

WisePenetration

EXCEPTIONALLY STABLE WELDING ARC

"Because of limited accessibility, the position of the torch changes from pulling to pushing during welding, and the alignment of the arc with respect to the joint cannot be optimal all the time. WisePenetration ensures the penetration of hard-to-reach welds inside the beam"

– Toni Rätty, Production Manager, Peikko, Finland



WELD WITH INVARIABLE PENETRATION EVEN IN DEMANDING CONDITIONS

WisePenetration optimized welding function is designed to keep welding current and thus penetration invariable regardless of the changes in stick-out length in manual welding. Normally in MIG/MAG welding the power to the weld pool is changing as the welder or weld piece dictates the distance between the joint and welding gun nozzle. These deviations may result in quality issues such as lack of fusion, incomplete or inconsistent penetration, changes in weld profile and of course welding spatter. WisePenetration solves these issues and reduces the need for post-grinding and repair work. The function prevents the current from dropping down by actively adjusting wire feeding. This helps to keep the weld mechanical properties on a desired level and prevents welding defects. The user sets the wished current level, and with the help of WisePenetration, the current level does not drop below this level when stick-out length increases.

WisePenetration welding function is available for ferritic synergic MAG welding programs. WisePenetration is an optional software product for Kemppi FastMig M, and FastMig X welding equipment, but featured as standard in FastMig X Intelligent setup.

KEY BENEFITS



LESS REPAIR COSTS
Per welded meter



SAVING IN FILLER MATERIAL

Due to the ability of having a narrower groove angle

KEY APPLICATIONS



PIPELINES



SHIPBUILDING



GENERAL MECHANICAL
ENGINEERING

BENEFITS



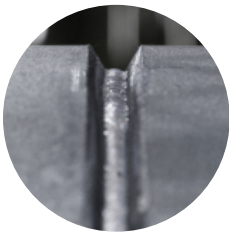
Ensured penetration even in case of:

- Narrow structures where visibility of the arc is a problem
- Limited visibility or accessibility
- Position welding
- Difficult-to-weld joints

SAVE IN REPAIR COSTS

Even if the stick-out length varies from 25 mm to 35 mm, which equates to a 28% difference, you can still get excellent penetration with WisePenetration. Using 1-MIG under the same conditions produces results outside of tolerance. When the current is constant, the welder can more easily stay within WPS limits, which means that penetration is ensured and the lack of fusion can be avoided.

As a result, weld quality is improved with less spatter, and thus less rework needed. The welder does not have to make adjustments for the parameters each time, which produces a more efficient duty cycle.



SAVINGS IN GROOVE AREA AND FILLER MATERIAL

Combine WiseFusion with WisePenetration and you can narrow the groove angle for example by 26%, from 45 to 30 degrees. This way fewer welding runs are needed to complete the joint. Reduced welding time and less filler material are required.

Using WiseFusion and WisePenetration simultaneously can provide many benefits, especially when welding thick butt joints. The high energy density of the arc provided by WiseFusion combined with the constant penetration regardless of the stick-out length delivered by WisePenetration makes it possible to weld in deep, narrow grooves.

TECHNICAL SPECIFICATIONS

WisePenetration

Product code

9991000