

Instructions

K117 INSTRUMENT SHUTTLE

INTRODUCTION

The K117 Instrument Shuttle is a lightweight, durable vehicle for transporting 55 kg (121 lb) of instruments and tools. It has been designed to be used for inter-plant mobility, as a work station at service sites, and is easily placed into service vehicles even when fully-loaded.

The following information provides a description of the K117 and its parts, application suggestions, and safety precautions. Please read all instructions completely before loading and using the cart.

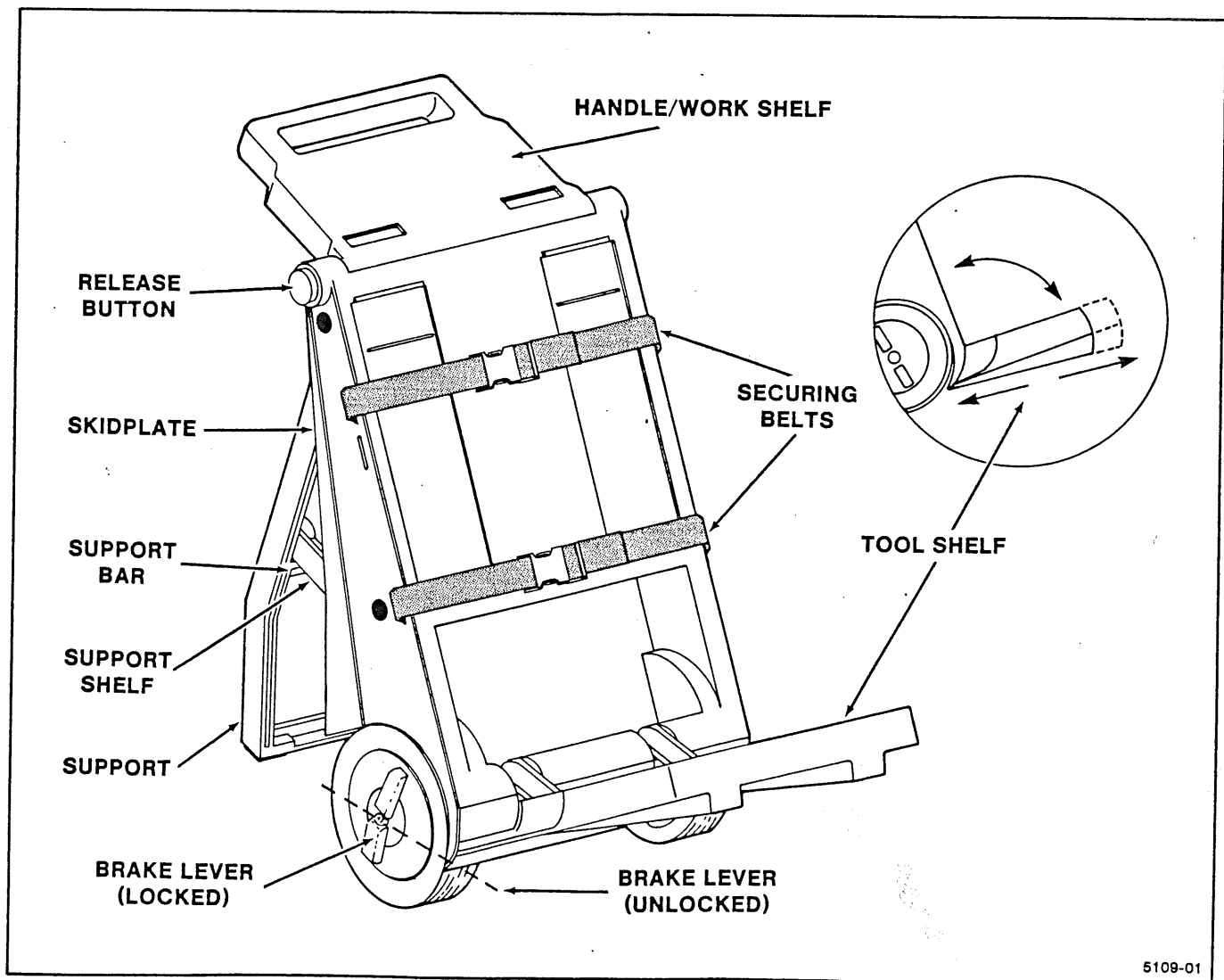


Figure 1. Instrument Shuttle Nomenclature.

FEATURES

Please refer to Figures 1 and 4.

Support

The Support together with the Support Shelf acts as a leg assembly which allows the cart to stand self-supported. The Support has two positions; the stored position and the in-use position. The Support may be moved to the in-use position by pulling out on the cross bar until the Support Shelf is completely down with the Support Shelf Arms against the Support in its full-out position. The Support Shelf may be used as a small storage area with a recommended maximum weight of 10 kg (22 lb) when in the in-use position. Some visible flexing of the Support is normal while being used. The stored position is achieved by reversing the above procedure.

CAUTION

To avoid damage to the cart and support system, do not tow or move the cart with the Support down. When moving the cart, ALWAYS place the Support in the stored and latched position.

Handle/Work Shelf

The Handle/Work Shelf may be used to tow the cart, and as a work or document shelf when at a job or demonstration site. The handle has five positions, one of which can be used as a small work surface. To change the position of the Handle, push in the Release Button, and move the Handle near the desired position. Release the button, and reposition the Handle until it locks into place. The Handle/Work Shelf is designed for towing loads up to a maximum weight of 55 kg (121 lb), and for a work shelf load of up to 20 kg (44.1 lb).

CAUTION

Never Use the Handle/Workshelf as a seat. Doing so could result in serious injury to the user and serious damage to the cart and instruments.

PLEASE REFER TO "LOADING RECOMMENDATIONS" BEFORE USING THE HANDLE AS A WORK SHELF.

Securing Belts

The Securing Belts (two provided) may be placed at any of three positions to secure loads to the Frame of the cart. To secure a load for transport, thread each belt through the cart frame and the buckle, and tight-

en by pulling the belt end through the buckle. Once tightened, the position of the belt webbing need not be changed for removal and replacement of a load of the same size. The buckle is made in two parts and may be separated by depressing the two locking-release levers and separating the two parts. The belts are designed to secure the maximum Frame load and maintain a no slack condition. Caution should be taken to avoid excessive tightening of the belts and possibly causing damage to the cart or instruments. Additional belts are available (see "Replaceable Parts").

Tool Shelf

The Tool Shelf has two positions; stored and in-use. When being placed into the in-use (down) position, the shelf is pulled into place by springs which act as a deterrant to accidental shelf folding. When returning the shelf to the stored position, it is necessary to pull the shelf out before folding (refer to inset, Figure 1). Commercially available straps may be used to secure loads to the Tool Shelf. To avoid cart tipping, please read the "LOADING RECOMMENDATIONS AND SPECIFICATIONS" section before loading the cart.

Wheel Brakes

The Wheel Brakes are operated by turning the wheel Brake-Levers by hand or foot. When the Brake-Levers are placed parallel to the floor surface (with the cart in the standing position), the wheels are unlocked. Turning the levers 45° either direction from the parallel position places the wheels in the locked position. The Wheel Brakes are designed to prevent the wheels from turning when the cart has a maximum 55 kg (121 lb) load, and is on a surface with a slope of 10° or less.

CAUTION

The Wheel Brakes are intended to prevent accidental rolling. Pulling the cart while the brakes are locked will cause damage to the brake mechanism.

Skidplates

The back edges of the Main Frame have been fitted with metal plates so that the cart will slide easily into service vehicles without damage to the structural foam frame. (The Support and Handle must be in their stored positions.)

OPTIONAL ACCESSORIES

Accessory Pouch

The accessory pouch secures to the lower portion of the Support, and is useful for holding documents, cables, or other accessories.

Rain Cover

The Rain Cover is made of durable fabric effectively protecting the cart and its load from the weather, dust, and UV radiation.

LOADING AND SAFETY RECOMMENDATIONS AND SPECIFICATIONS

The following recommendations and specifications are provided to aid you in using your K117 with maximum safety and reliability. Conditions hazardous to personnel or equipment are possible if these recommendations are not followed closely. Refer to Figures 2 and 3.

CAUTION

Maximum stability of the K117 will be achieved by having the main concentration of load on the Frame portion of the cart.

When the cart is otherwise unloaded, DO NOT ATTEMPT TO COUNTERBALANCE EXCESSIVE WEIGHT ON THE HANDLE/WORK SHELF BY ADDING MORE WEIGHT TO THE TOOL SHELF.

Likewise, DO NOT ATTEMPT TO COUNTERBALANCE EXCESSIVE WEIGHT ON THE TOOL SHELF BY ADDING WEIGHT TO THE HANDLE/WORK SHELF.

Avoid the need to counterbalance if possible, but if necessary, counterbalance ONLY with weight (always secured with belts) on the FRAME of the cart.

The Handle/Work Shelf is used for towing the folded (loaded or unloaded) cart, and for holding manuals, tools or circuit boards at a work or demonstration site. The MAXIMUM TOWING WEIGHT IS 55 kg (121 lb), and the MAXIMUM HANDLE LOAD in the Work Shelf position is 10 kg (22.0 lb). Placing weight greater than 7 kg (15.4 lb) on the Handle/Work Shelf may cause a hazardous tipping situation unless an equal or greater load of up to 40 kg (88.2 lb) is placed as a counterbalance on the frame.

The Tool Shelf is designed to be used for the transportation of tools or instruments between sites. THE MAXIMUM TOOL SHELF LOAD WEIGHT IS 20 kg (44.1 lb). Cart tipping may be avoided by loading the tool shelf with the cart in the upright position. Placing a load on the Tool Shelf when no other load is on the cart may cause a hazardous tipping situation, especially if the cart is going to be used in the standing position. A counterbalancing load (maximum 40 kg 88.2 lb) should be placed on the cart frame to eliminate this potential.

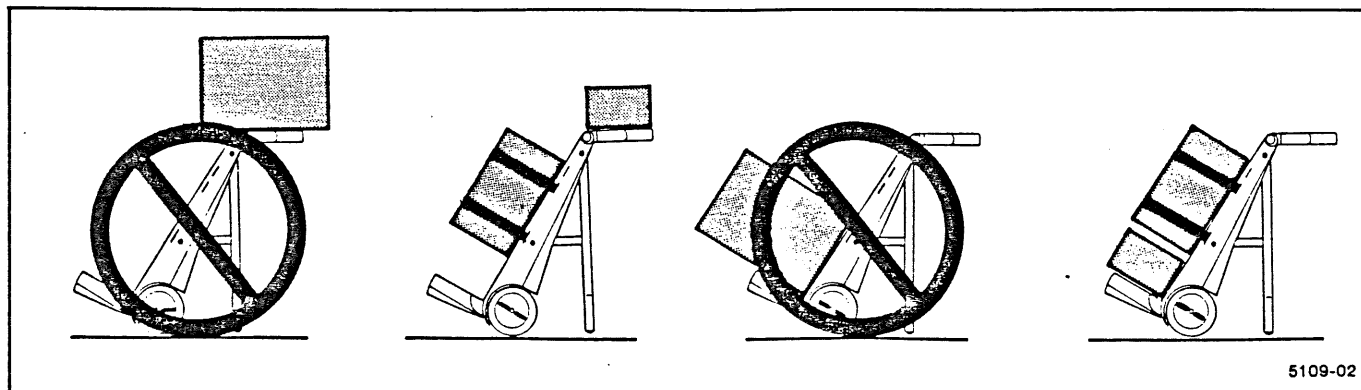


Figure 2. Stability.

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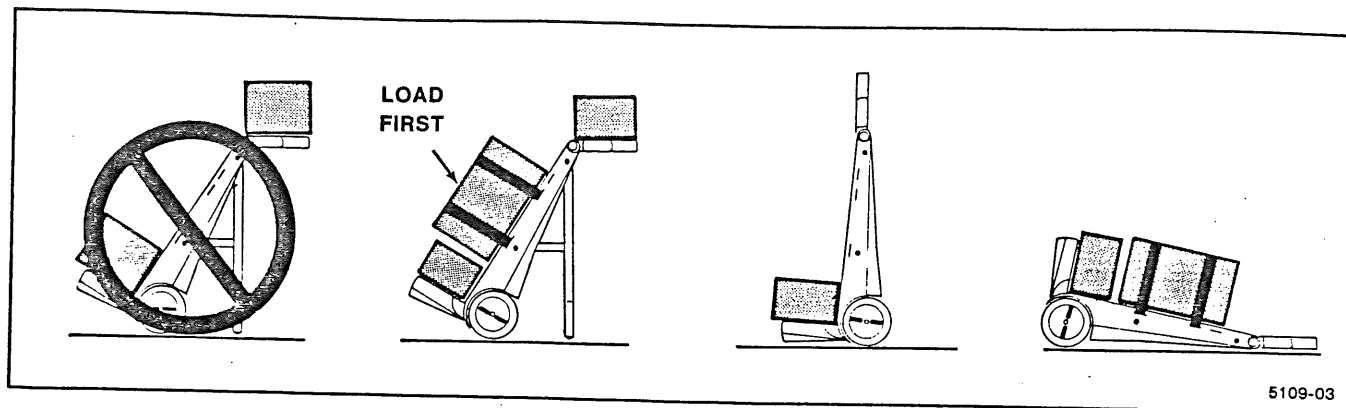


Figure 3. Loading Positions.

The MAXIMUM FRAME LOAD IS 40 kg (88.2 lb), and the MAXIMUM TOTAL CART LOAD IS 55 kg (121 lb). Equipment and tools should always be secured to the cart with hold-down devices (such as those provided). Additional securing straps are available (see "Replaceable Parts"). Also, several styles of stretch type securing straps are sold commercially which can be used as hold-down devices in addition to those available from Tektronix.

Temperature Considerations

The K117 Instrument Shuttle is constructed of structural foam designed to maintain full structural strength to 85°C (185°F). Caution should be taken to insure that the cart is not subjected to higher tem-

peratures. Sustained high temperature storage with a load tightened to the point of causing cart distortion may result in permanent cart warpage. Concentrated high temperature (such as from a hot soldering iron), will cause melting and possible weakening of the structure. Strength is maintained in colder temperatures, however at very low temperatures (-30°C, -22°F), strong or sharp blows can more easily damage the cart and should be avoided.

Electrical Properties

The structural foam used in the manufacture of the K117 is an electrical insulator. It is recommended that standard personnel static-dissipation procedures be followed when working with static-sensitive instruments or components.

MAINTENANCE AND SERVICE

The K117 Instrument Shuttle requires no lubrication or maintenance except for an occasional cleaning. Do not contaminate the brake assembly parts with any lubricating substance. All Shuttle parts are easily cleaned with a cloth dampened with water or a mixture of water and a small amount of household detergent.

CAUTION

Do not use harsh or abrasive cleaning agents. Avoid exposure to harsh UV radiation or to agents or chemicals containing aromatic or hydrogenated hydrocarbons, alkali, alkaline salts, amines or ozone. Such chemicals may affect the cart finish or structure.

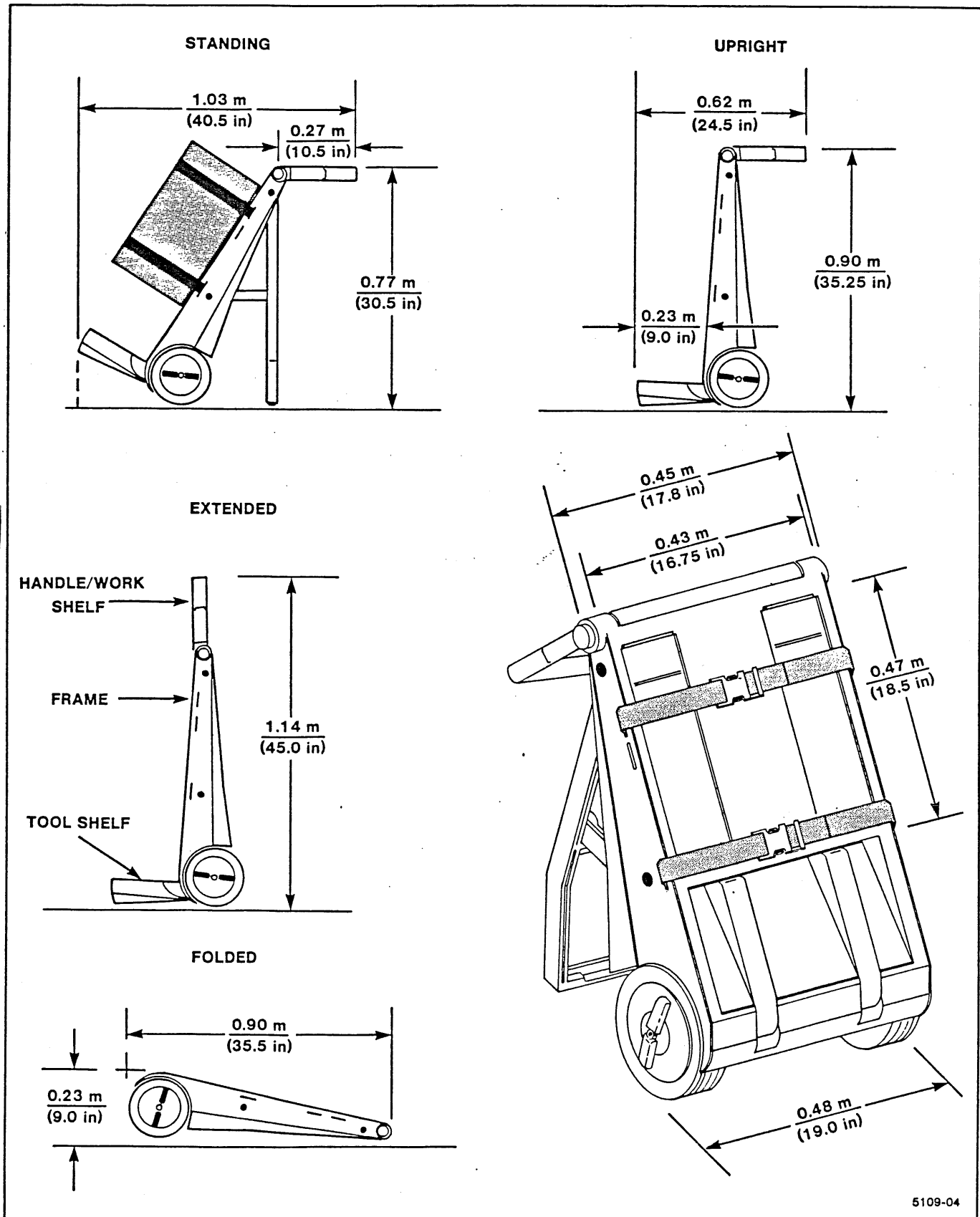
Parts and assemblies for the K117 are readily available and easily installed (see "Replaceable Parts

List"). Always include the serial number (located about half way up on the back of the main frame) when requesting information or ordering parts. Service for the Instrument Shuttle is also available at any of the Tektronix Service Centers located throughout the world.

Repackaging For Shipment

When shipping the K117 to a Tektronix Service Center for repair, attach a tag to the cart showing: owner, address, serial number, and the name of an individual who can be contacted, along with a description of the service required.

Obtain a cardboard carton with a test strength of 90.7 kg (200 lb) which is large enough to allow 3 cm (3.15 in) of cushioning on all sides of the cart. Seal the carton with shipping tape or an industrial stapler.



5109-04

Figure 4. Nominal dimensions.

Fig. & Index No.	Tektronix Part No.	Serial/Model No. Eff Dscont	Qty	1 2 3 4 5	Name & Description	Mfr Code	Mfr Part Number
1-1	367-0340-01		1		HANDLE,CART:LEXAN,W/LABELS	80009	367-0340-01
-2	386-5174-00		1		SUPPORT,CART:LEXAN ***** (ATTACHING PARTS) *****	T1173	ORD BY DESCR
-3	354-0644-00		2		RING,RETAINING:BOWED EXT,U/O 0.50 ID SHAFT ***** (END ATTACHING PARTS) *****		
-4	214-3693-00		1		SPRING,LATCH:CU-BE		
-5	348-0627-02		2		FOOT,CABINET:SMOKE GRAY,POLYCARBONATE ***** (ATTACHING PARTS) *****	80009	348-0627-02
-6	213-0185-00		4		SCR,TPG,THD FOR:6-20 X 0.625 INCH,PNH STL ***** (END ATTACHING PARTS) *****	T0435	ORD BY DESCR
-7	351-0726-00		2		SLIDE,SUPPORT:NYLAFIL,MED GRAY		
-8	210-1413-00		2		WASHER,SPR TNSN:0.531 ID X 0.008 THK,STL		
-9	436-0183-00		1		SHELF,SUPPORT:LEXAN		
-10	354-0644-00		2		RING,RETAINING:BOWED EXT,U/O 0.50 ID SHAFT		
-11	214-3638-00		1		ROD,GRVD,HDLS:0.25 DIA X 16.25 L,AL	T1287	ORD BY DESCR
-12	354-0643-00		2		RING,RETAINING:EXT TYPE E,U/O 0.396 ID SFT	57673	1540-50
-13	354-0624-00		2		RING,RETAINING:BASIC EXT,0.281 ID	79136	5100-31
-14	210-1401-00		1		WASHER,FLAT:0.312 ID X 0.04 THK,SST,1.0		
-15	214-3628-00		1		LOCK,HANDLE:PLASTIC	T1173	ORD BY DESCR
-16	214-3738-00		1		LOCK,HANDLE:PLASTIC,RIGHT		
-17	214-3627-00		1		PLUG,HOLE:1.72 DIA,PLASTIC	80009	214-3627-00
-18	214-3635-00		1		SPRING,HLCPS:1.359 X 2.625,CLOSED ENDS		
-19	214-3629-00		1		BUTTON,RELEASE:HANDLE,PLASTIC ***** (ATTACHING PARTS) *****	T1173	ORD BY DESCR
-20	213-0034-00		1		SCR,TPG,THD CTG:4-40 X 0.188 INCH,PNH STL ***** (END ATTACHING PARTS) *****	T0858	ORD BY DESCR
-21	426-2040-01		1		FRAME,SPRT,ASSY:LEXAN,W/LABEL	80009	426-2040-01
-22	348-0837-00		2		.MATTING,RUBBER:18.2 X 4.27 X 0.125,BLACK	85471	ORD BY DESCR
-23	386-5173-00		1		.PLATE,SKID:LEFT,SST ***** (ATTACHING PARTS) *****	T1559	ORD BY DESCR
-24	213-0124-00		5		.SCR,TPG,THD FOR:6-20 X 0.250 INCH,PNH STL ***** (END ATTACHING PARTS) *****	83385	ORD BY DESCR
-25	386-5198-00		1		.PLATE,SKID:RIGHT,SST ***** (ATTACHING PARTS FOR SKID PLATES) *****	T1559	ORD BY DESCR
-26	213-0124-00		5		.SCR,TPG,THD FOR:6-20 X 0.250 INCH,PNH STL ***** (END ATTACHING PARTS) *****	83385	ORD BY DESCR
-27	214-3630-00		4		PIN,GRVD,HEADED:0.47 DIA X 2.565 L,PLASTIC		
-28	210-1415-00		4		WASHER,FLAT:0.475 ID X 0.075 THK,ACETAL		
-29	401-0600-00		1		AXLE,CART:19.0 L,W/0.25-20 THD EA END		
-30	210-1399-00		6		WASHER,FLAT:0.505 ID X 0.018,STL,1.0 OD		
-31	401-0599-00		2		TIRE,SOLID:8.0 OD X 0.5 ID X 1.75 W	11431	81749034
-32	210-1027-00		2		WASHER,FLAT:0.252 ID X 0.624 THK X 0.40	80009	210-1027-00
-33	354-0644-00		2		RING,RETAINING:BOWED EXT,U/O 0.50 ID SHAFT		
-34	386-5172-00		2		PLATE,WHEEL:INDEX,POLYCARBONATE ***** (ATTACHING PARTS) *****		
-35	214-3736-00		2		PIN,SPRING:0.625 L X 0.199 OD,CS ***** (END ATTACHING PARTS) *****	22599	59-040-187-0625
-36	354-0556-00		2		O-RING:0.76 ID X 0.05,NEOPRENE	T1587	ORD BY DESCR
-37	214-3633-00		4		BRAKE SHOE:POLYCARBONATE	T1176	ORD BY DESCR
-38	214-3632-00		2		HUB,WHEEL:PLASTIC		
-39	220-0506-00		2		NUT,SLFLKG,HEX:0.25-28 X 0.375 HEX,BRS NP	22599	F52TEE2032-048
-40	436-0182-01		1		SHELF,TOOL:LEXAN,W/LABEL ***** (ATTACHING PARTS) *****	80009	436-0182-01
-41	214-3631-00		2		PIN,GRVD,HEADED:0.47 DIA X 1.6 L,PLASTIC		
-42	214-3731-00		2		SPRING,HLEXT:1.0 OD X 2.5 L,X LOOP,SPR		
-43	354-0644-00		2		RING,RETAINING:BOWED EXT,U/O 0.50 ID SHAFT ***** (END ATTACHING PARTS) *****		
-44	346-0208-00		2		STRAP ASSY:FIELD CART		

K117 Instrument Shuttle

Fig. & Index No.	Tektronix Part No.	Serial/Model No. Eff	Dscont	Qty	1	2	3	4	5	Name & Description	Mfr Code	Mfr Part Number
STANDARD ACCESSORIES												
	070-5109-00			1						SHEET, TECHNICAL: FIELD SERVICE CART	80009	070-5109-00
OPTIONAL ACCESSORIES												
	016-0800-00			1						POUCH, ACCESS:		
	200-3051-00			1						COVER, PROT: RAIN JACKET, VINYL		

CROSS INDEX—MFR. CODE NUMBER TO MANUFACTURER

Mfr. Code	Manufacturer	Address	City, State, Zip
11431	GLEASON CORPORATION	2266 N PROSPECT AVE, PO BOX 343	MILWAUKEE, WI 53202
22599	ESNA, DIV. OF AMERACE CORPORATION	16150 STAGG STREET	VAN NUYS, CA 91409
57673	ANDERTON-UNITED PRODUCTS, INC.		
	SUB OF AURORA ENGINEERING INDUSTRIES	125 LOUIS ST.	SOUTH HAKENSACK, NJ 07606
79136	WALDES, KOHINOOR, INC.	47-16 AUSTEL PLACE	LONG ISLAND CITY, NY 11101
80009	TEKTRONIX, INC.	P O BOX 500	BEAVERTON, OR 97077
83385	CENTRAL SCREW CO.	2530 CRESCENT DR.	BROADVIEW, IL 60153
85471	BOYD, A. B., CO.	2527 GRANT AVENUE	SAN LEANDRO, CA 94579
T0435	LEWIS SCREW CO.	4114 SOUTH PERORIA AVE.	CHICAGO, IL 60609
T0858	STAUFFER SUPPLY CO	105 SE TAYLOR	PORTLAND, OR 97214
T1173	ACCURATE PLASTICS & ENGINEERING, INC.	P.O. BOX 475	LONGMONT, CO 80501
T1176	KASO PLASTICS	RT 2, BOX 600	CORBETT, OR 97019
T1287	ENOCH MFG. CO.	14242 S.E. 82ND DR	CLACKAMAS, OR 97015
T1559	TRIAX METAL PRODUCTS	1800 N.W. 216TH	HILLSBORO, OR 97123
T1587	APPLE RUBBER PRODUCTS CO.	310 ERIE ST.	LANCASTER, NY 14086

