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DSM

DIE SPLITTING MACHINE ®,

a machine designed and produced by Compes to split die plate and mandrel of all portholes, even the most resistant, without efforts and in total safety.

DSM - DIE SPLITTING MACHINE ®, a Compes patent, separates die plate and mandrel, through an automated quick, quiet and efficient process, eliminating the problems of poor safety caused by the manual opening of the dies for tubular profiles.

Compes splitting system exploits the groove that is present on all porthole dies.
In this way even the most resistant portholes are opened easily and safely: die plate and mandrel are actually separated by the contemporary force of three tools, specifically designed in shape and size, so as to fit different shapes of grooves. These tools have the function of centring and clamping of the piece. The strength required for separation is self-regulated and progressive, uniformly distributed on the three tools and discharged axially. The die is loaded on the roller, so as to minimize the operator's efforts. Upon request, the robotic arm is available for loading and unloading of the die instead of manual operations.

The cycle of DSM DIE SPLITTING MACHINE ® is fully automatic, but in any case you retain the possibility of manual intervention on the individual stages. The ideal lay-out of DSM in the production cycle is immediately after soda treatment and before sand blasting and the entrance in the correction department.

1 • THE RISKS ARISING FROM A MANUAL SEPARATION

• Risk of injury to operators due to careless use of a hammer and chisel, which can cause serious injury to hands and fingers in particular.
• Datachment of chips and shards of steel, especially when the dies to be opened have been nitrided many times.
• Spray of residual soda, highly toxic, that can stagnate inside the holes of screws and pins.
• Seizing of the coupling diameters, due to the impossibility of applying a symmetric and contemporary radial force: little slope changes between the parts to be separated can ruin the coupling.
• Rupture of the mandrel, especially when this is very small, as a result of vibrations caused by hammer blows.
• Die life compromised, because during separation the bearings of die plate and mandrel may come in contact and cause irreparable damage.
• Opening times significantly prolonged in the case of dies deformed during the extrusion process.

The use of DSM DIE SPLITTING MACHINE ® is benefiting from the obvious advantage of eliminating all these risks, inconveniences and costs by combining ease of use and safety and zeroing noise.

2 • OPERATING INSTRUCTIONS IN STANDARD CONFIGURATION

The following operations are valid to split porthole dies.

- Place the die with the mandrel surface resting on the roller belts.
- Centre the die on the movable table, by hand or, on request, by an automatic arm.
- Position the pointer by hand on the die groove and take the measurement necessary for automatic correct positioning of the die with respect to the splitting tools.
- Press the start button to begin the fully automatic cycle:
  1) the protection casing comes down
  2) the movable table goes up and brings the die groove to the 3 tools
  3) the tools start to rotate, proceeding in sequence to perform automatic centring, splitting die plate and mandrel and blocking the die plate at the top
  4) The movable table comes down in order to complete separation of the mandrel that can then be taken off the machine by hand or through the optional automatic arm
  5) the movable table goes up just enough to sustain the die plate that is thus released by the 3 tools
  6) the die plate is deposited and moves toward the exit with the same procedure used for the mandrel

3 • TECHNICAL SPECIFICATIONS

	DSM 420	DSM 530
Power installed	3 Kw	3 Kw
Hydraulic unit	100 l	100 l
Hydraulic pump	6+20 l	6+20 l
Maximum pressure	160 bar	160 bar
Actuator with maximum torque	1800 Kg	1800 Kg or higher upon request
Tools for die splitting	Ø 180-420	Ø 180-530

• Structure in welded, tempered tubular steel.
• Movable platform with centring balls.
• Rollers for loading and unloading.
• Dimension detector for die centring.
• Low voltage electric equipment controlled by PLC (Siemens, A.B. or other make) in a unit integrated with the machine.
• Push-button check panel positioned at ideal height, including view panel
• Protection with casing in aluminum profiles and PVC GLASS with pneumatic movement.
• Optional automatic conveyor-arm, ideal for movement of all dies and essential for those with high diameter.

• Rebound-proof device, installed in the middle of the three tools, destined to create a contrast counterbalance limiting the rapid die splitting with spring separation effect.
• 4 possibilities of die loading and unloading, two from right and two from left.
• Sensor suitable to intercept the die non-separation and to prevent its accidental fall.

NB
For a good performance of DSM, COMPES specifications are to be followed for coupling diameters, opening grooves and pins, as per drawing supplied upon request.
The machine is supplied in compliance with CE standards or alternative ones.
DSM DIE SPLITTING MACHINE ®: a CO.M.P.ES. S.p.A. patent.
Compes reserves the right to apply without prior notification any technical modification deemed necessary or as a function of specific requests.