

MT 2000

INTEGRATION BY DESIGN



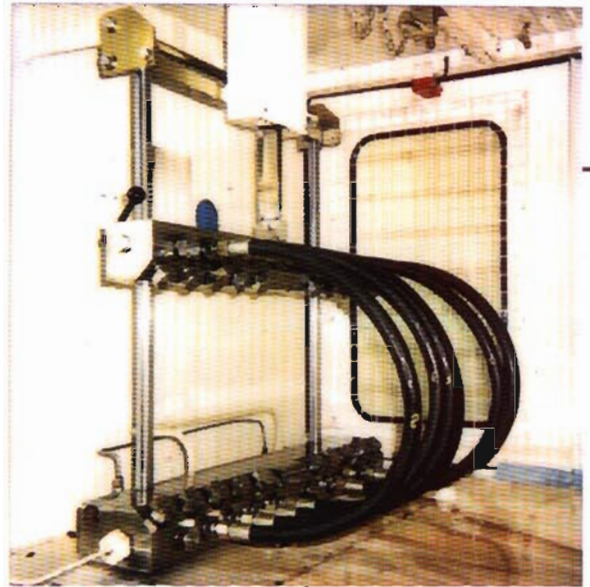
A D V A N C E D
T E C H N O L O G Y
F R O M T H E L E A D E R S
I N H I G H P R E S S U R E
H O S E A S S E M B L I E S

IMPULSE TESTED TO
1.000.000
FLEX IMPULSE CYCLES

 **manuli**

Designed for Spiral

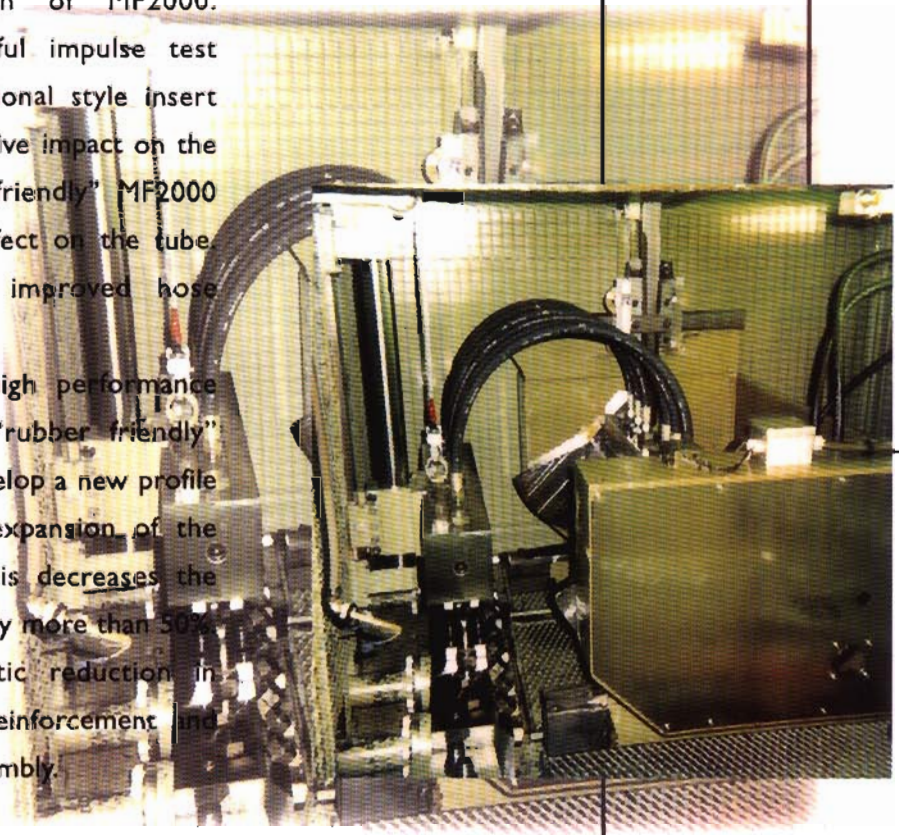
The increasing demands of OEM applications require performance testing, far in excess of the 400,000 impulse cycles designated by international norms. Our target for four spiral, non-Interlock hose, was 1,000,000 impulse cycles and MF2000 is the result of this arduous design and test program. In response to market demand for rationalisation, MF2000 has also been developed and approved for use on the entire Manuli wire and textile braided hose range.



New Rubber Friendly Design

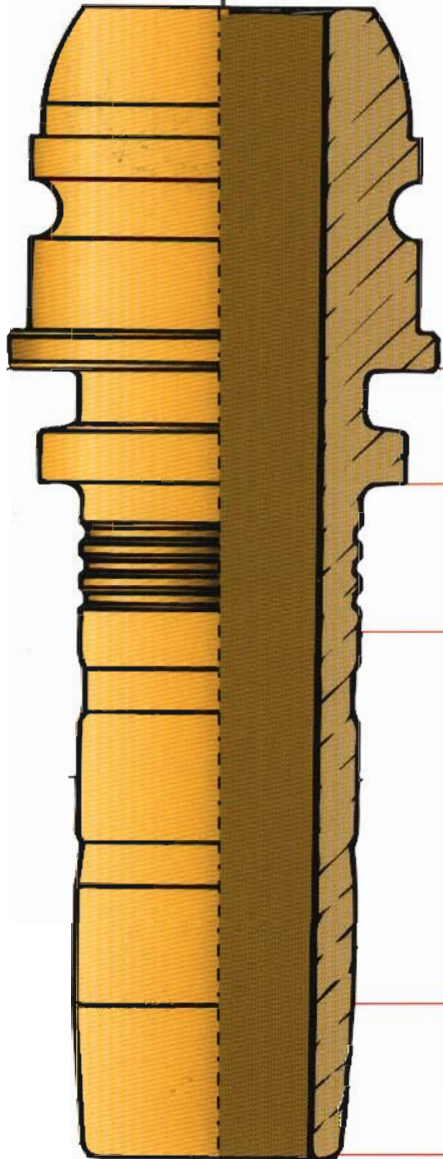
The concept of a "rubber friendly" fitting is central to the design of MF2000. Examination of successful impulse test samples using the traditional style insert shows evidence of excessive impact on the tube. The new "rubber friendly" MF2000 insert has no adverse effect on the tube. This results in much improved hose assembly life.

When applied to our high performance ferrule technology the "rubber friendly" concept has led us to develop a new profile that allows volumetric expansion of the ferrule when swaged. This decreases the elongation of the ferrule by more than 50%. The result is a dramatic reduction in frictional stress to the reinforcement and the cover of the hose assembly.



MF2000

INSERT



Latch Area

Designed for optimum distribution of swaging force and effective mechanical locking.

Micro Grooves Area

Designed to combat the effects of long term ageing on the tube. The effect of stress and heat in a hydraulic system causes rubber to harden, reducing its sealing efficiency. The portion of rubber trapped in the "micro groove" area after swaging produces an O-Ring effect, which further enhances sealing in the assembly.

Macro Groove Area

The new "macro groove" profile is at the heart of the MF2000 design replacing the aggressive serrations present in traditional designs. This rubber friendly profile protects the tube and improves sealing under demanding impulse and flexing conditions.

Conical Area

The conical area provides easy assembly of the insert. It also reduces stress on the tube after swaging by providing a graduated interface between insert and hose.

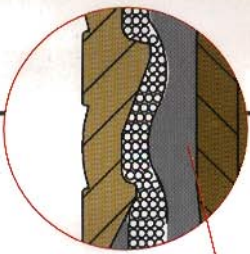
ADVANCED TECHNOLOGY

manuli

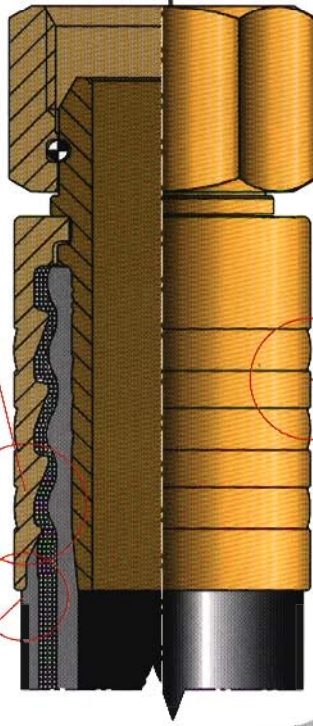
GOLDEN SPIRIASP

-20-

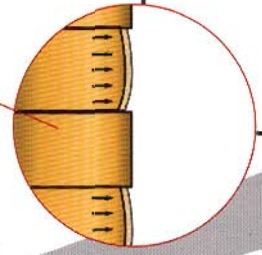
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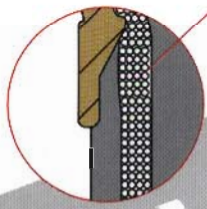
Progressive swaging: Graduated tooth height reduces stress by giving progressive swaging along the length of the ferrule.



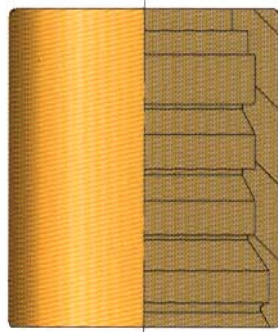
M00910



Castellated profile: removes stress by drastically reducing elongation after swaging (Ferrule expands radially instead of lengthening).

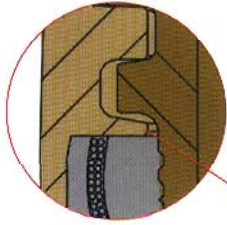


No bulge profile: new internal profile design allows rubber flow and eliminates bulging.

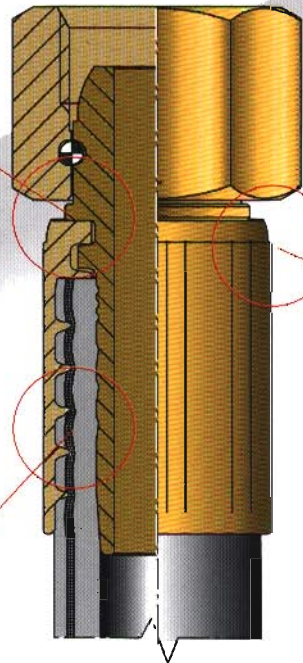


M00110

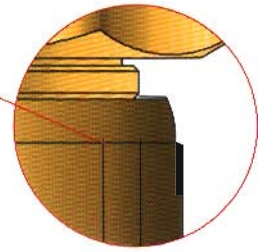
Redesigned internally to increase performance on skived one wire braid and compact hoses. Incorporates the concept of progressive swaging giving improved assembly life.



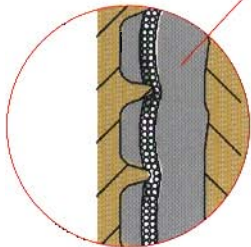
Back stop: allows positive location of the insert when assembling.



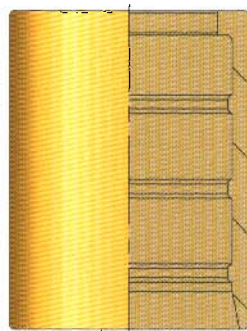
M03400



A new external profile prevents any conical effect after swaging.



New aggressive internal profile: Gives effective penetration of the cover and metal to metal contact for maximum fitting retention. Enlarged spaces between the teeth allow room for the cover to expand ensuring optimum compression.



M00810

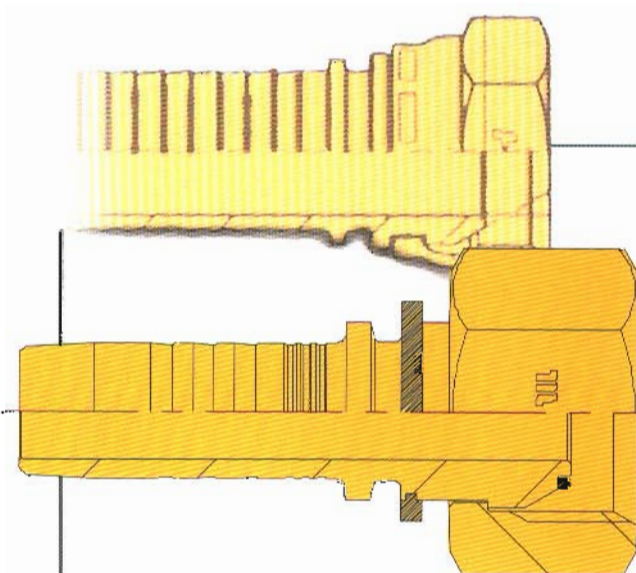
The most compact ferrule in the range: provides a solution for thermoplastic and non-skive compact hoses. Tested and approved where skiving is required for pressure wash hose assemblies.

TERMINATION END

MF 2000 advanced technology means improved sealing performance for both the insert and end termination.

BSP

- No more crimped nuts.
- Improved slip on nut solution on 1/4", 3/8" and 1/2" parallel and step-up sizes. High performance thrust wire nut on other sizes.
- BS 5200 O-Ring solution available throughout range.



JIC

- No more crimped nuts.
- Improved slip on nut solution on step sizes, high performance thrust wire nut on remaining range.

Metric

- All nuts forged to increased mechanical strength and tighter tolerance on threads.

MF2000

Already approved by major OEMs
Already approved by DNV
Patent pending

Stock Reduction

The development of a single MF2000 insert for both spiral and wire braid hose has led to a 50% reduction in the number of parts in our fitting range. The MF2000 insert and 4 ferrule types provide fitting solutions for the majority of our hoses.

Ease of Selection

Selection of the correct insert and ferrule is simple with clear swaging instructions available for each type of hose. MF2000 products are marked with the Manuli "m", and in addition all ferrules are part numbered. All insert part numbers remain the same with the addition of an "m" prefix to denote MF2000. To further distinguish the new range MF2000, will be delivered in easily identifiable boxes marked with the new logo.

Interchangeability

During its development MF2000 was tested in conjunction with the original Hydrofit standard range to ensure interchangeability. The selected ferrule whether MF2000 or original Hydrofit determines the swage diameter, regardless of the type of insert used. The ferrule determines the swage diameter:

MF2000
ferrule

MF2000
ferrule

standard
ferrule

standard
ferrule

MF2000
insert

standard
insert

MF2000
insert

standard
insert

MF2000
swage diameter

MF2000
swage diameter

original
swage diameter

original
swage diameter

MF2000

design: EBW
May 1998

INTEGRATION BY DESIGN

**STOCK
REDUCTION**

**EASY
SELECTION**

**ADVANCED
TECHNOLOGY**



4x40

FOUR FOR FORTY

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