



# HYDRAULIC HOSES

**WE PERFORM  
UNDER  
PRESSURE**





# HYDRAULICS PRODUCTS OVERVIEW

Platform	Specifications	Gates Products	Options
Wire Braid Hoses	SAE 100R1 SAE 100R2 SAE 100R16 SAE 100R17 SAE 100R19 EN 857 Type 1SC EN 857 Type 2SC ISO 18752 (A, B, C, and D)  Gates Proprietary specs	G1, CR1 G2, CR2, M2T, G2L M2T, CM2T, Pro2T, MXT M3K,M3KH M4K, M4KH,M4KL EX1SC EX2SC, M2T, Pro2T IA1K, IA2K, IA3K, M3K (B), M4K (B), M3KH (C), M4KH (C), IC6K, EFG4K (D), EFG5K (D), ID5K G2XH, MXP,M6K, M5K,J2AT, Hot Oiler, RFS, MegaTech II, MegaTech 3000, MegaTech 1000, MegaTech 500, MegaTech 250,M500, MegaTechG5TB, TR500	XH XH MTF XTF, MTF XTF, MTF  M5K-XTF, M5K-MTF
Textile Hoses	SAE 100R4 SAE 100R5 SAE 100R6; EN 854 TYPE R6 SAE 100R3; EN 854 TYPE R3 SAE J844 Gates Proprietary specs	GMV, G4H C5C, C5CXH, C5D, C5E, C5M GTH G3H NABT RLA, RLC,LOL, LOC, MegaTech LOC	
Spiral Hoses	EN 856 Type 4SH/SP SAE 100R12 SAE 100R13 SAE 100R15 Gates Proprietary specs	4XH, 4XP EFG4K, EFG3K EFG5K EFG6K G8K	XTF XTF, MTF,EFG4KL MTF,EFG5KL MTF, EFG6KL
Specialty Hydraulics Hoses	SAE 100R14 SAE 100R7 SAE 100R8 SAE 100R18 AC hose	C14, C14CT TH7, TH7NC, TH7S, TH7DL,TH7NCDL TH8,TH8NC TH18 Polar Seal and Polar Seal II	
Couplings	Wire Braid Spiral Specialty	MegaCrimp G, GL,GLP, SS B Global Spiral GS, GSP, GSM, MGS, SS S PC, PCTS, Field Attachable : LOC, C1T, C2AT, C5, C5X, C5E, SureLok, C14	



## Constant Pressure. Continuous Innovation.

Gates delivers peak performance and flexibility to the hydraulic industry by integrating MegaSys® spiral-wire and wire-braid hoses with Gates coupling products for the ultimate hydraulic system.



### ■ Wire-Braid Hose

M3K, M4K, M5K, and M6K

- Braided high-tensile steel wire
- Nitrile tube for use with biodegradable hydraulic fluids
- Tested to industry-leading 600,000 cycles
- Temperature range -40° F to +212° F (-40° C to +100° C)
- Extreme temperature versions available
- Available with abrasion-resistant XtraTuff™ or MegaTuff® covers



### ■ Spiral-Wire Hose

EFG3K, EFG4K, EFG5K, EFG6K, and G8K

- Four to six alternating layers of spiraled, high tensile steel
- Nitrile tube for use with biodegradable hydraulic fluids (Chlorprene for G8K)
- Tested to industry-leading 1,000,000 impulse cycles
- Temperature range -40° F to 250° F (-40° C to +121° C)
- Extreme temperature versions available
- Available with abrasion-resistant MegaTuff cover





### Better Bend Radius = Less Hose Needed

The hydraulic industry is complex – extreme pressure, high risk and tough applications. While budgets are tightening, performance expectations are increasing. Is sacrificing production for perceived savings with lower performing products worth the risk?

- **We don't think so:**
  - **Challenge:** increase production by decreasing downtime due to hose failure.
  - **Solution:** convert assemblies to Gates MegaSys with MegaTuff cover.
  - **Bottom Line:** 37% reduction in downtime and 25% fewer hose failures.

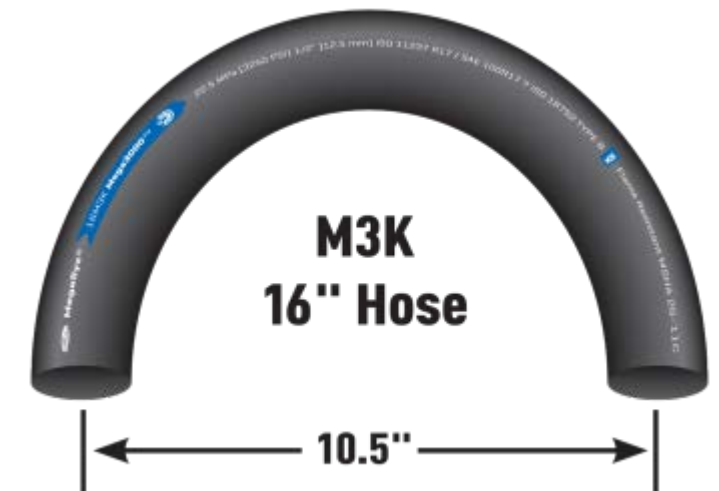
### BEND RADIUS

**Reduced 24-62%**



### PORT to PORT

**Reduced 21-58%**



### HOSE LENGTH **Reduced 24-60%**

**M3K HOSE 16"**



100R17 HOSE 21"

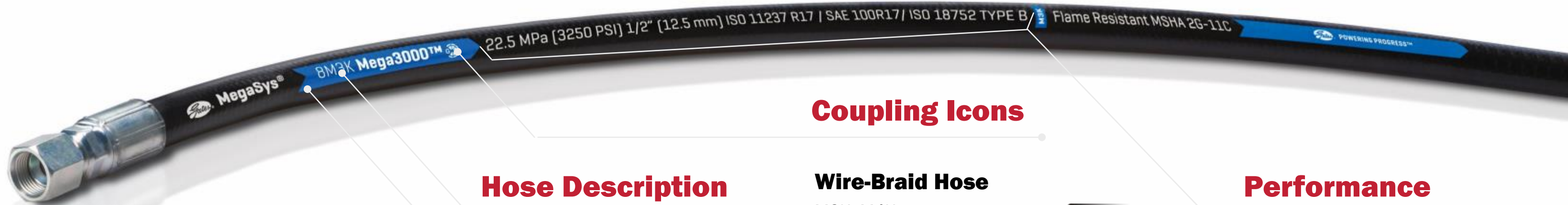


100R2 HOSE 40"





## HOW IT WORKS: Icons + Heat Map = Foolproof Identification




### Coupling Icons

#### Wire-Braid Hose

M3K, M4K,  
M5K, and M6K





 = MegaCrimp®


#### Spiral-Wire Hose

EFG3K, EFG4K,  
EFG5K, and G8K



 = GlobalSpiral™

 = GlobalSpiral Plus™

 = GlobalSpiral MAX Pressure

### Hose Description

**8** = I.D.

**M** = MegaSys

**3K** = 3,000 psi

### Performance Specifications

All Gates MegaSys hoses exceed SAE, EN, and ISO performance requirements.



### Hose Pressure Color Key

Distinctive pressure-rating color coding make MegaSys hoses easy to identify in stock and in service.

3,000 PSI M3K/EFG3K	4,000 PSI M4K/EFG4K	5,000 PSI M5K/EFG5K	6,000 PSI M6K/EFG6K	8,000 PSI G8K/EFG8K
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## Protect Your Investment

Nothing is harder on hydraulic hose covers than constant abrasion. Rubbed against metal or other hose, most standard hydraulic hoses – even ones with spring guards or nylon sleeving – can't take the punishment. There's no industry standard for hose cover performance. Historically, Gates leads the pack in establishing engineering specs, and hose covers are no exception.

- **MegaTuff®**

Gates MegaTuff hoses are exceptionally resistant to abrasion. The specially bonded cover stays put and won't peel as some competitive hose covers do.

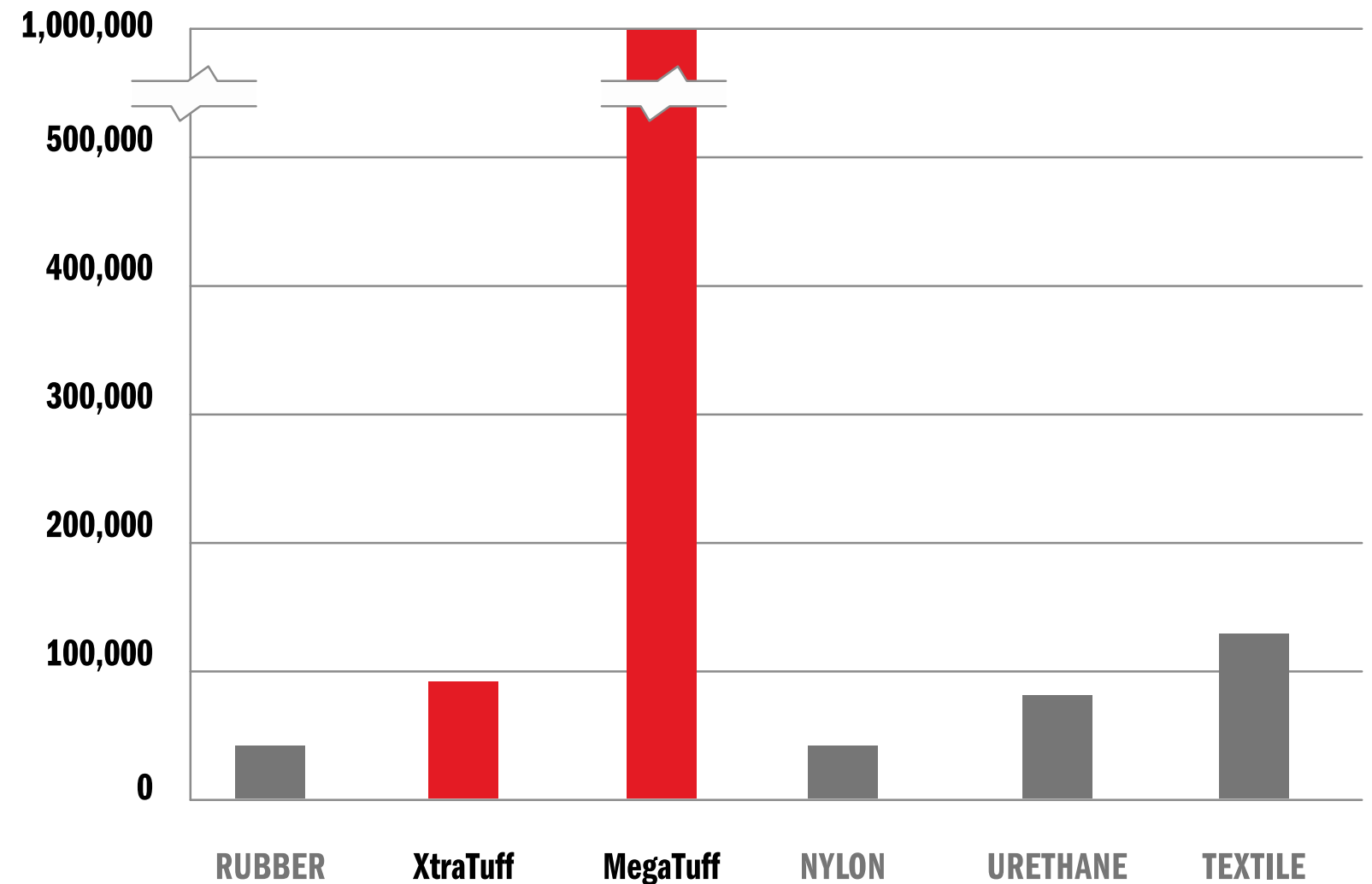
- Maintain their flexibility and minimum bend radius
- Resistant to oil, ozone and UV rays
- Tested to 1,000,000 impulse cycles without failure

- **XtraTuff®**

Made of special hybrid compounds, Gates XtraTuff covers are versatile, flexible and easy to manage.

- Increasing service life
- Lowering maintenance
- Eliminating the need for costly hose protectors

## ABRASION TESTING





# MEGASYS® TESTING + QUALIFICATION

## Gates Takes Standards a Step Further

SAE Specification Requirements		GATES MegaSys Testing Requirements	
100R16	133% of WP 200,000 Cycles	M2T	133% of WP 600,000 Cycles
100R17	133% of 3000 PSI WP 200,000 Cycles	M3K	133% of 3250 PSI WP 600,000 Cycles
100R19	133% of WP 200,000 Cycles	M4K	133% of WP 600,000 Cycles
100R12	133% of WP 500,000 Cycles	EFG4K	133% of WP 1,000,000 Cycles
100R13	120% of WP 500,000 Cycles	EFG5K	133% of WP 1,000,000 Cycles
100R15	120% of WP 500,000 Cycles	EFG6K	120% of WP 1,000,000 Cycles





## Judge Us by Our Cover.

Gates engineered the first sleeving system to protect operators, equipment and the environment from the hazards of catastrophic hose failure.



Creates channels in which fluid flows as a visual indicator of leak

Controls pinhole leaks up to 5000 PSI at 250°F for up to 5 minutes

Inner nylon layers control the sudden pressure of hydraulic bursts and pinhole leaks

Contains bursts up to 10,000 PSI (68.9 MPA)





# COUPLINGS AND CRIMPERS

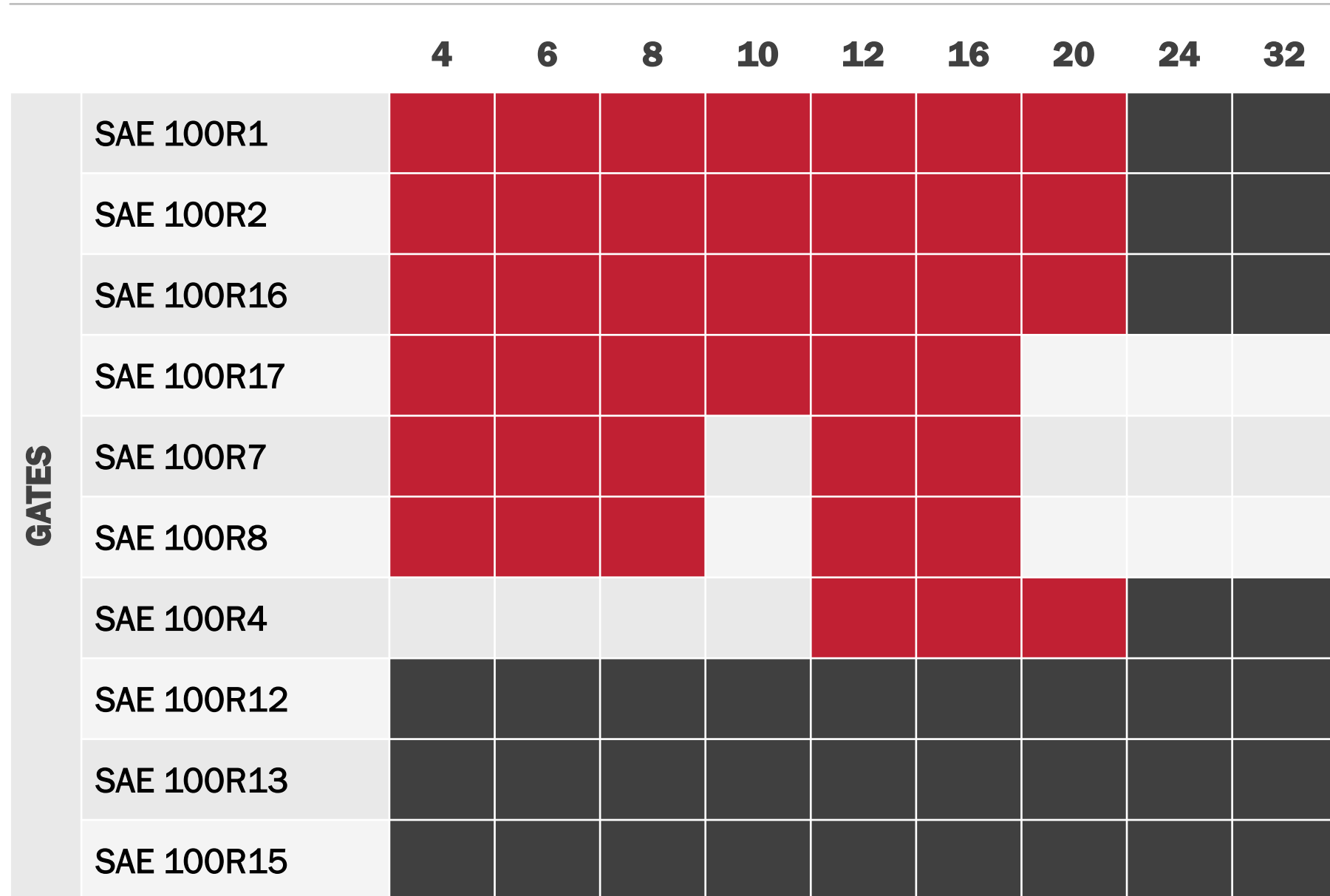




# COUPLINGS

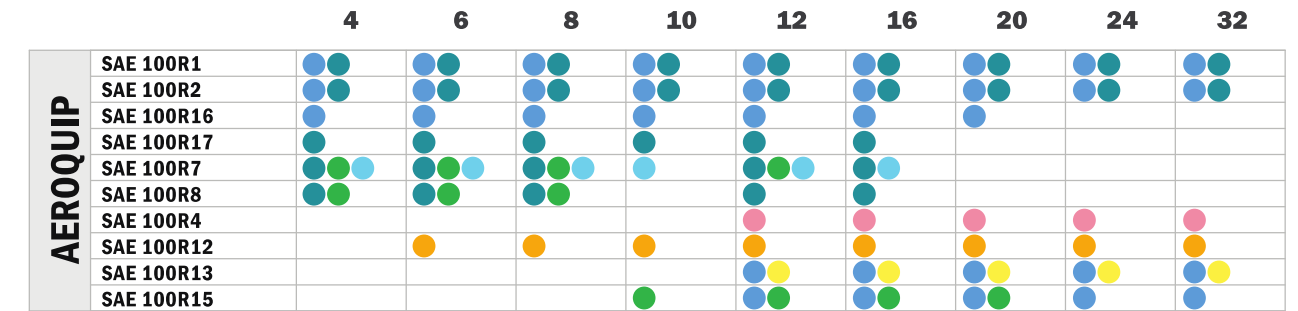
## Two Families. Complete Coverage.

- Gates MegaCrimp
- Gates GlobalSpiral



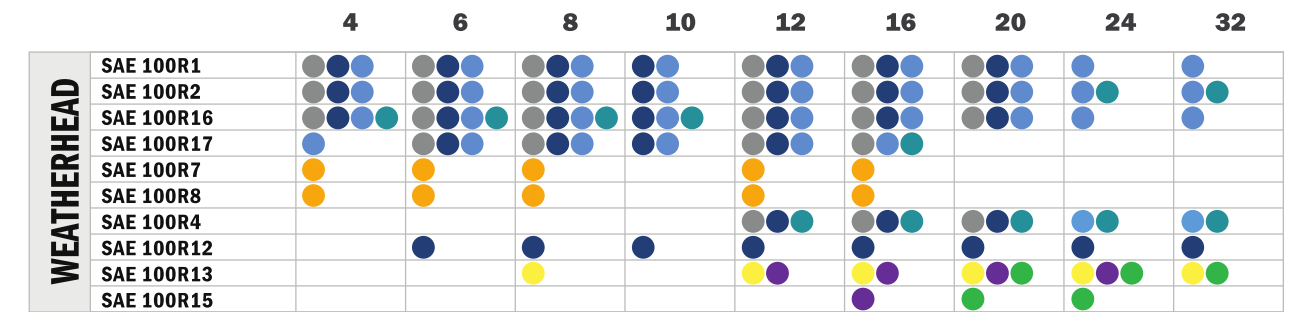
## 7 Coupling Families.

- SKIVE NIPPLE
- TTC
- CONTACT EATON
- TTC12
- SPIRAL TTC
- POLYON
- OTC



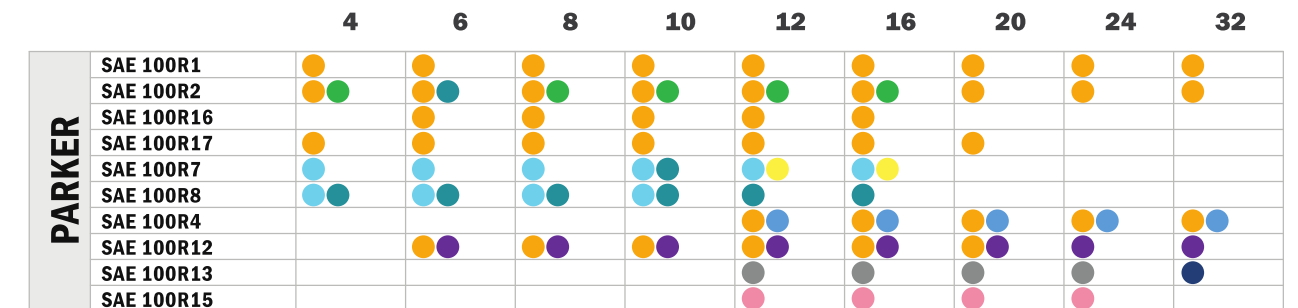
## 8 Coupling Families.

- S
- Z
- E
- WT 4SP
- U
- 430 U
- 470 E
- WT 6SP



## 10 Coupling Families.

- 43
- HY
- 58
- 88
- 78
- 79
- 55
- 51
- 71
- S6





## Gates Global Spiral

- Qualified on all spiral and select wire braid hose
- 2-piece coupling
- Solid stem design

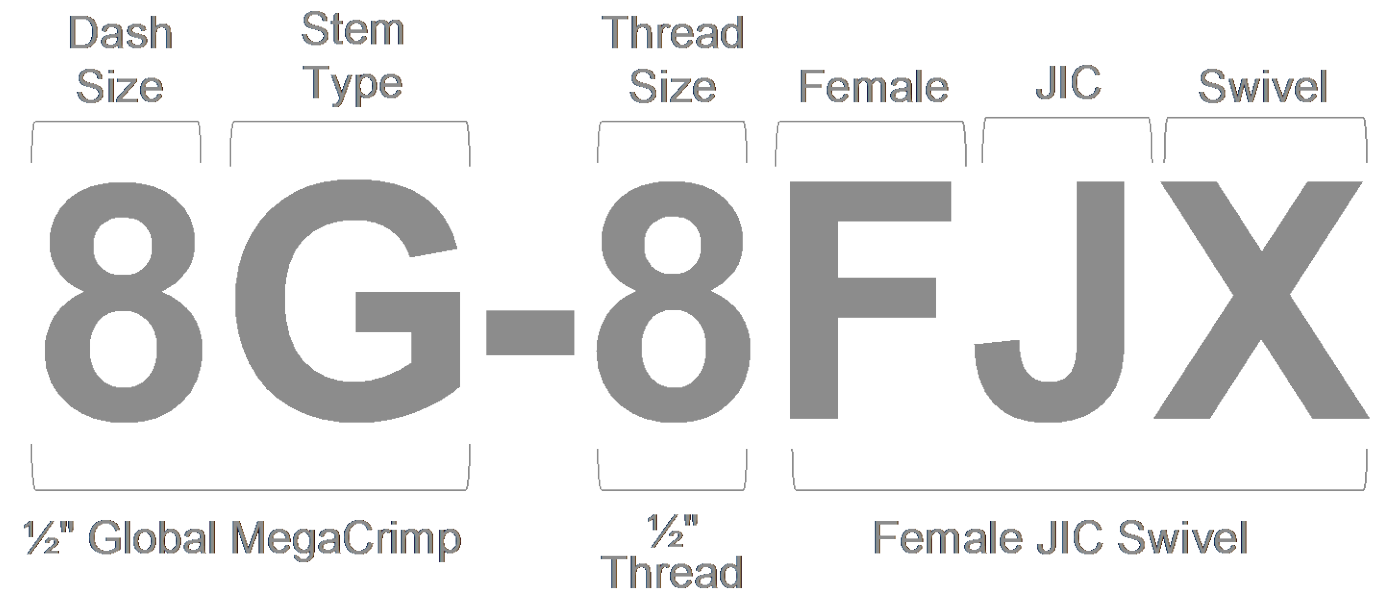
### "Bite-the-wire" Full-Torque Nut

- Qualified on wire-braid hose
- Guaranteed to 1M impulse cycles
- Crimped to the world's best hoses
- TuffCoat™ plating standard
- Full insertion indication
- Low insertion force
- No skive

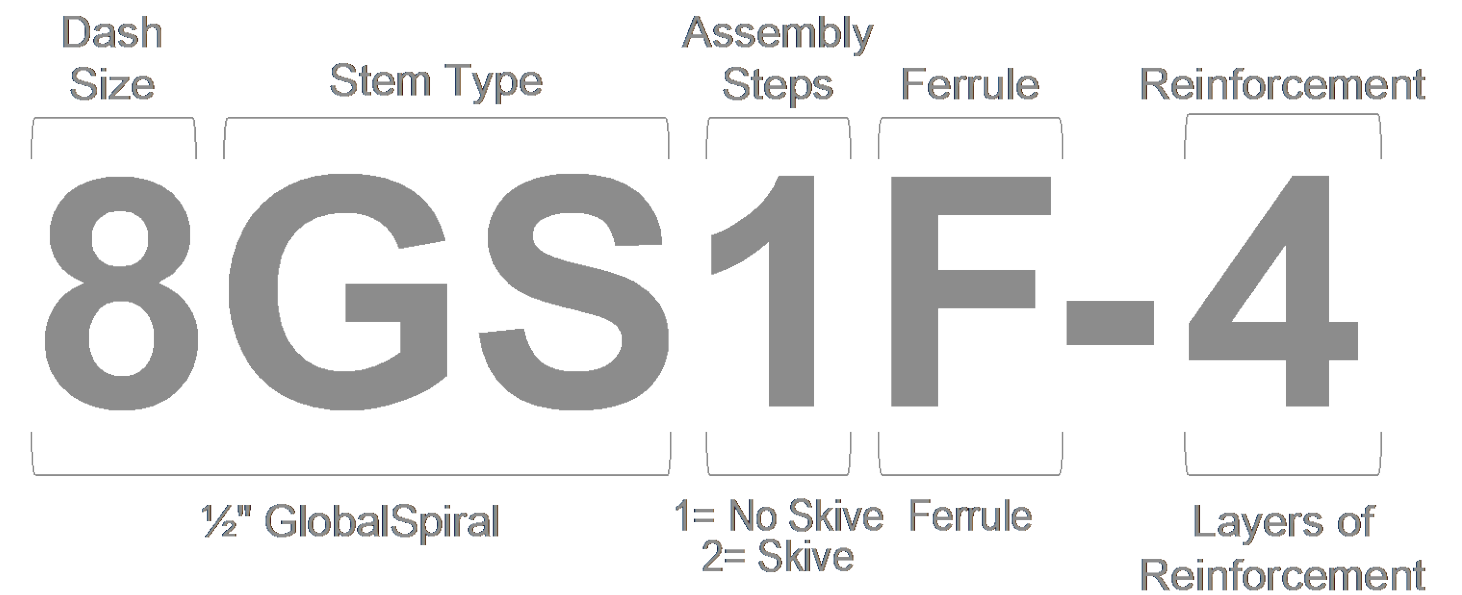
## Gates MegaCrimp

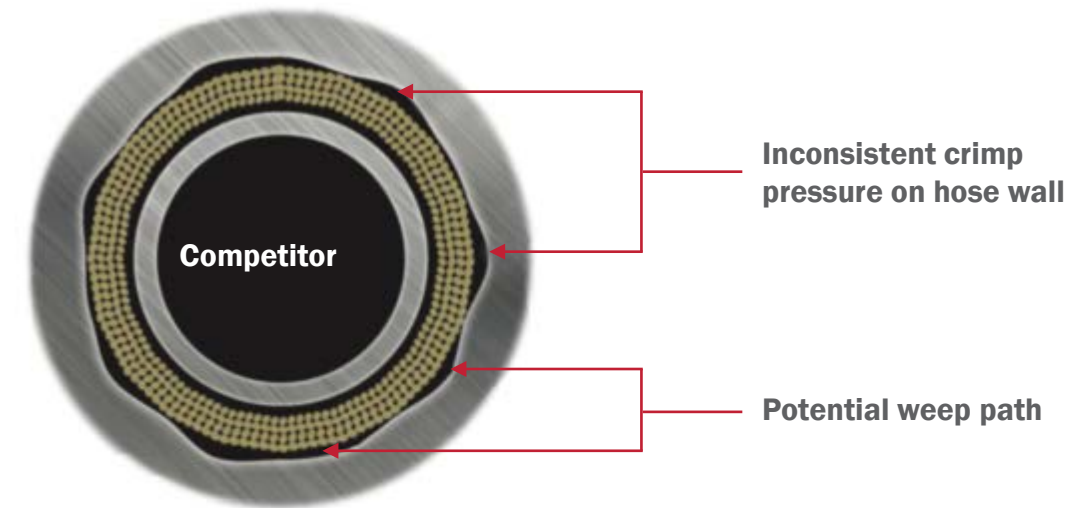
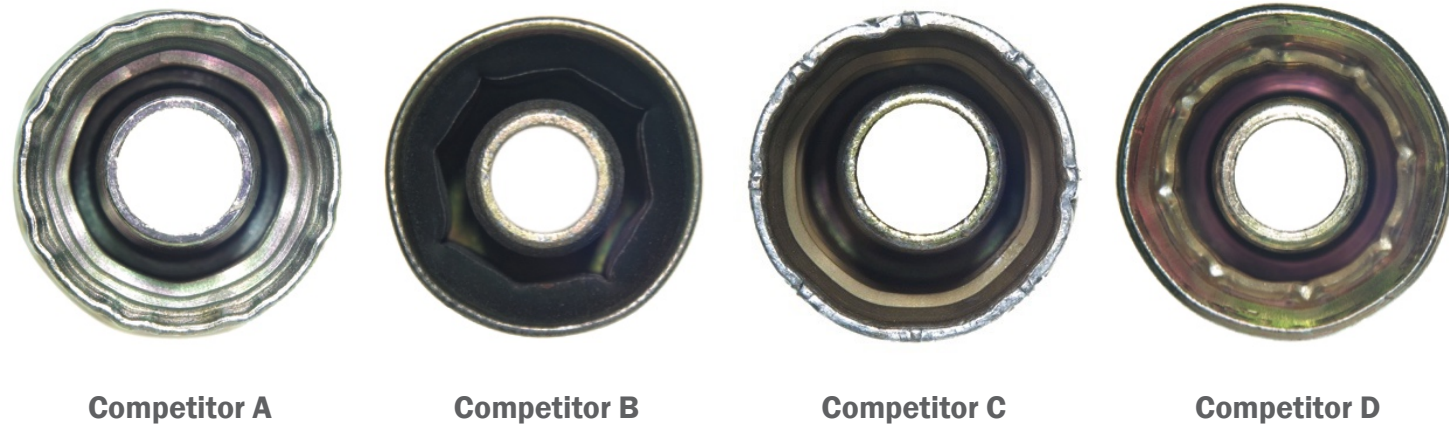
- Qualified on all wire braid hose
- 1-piece coupling
- Weep-free C-insert

## COUPLING OR STEM IDENTIFICATION



## FERRULE IDENTIFICATION





## SIMPLICITY AND VERSATILITY

- Crimps on all wire-braid hose
- "Bite-the-wire"
- Easy insertion
- TuffCoat™ plating
- Fully integrated with Gates MegaSys® hose



**SOLUTIONS FOR:** All markets and wire-braid applications where leak reduction, productivity and safety are critical.



## GATES DESIGN

## IMPACT

### No braze/weld joints

- Increases safety factor + burst ratios
- High pressure capability
- Eliminates flange head separation + premature tube failure

### Tapered flange head

- Increases stress resistance
- Better vibration resistance + reliability

### Easily adapts to flange ports

- Better stress resistance
- Easier to install assemblies
- Reduces replacement cost
- More design flexibility

### Thicker tube walls

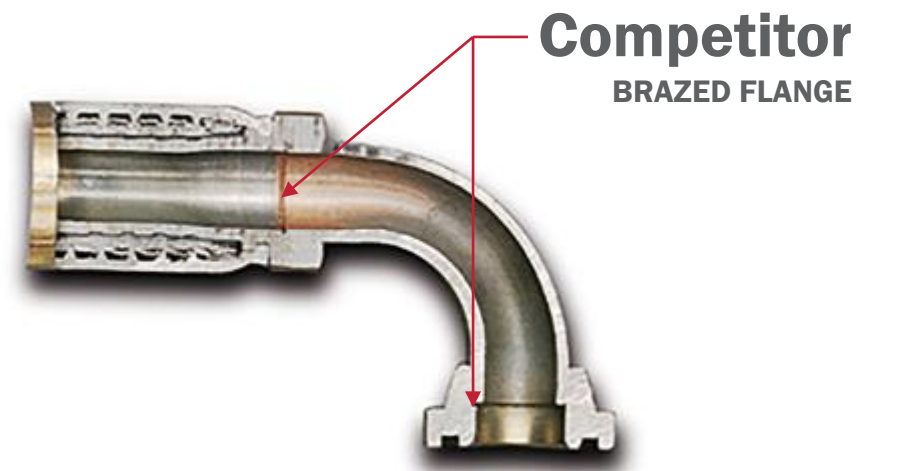
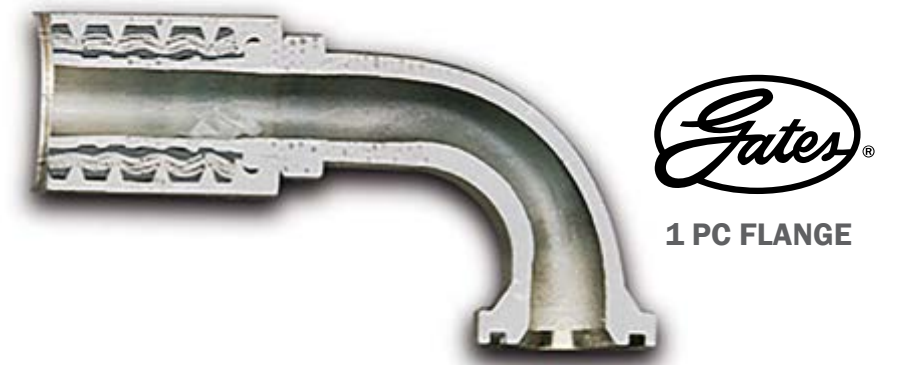
- Eliminates possible leak points
- Better vibration resistance

### Premium lead-free steel

- Improves flexing impulse performance

### TuffCoat™ plating

- More than 3x better corrosion resistance than SAE ASTMB117



**SOLUTIONS FOR:** Extremely high-pressure applications in industries where high-productivity and safety are critical.



## GATES DESIGN

## IMPACT

**One stem for all wire-braid + spiral hoses**

- Simplifies inventory – 6 ferrules do the job of 143 couplings

**Simple, no-skive installation**

- Fast, secure assemblies

**"Bite-the-wire" crimp**

- Improves coupling retention
- Enhances blow-off prevention

**Full-Torque Nut™ technology**

- Eliminates damaged couplings + leaks due to over-torqueing

**Tested up to 1M impulse cycles + 4x working pressure**

- Long coupling life



**96% fewer SKUs**

**90% less cost**

**88% less weight  
on the shelf**

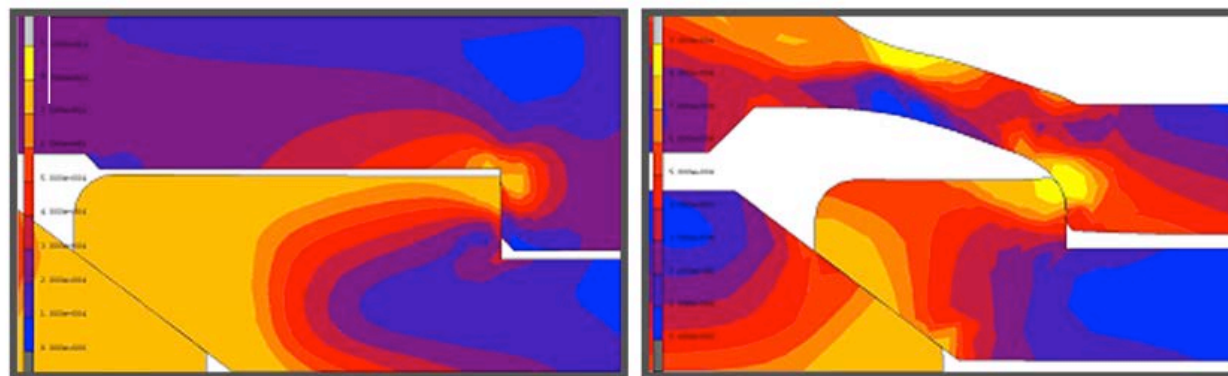


**SOLUTIONS FOR:** Applications and industries where SKU rationalization is needed.

## OVER-TORQUE PROTECTION STANDARD ON MEGACRIMP + GLOBALSPIRAL COUPLINGS

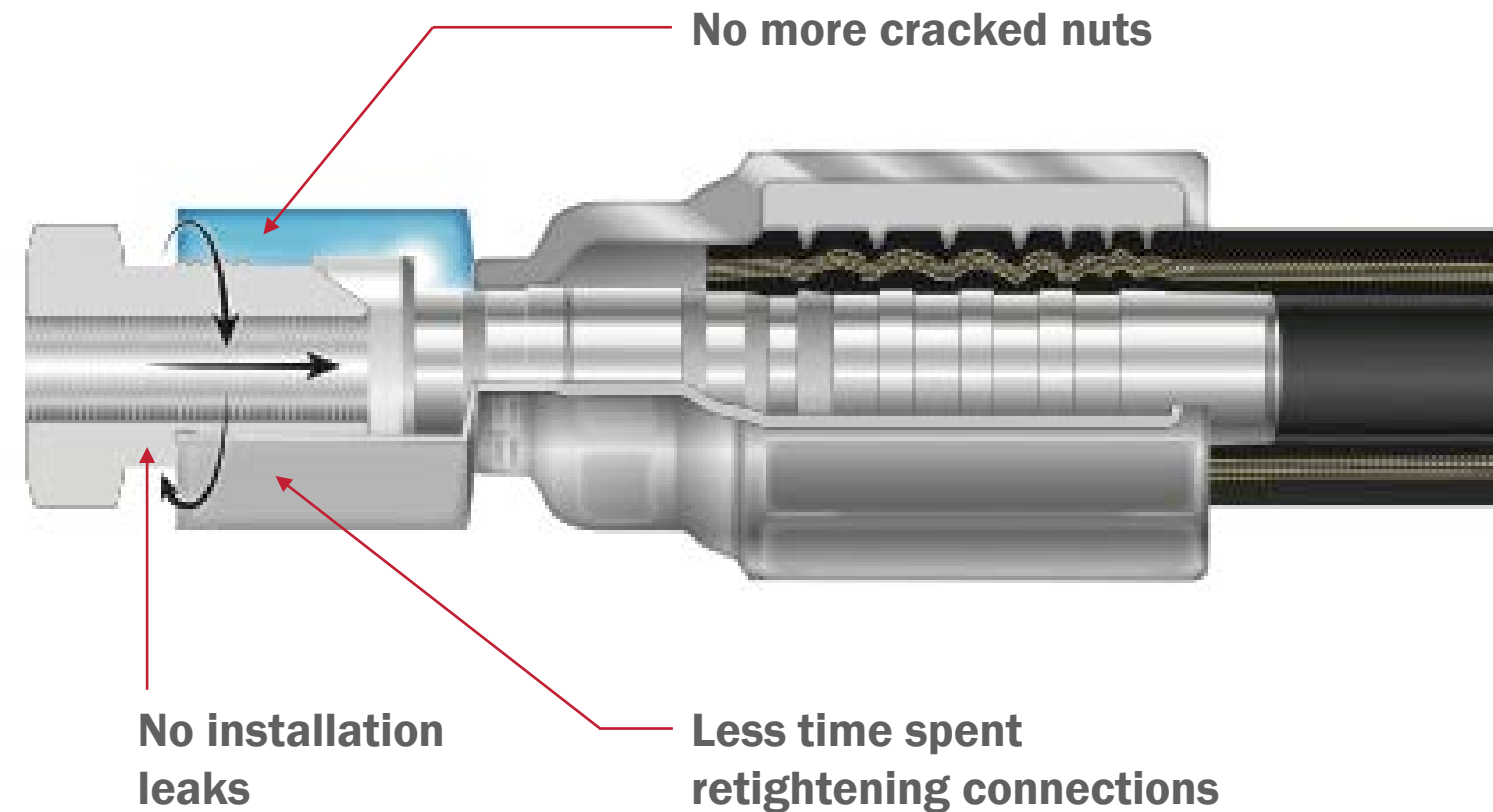
- Large holding shoulder evenly distributes stress forces
- Higher resistance against cracking, even when inadvertently over-torqued
- Less sensitive to material and processing flaws
- More consistent transfer of input-torque to clamp-load results in fewer leaks

### Stress Analysis



Full Torque Full Back Nut

Industry Staked Nut



**SOLUTIONS FOR:** Applications where the elimination of leaks, contamination and/or hazards is critical.



## PROTECT YOUR INVESTMENT

- Just as hoses need a rubber cover to protect the metal reinforcement, hydraulic couplings need plating to prevent deterioration of the metal
- When fittings rust, the base metal is eaten away by oxidation, eventually damaging the hydraulic system

**Gates TuffCoat Xtreme offers 840 hours of red rust corrosion resistance, more than 580% longer than the new 144-hour SAE industry standard**

**GATES TuffCoat**

**Competitor**



**GATES TuffCoat**

**Competitor**



**SOLUTIONS FOR:** Applications such as Ag sprayers, salt sprayers and other equipment that requires exceptional corrosion resistance.

## REDUCING CRIMPER COMPLEXITY

- Automatically converts any 208 - 258 VAC single phase 50/60 HZ electrical input to 208 - 258 VAC 3-phase 50/60 HZ
- Touch-screen interface offers advanced functionality and links to Gates eCrimp data, training and maintenance
- Opens automatically when correct O.D. is achieved
- Infinitely adjustable compared to competitive units with positive stop only
- Color-coded die sets are easy to find in crimp data and in the rack
- Rear facing camera projects on tablet to ensure proper crimping
- Self-lubricating head reduces maintenance time
- Requires fewer die sets than competitive crimpers



## COMPETITOR



**SOLUTIONS FOR:** Applications where the elimination of leaks, contamination and/or hazards is critical.



## PERFORMANCE AND PORTABILITY COMBINED

Crimping at remote job sites requires a durable yet user-friendly crimper. Weighing only 44 pounds, this crimper can be used anywhere. The Gates Mini Crimper and pump combine the performance and speed of a powered pump with the convenience of a hand pump.

- **Unmatched portability and speed with 10,000 psi battery-operated pump**
- **Cordless, lightweight design with integrated handle and carrying strap**
- **1/2 horsepower motor and 28 volt Lithium-Ion battery**
- **High-strength fiberglass reinforced composite pump shroud for superior durability**
- **1" 2-wire and 1/2" 4-wire capability**
- **User-friendly horizontal loading for crimping in the field**
- **80 ton crimp force**



## SIMPLE. FAST. SAFE.

- Requires no tools
- Disconnects in 2 minutes or less
- 4:1 burst factor
- Impulse tested to 133% of maximum working pressure for 1M cycles



**SOLUTIONS FOR:** Hydraulic applications where hand-torqued, tool-free, quick connection/disconnection is desired.

Assuming 20 miners disconnecting 560 hydraulic hose assemblies



## FAST. EASY. SAFE

- Increased assembly line production
- Eliminate leaks and emissions
- Lower total cost of ownership
- Error-Proof installation
- Easy to service, no special tools to lose
- Ideal for OEMs to increase line productivity



**Quick-Lok threadless couplings are pushed into place quickly and simply by hand.**





# TECHNICAL EXPERTISE + SUPPORT

ENGINEERS LIKE TO  
SOLVE PROBLEMS.  
OURS ARE GREAT AT IT.





## Everything you need to optimize your designs:

From in-person to online, manuals to software, GatesDesignCenter.com is the one resource you need to start, evaluate or finalize your designs.



Field Engineers



Product Application Engineers



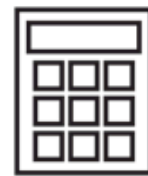
Live Forums



Hose Advisor Program



Fluid Power YouTube Channel



Calculators



Design Connect™ Software



Case Studies + White Papers



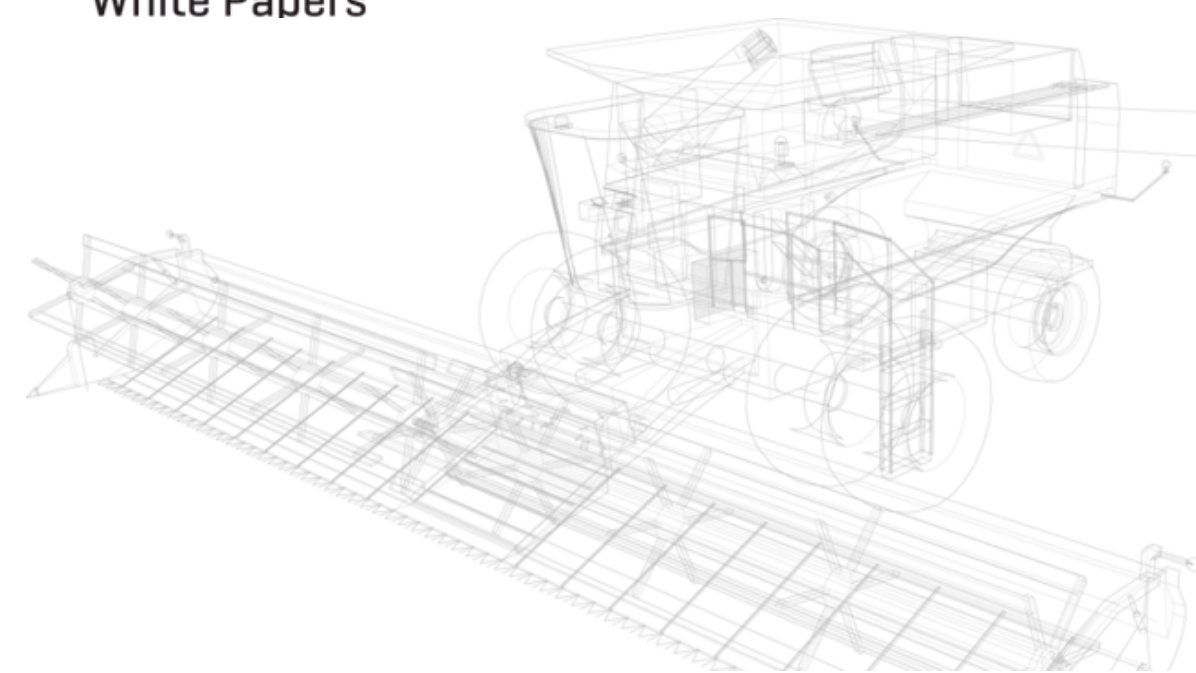
eCrimp™ Mobile App



Hydraulic Catalog

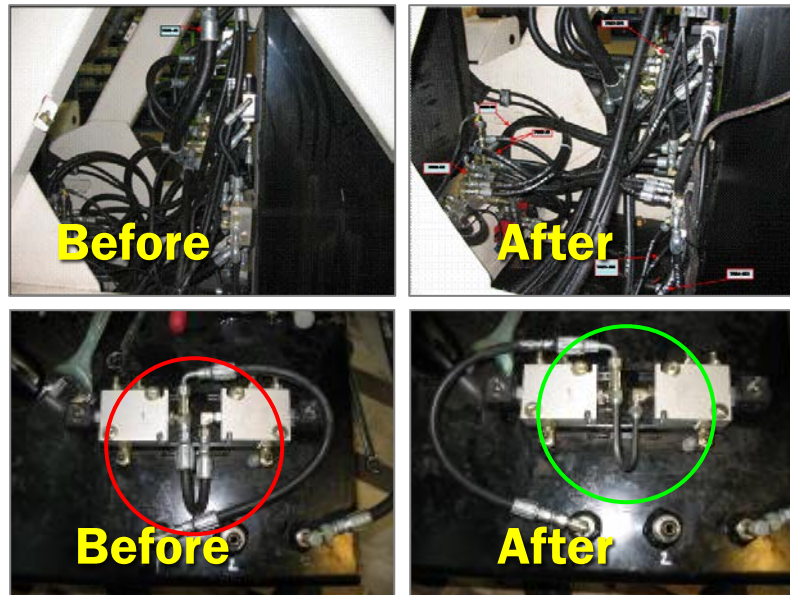


Quick-Pic™ + AIM™

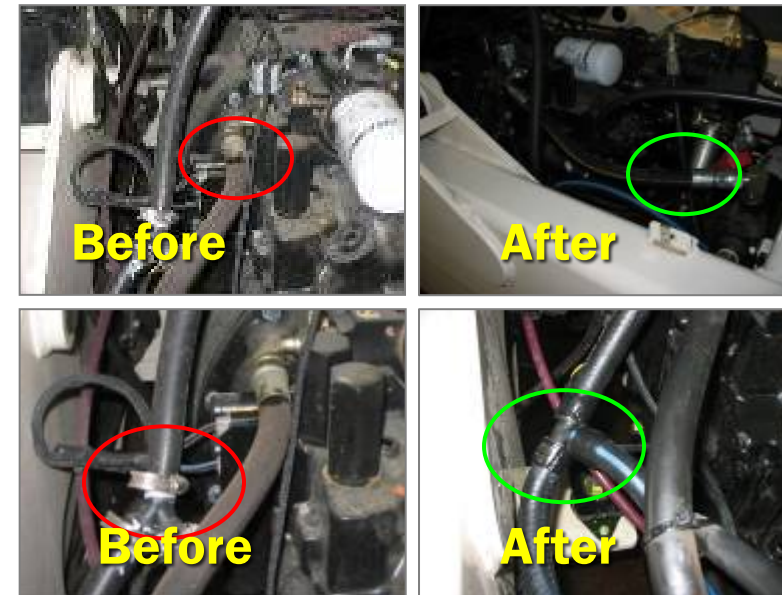


## Hose Assembly Routing

(Ease of Assembly, Customer Perception, Serviceability)



## Best Product Selection

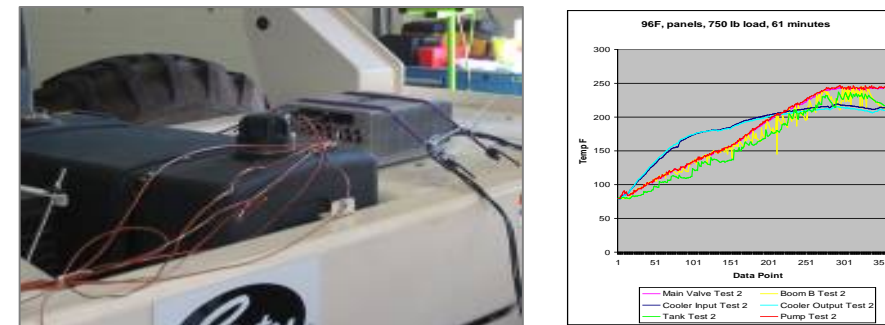


## Leak-Free Quick-Lok in Problem Areas

(Difficult to Install, Re-work or Service)



## Heat and Flow Analysis







Hands on, intensive workshops leverage your experience, leaving you with a comprehensive understanding of Gates fluid power products.

Participants who complete the Hydraulic and Industrial Hose classes are eligible to take the Gates Fluid Power Level 1 certification exam.



Staffed by expert engineers, scientists and technicians and outfitted with tools to put any hose assembly or prototype to the test, the Customer Solutions Center is the heart of Gates engineering.

In state-of-the-art labs with specialized equipment, Gates fluid power experts lead the industry in product research, development, testing and training.

Gates engineers use Value Engineering/Value Analysis (VE/VA) to identify and eliminate unnecessary cost, while maintaining or increasing functionality.



## SIMPLICITY

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- Mitigate risk with products that are easy-to-decipher and don't clog shelves with inventory.
- Shorten the learning curve with intuitive nomenclature.
- Quickly resolve requests with proven solutions that work.

## PRODUCT PERFORMANCE

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- Superior products meet or exceed industry standards.
- Robust engineering instills confidence and security.
- Focus on the entire system solution instead of individual components only drives long-term quality and performance.
- Value comes in many forms – reduced downtime, increased production, better performing systems, smarter investments, lower cost of ownership.

## TECHNICAL EXPERTISE + SUPPORT

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- We set the bar for most industry specs, engineering products that drive our industry.
- The magic doesn't just happen behinds the scenes – we will evaluate and optimize your designs onsite, over the phone or in our facility.
- Protect your people, plants and profits with free safety programs.



**THANK YOU**

