

Abrasive Metering System FEEDLINE IV

Optimized abrasive consumption for customized applications

Stable and repeatable operating parameters are a fundamental requirement for high-quality waterjet cutting. This applies in particular to abrasive applications used to cut brittle materials, where a constant flow of abrasive is simply a must. KMT Waterjet Systems responded to this demand by developing the FEEDLINE IV abrasive metering system. Controlled through a central CNC controller or a potentiometer, the FEEDLINE IV supplies the cutting head with the optimized flow of abrasive. This helps save material and costs.

The FEEDLINE IV technology

The FEEDLINE IV system supplies the cutting head with a constant metered quantity of abrasive. Without this controlled supply, the mixing chamber for abrasive, air and water would become clogged up. With the FEEDLINE IV, this is effectively prevented. It feeds a metered flow of abrasive by means of compressed air into a 0.8-liter transfer tank. At the base of the tank, the abrasive collects on the metering and transfer wheel whose rotational speed determines the feed rate to the cutting head.

New design of abrasive outlet and control unit

The new abrasive outlet consists of a single component, facilitating maintenance as there are no moving parts. A bypass opening in the outlet component significantly reduces the risk of cutting water entering the plastic hose through which the abrasive is transferred to the cutting head. This prevents water entering the FEEDLINE IV housing. The metering wheel of the FEEDLINE IV is equipped with a shaft seal preventing water from entering the control unit. The housing lid of the metering wheel and the control unit are transparent, so that operators can easily detect any problems occurring in the unit.

Lower costs thanks to accurate control

Different materials to be cut require different quantities of abrasive. The thicker the material, the more abrasive is needed. Accurate metering settings help lower operating costs



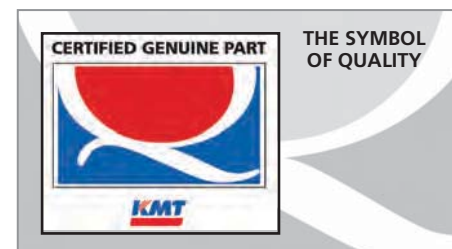
especially in units used to cut many different materials on a daily basis. The adjustment range of the FEEDLINE IV caters for flow rates of 0 to 1,000 g per minute. Greater quantities can be catered for by changing a shim.

Suitable for integrated or stand-alone control

Standard feed rates can be stored in the CNC controller and transferred to the FEEDLINE IV. Alternatively, the FEEDLINE IV operation can be controlled by means of a potentiometer. Each cutting head is thereby supplied by a separate FEEDLINE IV.

Lightweight and compact design for easy installation

The FEEDLINE IV module weighs only 6.8 lbs and can thus be mounted directly onto the motion system of the waterjet cutting unit. The abrasive hose connecting the metering unit to the cutting head is therefore kept very short, which is an advantage, as long hose length result in poor cuts.





Technical data

Flow rate (adjustable*)	0–1,000 g/min
Operating voltage	24 V DC
Control voltage	0–10 V / 4–20 mA
Net weight	6.83 lbs (3.1 kg)
Length	4.88 in (124 mm)
Width	5.12 in (130 mm)
Height	18.50 in (470 mm)

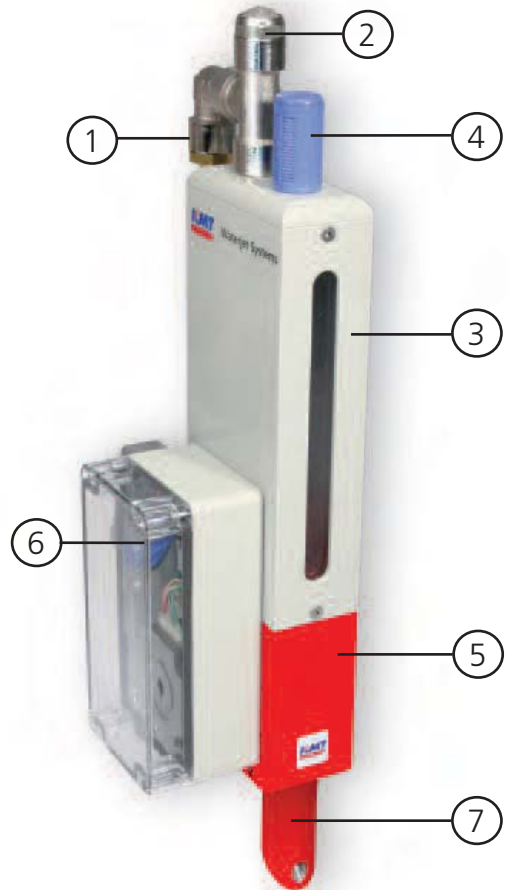
* Flow rates of greater than 1,000 g/min can be achieved by replacing a shim.

AMS III abrasive management system

The FEEDLINE IV is an integrated component and therefore designed for use in conjunction with the AMS III abrasive management system. It consists of an ABRALINE III abrasive feed unit supplying up to four FEEDLINE IV metering modules with abrasive. These can be individually controlled to supply the connected AUTOLINE™ II cutting heads with abrasive. The perfect coordination of these components results in precision cuts and makes the system particularly reliable and economical.

Improved features of the FEEDLINE IV:

- Re-designed abrasive outlet section
- Watertight control unit housing
- Flexible adjustment of control parameters to meet customer requirements
- Reduced module weight
- Transparent lids over electronics and metering wheel
- Powder-coated housing



- 1 Abrasive inlet
- 2 Air filter of abrasive inlet
- 3 Abrasive transfer tank
- 4 Air filter of transfer tank
- 5 Housing of feed system
- 6 Motor
- 7 Abrasive outlet



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