

Energy efficiency



HERMLE AG PRACTICES INTEGRATED CONSERVATION OF RESOURCES AND ENERGY EFFICIENCY

Both the manufacturer and customer benefit from efficient machining processes. Therefore, Hermle has focused on integrated conservation of resources and energy efficiency for decades. From development to low-energy manufacturing (with a high level of in-house production) to the operation of machining centres - Hermle has stood for sustainable environmental protection combined with economic considerations for many years. Energy recovery is just one of the advantages enjoyed by our customers.



DOING ONE THING WITHOUT ABANDONING THE OTHER

This is how Hermle's philosophy prevailing for years of integrated conservation of resources and energy efficiency can be characterised best. Long ago the management of Hermle recognised that an efficient machining process for manufacturer and customer alike can only offer advantages if it counteracts waste and thus consumption of resources at the source. Consequently, sustainable conservation of resources in terms of materials and equipment represents key tasks, as do the engineering, production and fitting of high-quality machining centres based on "strict resource conservation and energy efficiency". This is especially true since these practices result in the lowest possible operating costs and the highest possible added value or earnings for the user.

ENERGY RECOVERY? OUR STANDARD FOR 20 YEARS!

These much repeated buzz words of energy efficiency and conservation of resources have been practiced for many years at Hermle over the entire life cycle of a machining centre, from development and manufacturing of the machine to operation by the customer. Hermle consistently conserves material and use energy efficiently in our manufacturing not because it has suddenly become fashionable, but from the conviction we espouse for sustainable environmental protection. Hermle has been demonstrating for a good 20 years now that this is absolutely compatible with economic considerations. Before saving energy even became an issue, we already installed effective energy recovery systems in our machining centres

in the basic configuration. Since then it has saved customers considerable energy costs and helped them achieve greater competitive strength.

MINERAL CASTING AND OTHER MATERIALS WITH A FAVOURABLE ECOLOGICAL BALANCE

Starting with the life cycle of a machining centre, Hermle uses a comparatively low-energy manufacturing process for the basic machine and machine components, mineral casting technology. Lightweight design is also practiced whenever possible. Virtual development helps in this regard, as does optimisation of basic systems and assemblies to ensure highly efficient use of materials. It should also be mentioned that Hermle maintains a very high





level of internal manufacturing at two central locations, which limits transport and delivery traffic to a minimum. Furthermore, local sources in the German speaking area or nearby European countries are preferred for procuring materials and purchase parts. Finally, great care is taken already during design and layout of machine elements and components to ensure that the required performance capability matches the use of energy. This is done by selecting high-quality machine elements such as roller bearings, ball screws, drives, servo axes and so forth, which also has the effect of saving energy and keeping service and maintenance expense to a minimum.

ENERGY EFFICIENCY AND CONSERVATION OF RESOURCES BEGINS WITH THE DEVELOPMENT

Not least significantly, intensive consulting and examination of issues with a wide range of customers and users allows us to find the optimum design in each case – optimum because it is compatible with the drive technology. That prevents overdimensioning, which brings with it higher energy consumption without even ultimately deriving value from the energy. The same applies to the design and dimensioning of cooling systems, which in combination with energy recovery and energy-saving control technology (situation-based or after-work disconnection, minimal warm-up phase) reduces energy demand to a minimum and proves to be a competitive advantage with rising energy costs. Compressed air demand also offers savings potential. It is reduced to a minimum at Hermle machining centres, for example because the roller guides have long-term lubrication and the spindles have 80% grease lubrication.

THE "OTHER" RESOURCE PROTECTION: MAXIMUM QUALITY FOR A LONG SERVICE LIFE

All the measures named here and the previously mentioned high quality of mechanical components and machine elements ultimately result in a demonstrated long service life of machining centres, which must also be seen as an important contribution to resource conservation. Not using high-quality components means having to make an expensive replacement more often, which not only results in a certain amount of machine downtime, but also causes the (otherwise actually superfluous)

manufacturing of a spare part, which in turn entails corresponding material and energy overheads. Simply repeating buzz words accomplishes nothing. Only a complete and uniform assessment makes sense and is fair. Someone who takes up the cause of providing an energy efficient machining centre is still a long way from qualifying as an energy saving and resource conserving producer.

CONSERVATION OF RESOURCES AND ENERGY EFFICIENCY AS CROSS-DIVISIONAL FUNCTIONS THROUGHOUT THE COMPANY

How serious a matter this is to Hermle throughout the entire company is apparent from the investment made in recent years in building technology and energy efficiency. This begins with the intelligent multi-storey design of the production halls, which immediately results in less use of land and surface area. On the other hand there is the clear in-house requirement to provide "natural" compensation for all new buildings at the company's location. In terms of energy supply, Hermle AG relies on a block-type thermal power station that runs on natural gas. Depending on the need it can be used to recover energy or for emergency operation. Heat recovery is also practiced with the supercharger system, as the heat is used in turn to support the hot water supply. The entire factory is also equipped with an integrated reporting and control system as well as climate control. There is also a light control system with break-time and night disconnection. All these measures always serve only two purposes: to create a pleasant work environment for employees while at the same time controlling it so that as little energy as possible is needed and practically none is wasted. In terms of reducing impact on resources, the environment and the workplace as well as for energy efficiency, there are both "educational" and economic reasons for this, as people at Hermle AG would frankly admit. The one does not necessarily exclude the other!

EFFICIENT MANUFACTURING

We use energy efficient manufacturing methods not because it is the current trend or because it is required of us, but on principle. And we always have.

Low energy component manufacture

- Mineral casting technology
- Lightweight construction

Virtual machine optimisation / machine development

Reduction of transport energy consumption

- High levels of in-house production
- Only two manufacturing locations
- Locally sourced components
and materials
- No material tourism

High quality, high efficiency components

- Ball screws
- Guideways
- Antifriction bearing etc.

EFFICIENT OPERATION

Our machining centres are energy efficient both during their manufacture and during operation.

*Energy recovery has been standard at Hermle for
over 20 years*

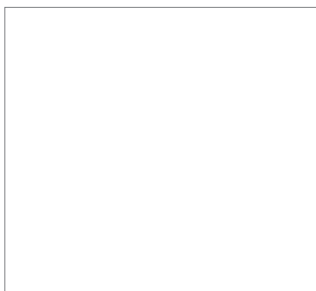
High quality servo axes

*Ideal drive design for
the respective application*

*Demand-based cooling technology
both for dimensioning and
in application*

*De-energize system:
Up to 80% less energy consumption
in stand-by mode*

Very long machine service life



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