

1/4" LONG FRAME TELEPHONE JACKS

JACK MATERIALS

The complete Switchcraft line of standard size panels, jacks, plugs, switches and accessories are rugged, premium quality devices...hand-crafted by experts...100% inspected...and carefully adjusted to meet the traditionally high quality demands of the telephone industry and the military. Tightly controlled incoming inspection, manufacturing methods, and QC procedures assure you of long-life, reliable components. Typical applications where Switchcraft components have been specified for more than five decades are: telephone central office equipment, switchboards, jackfields, test and patch panels, and station equipment; TV and radio broadcasting consoles; PA and communication consoles; telegraph systems and apparatus; multichannel video and audio patching; and data processing equipment, such as computers, telemetry, I/O devices and facsimile.

FRAMES — Jack frames are heavy steel, formed and press welded for added strength. Side member adds to frame rigidity and resistance to shock and vibration. Both "A" and "C" type frames can be supplied. (See next page.)

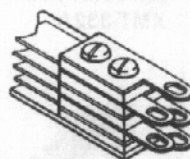
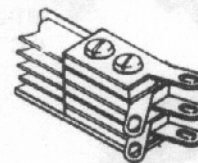
SPRINGS — A special copper alloy is used for leaf springs because it offers excellent mechanical and electrical characteristics, and good corrosion resistance. The spring alloy has special hardness and ductility, and springs are produced from custom-designed dies. Although normally adjusted to mate with telephone (and MIL-type) plugs, springs can be adjusted to mate with commercial phone plugs.

BUSHINGS — Bushings are copper alloy (except insulated jacks), drilled to accept either a standard (.250" diameter finger) plug or a popular smaller (.206" diameter finger) plug. Series M Hi-D Jax® have a threaded brass bushing, or a molded thermoplastic bushing for insulated mounting.

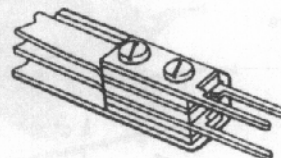
CONTACTS — Jack design includes "wiping" action of contacts for low resistance connections. The contacts supplied depend on the jack selected. Gold or silver plating is normally offered as an option on tip, ring and/or sleeve springs. Several precious metals and shapes are used on jacks.

Material	Shape	Description
Palladium	Welded Crossbar	Best overall combination of life, current carrying, and resistance to environment. Also known as WEco #2.
Fine silver	Riveted, button-type	Carries higher current than palladium.
Gold alloy Crossbar	Welded switching.	Recommended for dry circuit. Excellent resistance to corrosion and contamination. Also known as WEco #1.
Fine silver (Large)	Riveted, button-type	Heavy currents.
Gold or Silver	Plating	For lower contact resistance (used on through circuit springs).

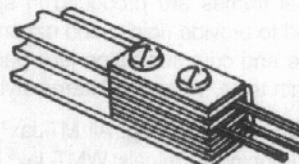
SOLDER LUGS TERMINALS — Lugs project out directly from rear of jack and are solder-coated for easy wiring and soldering. Offset lugs can be supplied on special order (except standard on MT-Jax®). Jacks with offset ground lugs are particularly suitable for bussing connections on jack panels. Contact Switchcraft for special order lug requirements.

STRAIGHT
SOLDER LUGSOFFSET
SOLDER LUGS

WIRE-WRAPPING TERMINALS — Wire-wrapping eliminates the need for soldering. Each terminal accepts up to three wrapped wires (22 or 24 gauge, 5 wraps each), applied with standard wire-wrapping tools. Terminal base has standoff shoulder which prevents first wrapped wire from accidentally sliding down and shorting against another terminal or adjacent spring. Terminal tips are radiused to facilitate positioning of wire-wrapping tool over terminals. See page 80 for wire-wrapping data.

WIRE-WRAPPING
TERMINALS

PRINTED CIRCUIT TERMINALS — Components can be supplied with printed circuit terminals on special order. Terminals can be specified in various lengths to accommodate different thicknesses of single and double sided boards, as well as multilayers, and flat flexible cable and circuitry.

PRINTED CIRCUIT
TERMINALS
(SPECIAL)

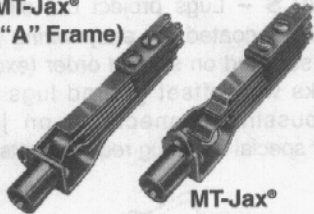
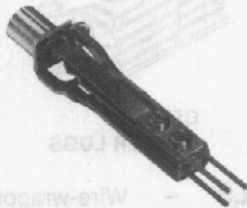
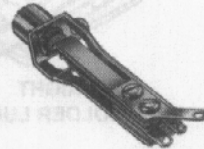
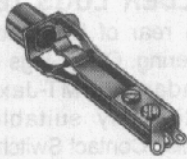
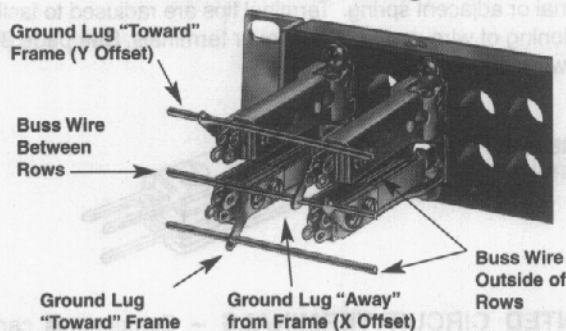
OTHER TERMINALS — Many other special terminal styles are possible. For example, where mounting permits, jacks can be supplied with stacks having right-angle terminals. Contact Switchcraft for special terminals.

CUSTOM COMPONENTS

Only the most popular types of jacks are listed.

DIMENSIONS ARE FOR REFERENCE ONLY $\frac{\text{Inch}}{(\text{mm})}$

LONG FRAME TELEPHONE JACKS

MT-Jax®
("A" Frame)MT-Jax®
("C" Frame)XMT-Jax®, Number
XMT-332AWMT-Jax®, Number
WMT-332BYMT-Jax®, Number
YMT-332BDetails of Typical Buss Wiring of Jacks
with Offset Ground Lugs

Long frame jacks are designed especially for high quality communication equipment, and to meet exacting MIL specifications, as well as telephone and communication systems. Many jacks have WEco equivalent types. MT-Jax® phone jacks are offered in four styles: MT-Jax®, WMT-Jax®, XMT-Jax® and YMT-Jax®. Rugged steel frames are produced in specially designed dies, press welded to provide rigidity and dimensional stability required by telephone and communication jack panels - and to meet MIL frame strength tests. "A" and "C" frame styles are available.

TERMINALS - Solder Lug: All MT-Jax® have solder lug terminals. Wire-Wrapping Terminals: WMT-Jax® have wire-wrapping terminals. Offset Ground Lugs: XMT-Jax® and YMT-Jax® have ground lugs, which simplify production line wiring time. A single row of jacks can be installed with a single buss wire connected to all ground lugs in a row, or when double rows are mounted on .625" vertical centers with lugs oriented between rows, holes in ground lugs line up so a single buss wire provides connections for both rows. XMT-Jax® have ground lugs oriented away and YMT-Jax® are oriented toward jack frame. See illustration.

MIL STANDARDIZATION - MIL jack types listed have been adjusted for use with plugs specified in Amendment No. 1, MIL-P-642, usually M642/1-1, M642/1-2, M642/2-1, M642/2-2, M642/4-1 or M642/4-2. When applicable, specify the plug you will use; we will adjust with that plug where the item is not a MIL-type. NOTE:

DIMENSIONS ARE FOR REFERENCE ONLY

Inch
(mm)

MT-Jax® jacks Numbers ◊MT-342B and ◊MT-344B have shorter bushings, 0.5" long with a hold inside diameter of .21". They will mate with MIL plug M642/5-1 or M642/8-1. M642/5-1 plug (Switchcraft 480) cannot be used with ◊MT-342B or ◊MT-344B if these jacks are mounted on standard .625" thick panels. The short jack bushings are recessed .125", and the M642/5-1 is too wide to fit in the panel recess. Use plug M642/8-1 (Switchcraft 484) with a narrower diameter to fit in the recess and mate properly.

CONTACTS - Contacts on shunts and isolated switching circuits are welded crossbar palladium. Welded crossbar gold alloy contacts (WEco #1) are available on special order for dry circuit applications.

SPECIFICATIONS

Frame and Stack Screws: Plated steel, with iridescent iridite finish.

Springs: Copper alloy, spring tempered. Solder lugs are tinned.

Bushings: Plated copper alloy standard. Natural brass finish optional.

Insulation: Rigid plastic spacers (MIL-type PBE-P per Specification LP-513). One piece molded through stack.

Contacts: Welded crossbar palladium contacts in shunt and isolated switching circuits are standard. Gold alloy (WEco #1) and fine silver are available on special order.

MECHANICAL

Life: Commercial jacks: 10,000 insertion/withdrawal cycles, minimum. Military Jacks: 20,000 insertion/withdrawal cycles, minimum.

Mechanical Shock: Military Jacks - Per MIL-STD-202, method 213, Test Condition H (75g).

Vibration: Military Jacks - Per MIL-STD-202, method 213, (10-55 Hz).

ELECTRICAL

Contact Resistance: Commercial Jacks - .030 ohms maximum (initial), .050 ohms maximum (after humidity, durability exposure). Military Jacks - .010 ohms maximum (initial), .020 ohms maximum (after life), .10 ohms maximum (after salt spray).

Insulation Resistance: Commercial Jacks - 10,000 MΩ minimum (initial), 1,000 MΩ minimum (after humidity). Military Jacks - 10,000 MΩ minimum (initial), 1,000 MΩ minimum (after humidity, durability exposure).

Dielectric Withstanding Voltage: 500 V, 60 Hz (rms) AC.

ENVIRONMENTAL

Thermal Range: Commercial Jacks - -55°C to +85°C (non-operating); -20°C to +65°C (operating). Military Jacks - -55°C to +85°C (non operating); -40°C to +65°C (operating).

Thermal Shock: Commercial Jacks - Per MIL-STD-202, method 107. Military Jacks - Per MIL-STD-202, method 107.

Humidity: Commercial Jacks - Per MIL-STD-202, method 106. Military Jacks - 0% to 95% operating and non-operating.

Salt Spray: Commercial Jacks - Per MIL-STD-202, method 101. Military Jacks - Per MIL-STD-202, method 101 (48 hours).

Moisture Resistance: Military Jacks - Per MIL-STD-202, method 106 (240 hours).

ORDERING - Order jacks by part number. Additional variations in jacks are available on special order. Special circuitry, frames, contacts, natural brass bushings, as other terminals are available.

1/4" LONG FRAME TELEPHONE JACKS

MT-JAX[®] (with WEco Equivalent Jacks)²

Switchcraft Part Number	WEco Equiv.	MIL Type ¹	Schematic Circuit ⁴	Dim. "X" maximum Inch (mm)	Mating Plug ³
2-CONDUCTOR 2					
MT331	233A, 221E3	M641/2-8	I	.438 (11.1)	M642/4-1 M642/4-2 or M642/4-3
◊CMT331	223C	-	I	.438 (11.1)	
◊WMT331	223AM	-	I	.438 (11.1)	
◊WCMT331	223CM	-	I	.438 (11.1)	
◊MT332	232A, 544A4	-	II	.5 (12.7)	
◊CMT332	232C	-	II	.5 (12.7)	
MT332A	218A	M641/2-3	III	.5 (12.7)	
◊CMT332A	218C	-	III	.5 (12.7)	
◊MT332C	303A	M641/2-1	XVIII	.562 (14.3)	
MT333	215A	M641/2-6	V	.469 (11.9)	
◊CMT333	215C	-	V	.469 (11.9)	
◊MT333E	237A	-	IX	.625 (15.9)	
◊CMT333A	237C	-	IX	.625 (15.9)	
MT334A	225A, 234A	-	XI	.562 (14.3)	
◊CMT334A	225C, 234C	-	XI	.562 (14.3)	
MT334C	216A	M641/2-5	XVII	.625 (15.9)	
◊CMT334C	216C, 484C5	-	XVII	.625 (15.9)	
MT334E	217A	M641/2-7	XXV	.562 (14.3)	
◊CMT334E	217C	-	XXV	.562 (14.3)	
◊MT334F	226A	M641/2-4	XIX	.562 (14.3)	
◊CMT334F	226C	-	XIX	.562 (14.3)	
◊MT335	236A	-	XIII	.562 (14.3)	
◊CMT335	236C	-	XIII	.562 (14.3)	
◊MT336E ¹⁰	438A	-	XXIII	.75 (19.0)	
◊CMT336E	438C	M641/1-2	XXIII	.75 (19.0)	
◊MT337 ¹⁰	411A	M641/2-9	XXIV	.75 (19.0)	
◊CMT337	411C	M641/1-1	XXIV	.75 (19.0)	
◊CMT351C	394C	-	XXXIII	.812 (20.6)	
◊MT352A	218J	-	III	.5 (12.7)	
◊CMT354F	361C	-	XXXIV	.75 (19.0)	

*Refer to page 79 and 80 for schematics.

◊ Special order only; contact Switchcraft.

- Many jacks are offered with MIL specifications. Other jacks are made of MIL-spec materials but do not have MIL approval because no MIL type numbers have been assigned.
- MT-Jax have nickel-plated copper alloy bushing. WEco equivalent jacks have plain copper alloy bushings (except WEco Number 221E, which has nickel-plated copper alloy bushing).
- Mating plugs and patch cords are contained in the catalog.
- Adjust non-short tip-ring.
- Adjusted for plug M642/1-1 or M642/1-2.
- Actuates differently (insulated "A" off ring instead of tip).
- Same as MIL type M641/2-3 except with offset ground lug.
- Same as MIL type M641/3-1 except with offset ground lug.
- Same as MIL type M641/3-2 except with offset ground lug.
- When mounted on "A" frames, stacks are too high to fit in standard panels with .625" horizontal space add prefix "C" to part number to order jacks with "C" frame.

Switchcraft Part Number	WEco Equiv.	MIL Type ¹	Schematic Circuit ⁴	Dim. "X" maximum Inch (mm)	Mating Plug ³
3-CONDUCTOR					
MT332B	238A	M641/3-1	IV	.562 (14.3)	M642/2-1 or M642/2-2
◊CMT332B	238C	-	IV	.562 (14.3)	
WMT332B	238AM	-	IV	.562 (14.3)	
◊WCMT332B	238CM	-	IV	.562 (14.3)	
MT333B	300A	-	VII	.562 (14.3)	
◊MT334B	239A	M641/3-2	XII	.562 (14.3)	
◊CMT334-B	239C	-	XII	.562 (14.3)	
WMT334B	239AM	-	XII	.578 (14.7)	
◊WCMT334B	239CM	-	XII	.578 (14.7)	
◊MT336	241A	M641/3-4	XX	.562 (14.3)	
◊CMT336	241C	-	XX	.562 (14.3)	
◊WMT336 ¹⁰	241AM	-	XX	.625 (15.9)	
◊WCMT336	241CM	-	XX	.625 (15.9)	
◊MT336A ¹⁰	242A	M641/5-5	XIV	.688 (17.5)	
◊CMT336A	242C	-	XIV	.688 (17.5)	
◊WMT336A	242AM	-	XIV	.75 (19.0)	
◊WCMT336A	242CM	-	XIV	.75 (19.0)	
◊MT336B ¹⁰	285A	M641/3-6	XXI	.812 (20.6)	
◊CMT336B	285C	-	XXI	.812 (20.6)	
MT336C ¹⁰	240A	M641/3-3	XXII	.688 (17.5)	
◊CMT336C	240C	-	XXII	.688 (17.5)	
◊WMT336C ¹⁰	240AM	-	XXII	.75 (19.0)	
◊WCMT336C	240CM	-	XXII	.75 (19.0)	
◊MT336D ¹⁰	280A	-	XXXI	.75 (19.0)	
◊CMT336D	280C	-	XXXI	.75 (19.0)	
◊WMT336D ¹⁰	280AM	-	XXXI	.938 (23.8)	
◊WCMT336D	280CM	-	XXXI	.938 (23.8)	
◊MT338	267A	-	XXXII	.562 (14.3)	
◊CMT338	267C	-	XXXII	.562 (14.3)	
◊MT339 ¹⁰	284A6	M641/3-7	XXVII	.967 (24.6)	
◊CMT339	384C6	-	XXVII	.967 (24.6)	
◊MT342B	246A	-	IV	.563 (14.3)	M642/5-1

MT-JAX (WITH WECO EQUIVALENT JACKS)²

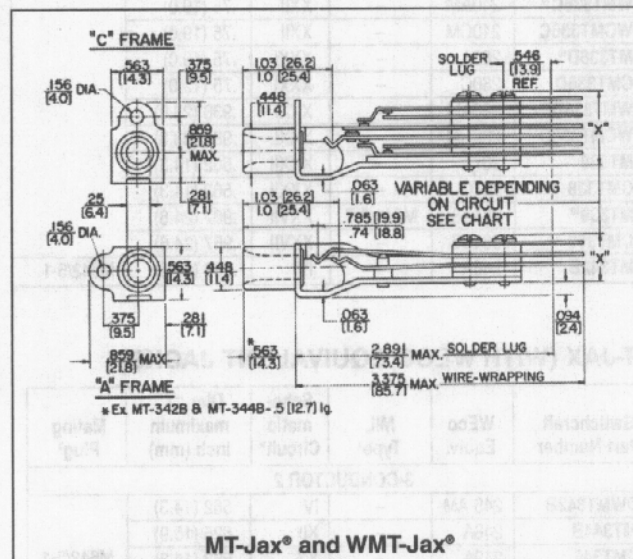
Switchcraft Part Number	WEco Equiv.	MIL Type ¹	Schematic Circuit ⁴	Dim. "X" maximum Inch (mm)	Mating Plug ³
3-CONDUCTOR 2					
◊WMT342B	246 AM	-	IV	.562 (14.3)	M642/5-1
MT344B	248A	-	XII	.625 (15.9)	
◊MT346	249A	-	XX	.562 (14.3)	
◊CMT346	249C	-	XX	.562 (14.3)	
◊MT354B	248E	-	XII	.625 (15.9)	M642/5-1 or M642/2-2
◊MT355 ¹⁰	243C	-	XXXV	.812 (20.6)10	
◊MT356C ¹⁰	245A	-	XXXVI	.938 (23.8)10	
◊CMT356C	245C	-	XXXVI	.938 (23.8)	
◊MT357 ¹⁰	363A	-	XXXVII	.75 (19.0)10	
◊CMT358	290C	-	XXXVIII	.875 (22.2)	
◊CMT359	326C	-	XXXIX	.75 (19.0)	

DIMENSIONS ARE FOR REFERENCE ONLY $\frac{\text{Inch}}{(\text{mm})}$

MT-JAX®

(Industry Standard – No WEco Equivalent)

Switchcraft Part Number	MIL Type ¹	Schematic Circuit ⁴	Dim. "X" maximum Inch (mm)	Mating Plug ²
2-CONDUCTOR³				
◊WMT332A	—	III	.5 (12.7)	M642/4-1 M642/4-2 or M642/4-3
◊WCMT332A	—	III	.5 (12.7)	
XMT332A	—	III	.5 (12.7)	
◊YMT332A	—	III	.5 (12.7)	
◊CMT332C	—	XVIII	.562 (14.3)	
◊WMT332C	—	XVIII	.5 (12.7)	
◊WMT333	—	V	.469 (11.9)	
◊WCMT333	—	V	.469 (11.9)	
◊MT333A	—	VI	.967 (24.6)	
◊WMT333E	—	IX	.625 (15.9)	
◊WMT334A	—	XI	.562 (14.3)	
◊WMT334C	—	XVII	.562 (14.3)	
◊WMT334E	—	XXV	.562 (14.3)	
◊WMT334F	—	XIX	.641 (16.3)	
◊WMT335 ¹⁰	—	XIII	.688 (17.5)	
◊WCMT335	—	XIII	.688 (17.5)	
MT335A ¹⁰	M641/2-2	XXVI	.75 (19.0)	
◊CMT335A	—	XXVI	.75 (19.0)	
◊WMT335A	—	XXVI	.75 (19.0)	
◊WCMT335A	—	XXVI	.75 (19.0)	
◊WMT336E ¹⁰	—	XXIII	.875 (22.2)	
◊WCMT336E	—	XXIII	.875 (22.2)	
◊CMT341	—	I	.438 (11.1)	



MT-JAX®

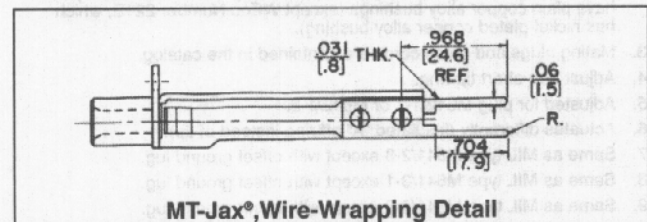
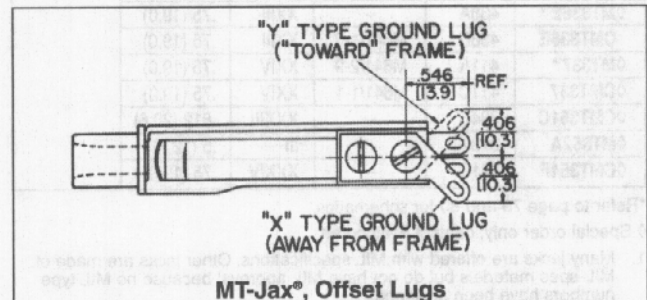
(Industry Standard – No WEco Equivalent)

Switchcraft Part Number	MIL Type ¹	Schematic Circuit*	Dim. "X" maximum Inch (mm)	Mating Plug ³
3-CONDUCTOR²				
XMT332B	—	IV	.562 (14.3)	M642/2-1 or M642/2-2
◊YMT332B	—	IV	.562 (14.3)	
◊CMT333B	—	VII	.562 (14.3)	
◊WMT333B	—	VII	.562 (14.3)	
XMT334B	—	XII	.562 (14.3)	
◊YMT334B ¹⁰	—	XII	.562 (14.3)	
◊WMT336B	—	XXI	.812 (20.6)	M642/5-1 or M642/2-2 ¹
◊WCMT336B	—	XXI	.812 (20.6)	
◊MT343B	—	VII	.5 (12.7)	
◊CMT342B	—	IV	.562 (14.3)	
◊CMT344B	—	XII	.625 (15.9)	
◊WMT344B	—	XII	.625 (15.9)	
◊MT346A ¹⁰	—	XIV	.688 (17.5)	M642/5-1 or M642/2-2 ¹
◊MT346B ¹⁰	—	XXI	.812 (20.6)	
◊MT346C ¹⁰	—	XXII	.688 (17.5)	
◊CMT346C	—	XXII	.688 (17.5)	

*Refer to pages 79 and 80.

♦ Special order only; contact Switchcraft.

1. Many jacks are offered with MIL specifications. Other jacks are made of MIL-spec materials but do not have MIL approval because no MIL type numbers have been assigned.
2. MT-Jax have nickel plated copper alloy bushing. WEco equiv. jacks have plain copper alloy bushings (except WEco No. 221E, which has nickel plated copper alloy bushing).
3. Mating plugs and patch cords are contained in this catalog.
7. Same as MIL type M641/2-3 except with offset ground lug.
8. Same as MIL type M641/3-1 except with offset ground lug.
9. Same as MIL type M641/3-2 except with offset ground lug.
10. When mounted on "A" frames, stacks are too high to fit in standard panes with .625" horizontal space add prefix "C" to part number to order jacks with "C" frame.



DIMENSIONS ARE FOR REFERENCE ONLY $\frac{\text{Inch}}{(\text{mm})}$