

Weatherhead H881 hose performance guide

Navigating Hydraulic Hose Choices:

Comparing **Weatherhead H881 hose**
to SAE 100R12 spiral hose



Weatherhead® by Danfoss H881 Dynamax® hose
exceeds EN857 Type 2SC specifications

There are a **million reasons** to choose Weatherhead H881 Dynamax hose.

Well, actually **one million +**

Danfoss is proud to introduce the Weatherhead® Dynamax® H881 hose, the new high performing, two wire EN857 2SC braided hose, qualified to one million impulse cycles. The Dynamax H881 hose outperforms the typical EN857 2SC 200,000 impulse cycle requirement by 5X, in addition to providing a range of other benefits such as: lighter weight, higher abrasion resistance, and higher pressure & temperature ratings. Weatherhead by Danfoss Dynamax H881 hose provides many advantages in applications such as agriculture, oil & gas, and mining including reduced cost, decreased downtime, and better fuel efficiency. See below for more information regarding applications, features and benefits:

Applications



Waste/Refuse
Trucks



Construction
equipment



Forestry/Logging
equipment



Aerial lifts



Agricultural
equipment

Features

- One million impulse cycle performance
- Higher pressure ratings than standard two wire braided hose
- Low compression set due to new Dura-Pulse™ inner tube
- Dynamax H881 hose provides superior flexibility (1/3 SAE 100R2 bend radius at 100°C)
- Dura-Tuff™ premium abrasion cover

Benefits:

- Extended product life expectancy over standard EN857 Type 2SC hoses
- Allows for use in a broader range of hydraulic systems where four spiral hoses may have been required in the past
- Better sealing and leak free performance
- Improved flexibility for easier installation in tight spaces
- Provides additional abrasion resistance which is a leading cause of hydraulic hose failures



Why **replace spiral hose** with Weatherhead H881 Dynamax two wire braided hose?

H881 two wire braid hose vs 100R12 four wire spiral hose



Pressure		H881 hose	SAE 100R12 Spiral hose
Hose sizes	-6	5,800	4,000
	-8	5,220	4,000
	-10	5,075	4,000
	-12	4,785	4,000
	-16	4,060	4,000
Bend Radius		H881 hose	Spiral hose
Hose sizes	-6	1.65	4.92
	-8	2.36	7.09
	-10	2.68	7.87
	-12	3.15	9.45
	-16	5.91	11.81
Weight		H881 hose	Spiral hose
Hose sizes	-6	.28	.47
	-8	.39	.59
	-10	.50	.70
	-12	.69	.90
	-16	.99	1.20
Temperature		H881 hose	Spiral hose
All sizes		-50° F to 260° F (-46° C to 126° C)	-40° F to 248° F (-40° C to 120° C)
Impulse life		H881 hose	Spiral hose
All sizes		1,000,000 impulse cycles	500,000 impulse cycles
Fittings		H881 hose	Spiral hose
All sizes		Z series braided fittings	Spiral fittings

Feature	Benefit	Feature	Benefit
Lighter weight	Lighter hose reduces overall machine weight for more fuel efficient machines	One million impulse cycles	Longer hose life, more application options & improved safety factors
Better flexibility & 1/3 bend radius	Easier to route/replace and requires less hose overall	Dura-Tuff® premium abrasion cover	8x higher abrasion resistance for longer hose life, more application options & improved safety factors
High pressure rating	Longer hose life, more application options & improved safety factors	Higher operating temperature	Longer hose life, more application options & improved safety factors
Z series fittings	Lower cost than spiral fittings and minimizes inventory by eliminating the need to stock spiral fittings		



reduced cost



reduced weight



better flexibility



higher pressure rating



higher operating temp



5x more impulse life



8x higher abrasion resistance



1/3 BEND and over 50% more flexible



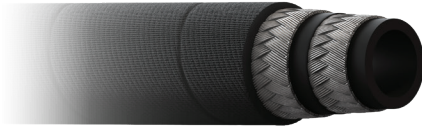
1 MILLION qualified cycles



H881

Core premium Dynamax ultra-performance two wire braided hose

Exceeds: SAE 100R16 | SAE 100R19 | EN 857 2SC | ISO 18752



Weatherhead by Danfoss **H88106** 9.5 mm(0.38 in) DN10 Dura-Tuff Dynamax Exceeds SAE 100R16 / 100R19 / EN857 2SC ISO 18752 • ABS • DNV-GL • MSHA IC-84/56 400 BAR (5800 PSI) -46°C to +126°C (-50°F to +260°F) 1/3 Bend Z series

Typical application:

Hydraulic systems with petroleum and water-based fluids, for general industrial service.

This Dynamax ultra-performance hose with the Danfoss Dura-Pulse inner tube combines the lightweight flexibility of a two-wire braided hose with the pressure and performance of spiral 100R12 hoses (-16 and smaller).

Agency specifications:	ABS DNV MSHA		
Hose construction:	Inner tube: Dura-Pulse patented tube	Reinforcement: Two wire braid	Cover: Dura-Tuff premium abrasion
Operating temperature:	-46°C to +126°C (-50°F to +260°F) -46°C to +70°C (-50 to +158°F) for water based hyd. fluids 0°C to +70°C (+32°F to 158°F) for water		
Qualified fittings:	Z series		

PART #	SIZE DIMENSIONS				PRESSURE				BEND		WEIGHT	
	Hose I.D.		Hose O.D. (nominal)		Working Pressure		Min. Burst pressure		Min. Bend Radius		Weight	
	mm	in	mm	in	bar	psi	bar	psi	mm	in	kg/m	lbs/ft
H88104	6,4	0.25	13,6	0.54	450	6,525	1800	26,100	33	1.30	0,32	0.22
H88106	9,5	0.38	17,3	0.68	400	5,800	1600	23,200	42	1.65	0,42	0.28
H88108	12,7	0.50	17,3	0.68	360	5,220	1440	20,880	60	2.36	0,58	0.39
H88110	15,9	0.62	24,0	0.94	350	5,075	1400	20,300	68	2.68	0,75	0.50
H88112	19,0	0.75	27,9	1.10	330	4,785	1320	19,140	80	3.15	1,03	0.69
H88116	25,4	1.00	34,6	1.36	280	4,060	1120	16,240	150	5.91	1,47	0.99
H88120	31,8	1.25	43,4	1.71	172	2,500	688	9,980	210	8.27	1,75	1.18
H88124	38,1	1.50	51,8	2.04	138	2,000	552	8,000	250	9.84	1,91	1.28

Choosing between braided or spiral hose?

What pressure (psi) is needed?

Choosing between a braided or spiral hydraulic hose depends on several factors.

Braided hose:

Flexible | Tighter bend radius | Compact applications with frequent movement | Medium/High pressure
Braided hoses are ideal for applications requiring flexibility and a tighter bend radius, making them suitable for installations with limited space or where frequent movement occurs. They provide excellent resistance to abrasion and are often preferred for medium-pressure hydraulic systems.

Spiral hose:

Rigid | Strong | Heavy-duty machines or industrial settings | High pressure
Spiral hoses are better suited for high-pressure applications due to their reinforcement structure, which offers greater strength and support under intense pressure conditions. They are commonly used in heavy-duty industrial settings or machinery requiring robust hydraulic performance.

Ultimately, the decision between braided and spiral hoses should consider the specific requirements of the hydraulic system, including pressure levels, flexibility needs, and environmental factors, to ensure optimal performance and longevity.

Braided -
Medium pressure hose



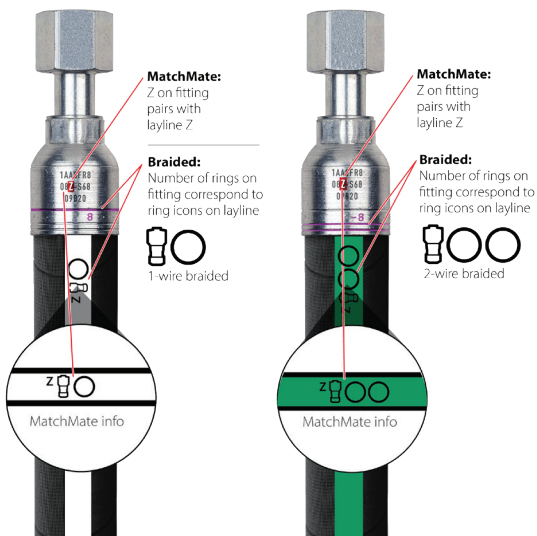
Spiral -
High pressure hose



Identify hose construction: braided or spiral

Check your layline.

BRAIDED



SPIRAL



Hydraulic hose **FAQs**

Critical considerations when selecting a hydraulic hose

Temperature

- Temperature significantly impacts hydraulic hose performance, durability, and safety.
- Hoses are designed for specific temperature ranges, exceeding which can cause degradation, leakage, or system failure.
- High temperatures can soften or weaken hoses, increasing the risk of bursts, while low temperatures can cause stiffness or cracking, impeding fluid flow.
- Selecting hoses based on temperature conditions is crucial for optimal performance, reliability, and longevity.
- Considering temperature factors during hose selection mitigates risks, enhances system efficiency, and prolongs hydraulic component lifespan.

Fluid compatibility

- Fluid compatibility is crucial when choosing a hydraulic hose.
- Using the wrong fluid can damage both the hose and the entire system.
- Different fluids have varying properties; using an incompatible one can degrade hose materials over time, leading to leakage or system failure.
- Incompatible fluids may compromise seals and other components.
- Ensuring the hose is compatible with the fluid used is essential for maintaining performance, reliability, and safety.

Hose size

- Choosing the right hydraulic hose size is vital for optimal performance and safety.
- A hose that is too small can restrict fluid flow, leading to inefficiencies and potential overheating.
- Conversely, an oversized hose may cause fluid leakage and reduced system responsiveness.
- Consider factors such as flow rate, pressure requirements, hose length, and fitting compatibility to determine the correct size.
- Consulting system specifications and seeking guidance from manufacturers can help identify the best hose size for your application.

Industry standards & certifications

- Industry standards and certifications ensure hydraulic hose quality, reliability, and safety.
- Organizations like ISO and SAE set rigorous standards covering factors such as size, construction, and performance.
- Compliance assures users of hoses meeting criteria for durability, pressure ratings, temperature ranges, and resistance to abrasion.

Impulse life

- The hydraulic hose impulse life cycle measures a hose's durability and performance under pressure surges or impulses.
- Hydraulic systems often experience pressure fluctuations due to rapid changes in fluid flow, exerting stress on the hose.
- If not designed to withstand such conditions, the hose may weaken or fail.
- Manufacturers subject hoses to standardized impulse tests simulating real-world conditions, quantifying their ability to withstand pressure surges without degradation.
- Selecting hoses with appropriate impulse life ratings ensures reliable performance, minimizing the risk of unexpected downtime.

Hydraulic hose **specs**

Which specs call out braided and spiral hose construction?

SAE specs

Spec	Braided Hose Construction	Spec	Spiral Hose Construction
SAE 100R1	One wire braid	SAE 100R9	Four wire spiral
SAE 100R2	Two wire braid	SAE 100R12	Four wire spiral
SAE 100R3	Two wire braid	SAE 100R13	Four/Six wire spiral
SAE 100R5	One wire braid	SAE 100R15	Four/Six wire spiral
SAE 100R6	One wire braid		
SAE 100R16	One/Two wire braid		
SAE 100R17	One/Two wire braid		

SAE specialty specs

Spec	Hose Construction	Spec	Hose Construction
SAE 100R4	Suction hose	SAE 100R14	PTFE
SAE 100R7	Thermoplastic		
SAE 100R8	Thermoplastic		

EN specs

Spec	Braided Hose Constructions	Spec	Spiral Hose Construction
EN 853 1SN	One wire braid	EN 856 4SH	Four wire spiral
EN 853 2SN	Two wire braid	EN 856 4SP	Four wire spiral
EN 857 1SC	One wire braid		
EN 857 2SC	Two wire braid		

EN hose series descriptions

Spec	Braided Hose Constructions	Spec	Spiral Hose Construction
1ST	One wire braid - standard cover	4SP	Four wire spiral
1SN	One wire braid - thin cover	4SH	High pressure - Four wire spiral
2ST	Two wire braid - standard cover		
2SN	Two wire braid - thin cover		
1SC	Compact one wire braid		
2SC	Compact two wire braid		

Government agencies

MSHA
US Mine Safety and
Health Administration

USCG
US Coast Guard

DNV
DNV/GL (USA) WC

Industry agencies

DIN
Deutsche (German) Industrial
Norme (Replaced by EN)

EN
Committee for
European Normalization

ABS
American Bureau of Shipping

SAE
Society of Automotive Engineers

UL
Underwriters Laboratories

ISO
International Standards
Organization



ENGINEERING
TOMORROW



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