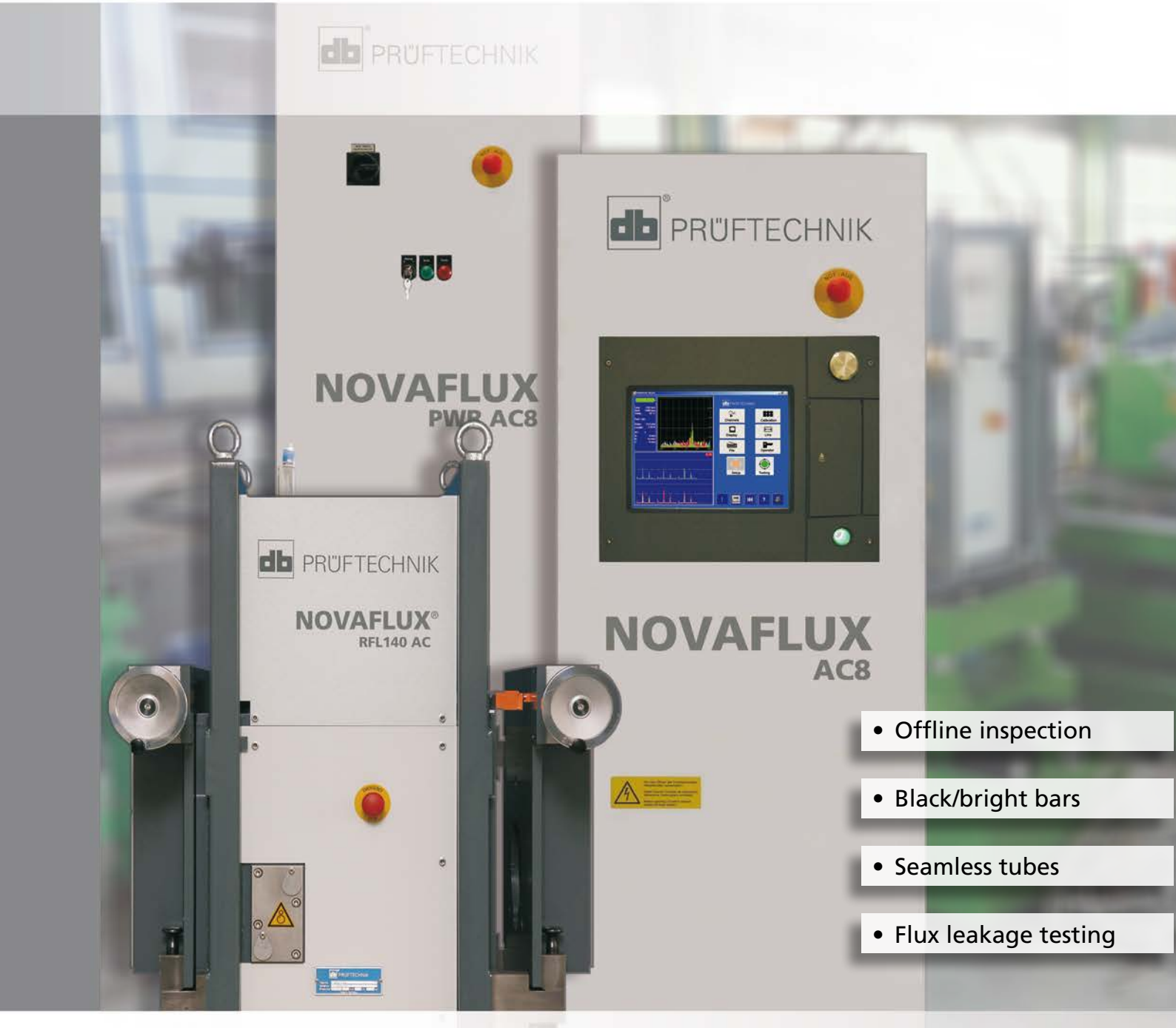
PRÜFTECHNIK

NOVAFLUX® Inspection System

Ultrasensitive Bar Testing



- Offline inspection
- Black/bright bars
- Seamless tubes
- Flux leakage testing

Ultimate bar testing with NOVAFLUX®

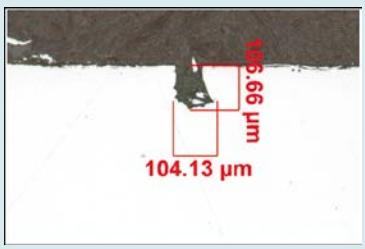
Easy to integrate, reliable, cost saving

- **Compatibility:** Can be freely combined with existing rotating units or testing electronics of other manufacturers
- **Testing at high speeds**: High throughput, test frequency, and rotational speed
- **Savings on materials:** Facilitates the retrieval of repairable material
- **Cost effective investment:** Reasonably priced test unit

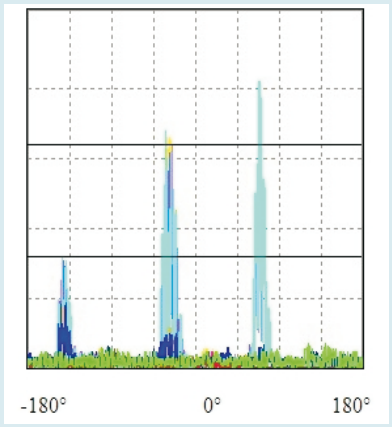
As a producer of black or bright metal bars, you are confronted with customer demands for high quality products – and for good reason, since semi-finished products are often used in safety critical parts for public transport, automobiles, construction, etc.
We can help you find cracks reliably and reduce scrap and material expenses effectively. The NOVAFLUX® flux leakage system provides a dependable and reasonably priced method for ultra-sensitive bar testing: It detects cracks as small as 0.1 mm in depth.

Sensitivity at work

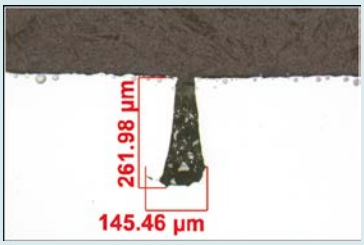
Based on the flux leakage method, the NOVAFLUX® rotating unit finds miniscule surface defects typical for bars and tubes. The defects can be as small as 0.1 mm and are distinctly visible in the signal display, unobscured by pseudo signals from uneven surfaces.



Cross section 1
Defect depth: 0.1 mm

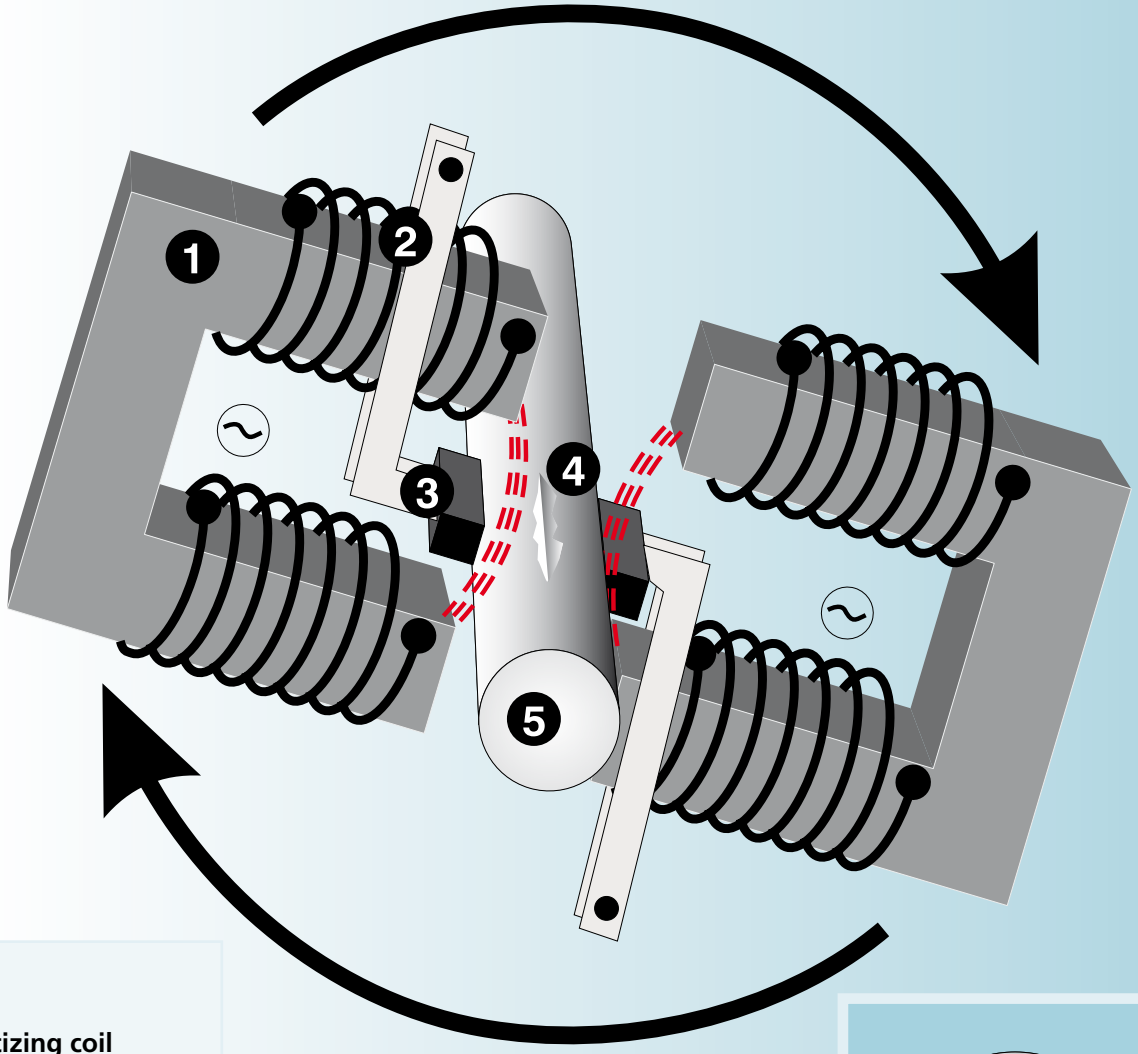


This is how NOVAFLUX® displays the defects



Cross section 2
Defect depth: 0.26 mm

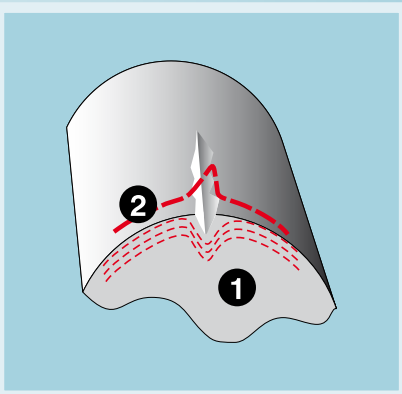
Flux leakage method:
Pure precision for reliable test results



1. Yoke
2. Magnetizing coil
3. Probe with lever
4. Defect
5. Test piece

Flux leakage method
AC current flows through two rotating magnetizing yokes. The yokes magnetize the test piece at a distance of a few millimeters. Special test shoes with protected probes located between the yoke arms scan the surface of the test piece by sliding over it.

Detecting miniscule defects
The AC magnetic field generates a magnetic flux inside the test piece. If the test piece has an inconsistency in its surface, the magnetic field is deviated and a leakage flux is generated. The sliding probes detect the leakage flux and the NOVAFLUX® testing system displays and reports this deviation including exact localization information.
In this way, defects as small as 0.1 mm can be detected.



1. Magnetic flux in test piece
2. Leakage flux

NOVAFLUX® in your production line: Easy to integrate with savings potential!

Sensors

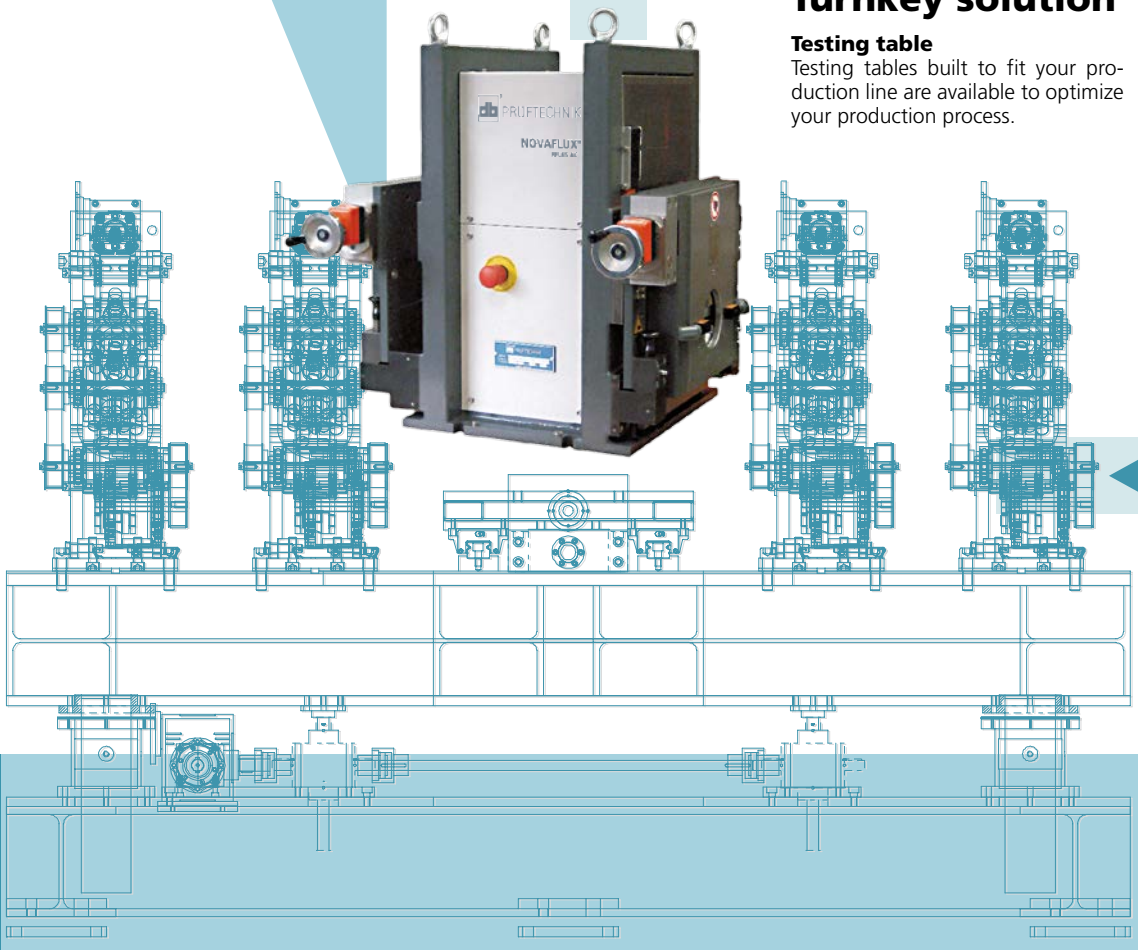
Rotating units in different sizes
Rotating units are available in three different sizes for different product diameters. They contain special rotating sensors that reliably detect small defects on bars and tubes.

Line control unit

Control cabinet PWR AC8
The NOVAFLUX® PWR AC8 cabinet controls the flux leakage testing and communicates with the higher-order line control system already in place.

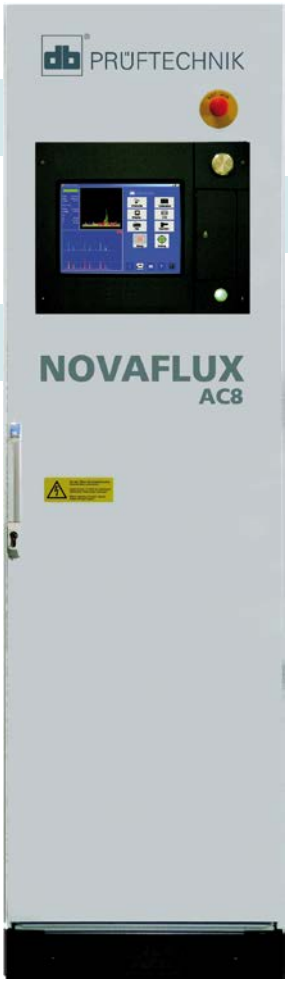
Turnkey solution

Testing table
Testing tables built to fit your production line are available to optimize your production process.



User-friendly

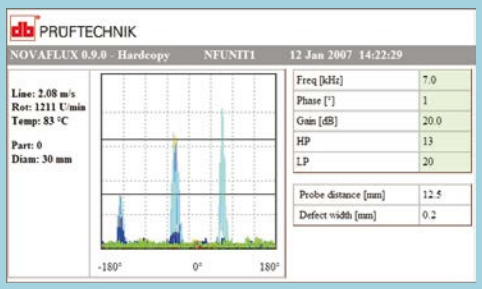
Testing cabinet AC8
The AC8 cabinet features a powerful PC with a touchscreen for easy operation: simply enter all parameters directly and instantly create reports. The touchscreen can also be integrated in the control panel of the line.



Documented test results

Signals
Realtime signals provide immediate feedback on the quality of the test piece. On the display, signals are shown in 8 different colors to distinguish the 8 channels.

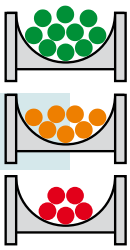
Reports
You can save or print out test reports for use during repair or for later verification of testing. Reports contain test results from NOVAFLUX® alone or from all testing equipment in the finishing shop.



Outputs

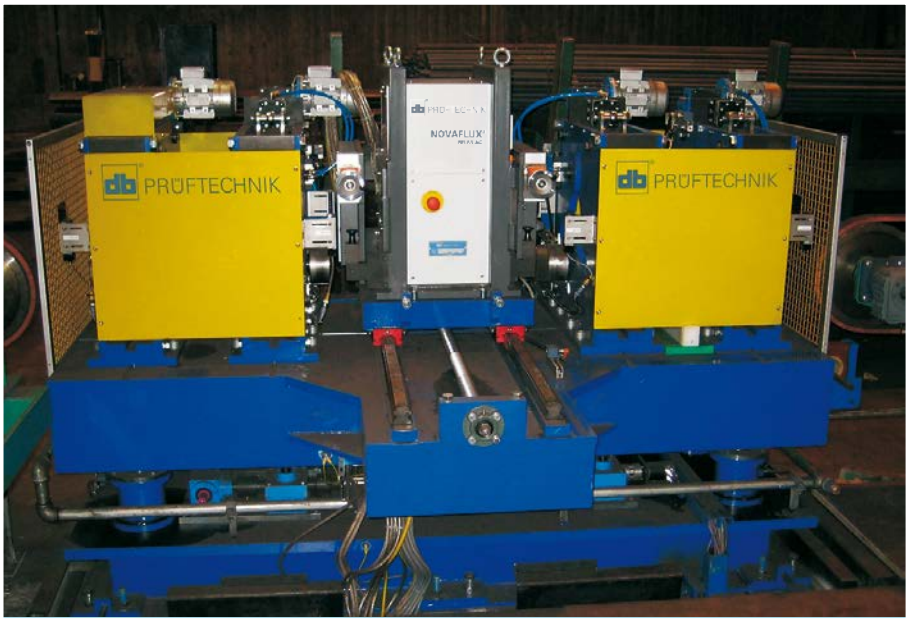
Marking for repair
Defects can be marked anywhere on the tested bar for easy identification. This simplifies the retrieval of repairable material.

Sorting
Use three sorting classes to sort the tested bars in three qualities.



Typical NOVAFLUX® applications

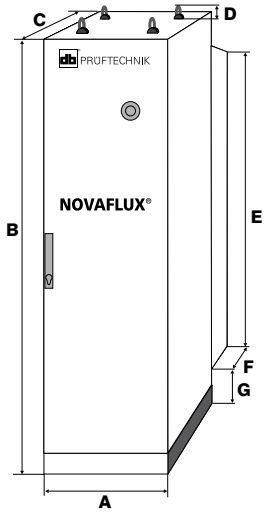
Typical application of the NOVAFLUX® testing system with the RFL65 and a PRÜFTECHNIK testing table at a major bar manufacturer.



Rotating unit RFL140 in the production line of a well-known supplier of the automotive industry, with NOVAFLUX® technology running the testing process.

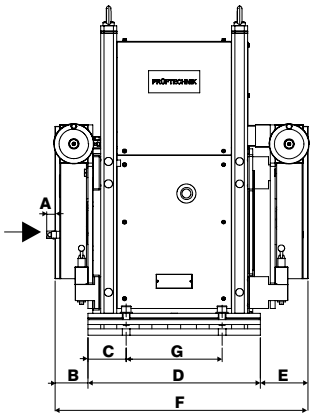
Dimensions

Cabinets



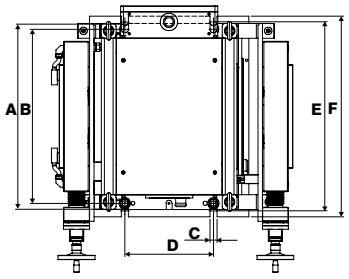
	Units	A	B	C	D	E	F	G
Testing cabinet AC8: ACF1000/ ACF1001	mm	600	2100	800	65	--	--	--
	inch	23.6	82.7	31.5	2.6	--	--	--
Control cabinet PWR AC8 ACF2001	mm	600	2100	800	65	--	--	--
	inch	23.6	82.7	31.5	2.6	--	--	--
Control cabinet PWR AC8 ACF2000	mm	600	2100	800	65	1580	290	113
	inch	23.6	82.7	31.5	2.6	62.2	11.4	4.4

Rotating unit: Operator side



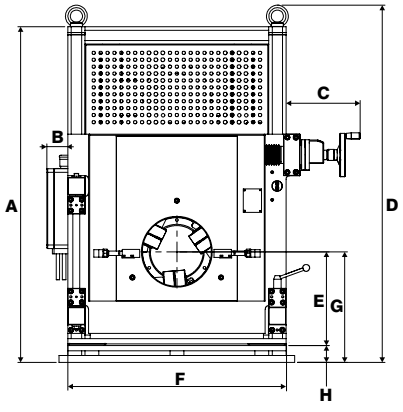
	Units	A	B	C	D	E	F	G
RFL65	mm	20	59.9	111	424	105.5	589	
	inch	0.79	2.36	4.37	16.69	4.15	23.19	
RFL140	mm	26.4	103	120	540	149	792	300
	inch	1.1	4.05	4.72	21.26	5.87	31.18	11.81
RFL200	mm	20.4	103	136	632	103	838	360
	inch	0.80	4.06	5.35	24.88	4.06	33	14.17

Rotating unit: Top



	Units	A	B	C	D	E	F
RFL65	mm	454	420	20	202		
	inch	17.87	16.54	0.79	7.95		
RFL140	mm	630		24	300	640	680
	inch	24.80		0.94	11.81	25.19	26.77
RFL200	mm	776		24	360	820	860
	inch	30.55		0.94	14.17	32.28	33.86

Rotating unit: Infeed



	Units	A	B	C	D	E	F	G	H
RFL65	mm	660	60	181	714	195	454		
	inch	25.98	2.36	7.13	28.11	7.68	17.87		
RFL140	mm	970	60	214	1033	270	630	321	51
	inch	38.19	2.36	8.42	40.67	10.63	24.8	12.6	2.0
RFL200	mm	1120	40	172	1191	340	776	395	55
	inch	44.09	1.57	6.77	46.89	13.38	30.55	15.55	2.17

NOVAFLUX® testing system: Technical data

	NOVAFLUX® system with RFL65	NOVAFLUX® system with RFL140	NOVAFLUX® system with RFL200
Weight	350 kg (772 lb)	840 kg (1852 lb)	1150 kg (2535 lb)
Inspection speed	Up to 2.4 m/s (7.87 ft/s) depending on the test piece diameter	Up to 3 m/s (9.84 ft/s) depending on the test piece diameter	Up to 1.6 m/s (5.25 ft/s) depending on the test piece diameter
Defect resolution	0.1 mm depending on surface structure; 0.05 mm on bright steel depending on surface structure		
Defect length	Probe distance 6.25 mm: 9 mm (0.35 in); probe distance 5 mm: 7.5 mm (0.30 in)	Probe distance 10 mm: 15 mm or more (0.59 in); probe distance 12.5 mm: 17 mm (0.67 in) or more	Probe distance 7.5 mm: 10 mm (0.39 in)
Sorting classes	S0 (good); S1 (repairable); S2 (scrap)		
Display	8-channel		
Acoustic emission	Approx. 82 dB(A) without test piece (distance 1m)	83 dB(A) at 1800 rpm without test piece (distance 1 m)	Approx. 80 dB(A) without test piece (distance 1 m)

Application fields

	NOVAFLUX® system with RFL65	NOVAFLUX® system with RFL140	NOVAFLUX® system with RFL200
Production type	Bars and seamless tubes		
Materials	Round black or bright steel (ferromagnetic); rolled, straightened or sand blasted		
Diameter	5-65 mm (0.20 - 2.60 in)	10-140 mm (0.39 - 5.51 in)	30-200 mm (1.18 - 7.87 in)
Production line	Offline (single bars and tubes)		

Agent:

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