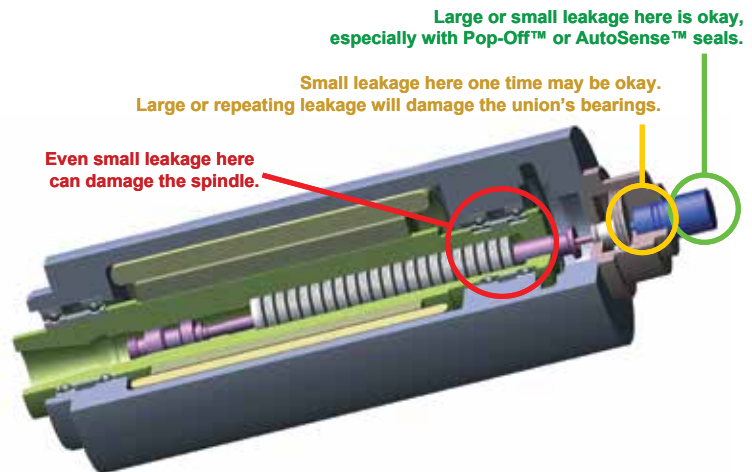


Introducing the new, patented SpindleShield™ Alert System that prevents expensive spindle failures by alerting the operator. Used in conjunction with Deublin's patented Pop-Off™ unions with AutoSense™ seal technology, and the SpindleShield™ Operation System, the SpindleShield™ Alert System can eliminate damage and downtime of machining centers, while maximizing productivity. The new system can be retrofitted to all types of machining centers.

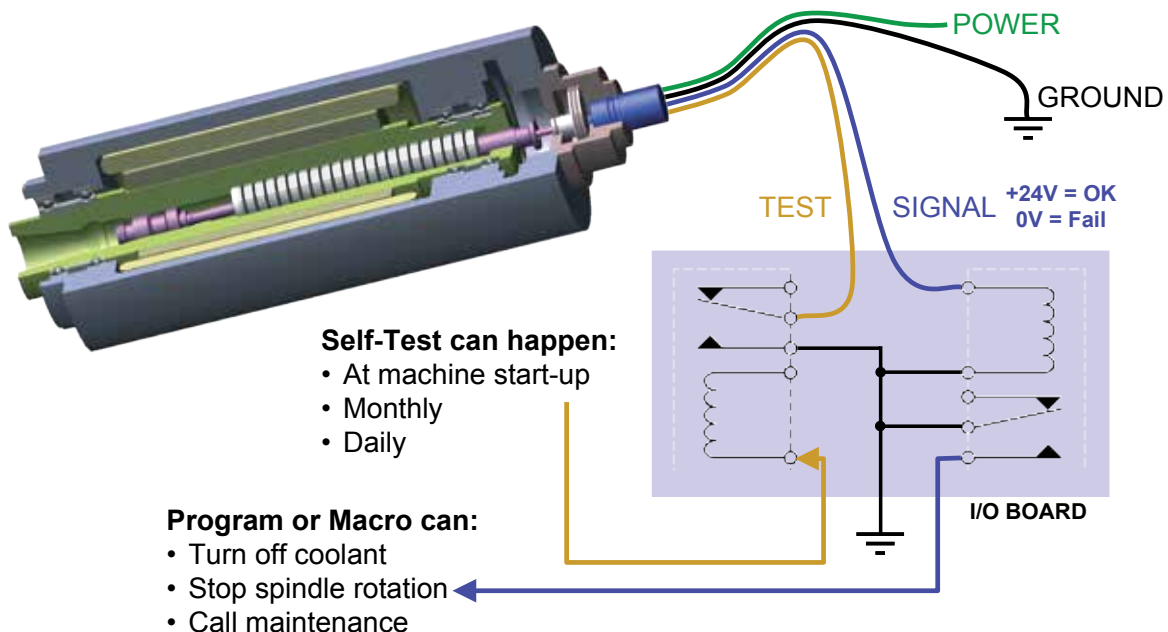
## HOW IT WORKS

Ordinary leak-detection systems check for liquids in the area around the seals, or in the drain line. For this to work, the seals always must be closed, which means faster seal wear and higher operating temperatures during dry running. Even with closed seals, "normal" leakage is never zero because a thin film of media lubricates the seal faces. Therefore, the system designer must make a guess about how much leakage is too much.

SpindleShield™ instead considers the location of any leakage. In other words, SpindleShield™ detects leakage due to excessive seal wear, as well as flooding due to drainage problems.



## HOW TO CONNECT SPINDLESHIELD™ TO YOUR MACHINE



WIRE	OPERATING STATUS				
	Normal (No Leak)	Leak Detected	Broken Signal Wire	Broken Power Wire	Test Mode
SIGNAL	+24 VDC	0 VDC	0 VDC	0 VDC	0 VDC
POWER	+24 VDC	+24 VDC	+24 VDC	Not Connected	+24 VDC
GROUND	GND	GND	GND	Not Connected	GND
TEST	Not Connected	Not Connected	Not Connected	Not Connected	GND

# 1103 Series Bore-Mounted Pop-Off™ with SpindleShield™ Alert System

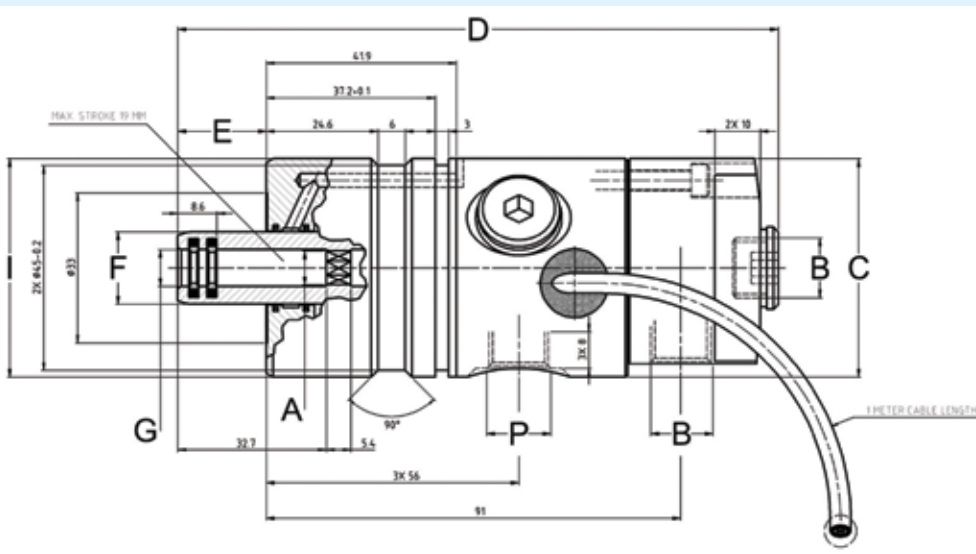
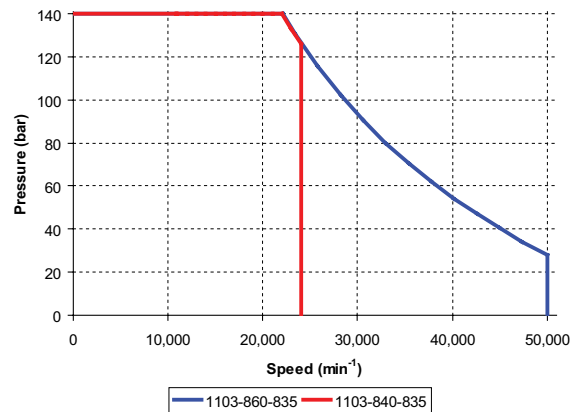


## Operating Data

Media:	Water-based coolant	
	MQL (oil mist) up to 10 bar (135 psi)	
Filtration:	ISO 4406 Class 17/15/12, max. 60 micron	
Maximum Speed:	24,000 min <sup>-1</sup>	24,000 rpm
Maximum Pressure:	140 bar	2,030 psi
Max. Coolant Flow:	24.3 L/min	6.4 gpm
Max. Temperature:	71°C	160°F

## Features

- Patented SpindleShield™ Alert system reliably prevents expensive spindle failures by warning the machine of leakage due to excessive seal wear.
- Patented Pop Off™ technology allows unlimited dry running without media pressure.
- Full-flow design has no obstructions to trap chips or debris.
- Balanced mechanical seals from silicon carbide give long life even with difficult operating conditions.
- Anodized aluminum and stainless steel housing resists corrosion.



**NO AIR PRESSURE WITH ROTATION**



	Ordering Number	B Supply Connection	C Overall Diameter	D Housing Length	P Vent Size (3 x 120°)	A Rotor Connection	E Rotor Length	F Rotor O.D.	G Bore Diameter	I Housing Pilot Ø	Max Speed (RPM)	Max Pressure (bar)
Dual	1103-840-835	G 1/4"	48 g6	112	G 1/4"	Octagon 7.4 D10	19.5	15.9	8.1 F9	48 g6	24,000	140
	1103-860-835	G 1/4"	48 g6	112	G 1/4"	Octagon 7.4 D10	19.5	15.9	8.1 F9	48 g6	50,000	140
	1103-097-212	G 1/4"	54	105	G 1/4"	M16x1.5 LH	30	Hex 24	9	N/A	20,000	140



## Features

- Visible alert when the coolant union should be replaced, in time to avert coolant entering the spindle.
- Visible notification that system is powered on.
- Sensing function of the union may be tested manually at any time.
- Attaches magnetically to machine, for easy installation near the CNC or other visible location.
- Easy electrical connection to machine power (24VDC) and ground.
- Industrial-grade components and powder-coated housing.

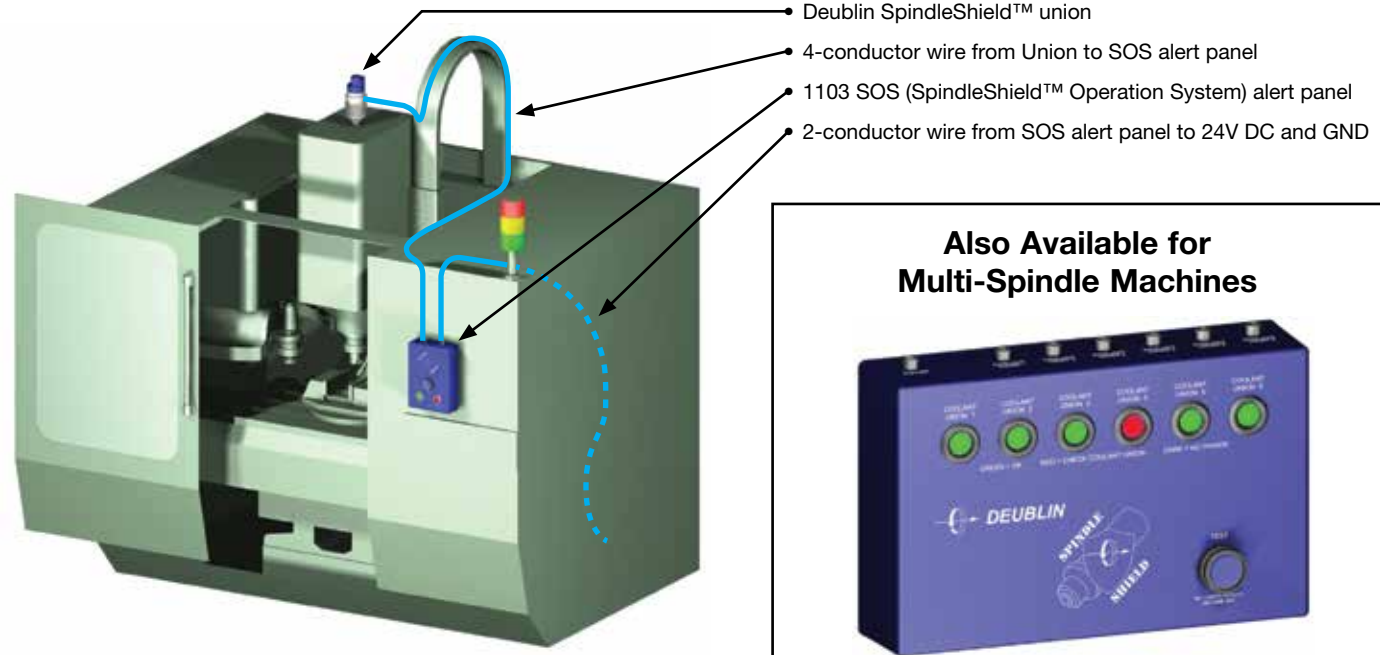


Power On



Check Coolant Union

## EXAMPLE INSTALLATION:



# SpindleShield™ Frequently Asked Questions

## HOW DOES THE SPINDLESHIELD™ SENSOR CONNECT TO MY MACHINING CENTER?

It depends on the machine's design and configuration. A typical method is to connect the Signal wire to an unused relay on the I/O board of the machining center and use an unassigned M-code to check the status of that relay.

## HOW DO I KNOW THAT SPINDLESHIELD™ IS WORKING?

SpindleShield™ includes a diagnostic or test mode that can be activated manually or automatically, for example, allowing the operator to program the machine to run a test mode before a shift. In addition, the SpindleShield™ Alert system transmits a positive voltage during normal operation, so a broken or loose wire also will be interpreted as a "leak".

## IS PROGRAMMING REQUIRED TO USE SPINDLESHIELD™?

Yes, because status of the signal wire must be monitored to confirm that a leak has not occurred. Monitoring may be continual, similar to spindle temperature, or periodic, similar to broken tool detection. One method for periodic monitoring is to check the signal status immediately after turning on through-spindle coolant. For retrofit situations, it is possible in principle to use SpindleShield™ without programming by connecting it to a separate, external warning system. Customers are advised to consult Deublin in such situations.

## IS IT POSSIBLE TO ADJUST THE SENSITIVITY OF LEAK DETECTION?

No. The sensitivity of SpindleShield™ rotating unions is set at Deublin's factory to be as sensitive as possible, so that leakage can be detected before spindle damage occurs. The patented SpindleShield™ design detects only excessive leakage, so there is no need to adjust the sensitivity.

## CAN A SPINDLESHIELD™ UNION BE REUSED AFTER A LEAK IS DETECTED?

No. When the SpindleShield™ sensor detects leakage, coolant has entered the ball bearing area of the rotating union and the rotating union should be replaced immediately. The purpose of SpindleShield™ is to protect your machining center investment and to minimize downtime. The only exception to this rule is if a wire has become disconnected or broken, with no other indications of leakage.

## DOES SPINDLESHIELD™ HAVE ANY SPECIAL INSTALLATION REQUIREMENTS?

SpindleShield™ unions with Deublin's patented Pop-Off™ or AutoSense™ seal technology have certain standard requirements regarding the drain line. Please consult Deublin for full information.



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