



Medical Interconnect Solutions

For MRI Scanners, Equipment, and MRI Body Coils

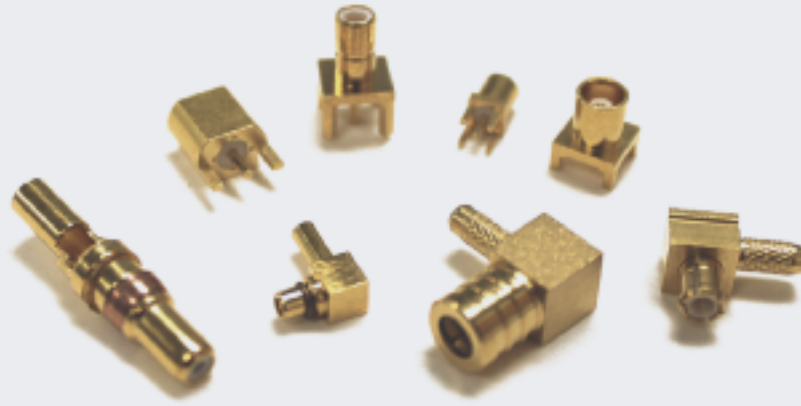


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To meet the demands of an evolving medical diagnostics market, The Phoenix Company of Chicago offers a series of Non-Magnetic Connectors and Cable Assemblies for MRI applications. MRI systems are very sensitive to magnetic interference, therefore, designers need to ensure connectors and cables do not interfere with image quality. Phoenix's Non-Magnetic products meet exacting requirements of increasing higher power applications (Tesla), allowing safe placement in or near the imaging area of diagnostic equipment.

Non-Magnetic RF Coaxial Contacts and Connectors



Designed to protect against image and magnetic field distortion in MRI equipment, Phoenix's non-magnetic standard line of RF Coaxial Contacts and Connectors provide the necessary immunity to ensure patients' scans are not compromised by outside magnetic distortions. Our connectors are manufactured under strict controls, dedicated tooling, and in special manufacturing/assembly environments ensuring ferromagnetic materials are not present during the manufacturing process.

Name	Series	Coupling	Frequency	Current Rating	Cable Groups (Custom Cables Available)	Axial Mating Tolerance	Housing
SMA (Brass)	22	Threaded	18 GHz	N/A	RG-141, 142, 174, 316	N/A	N/A
SMB	9	Snap-On	4 GHz	N/A	RG-174 & 316	N/A	N/A
MCX	13	Snap-On	6 GHz	N/A	RG-174, 316, 1.13mm	N/A	N/A
MMCX	33	Snap-On	6 GHz	N/A	RG-178, 316, 1.13mm	N/A	N/A
High Power Connectors (SMT Power)	PS	Snap-On	N/A	10-40 Amps	#20 - #8 Wire	N/A	N/A
N-Type	550	Clamp or Crimp	3 GHz	N/A	LMR400, 600, 900	N/A	N/A
HN	599	Clamp	1 GHz	N/A	LMR400	N/A	N/A
7/16	595	Clamp	3 GHz	N/A	LMR400, 600, 900, 1200	N/A	N/A
EIA 7/8	599	Clamp	1 GHz	N/A	LMR900 & 1200	N/A	N/A
33 Ω RF Contacts, Size 8	15	Slide-On	1 GHz	N/A	RG-174, 178, 316	N/A	D-Subs and Custom
50 Ω RF Contacts, Size 8	24	Slide-On	2 GHz	N/A	RG-178 & 316	N/A	D-Subs and Custom
75 Ω RF Contacts, Size 8	76	Slide-On	2 GHz	N/A	RG-179	N/A	D-Subs and Custom
50 Ω PkZ Blindmate RF Contacts, Size 8	26	Slide-On	32 GHz	N/A	RG-178 & 316	.090" Constant Impedance	D-Subs and Custom
50 Ω PkZ Blindmate RF Contacts, Size 12	56	Slide-On	40 GHz	N/A	RG-178 & 316	.070" Constant Impedance	High Density D-Subs, MIL-DTL-38999, & Custom
50 Ω PkZ Blindmate RF Contacts, Size 16	156	Slide-On	6 GHz	N/A	RG-178, 405 & 1.37mm	.050" Constant Impedance	Custom
50 Ω PkZ High Mating Cycle RF Contacts, Size 8	62	Slide-On	6 GHz	N/A	RG-178, 316, 1.13mm	.090" Constant Impedance	D-Subs, 4-Position Inserts, & Custom
High Power Contacts, Size 8	15	Slide-On	N/A	10-20 Amps	#16 - #8 Wire	N/A	D-Subs and Custom
High Power Contacts, Size 12	56	Slide-On	N/A	20 Amps	#16 - #12 Wire	N/A	High Density D-Subs, MIL-DTL-38999, & Custom

PkZ[®] Blindmate Constant Impedance RF Contacts

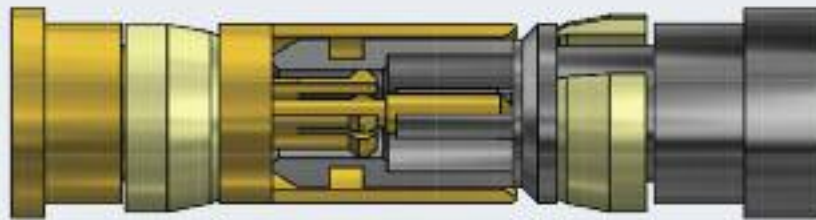
To accommodate large radial and axial misalignment tolerances found in modular applications, the Phoenix Company of Chicago's PkZ[®] RF Contacts offer an unmatched design; featuring **constant impedance** over a .090" axial mating tolerance - **the widest available among blindmate contacts**.

A common problem in modular applications is the tolerance stack-up in hardware that can prevent RF contacts from fully mating. The PkZ technology no longer requires full mating to achieve constant impedance, eliminating elaborate methods such as an internal spring to overcome mating gaps and guarantee full mating.

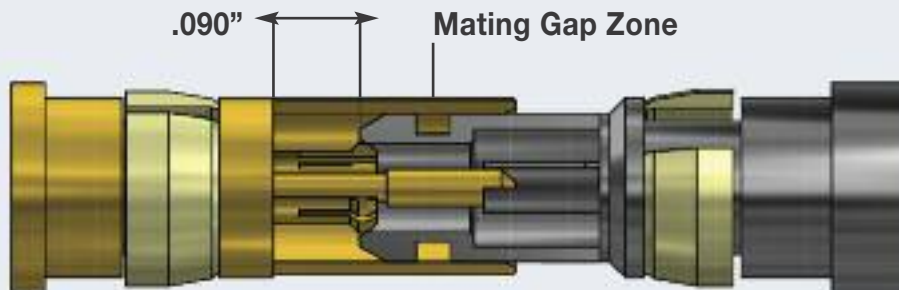
With low insertion forces and no internal engagement spring, the PkZ sets the standard for both **reliability** and **high performance**.

True 50Ω and 75Ω Constant Impedance Contacts

Widest mating tolerance available among blindmate contacts



Fully Mated



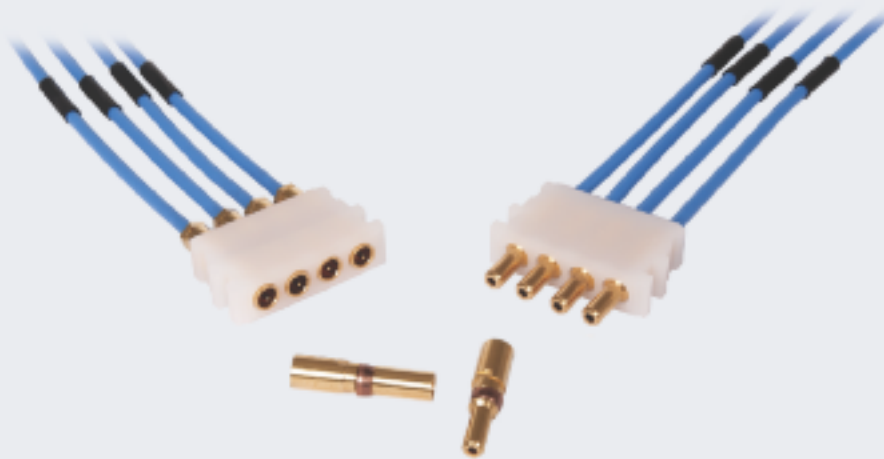
Partially Mated

- Axial mating tolerance: **Up to .090"**
- Very low insertion force per contact
- Constant impedance design eliminates the requirement for full mating
- High frequency contacts: **Up to 40 GHz**
- High mating cycle contacts: **Up to 60,000 cycles**
- Available in sizes **8, 12, and 16**

Non-Magnetic High Mating Cycle PkZ® RF Contacts

The Phoenix Company of Chicago has expanded its product capabilities to include non-magnetic high mating cycle contacts. These high mating cycle contacts are guaranteed to a minimum of **60,000 mating cycles** with no degradation in performance, and are specifically designed for MRI applications where frequent mating and unmating is required.

- **Size 8** PkZ® Blindmate RF Contacts for Combination D-Subs, Non-Magnetic D-Subs, Phoenix's 4-Position Inserts, and Custom Housings
- Rated to a minimum **60,000 mating cycles** with no degradation in performance
- Low insertion and extraction forces
- Snap-in feature allows for easy insertion and removal from housings
- Provides axial mating tolerance of .07" or .09" while maintaining a true 50 ohm impedance
- Modular and custom housings available in 4, 8, 16, and 32 position combinations. RF and Signal also available
- RoHS compliant
- Applications include: MRI Scanning Equipment, MRI Coils, and Diagnostic and Monitoring Systems in an MRI environment



Part Number	Gender	Housing	Configuration	Termination	Cable Group
62-0302-0290J	Plug	4-Position Inserts / Custom Housings	Straight	Solder/Clamp	Hirose 1.13mm
62-0302-0400J	Plug	4-Position Inserts / Custom Housings	Straight	Solder/Clamp	RG-178
62-0302-0670J	Plug	4-Position Inserts / Custom Housings	Straight	Solder/Clamp	RG-316
62-0802-0290J	Plug	4-Position Inserts / Custom Housings	Straight	Crimp/Clamp	Hirose 1.13mm
62-0802-0400J	Plug	4-Position Inserts / Custom Housings	Straight	Crimp/Clamp	RG-178
62-0802-0670J	Plug	4-Position Inserts / Custom Housings	Straight	Crimp/Clamp	RG-316
62-2450-63J	Plug	Custom Housings	Right Angle	PCB Through-Hole	N/A
62-1302-0290J	Receptacle	4-Position Inserts / Custom Housings	Straight	Solder/Clamp	Hirose 1.13mm
62-1302-0400J	Receptacle	4-Position Inserts / Custom Housings	Straight	Solder/Clamp	RG-178
62-1302-0670J	Receptacle	4-Position Inserts / Custom Housings	Straight	Solder/Clamp	RG-316
62-1802-0290J	Receptacle	4-Position Inserts / Custom Housings	Straight	Crimp/Clamp	Hirose 1.13mm
62-1802-0400J	Receptacle	4-Position Inserts / Custom Housings	Straight	Crimp/Clamp	RG-178
62-1802-0670J	Receptacle	4-Position Inserts / Custom Housings	Straight	Crimp/Clamp	RG-316
62-3450-63J	Receptacle	Custom Housings	Right Angle	PCB Through-Hole	N/A

Part Number	Description	Gender
PMC4W4P	High Mating Cycle, 4-Position Inserts, White	Plug
PMC4W4R	High Mating Cycle, 4-Position Inserts, White	Receptacle

Non-Magnetic High Density and Very High Density PkZ® RF Contacts

The Phoenix Company of Chicago offers a comprehensive line of non-magnetic high and very high density RF contacts. These contacts feature a small footprint and are designed to allow a large number of blindmate connections in tight spaces without sacrificing reliability, quality, or performance.



- Non-Magnetic **Size 12 PkZ®** measure **30% smaller** than size 8. **Size 16 PkZ®** is **43% smaller**
- Non-Magnetic **Size 16 PkZ®** Blindmate RF Contacts provide the lowest insertion and extraction forces in the industry
- RF Contacts offer .070" or .050" axial mating tolerance while maintaining constant true 50 ohm impedance
- Non-Magnetic High Density D-Subs offer up to 16 RF Contacts in a single standard D-Sub package. Combination High Density D-Subs also available; allowing for a variety of Coax, High Power, High Voltage, and Signal Contacts in a robust D-Sub package
- Custom housings also available to meet your design needs
- RoHS compliant

Part Number*	Gender	Housing	Configuration	Termination	Cable Group
56-0202-0400J	Plug	HD D-Sub	Straight	Direct Solder	RG-178
56-0202-0670J	Plug	HD D-Sub	Straight	Direct Solder	RG-316
56-0902-0400J	Plug	HD D-Sub	Straight	Crimp	RG-178
56-0902-0670J	Plug	HD D-Sub	Straight	Crimp	RG-316
56-1202-0400J	Receptacle	HD D-Sub	Straight	Direct Solder	RG-178
56-1202-0670J	Receptacle	HD D-Sub	Straight	Direct Solder	RG-316
56-1902-0400J	Receptacle	HD D-Sub	Straight	Crimp	RG-178
56-1902-0670J	Receptacle	HD D-Sub	Straight	Crimp	RG-316

*Size 12 Non-Magnetic High Density Blindmate RF Contacts. 1.13mm cable group available upon request.

Part Number	Description	Gender
NTRP3W36	HD D-Sub Housing, 3W3	Plug
NTRP10W106	HD D-Sub Housing, 10W10	Plug
NTRP16W166	HD D-Sub Housing, 16W16	Plug
NTRP28W86	HD D-Sub Housing, 28W8	Plug
NTRR3W36	HD D-Sub Housing, 3W3	Receptacle
NTRR10W106	HD D-Sub Housing, 10W10	Receptacle
NTRR16W166	HD D-Sub Housing, 16W16	Receptacle
NTRR28W86	HD D-Sub Housing, 28W8	Receptacle



Actual size shown.
Custom 16-Position Receptacle and 9-Position Plug.

Part Number*	Gender	Housing	Configuration	Termination	Cable Group
156-0202-0860J	Plug	Custom	Straight	Direct Solder	RG-405
156-0302-0470J	Plug	Custom	Straight	Solder/Clamp	M17/151 (S/R.047)
156-0902-0401J	Plug	Custom	Straight	Crimp/Clamp	Hirose 1.37mm
156-1202-0860J	Receptacle	Custom	Straight	Direct Solder	RG-405
156-1302-0470J	Receptacle	Custom	Straight	Solder/Clamp	M17/151 (S/R.047)
156-1902-0401J	Receptacle	Custom	Straight	Crimp/Clamp	Hirose 1.37mm

*Size 16 Non-Magnetic Very High Density Blindmate RF Contacts. RG-178 cable group available upon request.

MRI Transmission Cable Connectors

The Phoenix Company of Chicago manufactures non-magnetic connectors for MRI Transmission Cable Assemblies. Commonly used for the installation of MRI scanners in hospitals and clinics, Phoenix's non-magnetic connectors for MRI Transmission Cables are specifically designed to be installed with common wrenches, allowing easy and safe installations in the clinical environment.



Part Number	Connector Type	Gender	Configuration	Termination	Cable Type (LMR)
550-0500-3601S	N	Male	Straight	Clamp	900
550-0500-3801S	N	Male	Straight	Clamp	600
550-0700-3204S	N	Male	Straight	Clamp	400
550-0700-3801E	N	Male	Straight	Crimp	600
550-1700-3201S	N	Female	Straight	Crimp	400
550-1700-3801S	N	Female	Straight	Crimp	600
550-2700-3801S	N	Male	Right Angle	Crimp	600
595-0300-3200S	7/16 DIN	Male	Straight	Clamp	SFT-393
595-0300-3800E	7/16 DIN	Male	Straight	Clamp	600
595-0500-3101S	7/16 DIN	Male	Straight	Clamp	1200
595-0500-3601S	7/16 DIN	Male	Straight	Clamp	900
595-1300-3801S	7/16 DIN	Female	Straight	Clamp	600
595-1500-3201S	7/16 DIN	Female	Straight	Clamp	400
595-2300-3200E	7/16 DIN	Male	Right Angle	Clamp	SFT-393
595-2700-3801S	7/16 DIN	Male	Right Angle	Crimp	600
599-0500-3201S	HN	Male	Straight	Clamp	400
599-0700-3802E	HN	Male	Straight	Clamp	600
599-2500-3101S	EIA 7/8	Male	Right Angle	Clamp	1200
599-2500-3601S	EIA 7/8	Male	Right Angle	Clamp	900

Medical Cables and Assemblies

Medical systems require high performing products delivered through a responsive and cost-effective supply base. The Phoenix Company of Chicago helps its customers achieve these goals through expertise in connector design and assembly, matched by efficient cable assembly manufacturing practices. Whether our customers require a single molded cable design or a complex and proprietary chassis assembly, Phoenix's design and application specialists assist customers with connector and cable selections to optimize performance and cost. Our product capabilities extend to: **Overmolded Cable Assemblies, Wire Harnesses, and Flexible, Semi-Rigid, Conformable Coaxial Cable Assemblies.**



- Design and Application Services
- NPI Development
- Custom Design Capabilities
- Global Sourcing
- J-STD-001D Standards
- IPC/WHMA-620-A Standards
- ISO 13485:2003 Certified
- ISO 9001:2008 Certified



Worldwide Locations

With 3 global locations to serve its customers, The Phoenix Company of Chicago is positioned for growth and worldwide customer service. Phoenix began manufacturing quality RF connectors and cable assemblies in 1969. Since its inception, the company has added a design and manufacturing facility in Shanghai China to provide a near-source solution for the Asian market and an experienced international partner specializing in high mix/low volume products for the magnetic resonance and life sciences markets. Under the guidance of its parent company, The Shanghai facility adheres to a strict commitment of continuous improvement, dedication to customers, and determination to offer superior products and services; consistent in quality and competitive pricing.



Itasca, IL



Naugatuck, CT



Shanghai, China

