

# Screw Machine

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**&**

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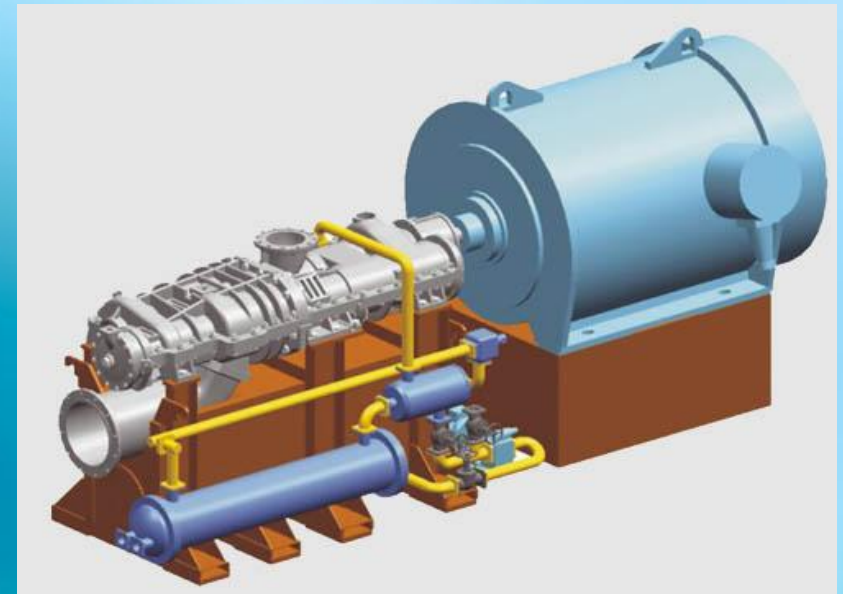
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# Screw Machine from the Company “Vanguard Recycling Energy”

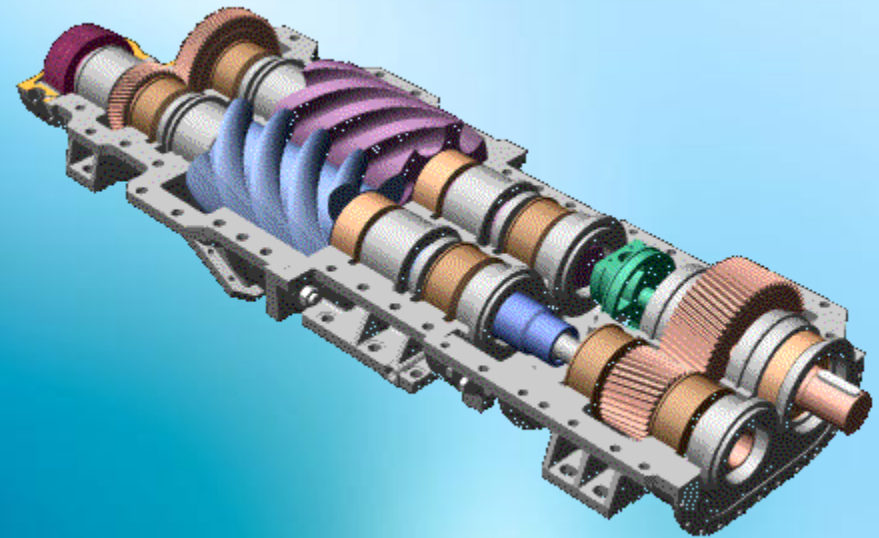
We offer you the development of our company - a screw machine (VM) to effectively utilize the excess energy drosseliruemogo couple, when it is applied to the technological needs, or gas, while reducing its pressure before feeding to consumers, and to receive mechanical energy that can be used to generate electricity or drive mechanisms

VM is a machine type and volume on the basis of an inverted screw compressor. It contains the master and slave rotors located in the building on the piers, where the housing has inlet and outlet pipes near the ends of the rotors. The rotors are made in the form of screws are in engagement with opposite helical surfaces, equipped with communications gear and are in a non-contact engagement with each other.



When working VM vapor or gas flows through the nozzle inlet, and passing along the screw, while rotating them out through the tube removal. At the same time it expands into the channels of variable size, formed by the rotor, housing and auxiliary parts. Power VM is controlled by changing the steam or gas. The output shaft of the rotor is connected through a lead sleeve to the shaft of the power generator or other equipment.

Also developed a steam BM higher dimension (up to 3.5 MW) to drive the feed pumps and gas power washer with a VM.



Technical advantages of the VM compared to a turbine blade in the power range 0.2 ... 4 MW:

- compact;
- simplicity of design, high maintainability;
- simplicity to the quality of steam, which can be of any moisture, but also contain solid particles;
- flexibility, rapid start and stop;
- Wide range of power control (20 ... 100%);
  - constant torque on the output shaft on the turnover;
- smaller (1.5 ... 2 times) cost;
- operational reliability and safety in emergency situations;
- high yield (up to 100 ... 150 thousand hours), due to the lack of mutual contact of rotors and, therefore, mechanical wear.



The table shows the design parameters of screw machines for pre-selection when working with the energy complex, "Ecopolis-salt" and "Ecopolis-silicate".

|                                     |                  |                  |                   |                   |                   |                   |
|-------------------------------------|------------------|------------------|-------------------|-------------------|-------------------|-------------------|
| Power, kW                           | 200              | 400              | 1000              | 1400              | 2000              | 2800              |
| Davlenie steam at the entrance, MPa | 1,3              | 1,3              | 1,4               | 1,6               | 1,4               | 1,6               |
| Outlet steam pressure, MPa          | 0,53             | 0,53             | 0,22              | 0,65              | 0,22              | 0,65              |
| Temperature pairs of an entry,      | 194              | 194              | 280               | 300               | 280               | 300               |
| Steam temperature at outlet,        | 150              | 150              | 130               | 220               | 130               | 220               |
| Steam flow, t / h                   | 8,5              | 17               | 18,6              | 40                | 37                | 80                |
| Output shaft speed, rev / min       | 3000             | 3000             | 3000              | 3000              | 3000              | 3000              |
| Rotor diameter, mm                  | 250              | 250              | 400               | 400               | 500               | 500               |
| Dimensions LxBxH, m                 | 1200x730x<br>440 | 1200x730x<br>440 | 1918x1170<br>x790 | 1918x1170<br>x790 | 2400x1470<br>x990 | 2400x1470x<br>990 |