



AIR BRAKE SYSTEM

ABC PUSH-IN

ABC TWISTLOCK

**MANIFOLDS AND
MULTICONNECTORS**

RAUFOSS ABC™ SYSTEM PUSH-IN BUILDING BLOCKS

SINCE 2004, KONGSBERG AUTOMOTIVE RAUFOSS COUPLINGS HAS BEEN PRODUCING A NEW GENERATION OF COUPLINGS BASED ON ADVANCED COMPOSITE MATERIALS IN COMBINATION WITH LEADING CONNECTION TECHNOLOGIES.

The system provides significant improvements in key connection areas. Composite materials have reduced the cost and weight of the system and increased design flexibility. Brass components ensure structural integrity in high-stress areas

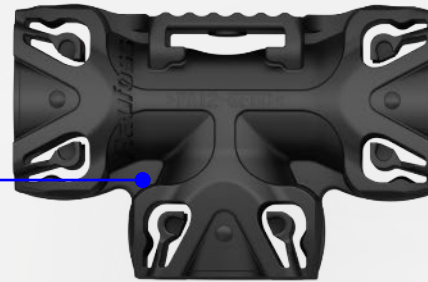
ABC system introduced a new standard for polymer valve ports, with additional cost-saving potential with a new cartridge solution.



ABC PUSH-IN BUILDING BLOCKS

SUSTAINABILITY

- > 100% RECYCLABLE COMPOSITE MATERIALS
- > PRODUCED WITH 100% RENEWABLE ENERGY



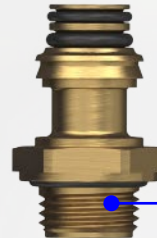
ASSEMBLY SECURITY
INTEGRATED ASSEMBLY SIGNAL
FOR OPERATOR AND SAFETY
FEATURE FOR EOL-TEST

**REDUCTION OF WEIGHT
AND DIMENSIONS**



EFFICIENCY

OPTIMIZED FLOW - IMPROVED REACTION
TIME AND REDUCED PRESSURE LOSS



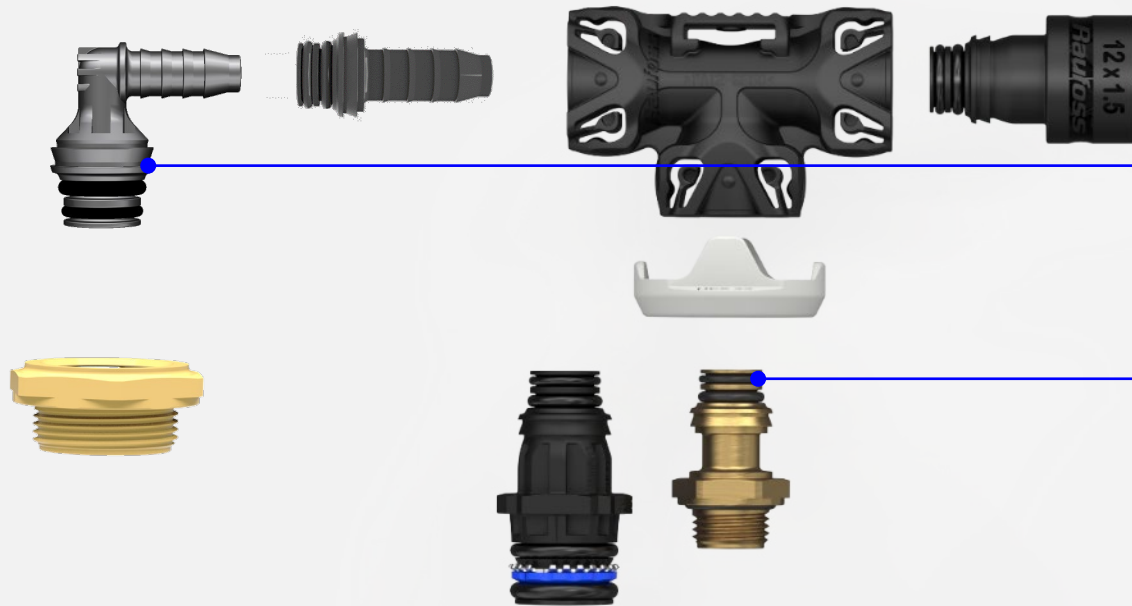
SYSTEM COST REDUCTION
> DESIGN FLEXIBILITY AND MODULARITY
> TOTAL INSTALLATION COST REDUCTION AND
LIFETIME COST REDUCTION



ABC PUSH-IN AND FIRTREE BUILDING BLOCKS

ABC BUILDING BLOCKS

FIRTREE



IDENTICAL SWIVELS
ALLOW FOR COMBINING SYSTEMS
TO FIND OPTIMAL SOLUTION

PUSH-IN

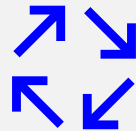


ABC PUSH-IN BUILDING BLOCKS



ASSEMBLY TIME REDUCTION

- > NO PREASSEMBLY OF TUBE
- > MORE EFFICIENT THAN FIXED BLOCKS



HIGH FLEXIBILITY

- > FLEXIBLE CONFIGURATION
- > DIFFERENT ASSEMBLY OPTIONS



REDUCED TOTAL SYSTEM COST

- > REDUCED ASSEMBLY COSTS
- > REDUCED LOGISTIC COSTS
- > MAINTENANCE-FREE



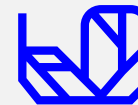
OPTIMIZED AIR FLOW

- > LOWER BRAKE STOPPING DISTANCE
- > REDUCED BRAKE RESPONSE TIME



EASE OF DISASSEMBLY

- > EASY RELEASE
- > RE-USE OF TUBE AND COUPLING

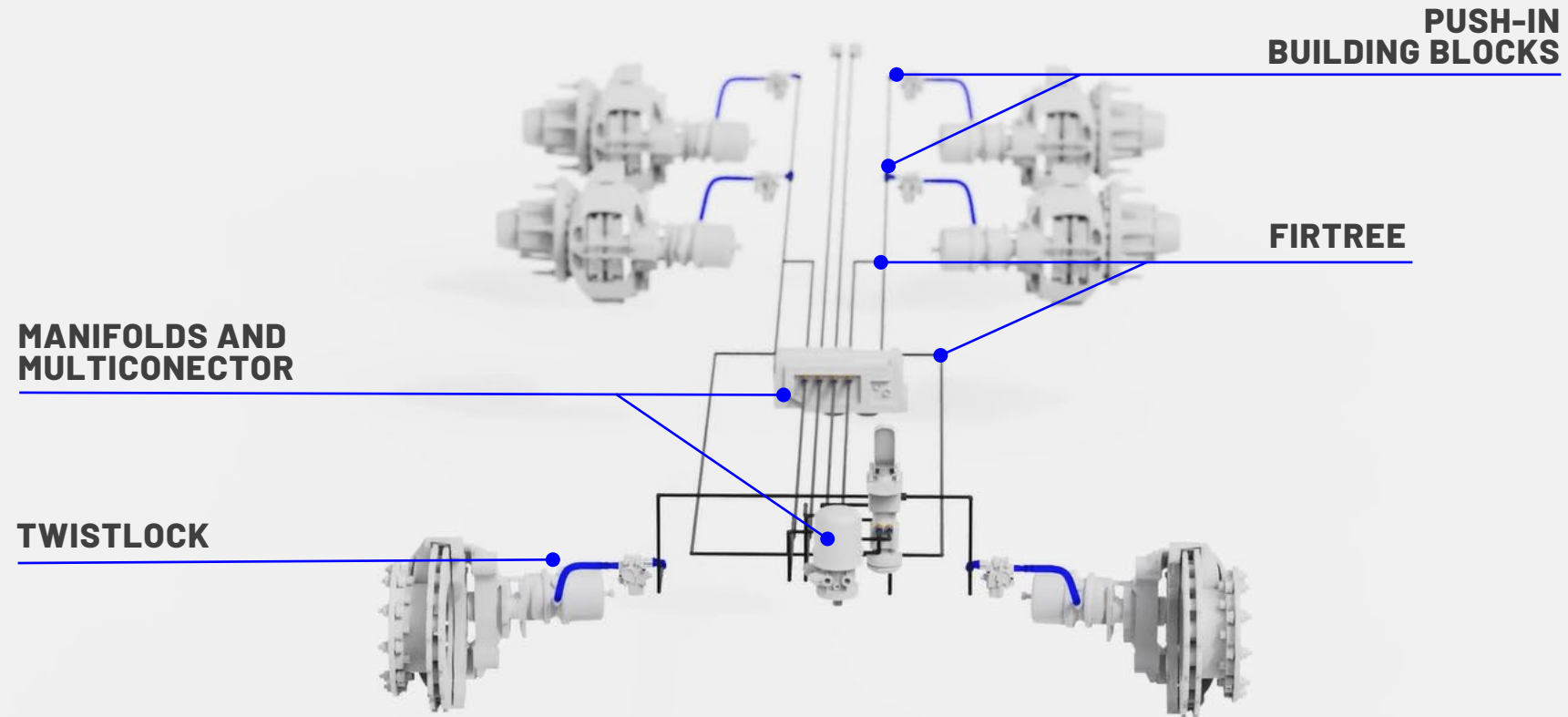


OPTIMIZED WEIGHT

- UP TO 6 KG SAVING COMPARED TO METAL SYSTEMS



ABC PUSH-IN BUILDING BLOCKS



ABC PUSH-IN BUILDING BLOCKS



"GRIP THEN SEAL" FUNCTIONALITY
NO SLIP OUT OF TUBE IS POSSIBLE
ONCE THE CONNECTION IS SEALED

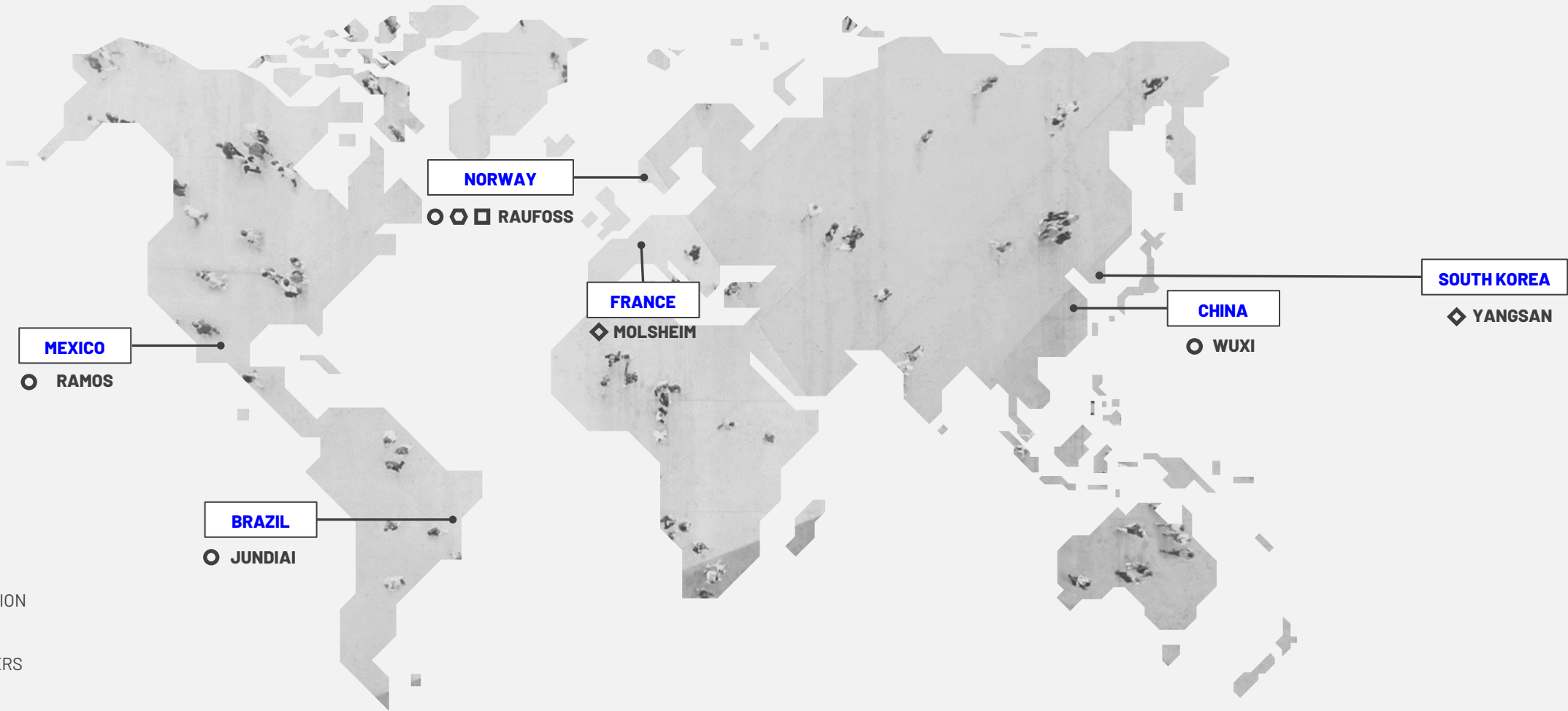


ABC PUSH-IN BUILDING BLOCKS

PARAMETER	SPECIFICATION
OPERATING TEMPERATURE	-40°C to +100°C
WORKING PRESSURE	12,5 bar Higher pressure on individual release
TUBING	METRIC TUBING: > ISO 7628 > DIN 74324/ DIN 73378 INCH TUBING: > SAE J844
PORTS	METRIC THREADS: All common <u>metric</u> standards in CV with same coupling (DIN; ISO; VOSS) Imperial threads: "R"; "G"; "NPTF"
ENVIRONMENTAL ROBUSTNESS	Resistant against all common road + vehicle pollutions
LEAKAGE	Leakage < 1cm ³ /min for lifetime



ABC PUSH-IN BUILDING BLOCKS



ABC TWISTLOCK

ASSEMBLY BY HAND

NO WRENCH IN LINE PRODUCTION

AVOIDING HOSE TURNING AFTER ASSEMBLY

THANKS TO INTEGRATED SPLINE

ENVIRONMENT SEALING
FOR LONG LIFE TIGHTNESS

ROBUST AND FLEXIBLE SOLUTION
FITS MOST AXLE ARRANGEMENTS



ABC TWISTLOCK

**QUICK CONNECTION**

REDUCED ASSEMBLY TIME
BY ~30S PER COUPLING

**100% END OF LINE TESTED****FAST REPAIR-RELEASE AND
REASSEMBLY**

WITHOUT
TWISTING RUBBER HOSE

**ASSEMBLY BY HAND**

NO WRENCH IN LINE PRODUCTION

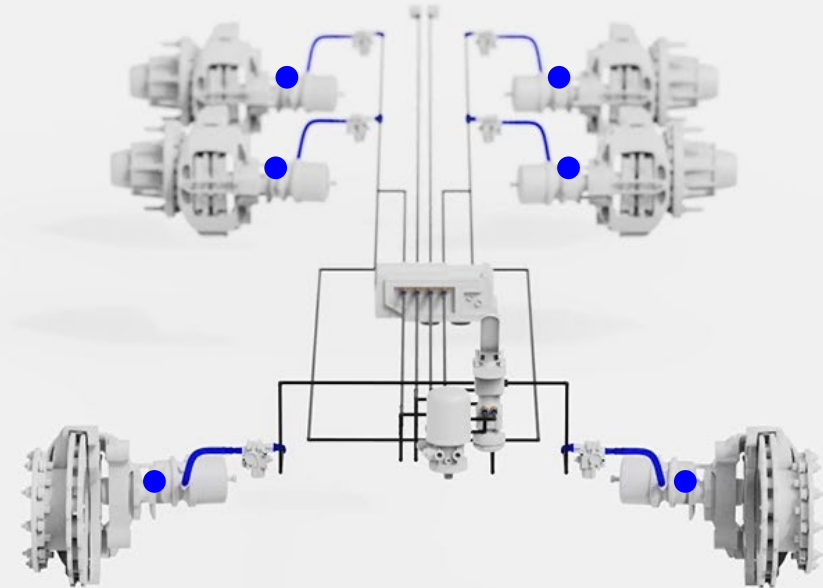
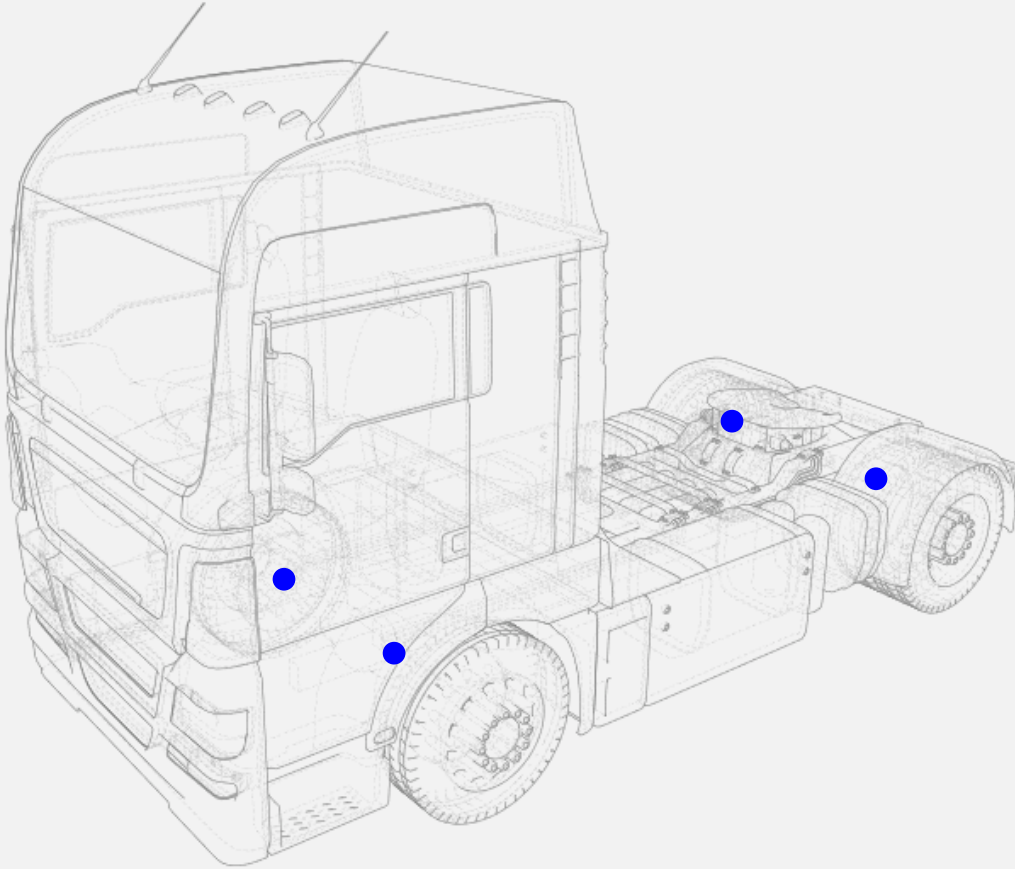
**TWO STEP ASSEMBLY**

SAFE ASSEMBLY



ABC TWISTLOCK

FRAME & BRAKE CHAMBERS



ABC TWISTLOCK

ABC HOSE MODULE WITH TWISTLOCK IS DEVELOPED FOR AIR BRAKING SYSTEMS AND THE CONNECTION BETWEEN VALVES ON THE CHASSIS AND BRAKE CYLINDERS ON THE AXLES

DESIGNED TO BE WORKING PERMANENTLY UNDER RELATIVE MOVEMENT BETWEEN DRIVE OR STEERING AXLES AND THE CHASSIS

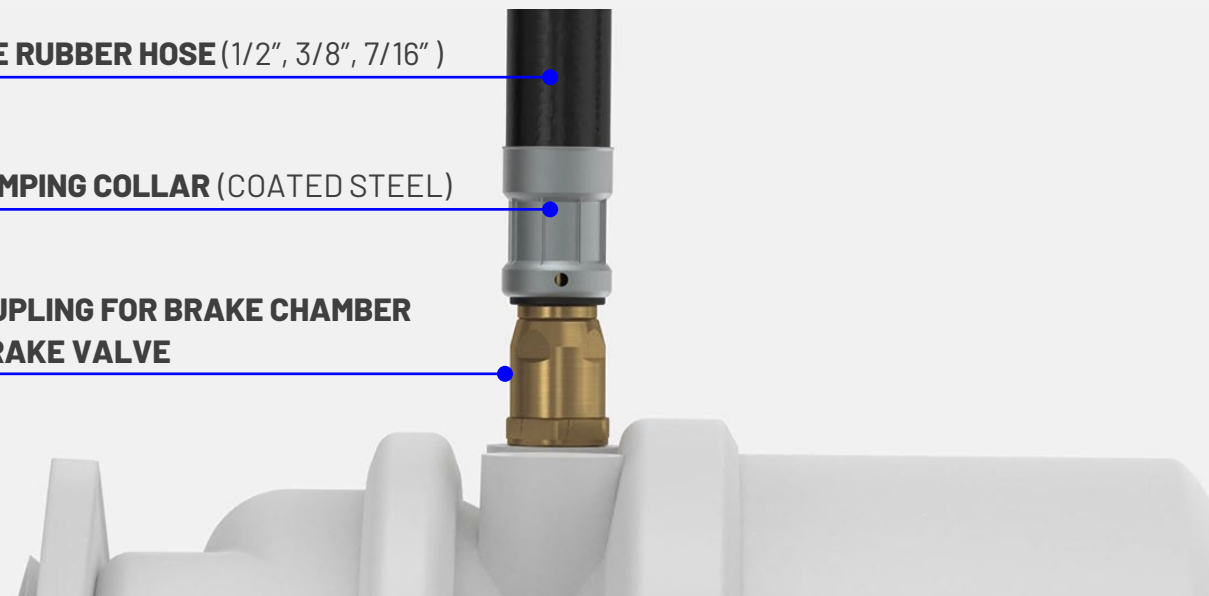
HOSE CONNECTION



SAE RUBBER HOSE (1/2", 3/8", 7/16")

CRIMPING COLLAR (COATED STEEL)

COUPLING FOR BRAKE CHAMBER /BRAKE VALVE



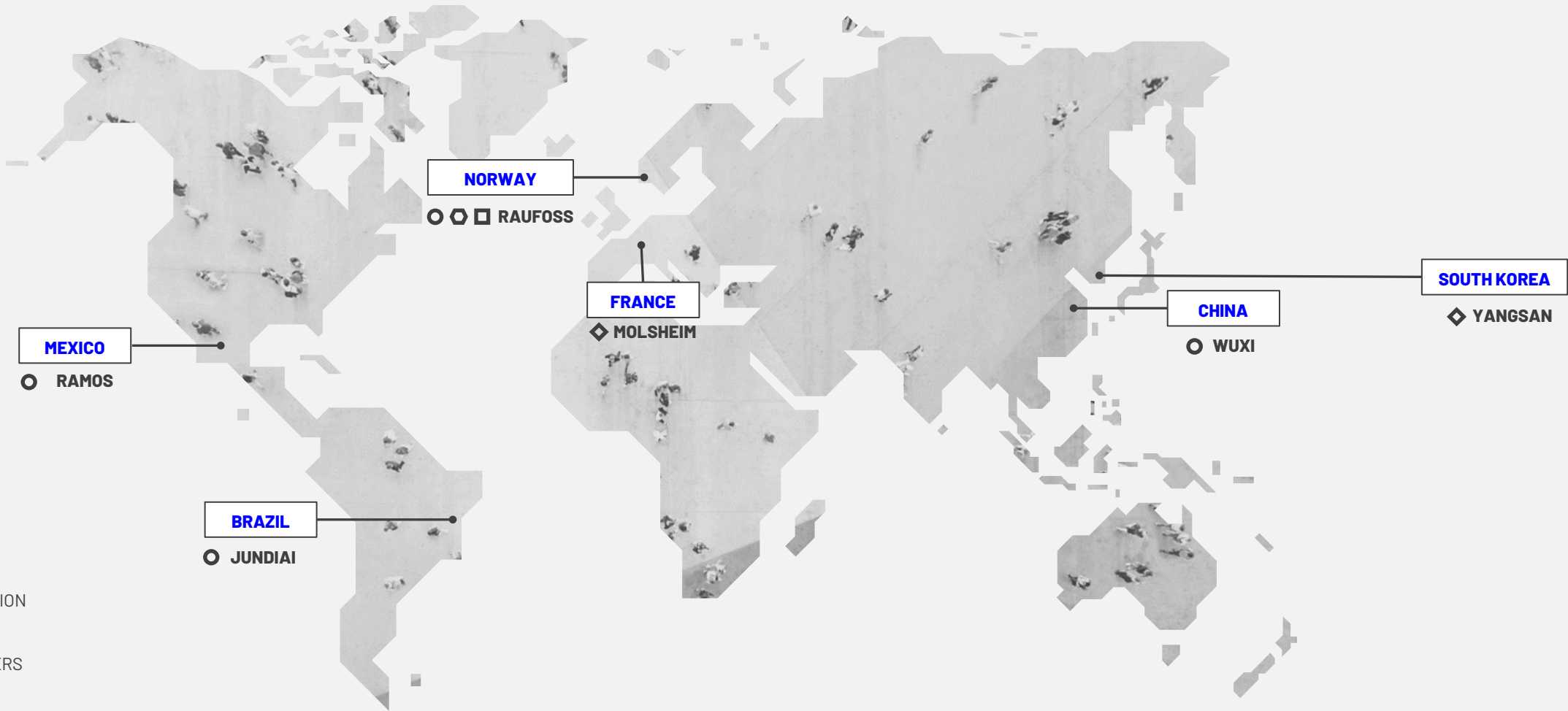
ABC TWISTLOCK

HOSE COUPLING		STRAIGHT	90 ELBOW	45 ELBOW
				
HOSE		PORT	PORT	PORT
Ø11	Ø 3/8"	M16	M16	M16
Ø13	Ø7/16"	M22	M22	M22
	Ø1/2"	NPTF 3/8"	NPTF 3/8"	NPTF 3/8"

PARAMETER	SPECIFICATION
OPERATION TEMPERATURE	-40°C TO 100°C
OPERATION PRESSURE	≤ 10,0 BAR ≤ 13,0 BAR MAX.
HOSE	METRIC -DIN 74310
	INCH -SAE J 1402
CORROSION RESISTANCE (BY KA ASSEMBLED FERRULE)	MIN 420 H: NO RED RUST MIN 1.000 H: FULL MECH. VALUE
FMVSS 106 RELEASE (BY KA ASSEMBLY)	YES (SAE- DIMENSIONS)



ABC TWISTLOCK



MANIFOLDS AND MULTICONNECTORS

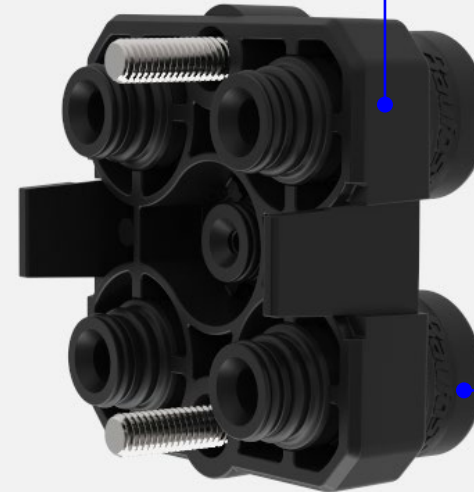
**HOUSINGS ARE AVAILABLE IN
COMPOSITE OR ALUMINIUM**

**STANDARD OR CUSTOMER-
SPECIFIC HOUSING**



**MANIFOLDS AND MULTICONNECTORS
ARE BASED ON ABC STANDARD
COMPONENTS:**

- > ABC THREADLESS AS A PART OF BUILDING BLOCK SYSTEM
- > KARTRIDGE



ABC-THREADLESS



MANIFOLDS AND MULTICONNECTORS



**ENABLES QUICK LINE
ASSEMBLY**



PART OF ABC™ SYSTEM



COST SAVING DUE TO GENERIC
SOLUTIONS AND CUSTOMER-SPECIFIC
USE OF STANDARD COMPONENTS
WITH REDUCED TOOLING COSTS



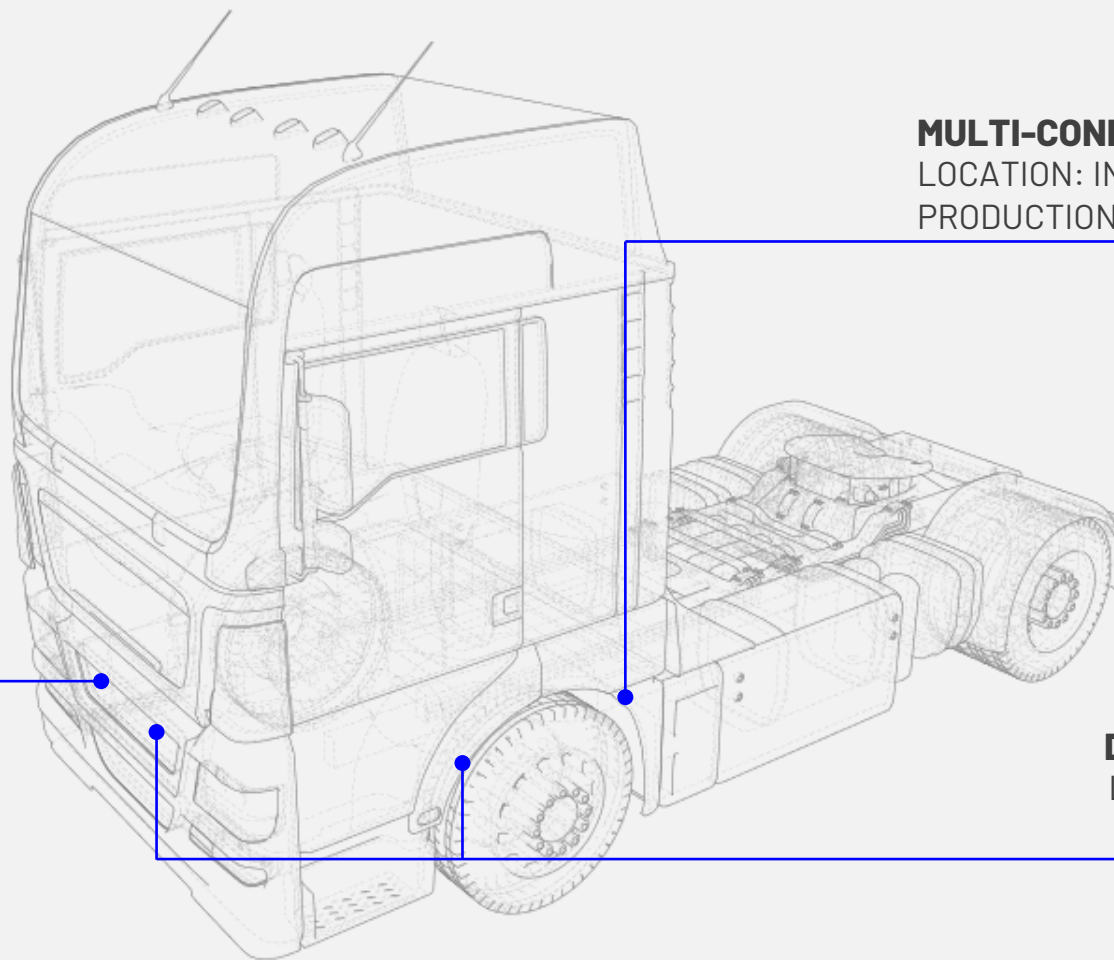
SIMPLIFIED ASSEMBLY PROCESS
ALLOWS FOR IMPROVED TUBE ROUTING
DUE TO INTEGRATED FIXATIONS



MANIFOLDS AND MULTICONNECTORS

PNEUMATIC PASS THROUGH

LOCATION: FIREWALL



MULTI-CONNECTOR PLATE

LOCATION: IN FRONT OF AIR
PRODUCTION UNIT ON FRAME

DISTRIBUTION MANIFOLD

LOCATION: BESIDE ENGINE
& ON FRAME

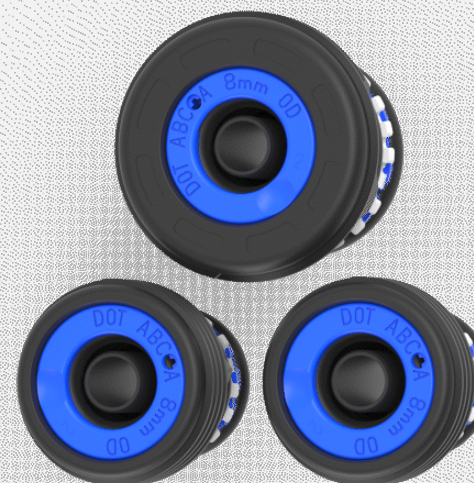


MANIFOLDS AND MULTICONNECTORS

RAUFOSS ABC™ MANIFOLDS AND MULTICONNECTORS ARE BASED ON STANDARD COUPLINGS

KARTRIDGE AND ABC THREADLESS TECHNOLOGIES ALLOW SAME HOUSING TO BE USED WITH DIFFERENT TUBE SIZES:

- > METRIC
- > INCH



HOUSING AND ABC KARTRIDGE PUSH-IN

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