buttons must pass completely through button heles.

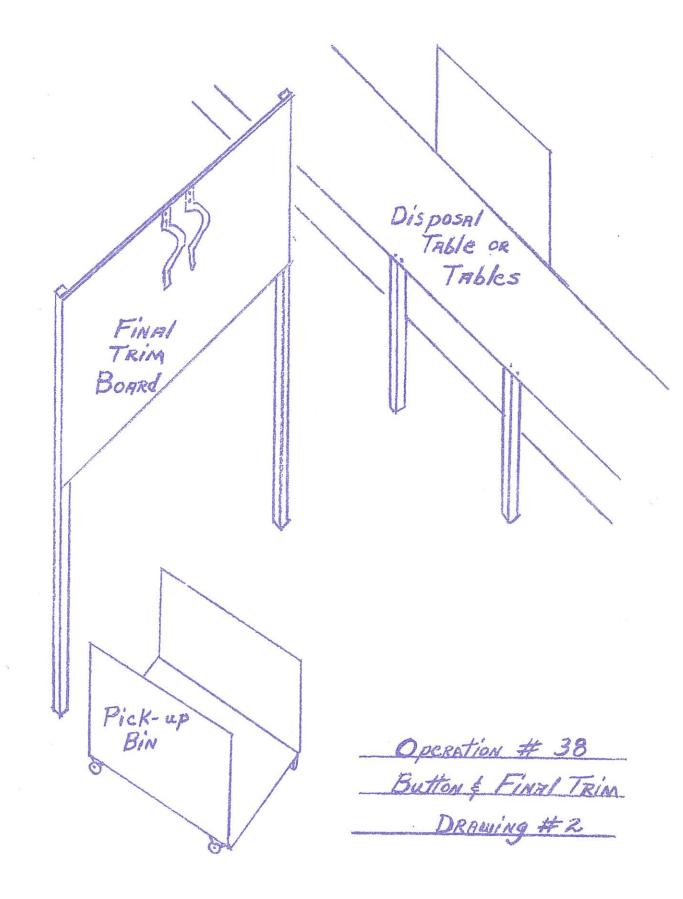
BUTTON & FINAL TRIM OPERATION #38

NOTE: SOND LIGHTNY WESDED DIRECTLY OVER HEND.

SLIP

SOLVE BOND

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	CLIENT: (CODE)	1	69	PLAN (CODE				MOTI	ON A	ND TII	ME S	TUDIES:	Nov. 19	70	SUMMAR NO.:	9	SHEI
	DEPARTM	ENT:	g	PROD	UCT:	rta		PART:	llar		F	ROM ST	UDY		OPERATO Syn		
	OPERATIONO.:	39		OPER.	ATION:	lar B	uek -	Tande	m						OPERATO OR POSI	DR'S NO TION:	
	SIZE:	All			RIAL:	11		STITCHES N/A				THREADS JSED:	N/A				
	MACHINE MAKE: S	unbran	d	MACH TYPE:				GAUGE: SEAM TY	PE: N/I	f	١	NEEDLES:	N/A		R.P.M.:	N/A	
	THROAT PLATE:	N/A		FEED DOG:	N	/A		PRESSER FOOT:	N/I	7	F	OLDER:	N/A		GEARS: CAMS:		•
	Count	MENTS:	r Ald	for p	ressi	ng co	llars				ī	TYPE POY	WER SSION: A1	c	MACH. PER PIEC	TIME CE:	
	STUDY STARTED	:		STUD' FINIS	Y HED:			ELAPSED TIME:			P	NO. OF PIECES:		0,5-1	AVG. TI PER PIE	ME CE:	EF
		NDLE 48		AVG. THRE	NO. OF AD CHG	S.:N/A	· ·	INFORMA BY:	TION	DRS		MOTION ANALYST	DRS		TIME ST BY:	UDIES	DRS
	CALCULA BY;	TIONS	S	CALC	ULATION KED BY:	15		SKETCHES BY:	5	DRS		KETCH NOS.:	1		ON SHEE	Т	
	STUDY T	RANSFER BY:		TYPE	D BY:			TYPING BY:	CHECKE	DRS		NSTALLE BY:	DR	3	DATE IN	STALLED)
	ELEMENT NO.	20)		OPERAT	TION SEC	QUENCE	AND JOE	B DESCRIP	TION			NO. C READ INGS	AVG.	G. F.	100% TIME	occ.	100% TIME
	1.0 2.0 A.0 B.0	bildis Ope Pici Pici Bun Bacci	e tak posed ratio k up, k up,	ome to les in en st m Sequ posit posit lendlin	bund orage ence ion, ion,	lles. tabl	Coll e bes #1 ma	ars ar ide bu chine	e bucks.	eked a	nd				.1472 .1472 .16	100 100 10/ 100 2/100	14.72 14.72 1.60
	ELEMENT NOS.	100% TIME MTS/100	% Delay	ADJUSTED BASE MTS/100	% / Pers. & Fat.	ALLOWAN Inc. F	NCES Total	S.A.M. PER 100	UZ-F	TIME TIM MTS.	STUDY ES HRS.	PRODU	CTION	INST TIM MTS.	FALLED ST/ ES HRS, 1		TION
	1-2	7.36	2늘	7.45	7호	121	20	8.94	DOZ.				350				
	A-B	2.05	c 27	2.05	7월	121	20	2.46	BDLE.								
		U					TOTAL		100	11.40			4200				

MOTION AND TIME

CODE 169 CODE PRODUCT: SUMMARY NO.: 39 OF DATE: NOTION ANALYST DRS NO.: 39 COLLAR Buck - Tander	TH. TIME
Nov. 1970 ANALYST DRS No.: 39 (Describe in Full) Buck - Tender	TH. TIME
(A) ELEMENT TITLE, CORRESPONDING WITH TITLE USED ON FORM 33. (C) KEY POINTS IN MOTION PAT (B) COMPLETE AND DETAILED JOB BREAKDOWN AND MOTION PATH. (D) KEY QUALITY POINTS. Bundle Handling Exchange trucks - Upon completion of a bundle the operator disposes empty truck and gets a new bundle on a truck from Final Trim. Dispose - When the operator completes bucking from 10 to 12 collars one machine, she then disposes of the collars on the disposel table.	TIME U
Bundle Handling Exchange trucks - Upon completion of a bundle the operator disposes empty truck and gets a new bundle on a truck from Final Trim. Dispose - When the operator completes bucking from 10 to 12 collars one machine, she then disposes of the collars on the disposal table.	··· u
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Dispose - When the operator completes bucking from 10 to 12 collars one machine, she then disposes of the collars on the disposel table.	
one machine, she then disposes of the collars on the disposel table.	
Operation Secuence	
1. A. Pick up and position 2 collars on buck #1.	9.
B. Right hand grasps one collar while left hand grasps second collar multaneously. Left hand holding collar flips shirt under left a free hand. Using both hands now places the collar in right hand form head #1 of machine #1 and them simultaneously places #2 collar under left arm on form head #2 of machine #1. Now both hands appressure to buttons to lower form heads.	rm to lon llar
C. Keep palms of both hands facing each other when grasping collars tables and use both hands simultaneously while placing collars of	
D. No wrinkles in collars.	
2. A. Pick up and position 2 collars on buck #2.	0.
B. Same as above except facing in opposite direction.	
C. Same as 1C.	
D. Same as 1D.	
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KNUDS KKWES INTRAFFS WAY PREVENT THOUGH T OPEKHTION # S COLLAK BUCK (THNIKM) A STATE OF THE PROPERTY OF THE CHETOD CONTROL SUNTEHES CHEEKN - LONGERS MEND PED - KHISES MEND BOTH MEST BE FREESSED FOR CHERKITHON HEMT & CONTROL SWITCHES ? TO AID OPERATOR IN FINDING SULTCHES AND PREVENT MORK AID BAR. (VA"X NA" FLANT MOON) TONG FORM HEADS FOR COLLIARS MCCHOENTAL BUNDING (1" ALIMINAM PIPE) HOLDS 5-10 SHIKTS PER BOR WORK AID BAK

KL		L L L L L L L L L L L L L L L L L L L	-		MOTION	I AND THE	DATES O				0.75	-
CLIENT: (CODE)	169	PLANT (CODE)		140		I AND TIME IS SUMMARY	STUDIES	Nov. 7	0	NO.:		3 SH
DEPARTM		PRODU	I Carlotte Co.	ements a	PART:		FROM ST			OPERATO		OF:
	Pressing	177.504.40.00	Sh	irt	Section May 50		NOS.:			Synth		
OPERATIONO.:		OPERA	ATION:	13831							OR'S NO	
NO				e (Long S		Jo, Press C				OK POSI	TION:	
SIZE:	All	MATER	RIAL:	1	STITCHES PE	N/A	THREADS USED:	N/A				
MACHINE MAKE:	Cissel	MACH TYPE:		el X	GAUGE: SEAM TYPE:	n/A	NEEDLES:	N/A		R.P.M.:	20 /1	
THROAT PLATE:	N/A	FEED DOG:		/A	PRESSER FOOT:	n/A	FOLDER:	N/A		GEARS: CAMS:	N/A	
ATTACHA			40				TYPE POY	VER SSION: 220	îs?	MACH. PER PIEC	TIME	
STUDY STARTED:		STUDY	HED:		ELAPSED TIME:		NO. OF PIECES:	·	W	AVG. TI PER PIE	ME CE:	
AVG. BUI	W 940.	AVG. THREA	NO. OF AD CHGS.	1	INFORMATIO BY:		MOTION ANALYST			TIME ST BY:	and deservation	
CALCULA BY:			JLATIONS (ED BY:	5	SKETCHES BY:	DRS	SKETCH NOS.;	DRS		ON SHEE	DRS	
-	RS RANSFER BY:	TYPED			TYPING CHI	DRS ECKED	INSTALLE BY:		1		NSTALLED)
ELEMENT			BG		00 00000		NO. C	DRS F AVG.	G. F.	1	3_70 occ.	100
NO.		OPERAT	ION SEQU	UENCE AND J	OB DESCRIPTIO	IN.	ING	- AVG. TIME		100% TIME		PER:
	picked y and posi Collar a buttomed bile tak	ome to a p by co. tioned and cuff. & pinnal le on le	llar, for pr are r ed. S eft.	prepared ressing b pressed,	with collecth collecth collecth	Top shirt : lar band ar and cuff. ar is rolle losed to mo-	s Sd.s					
1. 2. 3.	Shirts of picked wand positioned buttoned bile take Operation Pick up, Press cu	ome to a by contioned a pinnale on la n Sequent preparation of the control of the	llar, for pr are r ed. S eft. nce e & po llar	prepared ressing b pressed, Shirt is	with collecth collecthen collecthen disp	lar band or and cuff. ar is rolle cosed to mo-	s Sd.s			.126 .059 .102	300 300 300	5.
2.	Shirts of picked spand positioned buttoned bile table table pick up, Press ou Button & Bundle H	ome to p by contioned a pinned in Sequenter prepare ff & contioned in conting	llar, for pr are r ed. S eft. nce e & po llar	prepared ressing b pressed, Shirt is	with collecth collecthen collecthen disp	lar band or and cuff. ar is rolle cosed to mo-	s Sd.s			.059	100	5. 10.
3.	Shirts of picked wand positioned buttoned bile tab	ome to p by contioned and cuff & pinnel on le on	llar, for pr are r ed. S eft. nce e & po llar	prepared ressing b pressed, Shirt is	with collecth collecthen collecthen disp	lar band or and cuff. ar is rolle cosed to mo-	s Sd.s			.059	100 100 8.35	5. 10.
2. 3.	Shirts of picked spand positions of collar abuttoned bile table table. Pick up, Press cur Button & Bundle H	ome to p by contioned in cuff & pinned in Sequenter prepare ff & conting and ing	llar, for pr are r ed. S eft. nce e & po llar	prepared ressing b pressed, Shirt is	with collecth collecthen collecthen disp	lar band or and cuff. ar is rolle cosed to mo-	s Sd.s			.059 .102	300 300 8-356	2.
2. 3. A. B.	Shirts of picked wand position of collar a buttoned bile take Operation Pick up, Press ou Button & Bundle Hollerical Exchange Get supp	ome to p by contioned and cuff & pinnels on le o	llar, for pr are r ed. S eft. nge e & po llar	prepared ressing h pressed, Shirt is	with collecth collecthen collecthen disp	lar band or and cuff. ar is rolle cosed to mo-	s Sd.s			.059 .102 .25 .20	100 100 8.35	2.
2. 3. A. B.	Shirts of picked wand position of collar a buttoned bile take Operation Pick up, Press ou Button & Bundle Hollerical Exchange Get supp	ome to p by contioned and cuff & pinnels on le o	llar, for pr are r ed. S eft. nge e & po llar	prepared ressing h pressed, Shirt is	with collecth collecthen collecthen disp	lar band or and cuff. ar is rolle cosed to mo-	s Sd.s			.059 .102 .25 .20	200 100 8-35 4106 1/100	2.
A. B. C. D.	Shirts of picked wand position of collar a buttoned bile tab operation. Pick up, Press on Button & Bundle H Clerical Exchange Get supp Get band	ome to p by continued and cuff & pinnels on le o	for practice of the second sec	prepared ressing h pressed, Shirt is osition of table	shirt	lar band ar and cuff ar is roll cosed to mo-	DY STANDA PRODU	CTION	TIM	.059 .102 .25 .20 .11 .10	8.35/ 4106 1/100 2.100	200 a
A. B. C. D.	Shirts of picked wand position of collar a buttoned bile take to be compared to be collar as button a	ome to p by continued and cuff & pinnels on le o	for practice of the property o	prepared ressing be pressed, Shirt is continued to the co	shirt S.A.M. PER 100	TIME STUTIMES TIMES MTS. HR	DY STANDA PRODU	CTION		.059 .102 .25 .20 .11 .10	8-35/4-126 1/100 2.100	2. 2.
A. B. C. D.	Shirts of picked wand position of collar a buttoned bile tab operation. Pick up, Press on Button & Bundle H Clerical Exchange Get supp Get band	ome to p by continued and cuff & pinnels on le o	for practice of the second sec	prepared ressing be pressed, Shirt is continued to the co	shirt S.A.M. PER 100	lar band ar and cuff ar is roll cosed to mo-	DY STANDA PRODU	CTION	TIM	.059 .102 .25 .20 .11 .10	8.35/ 4106 1/100 2.100	2.0 2.0
A. B. C. D.	Shirts of picked wand position of collar a buttoned bile take to be compared to be collar as button a	ome to p by continued and cuff & pinnels on le o	liar for practice of the second secon	prepared ressing be pressed, Shirt is continued to the co	s.A.M. PER 100	TIME STUTIMES TIMES MTS. HR	DY STANDA PRODU S. 1 HR.	CTION	MTS.	.059 .102 .25 .20 .11 .10	8.35/ 4106 1/100 2.100	TION

FORM 33B KURT SALMON ASSOCIATES

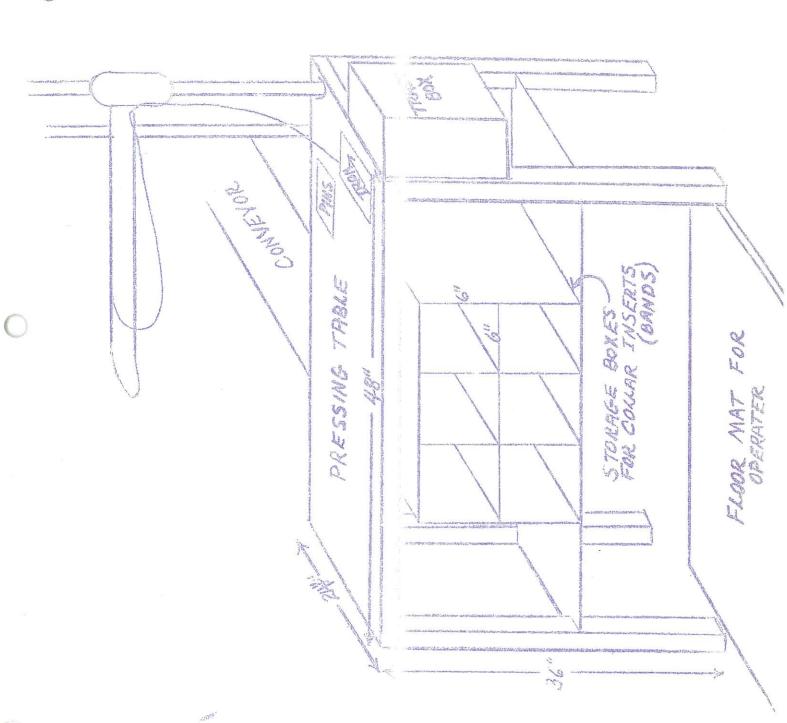
CONSULTING FNGINFFDG

33B K	CURT SALM	ON ASSOCIATES	CON	SULTIN	3 ENG	SINEERS	3	
CLIENT: (CODE)		PLANT: (CODE)	MOTION AND TIME ANALYSIS SUMMARY	DATES OF STUDIES:		SUMMA	V ₂	SHE
DEPART	TMENT: 169	PRODUCT: Dublin	PART:	FROM STUD'	Nov. 70	OPERAT		OF:
OPERAT	deing	OPERATION: Shirts		1		OPERAT OR POS	thesi OR'S NO	
SIZE:		MATERIAP Pare (Sh	orts Slagva - Solo)	THREADS USED:				
MACHII MAKE:	NE ALL	MACHINE ATT	GAUGE: SEAM TYPE:	NEEDLES:		R.P.M.:		
(Service 1000 (Service)	T Cissel	FEED Model X	PRESSER N/A FOOT:	FOLDER:		GEARS:	N/	'A
	нме А		N/A	TYPE POWER		MACH, PER PIE	TIME	'A
STUDY	N/A	STUDY	ELAPSED	NO. OF	220W	17		
STARTE AVG. B	41000	FINISHED: AVG. NO. OF	TIME:	PIECES:		AVG. TIPER PIE	_	Е
SIZE:	LAMONS	THREAD CHGS.:	BY:	ANALYST:	DRS	BY:	3 	DRS
BY:	TORS FER	CALCULATIONS CHECKED BY:	BY:	SKETCH NOS.;		ON SHE NOS.:		
STUDY	TRANSFER ED BY:	TYPED BY:	TYPING CHECKED DRS	INSTALLED BY:	DRS		STALLED	
ELEMENT NO.	Т	OPERATION SEQUENCE AND	JOB DESCRIPTION	NO. OF READ- INGS		G. F. 100% TIME	occ.	100% TIME PER: 10
2.	Get & po	get & position coll sition strip & pres pin collar andling				.602 .894 .893	100	8.9 8.9
Ao	Clerical					.25	8.3	
В	Exchange	trucks				.20	4.2/	.8
C.	Get supp	lies				.11	1/100	
								ll.
D.		s from under table		(I		<u>.10</u>	2/100	
540.00	Get bnad	ADJUSTED % ALLOWANCES BASE Pers. Inc. F Total	PER N TIMES	DY STANDARD PRODUCTI S. I HR. 8	ON	INSTALLED STA) •20 ION
De	Get band	ADJUSTED % ALLOWANCES BASE Pers. , , , , , , , , , , , , , , , , , , ,	PER I TIMES MTS. HR:	PRODUCTI S. 1 HR. 8	ON	INSTALLED STA	ANDARD PRODUCT) •20 ION
Do ELEMENT NOS.	Get bnad	ADJUSTED % ALLOWANCES BASE Pers. Inc. F Total	PER I TIMES I MTS. HR:	PRODUCTI 5. 1 HR. 8	ON HRS. MTS	INSTALLED STA	ANDARD PRODUCT) •20 ION

MOTION AND TIME ANALYSIS SUMMARY

CONSULTING ENGINEERS

ORM SSCH CLIENT: PLANT: Pressing CONTINUATION OF SHEET NO .: 2 (CODE) (CODE) PRODUCT: SUMMARY NO .: OF 4 SHEETS: 169 Dublin Shirts 40 DATE OPERATION OPERATION NAME: MOTION (Describe in Full) ANALYST NO.: 40 Nov. 70 DRS Prepare LIST THE FOLLOWING INFORMATION BELOW FOR EVERY ELEMENT NO.: ELEMENT 100% TIME PE (A) ELEMENT TITLE, CORRESPONDING WITH TITLE USED ON FORM 33. (C) KEY POINTS IN MOTION PATH. NO. UNIT (B) COMPLETE AND DETAILED JOB BREAKDOWN AND MOTION PATH. (D) KEY QUALITY POINTS. Bundle Handling Operator receives shirts on 5° conveyor in front of her table. Conveyor .0387 holds two stacks of Shirts on boards. When one stack is completed, the beard is pushed off conveyor to allow next stack to roll down to table. When shirt is finished it is disposed to left on mobile table face down. Coupon is taken and attached to gum sheet and ticket is pinned between second and third button on first shirt disposed. If possible, it is recommended to dispose 2 dozen shirts to each table. The table is then pushed out toward steam and on empty table secured. Operation Seguence 10 A. Pick up, prepare, & position collar & cuff .126 B. Operator picks up collar band with left hand while simultaneously picking up shirt with right hand. Shirt is then positioned about 4" from edge of table and collar folded over. The collar band is then inserted and collar position. The cuff is then positioned also with right hand with buttons face up. Both cuff and collar are now ready to presso C. If possible, right hand alone should position cuff. D. Band should be inserted properly and cuff positioned with buttons centered before pressing. 20 A. Press suff and collar. .059 B. While the left holds right side of collar, the right hand picks up the iron and presses the cuff first and then the collar while the left hand rolls collar behind pressing it. The right them replaces the iron. C. Left and right hands are crossed over while right hand presses below left hand rolling collar. D. Both cuff & collar should be pressed without wrinkles. 30 A. Button & pin collar & dispose shirt. .102 B. Shirt is then buttoned with right and left hand, then right hand secures a pin and pins collar below collar button. After pinning the collar, shirt is disposed with both hands face down to mobile table on left. Co. Left hand should hold right front of collar palm out while right hand replaces iron and grasps left front of collar, brings over, and both hands button collar button. Collar & cuff should be ready for package with no wrinkles.



33B k	CURT 5	SALM	IUN A									Callegan	-141	חווש	EER	_		
CLIENT (CODE)			PLANT (CODE		olin				ND TIN	111	TUDIES:	F Nov	. 17	n	SUMM/	11	, –	SHE
DEPART	TMENT:	Ismai	PRODU	JCT:	nirt		PART:			F	ROM ST		0 1	,	OPERA	TOR	:	OF:
OPERATINO.:		RIE	OPER A	ATION:									•			TOR	'S NO.	
SIZE:			MATE		em (1	iong S	Leeve stitches		v _o – B	Т	HREADS							
MACHI	A11		MACH	A INE Caz	ment.		GAUGE:				NEEDLES:	N/	A					
MAKE:	Pari	La	TYPE:		Lsher		SEAM TYP	E;	N/A		OLDER:	N/	A		R.P.M.:		N	A
THROA PLATE:	N/A	l	DOG:		N/A		FOOT:		N/A			N/	A		CAMS:		N	'A
000000 600000000	HMENTS: Lar Fort	ns									RANSMI				MACH PER PI			
STUDY	ED:		STUDY				ELAPSED TIME:				NO. OF PIECES:				AVG. PER P	TIME	_	EI
AVG. E	BUNDLE		AVG. THREA	NO. OF	5.:		INFORMAT BY:	DR	S	<i>h</i>	MOTION	DRS			TIME :		DRS	7ú
CALCU BY:	LATIONS DRS		CALCU	JLATION (ED BY:	IS		SKETCHES BY:			S	KETCH NOS.:				ON SH NOS.:			
	TRANSFER ED BY:		TYPEC		268		TYPING C		0		NSTALLI			,			TALLED	
ELEMEN				Ł	G						NO. REA	DRS	I	G. F.		Ť	0/70 occ.	100% TIME
NO.			OPERAT	ION SEC	QUENCE /	AND JOE	DESCRIPT	ION			ING	s fi	/G. ME	G. F.	100% TIME		occ.	PER:
	Shin bles on c buti	i. T pisse cons rt on	ome (by gils ar l. But are pin	e pir terfi ned. ssel	med d ly is Shir is di	n tak insta rt in	repare les and lled an then s ad on m	d the nd to team	en pla wo fro ed whi	nt le								
1.0 2.0 3.0 4.0	Shin bles on con the shin on con the shin on the shin	rts consisses one or on operation tail or operat	ome (by gils ar l. But are pin 2nd ci tor's r n Seque	e pir terfl ned. ssel ight. nce ion	med c ly is Shir is di	on tak insta rt in ispesa	les and lled and then s	d thend tream obil	en pla wo fro ed whi e tabl	ced mt le	280A					20	100 100 100	5.35 6.20 11.05 6.00
2.	Shir bles on control butter shir on control butter shir on control butter shir on control butter shir	rts consistent on the consiste	ome (by sils ar l. But are pin 2nd ci tor's r n Seque & posit Butter	e pir terfl ned. ssel ight. nce ion fly a	med c ly is Shir is di	on tak insta rt in ispesa	les and lled and them so ad on m	d thend tream obil	en pla wo fro ed whi e tabl	ced mt le	eem.				.06:	20	100	6.20
2.	Shin bles on o butt shin on o Con o Pin Pick Posi Disg	rts consistent on the consiste	ome (by gils ar l. But are pin 2nd ci tor's r n Seque & posit Butter of 2nd	e pir terfl ned. ssel ight. nce ion fly a	med c ly is Shir is di	on tak insta rt in ispesa	les and lled and them so ad on m	d thend tream obil	en pla wo fro ed whi e tabl	ced mt le	28M.				.06:	20	100 100 100	6.20 11.05 6.00
2. 3. 4.	Shin bles on o butt shin on o Open Pin Pick Posi Disg	rts consistence of the consisten	ome (by gils ar l. But are pin 2nd ci tor's r n Seque & posit Butter of 2nd	e pir terfl ned. ssel ight. nce ion fly a shirt	med c ly is Shir is di	on tak insta rt in ispesa	les and lled and them so ad on m	d thend tream obil	en pla wo fro ed whi e tabl	ced mt le	eem.				.066 .110	20 05 00	100 100 100	6.20 11.05 6.00
2. 3. 4. A.	Shir bles on control butter shir on control	rts consistent on the consiste	ome (by pils ar l. But are pin 2nd ci tor's r n Seque & posit Butter of 2nd	e pir terfl ned. ssel ight. nce ion fly a shirt	med c ly is Shir is di	on tak insta rt in ispesa	les and lled and them so ad on m	d thend tream obil	en pla wo fro ed whi e tabl	ced mt le	eam.				.066 .11(.066	20	100 100 100 8.35 100 4.2/	6.20 11.05 6.00
2. 3. 4.	Shir bles on control butter shir on control	rts consistence of the consisten	ome (by pils ar l. But are pin 2nd ci tor's r n Seque & posit Butter of 2nd	e pir terfl ned. ssel ight. nce ion fly a shirt	med c ly is Shir is di	on tak insta rt in ispesa	les and lled and them so ad on m	d thend tream obil	en pla wo fro ed whi e tabl	ced mt le	eam.				.066 .110 .066	20	100 100 100 4.2	6.20 11.05 6.00
2. 3. 4. A.	Shir bles on control butter shir on control	rts consistent on the consiste	ome (by mils ar l. But are pin 2nd ci tor's r n Seque & posit Butter of 2nd	e pir terfl ned. ssel ight. nce ion fly a shirt	med c ly is Shir is di	on tak insta rt in ispesa	les and lled and them so ad on m	d thend tream obil	en pla wo fro ed whi e tabl	ced mt le	eam.				.066 .11(.066	20	100 100 100 8.35 100 4.2/	6.20 11.05 6.00
Ao Bo Co	Shin bles on o butt shin on o Open Pin Pick Posi Disp Bund Cler Exch Supp	rts considers on the considers of the consideration of the	ame (by ails ar l. But are pin 2nd ci tor's r n Seque by posit Butter of 2nd andling	e pir terfl ned. ssel ight. ight.	med c ly is Shir is di	n tak insta t in ispess	les and lled and them so ad on m	t bu	en pla wo fro ed whi e tabl	aced nt le .e	STANDA PRODU	CTION		TIMI	.25 .20 .20	20 05 00 00 00 00	100 100 100 100 4.2/ 100 4.2/	6.20 11.05 6.00
Ao Bo Co ELEMEN NOS.	Shin bles on o butt shin on o Open Pin Pick Posi Disg Bund Cler Exch Supp	rts consisses ons of the consistent of the consi	ame (by mils ar l. But are pin 2nd citor's r n Sequent Butter of 2nd andling trucks	e pir terfined. ssel ight. ich ich ich ich ich ich ich ich ich ich	Shir is di	n tak insta t in spess	les and les and then s' d on m	t bu	m pla we fro sd whi s tabl	aced nt le study	STANDA PRODU				.066 .066 .25 .20	20 05 00 00 00 00	100 100 100 4.2/ 100 4.2/	6.20 11.05 6.00
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Ao Bo Co ELEMEN NOS.	Shin bles on o butt shin on o Open Pin Pick Posi Disg Bund Cler Exch Supp	rts consisses ons of the consistent of the consi	ame (by mils ar l. But are pin 2nd citor's r n Sequent Butter of 2nd andling trucks	e pir terfined. ssel ight. ich ich ich ich ich ich ich ich ich ich	Shir is di	n tak insta t in spess	S.A.M. PER 100	t bu	m pla we fro sd whi s tabl	aced nt le study	STANDA PRODU	CTION	Boz	TIMI	.25 .20 .20	20 05 00 00 00 00	100 100 100 100 4.2/ 100 4.2/	6.20 11.05 6.00

FORM 33B KURT SALMON ASSOCIATES

331	s KI	JRT SALME	IN A5500	CIATES			CON	SUL	TIN	IG EN	IGIN	IEERS				
1	CLIENT: (CODE)	169	PLANT: (CODE) Dut		ON AN YSIS SU	1,5550,570	ES OF DIES:	Novo '	70	SUMMARY 1 SHEI						
	DEPARTM	reasing	PRODUCT:	PART:				M STU	DY		OPERATOR: Synthesis					
	OPERATIONO.:	Test .	OPERATION:	70	dillo 1			OPERATOR'S NO. OR POSITION:								
	SIZE:	490	MATERIAL:		STITCHES			EADS	00							
	MACHINE			ment	GAUGE:	DE.		NEE	DLES:	N/A						
	MAKE:	Paris	FEED	isher	SEAM TYPE: N/A PRESSER				DER:	N/A		R.P.M.: N/A GEARS:				
	PLATE:	N/A	DOG:		FOOT:	N/	A	TVD	E POW	N/A		CAMS: N/A				
	SOURCE CONTRACTOR SERVICES	Collar Forms			·				NSMIS	ร์เด็พ:		MACH, TIME PER PIECE:				
	STUDY STARTED		STUDY FINISHED:		ELAPSED TIME:			NO. PIEC	OF CES:			AVG. TIME PER PIECE:				
	AVG. BU SIZE:	NDLE	AVG. NO. OF THREAD CHGS.:		INFORMA BY:	DRS		MO	TION ALYST:	DRS		TIME STUDIES BY: DRS ON SHEET NOS.:				
	CALCULA BY:	DRS	CALCULATIONS CHECKED BY:		SKETCHES BY:			SKE	TCH	2000						
	STUDY T	RANSFER	TYPED BY:		TYPING CHECKED BY:				TALLED	DR	S	DATE INSTALLED				
	ELEMENT NO.		OPERATION SEQU	ENCE AND JOE	B DESCRIP	TION		NO. OI READ- INGS		G. F.		occ.	100% TIME PER: 10			
		Condition					11103									
			200	(10)												
				g-sleeve (40)												
		Operation	Sequence													
	10	Pin tail										.0535	100	5.3.		
	2.	Pick up &	position				.0590	100	5.91							
	3.	Position steam	butterfly a	2 fro			er.		.1105	100	11.0					
	40	Dispose of	f 2nd shirt									.0577	100	5.7°		
		Bundle Ha	ndling													
	Ao	Clerical									.25	8.35/	2.01			
									0~)	100	≈0U(
	B.	Exchange !	Trucks							.20	4.2/ 100	.8				
	C.	Supplies														
	96	กสโท้กรรคอ										.20	2/100	0 04(
	ELEMENT NOS.	TIME	BASE Pors	LOWANCES	S.A.M. PER 100	U N I	TIME STU TIMES MTS. HR	P	ANDAR PRODUC HR. 8	TION	INST TIM MTS.		NDARD PRODUCT HR. 8	ION HRS.		
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	A-C	3.32 -	3。32 7章		3.98		20 50			12.48						
				TOTAL		100	38.50			mx 040						

MOTION AND TIME ANALYSIS SUMMARY

	KUKI	SAL	MON AS	SOCIATES	ANAI	LYSIS SUMMA	ARY	CONSULTING	3 EIN	GINE	ERS		
CLIENT: (CODE)	9	69	PLANT: (CODE)	Dublin	DEPT.	the all the first first educations.		CONTINUATION OF SUMMARY NO.:	41		T NO.:	2 s:	
DATE:	Nova	70	MOTION ANALYS	v. DRS	3	OPERATION NO.:		ERATION NAME: Describe in Full)	eam				
LEMENT . NO.:			TLE, CORRES	SPONDING WITH	TITLE US	MATION BELOW FO ED ON FORM 33. MOTION PATH.	OR EV	CRY ELEMENT NO.: (C) KEY POINTS IN M (D) KEY QUALITY POI		РАТН.		TIM U	
	Oper on i tear Note push	rator .t dep ra her er (!	pending r coupon licket i	on in-prod off ticke s not remo ard folder	oss. ot whil oved fr	When last sh e still on c om shirt.)	irt iss Wit	th either 1 or 3 is completed, t el and attaches h completed doze ble and then get	the c to g m th	perat num si ne ope	tor nest. erator	ol	
			n Seguen	ice									
1.	Вь	from	ator sec ts on ta bottom.	ible and pi	ins the	tails insid	e t	oks up the tails he shirt approx	imate	aly l'		6	
	C. Left hand can be positioning tails while right hand secures pin. D. Tails should be even when pinned.												
2.	As	Pick	up and	position	-								
								rom table by the					
3.	Ae	Posi	tion but	terfly and	i butto	n 2 fronts b	utt	ons & steam.				0.	
		tions	s it und t button	er collar	and ba	nde Both ha	nds	tterfly from ap are them used d by pressing th	to bu	atton	2		
40	Ao	Dispo	ose of 2	nd shirt.								0	
		ciss	al with	both hands	on bo	th shoulders	an	r removes 2nd si d disposed on to table depending	able	face	up.	=	

33B	CLIENT: (CODE)	360	PLANT: (CODE)	9.0		AND TIME			m.c	SUMMAR		SHE
The second	DEPARTM	169 AENT: Yessing	PRODUCT:	irt	PART:		FROM STI	Nov	70	NO.: 42 OF: OPERATOR: Synthesis		
	OPERATIONO.:		OPERATION:	22201			OPERATOR'S NO. OR POSITION:					
	SIZE:		MATERIAL:	(<u>MeDe</u> =	Solo - Pla STITCHES PER	N/A	THREADS USED:	ide)				
	MACHINE MAKE:	E	MACHINE TYPE:		GAUGE: SEAM TYPE:	N/A	NEEDLES:	25 /1		R.P.M.:		
	THROAT PLATE:	27/4	FEED DOG:	Δ	PRESSER FOOT:	FOLDER:	N/A		GEARS: CAMS:			
	ATTACHA	N/A MENTS: 11ar blocks	N/A	A		N/A	TYPE POV	YER SION:		MACH. TIME PER PIECE:		
	STUDY STARTED		STUDY FINISHED:		ELAPSED TIME:		NO. OF PIECES:			AVG. TI PER PIE	ME CE:	E
	AVG. BU SIZE:	INDLE	AVG. NO. OF THREAD CHGS.:		INFORMATION BY:	MOTION ANALYST:	npg		TIME STUDIES BY: DRS			
	CALCULA BY:		CALCULATIONS CHECKED BY:		SKETCHES BY:	DRS DRS	SKETCH NOS.:	DIN		ON SHEET NOS.:		
	STUDY T	TRANSFER DBY:	TYPED BY:		TYPING CHEC	INSTALLER BY:	DRS		DATE INSTALLED			
	ELEMENT NO.		OPERATION SEQUEN		R DESCRIPTION		NO. O READ INGS	F	G. F.		occ.	100% TIME PER:
))		is picked for fold folded, a from fold	rrive on mobil i up, position ing with board sleeves and to der. The cuf	ned on f d and ti ail pinn f is fol	older and saue. Sh led and th ded and p	prepared irt is the en remove immed out	i hen ed tside					
)	gen .	Shirts are is picked for folded, for folded, and the disposed	rrive on mobility, position in the position of the curs of the cur	ned on f d and ti ail pinn f is fol i if nece lder.	colder and saue. Sh ned and th ded and p assary. S	prepared irt is the en remove immed out hirt is	i hen ed tside			.17/	300	17.
	10034	Shirts are is picked for folded, if folded, if from folded and the ideas of the ide	rrive on mobility, position with board sleeves and the cuff on top of for a Sequence position, plant pin sleeves pin tail, and the cuff, and t	ned on f d and ti ail pinn f is fol if nece lder.	colder and saue. Sh ned and th ded and p assary. S	prepared irt is the en remove immed out hirt is	i hen ed tside			.171 .271 .131	100	27.: 13.: 16.6
	2. 3. 4.	Shirts and is picked for folded, of from folded, of from folded and the of disposed Operation Pick up, Fold and Fold and Fold and Folded Education Press, properties of the folder of th	rrive on mobility, position with board sleeves and the cuff of the cuff on top of for a Sequence position, plant pin sleeves pin tail in cuff, and andling	ned on f d and ti ail pinn f is fol if nece lder.	colder and saue. Sh ned and th ded and p assary. S	prepared irt is the en remove immed out hirt is	i hen ed tside			.271 .131 .166	100 100 100 8.3!	27.: 13.: 16.6 / 2.0
	2. 3. 4. A. B.	Shirts are is picked for folded, if folded, if from folded and the ideas of the ide	rrive on mobility, position with board sleeves and the cuffishirt pressed on top of for Sequence position, plant pin sleeves pin tail in cuff, and andling trucks	ned on f d and ti ail pinn f is fol if nece lder.	colder and saue. Sh ned and th ded and p assary. S	prepared irt is the en remove immed out hirt is	i hen ed tside			.271 .131 .166	8.3! 4.5	27. 13. 16.6 16.6 2/ 2.00
	2. 3. 4.	Shirts and is picked for folded, of from folded, of from folded and the of disposed Operation Pick up, Fold and Fold and Fold and Folded Education Press, properties of the folder of th	rrive on mobility, position with board sleeves and the cuffishirt pressed on top of for Sequence position, plant pin sleeves pin tail in cuff, and andling trucks	ned on f d and ti ail pinn f is fol if nece lder.	colder and saue. Sh ned and th ded and p assary. S	prepared irt is the en remove immed out hirt is	i hen ed tside			.271 .131 .166	100 100 100 8.39 10	27. 13. 16.6 16.6 2/ 8.8
	2. 3. 4. A. B.	Shirts are is picked for folded, if folded, if from folded and the idea of the	rrive on mobility position with board sleeves and the current pressed on top of for a Sequence position, plant pin sleeves pin tail in cuff, and andling trucks	ned on f d and ti ail pinn f is fol if nece lder.	colder and saue. Sh ned and th ded and p assary. S	prepared int is the remove immed out hirt is the state of	i hen ed tside	TION	INST TIM MTS.	.271 .131 .166 .25 .20	8-39 100 4-31 100 2-10	27. 13. 16.6 16.6 2/ .8
	2. 3. 4. A. B. C.	Shirts are is picked for folded, if folded, if from folded and the idea of the	rrive on mobility position with board sleeves and the sufficient pressed on top of form Sequence position, plant pin sleeves pin tail in cuff, and strucks lies ADJUSTED ADJUSTED ALLO BASE For Inc.	ned on f d and ti ail pinn f is fol if nece lder.	solder and ssue. Shaded and the ded and possary. So	rime STIME STIMES MTS.	Inen Id Laide Lhen PRODU	TION	TIM	.271 .131 .166 .25 .20	8-39 4-3 100 2-100 2-100 2-100	27. 13. 16.6 16.6 2/ .8
	A. B. C.	Shirts are is picked for folded, if folded, if from fold and the idea of the i	rrive on mobility position with board sleeves and the curs of four terms of four sleeves pin tail in cuff, and sandling trucks ADJUSTED ASSE Pers. Inc. 176.05 72 1	med on f rd and ti ail pinn f is fol if nece ace boar dispose	S.A.M. UN PER 100 1	TIME STATES TIMES MTS.	Inen Id Laide Lhen PRODU	TION	MTS.	.271 .131 .166 .25 .20	8-39 4-3 100 2-100 2-100 2-100	27. 13. 16.6 16.6 2/ .8

FORM 33B KURT SALMON ASSOCIATES

33E	3 KI	CONSULTING ENGINEERS PLANT: MOTION AND TIME DATES OF SUMMARY																	
	CLIENT: (CODE)	DE) 169				Dublir	1	MOTION MIND TIME				DATES O	The same and the s	70	SUMMARY I SHE				
1	DEPARTA	MENT:	ıg	PROD	PRODUCT:			PART:			ROM ST	UDY		OPERATOR: Synthesis					
	OPERATIONO.:	NC		OPER	ATION:	(Shor	t Sle	seve - S.V P.T.)							OPERATOR'S NO. OR POSITION:				
	SIZE:	A11	MATE	STITCHES PER NA TH					N/A										
	MACHINI MAKE:	Bisho	np ogo	MACI	HINE :			GAUGE: SEAM TYPE: N/A				NEEDLES:	N/A		R.P.M.: N/A				
	THROAT PLATE:	N/A		FEED DOG:	1	V/A		PRESSER FOOT: N/A				OLDER:			GEARS: CAMS: N/A				
		rachments: Collar forms										TYPE PO' TRANSMI			MACH. PER PIEC	CE:	49		
	STUDY STARTED	:		STUD	Y HED:			ELAPSED TIME:			F	NO. OF PIECES:			AVG. TIME PER PIECE:EF				
	AVG. BU SIZE:	NDLE		THRE	AVG. NO. OF THREAD CHGS.:			INFORMA BY:		DRS		MOTION ANALYST	DR	S	TIME STUDIES BY: DRS				
	CALCULA BY:	CALCULATIONS BY: DRS			CALCULATIONS CHECKED BY:		SKETCHES BY: DRS				SKETCH NOS.:			ON SHEET NOS.:					
	STUDY T	RANSFER BY:		TYPE	TYPED BY:							INSTALLED BY: DRS			DATE INSTALLED 11/30/70				
	ELEMENT NO.			OPERA"	TION SEC	QUENCE	OL DNA	B DESCRIP	TION			NO. (READ ING:	AVG.	G. F.	100% TIME	occ.	100% TIME PER:		
	Conditions																-		
)		Sam	10 25	long-	legv	(40)													
		Operation Sequence																	
	l _o	1. Pick up, position, place boar							ssue						.1595	100	15.9		
	2.	Fold and pin sleeves											·1340	100	13.1				
	3.	. Fold and pin tail													.1224	100	12.:		
	40	Pre								e0940	100	9.1							
		Bur	dlin	g Hand	iendling														
	Ao	Cle	rica	1								2			.25	8.35/	2.0		
	8.	The	hana	e desal	re										.20	100			
	B. Exchange trucks														020	100	30		
	C.	Get	enbl	plies											.20	2/100	0 01		
Jiv.	ELEMENT NOS.	100% TIME MTS/100	% Delay	ADJUSTED BASE MTS/100	Pers.	Inc. F	NCES Total	S.A.M. PER 100	H-ZC	TIME TIM MTS.	STUDY ES HRS.	PRODU	CTION	INST TIM MTS.		PRODUCT HR. 8	TION		
A17	1-4	50.99	21	52.26	73	121	20	62.72	DOZ.				60			1			
	A-C	3,32	-	3.32	7월	12]	20	3.98	BDLE.										
							TOTAL		100	66.70)		720						

MOTION AND TIME ANALYSIS SUMMARY

CONSULTING ENGINEERS

FORM SSCE Pressing CLIENT: DEPT .: PLANT: CONTINUATION OF SHEET NO .: Dublin 169 Shirts (CODE) PRODUCT: OF 4 SHEETS: (CODE) SUMMARY NO .: DATE OPERATION MOTION OPERATION NAME: (Describe in Full) ANALYST NO .: Nov. 70 DRS Fold LIST THE FOLLOWING INFORMATION BELOW FOR EVERY ELEMENT NO.: ELEMENT 100% TIME PE (A) ELEMENT TITLE, CORRESPONDING WITH TITLE USED ON FORM 33. (C) KEY POINTS IN MOTION PATH NO. UNIT (B) COMPLETE AND DETAILED JOB BREAKDOWN AND MOTION PATH. (D) KEY QUALITY POINTS. Bundle Handling Operator secures a mobile table from steam with either 1 or 2 dozen shirts .039 on it, depending on in-process. After operator has completed first shirt, she takes off the ticket, tears off her coupon, sticks it on her gun sheet, and disposes of the shirt on top of her folding machine. When the operator has completed the last shirt of the dozen, she replaces the ticket with a pin on front of the shirt. When the dozen shirts are completed the empty table is pushed back toward the steam operation and a full one obtained. Operation Sequence A. Pick up, position, place board & tissue .174 B. Both hands are used to pick up shirt from table by the shoulders. The collar of the shirt is positioned in the folding collar form and the shirt is straightened for folding face down. The folding board is picked up with the right hand and positioned in back of the collar. Then one or two shests of tissue are picked up also with right hand and placed on top of board. 20 A. Fold and pin sleeves. .27] The folding form is first dropped on board and tissue. Now the left sleave is folded over left sleave bar and position. The left sleave bar is folded in and next the right sleeve is folded over right sleeve bar and the bar folded in. The top of the sleeves are then pinned and then the right sleeve is folded back over the shirt and pinned leaving the right ouff protruding from the right side of the shirt. A. Fold and pin tail. .131 B. The tail is then folded back over the form and turned under enough to lay even with fold. The tail is then pinned on each side. A. Press, pin cuff, and dispose .166 The shirt is now removed from folder and flipped over to face-up. The cuff is now folded over the front of the shirt and pinned inside with the buttons showing. The shirt is now pressed and disposed on top of foldere C. Cuff is opened with right & left hand, held open left hand and pinned with right hand. D. Shirt should not have wrinkles, spots, flaws, or any other abnormalty showing.