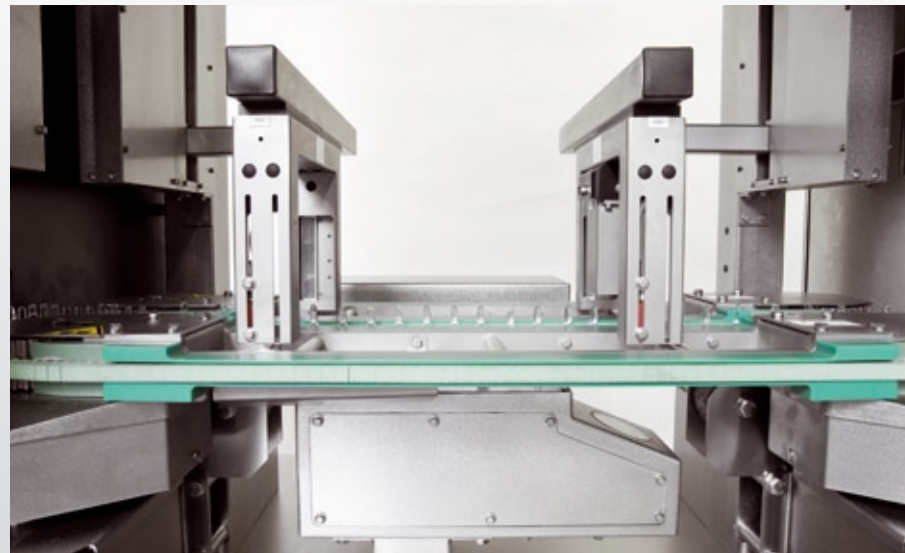
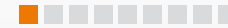




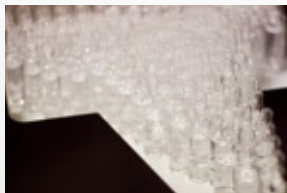
**FULL CONTAINER INSPECTION**

**HEUFT *spotter* PH**

**HEUFT *spotter* PH**



## Identifying faults in a straight-through system



Packaging filled with parenteral drugs and other pharmaceutical products must be free of foreign substances and completely intact. Otherwise the health of the patient could be seriously endangered. HEUFT has developed an innovative end of line system for specifically identifying contaminated and damaged pharmaceutical containers such as ampoules and vials and rejecting them in time: the HEUFT *spotter PH*.

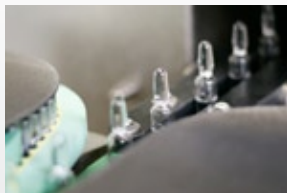
The device tracks down the smallest particles and contaminants such as

floating particles, foil remnants or glass splinters inside pharmaceutical containers filled with transparent liquids. The same applies to deviations in shape, chips, scratches or cracks on the container itself. The system identifies burn marks, among other things, during the ampoule tip inspection. This is black soot residue which can occur during the closing process. Missing, damaged or non-brand vial crimp caps cannot escape the complete inspection either.

In contrast to conventional pharmaceutical inspectors the HEUFT *spotter PH* was implemented not as a rotary but as a straight-through system without change parts. The result: particularly high throughput rates of up to 700 containers per minute and a particularly fast and simple brand change at the touch of a button. Maintenance and storage requirements and the costs involved with this are thus reduced to a minimum compared with rotary systems with numerous change parts.



## Complete optical inspection



The previously separated pharmaceutical containers are guided straight past several optical detection modules by means of a servo-controlled belt drive. They are each aligned in the course of this so that bases, sidewalls, neck and head areas can be continuously examined. For this they are optimally illuminated using LED technology. Three CCD cameras below the belt carry out the base inspection and three further cameras above the belt the sidewall, head and ampoule tip inspection.

The ampoules and vials are rotated by 120 degrees after each of these stations in order to ensure an all-around coverage of the complete container volume. An additional sidewall inspection has been integrated into the HEUFT *spotter PH* just before the outfeed so that such faults which the belt may cover are also detected: two cameras produce a total of four views of these areas there using a mirror cabinet. A final optical module in the outfeed checks the closures from above.

There are two methods available for identifying floating particles, foreign objects which have sunk and defects with the most diverse characteristics: the dark field detection finds reflecting and transparent faults and the bright field detection those which are opaque. The height and passage width of the belt drive can be adjusted automatically in the same way as the respective position of the individual cameras for fast brand changeovers and low maintenance and storage costs.



The HEUFT *reflex* image processing card

## The HEUFT *reflex* image processing system



Combining several camera pictures in real time can only be achieved with an extremely powerful image processing technology. The calculating speeds of image processors available on the market are quickly exhausted in this connection and can only meet these requirements at low production outputs.

The HEUFT *spotter PH* is equipped with the proven HEUFT *reflex* high-

performance image processing system in order to ensure an optimal inspection quality even in the high-speed section with a gap of only 5 mm between the individual containers. There is more time for the software controlled picture analysis because in this way basic processing stages can be processed on a hardware level in a very short time.

The result: maximum detection reliability with a minimum false rejection rate. Only those ampoules and vials are removed from the production flow, by means of an in-house developed rejection system, which are really faulty.



## Monitoring and self-tests



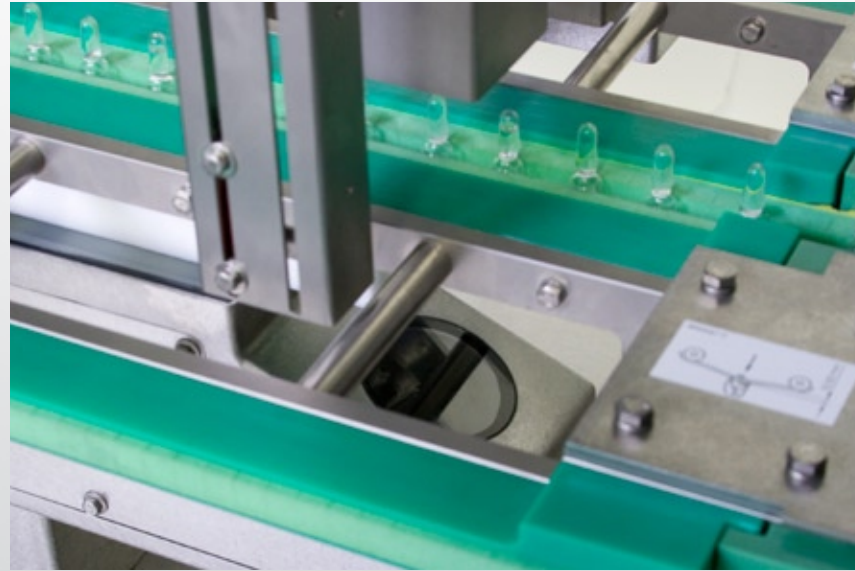
Container tracking ensures that each product is really inspected. For this triggers in the infeed and outfeed as well as inside the device determine the exact container position and encoders the respective transport speed. A reject verification ensures that all the products which have been identified as being faulty are consistently rejected.

Furthermore the inspection system validates its own detection performance at regular, freely configurable intervals

using special test container programs. Information regarding faulty functions which have been diagnosed in the course of this can be saved in the system just as pictures of the products identified as faulty, details about standstills and malfunctions and all other relevant production and batch data. This important information can be retrieved at any time from the device itself as well as from each office PC connected to the network. Connection to higher-level databases, production

data acquisition and MES systems makes it possible to archive this in the long term. User related, password protected access rights protect the system against unwanted changes to the adjustments and make all intervention traceable.

These monitoring, documenting and archiving functions help to ensure that the inline inspection system fulfils the fundamental FDA, GMP, GAMP 5 and 21 CFR 11 requirements.



## Specifications



The HEUFT *spotter PH* impresses, during the inline quality inspection of filled, transparent pharmaceutical containers with a diameter of 10 mm to 40 mm and a height between 45 mm and 100 mm, with the following performance data:

- maximum conveyor speed - 0.5 metres per second
- maximum throughput - 700 containers per minute

**The following faults are reliably detected:**

- 0.25 mm<sup>2</sup> opaque foreign objects and contaminants
- 1 mm<sup>2</sup> transparent and semitransparent faults such as suspended matter, foil remnants and damage

The false rejection rate is less than 0.2%.

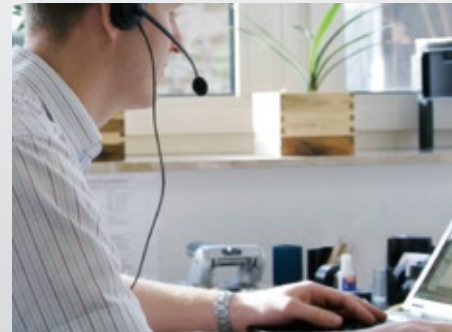


## Your cost advantages with HEUFT



We do everything in order to combine the very highest quality with fair prices:

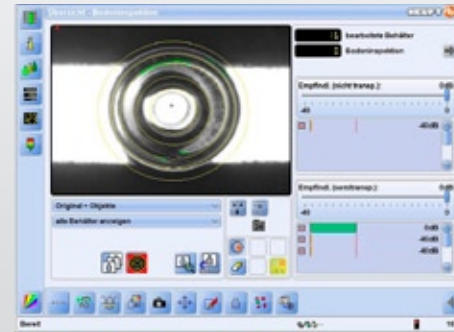
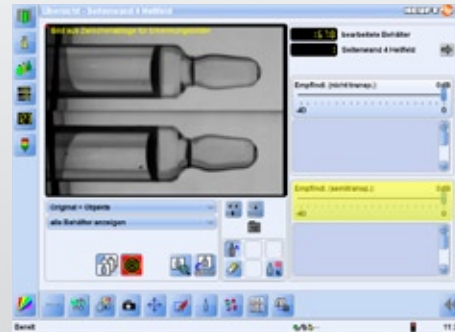
- increased efficiency due to the straight-through system
- series production due to the modular design of the HEUFT *SPECTRUM* series
- easy integration into existing lines
- high engineering performance
- fast brand changes and low storage costs due to the absence of change parts
- cost-cutting due to reduced downtimes and ensuring the production flow
- robust and stable components
- increased service life
- low wear and maintenance requirements
- the HEUFT *TeleService* cost savings - the service technician must not be specially called out
- an investment is considerably less than the costs involved due to loss of image caused by faulty products



## Networking



- integrated Ethernet interface and TCP / IP access to all networks
- connection to preconfigured DDE interfaces and SQL databases possible
- operation possible either via jog shuttle or touchscreen on the TFT screen at the device or via a network
- the HEUFT *PILOT* graphical user interface with a comprehensible menu structure for easy operating
- automatic transfer of counter readings and fault messages by SMS or email if required
- firewall protected Ethernet connection to the HEUFT *TeleService* for diagnosing and eliminating malfunctions from a distance



## Device operation and the HEUFT PILOT



- multilingual, simply arranged, comprehensible menu structure with extensive help boxes and complete online user's manual - the user interface can be supplied in any language / graphic characters if required
- password protected operator levels, can be freely adjusted to suit the tasks of the operating staff, the quality assurance department etc.
- easy identification of spare parts with online and offline spare parts list with photographs and exploded views - the order can be sent from the device either to an internal purchasing department or directly to HEUFT
- the operator receives all the information during a brand changeover regarding the necessary steps in order to exclude possible operating errors
- clear fault messages with service notes and support in order to avoid downtimes



HEUFT *InLine*



HEUFT *basic*



HEUFT *squeezer*

## Other HEUFT products



The following HEUFT devices are also suitable for an inline quality check during the production and packaging of pharmaceutical and healthcare products:

### The HEUFT *InLine*

- inspects containers before they are filled

- detects dirt, contamination, material defects and damage
- detects transparent faults such as foil remnants

### The HEUFT *basic*

- a compact full container check
- identifies fill level deviations
- filler valve monitoring

- label and closure detection

### The HEUFT *squeezer*

- leakage check for plastic pharmaceutical containers
- checks the closure integrity
- measures the internal container pressure
- overfill and underfill check



## CONTACT DETAILS

### HEUFT SYSTEMTECHNIK GMBH

Burgbrohl, GERMANY  
Phone: +49 2636 56 0  
info@heuft.com

### HEUFT LTD.

Tamworth, GREAT BRITAIN  
Phone: +44 1 827 25 5800  
uk@heuft.com

### HEUFT HISPANIA, S.A.

Madrid, SPAIN  
Phone: +34 91 6667 300  
spain@heuft.com

### HEUFT QUALIPLUS B.V.

Deventer, NETHERLANDS  
Phone: + 31 570 6617 00  
netherlands@heuft.com

### HEUFT FRANCE S.A.

Brumath, FRANCE  
Phone: +33 388 59 3000  
france@heuft.com

### HEUFT ITALIA s.r.l.

Vigevano, ITALY  
Phone: +39 0381 290411  
italy@heuft.com

### HEUFT SCAN Aps

Gilleleje, DENMARK  
Phone: +45 4836 5070  
scandinavia@heuft.com

### HEUFT USA Inc.

Downers Grove, USA  
Phone: +1 630 968 9011  
usa@heuft.com

### HEUFT DO BRASIL Ltda.

Alphaville-Barueri-SP-BRASIL  
Phone: +55 11 4195 7671  
brasil@heuft.com

### HEUFT S.A.

Beccar, ARGENTINA  
Phone: +54 11 4707 0936  
argentina@heuft.com

### HEUFT MEXICO S.A. de C.V.

Naucalpan de Juárez, MEXICO  
Phone: +52 55 5374 3280  
mexico@heuft.com

### HEUFT Systems Technology Co., Ltd.

Shanghai, CHINA  
Phone: +86 21 6434 3911  
china@heuft.com

### HEUFT ASIA LTD

Hong Kong, CHINA  
Phone: +86 21 6434 3911  
asia@heuft.com

### HEUFT AUSTRIA GMBH

Leobersdorf, AUSTRIA  
Phone: +43 2256 65556 0  
austria@heuft.com

### OOO HEUFT EURASIA

Moscow, RUSSIA  
Phone: +7-495-935-8704  
eurasia@heuft.com

### INTERNET:

www.heuft.com  
**E-MAIL:**  
info@heuft.com

# The HEUFT *spotter PH* full container inspection

for identifying contaminated and damaged pharmaceutical containers



## FUNCTIONS

- detects floating foreign particles and those which have sunk to the container base in transparent products
- detects contamination, defects and deviations in shape
- ampoule tip inspection for detecting burn marks and damage
- identifies vials with missing, damaged or non-brand crimp caps

[more] \*

## THE ADVANTAGES

- maximum detection reliability
- complete coverage of the total container volume
- extensive base inspection without "blind areas"
- linear operation for a high throughput
- optimal container alignment by means of a specially developed servo-controlled belt drive
- change parts dispensed with for fast brand changes at the push of a button and low storage costs
- automatic function monitoring by means of integrated tools such as a test bottle log, container tracking, reject verification and message stack

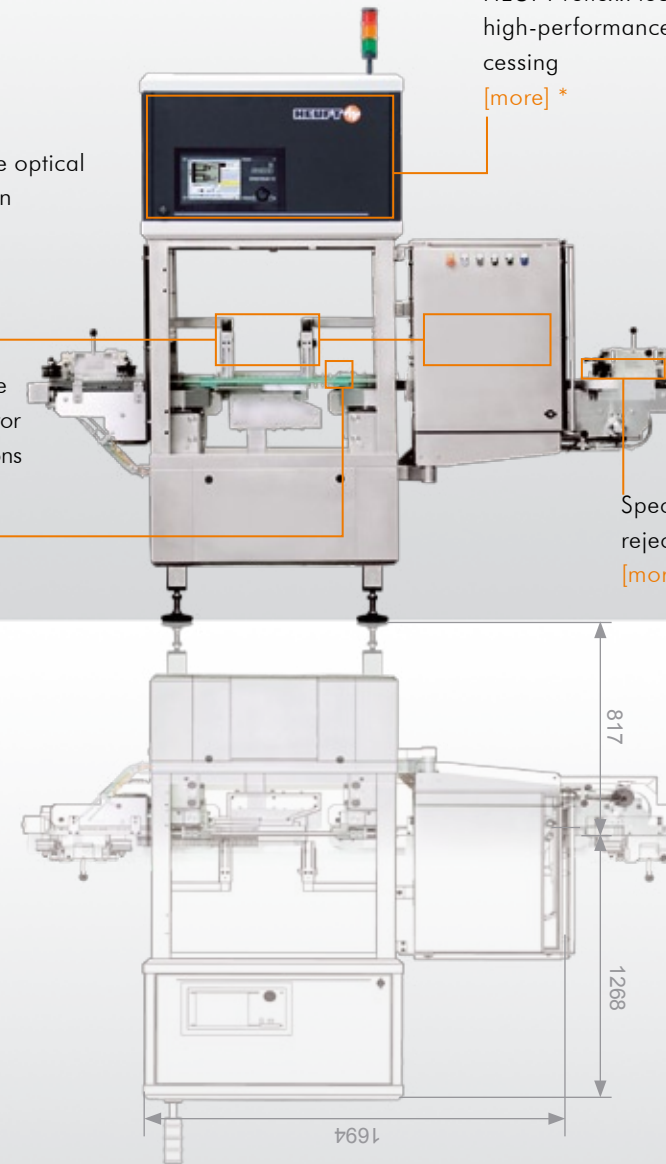
[more] \*

Complete optical inspection  
[more] \*

Automatic adaptation of the passing width of the conveyor belt and the camera positions during brand changeovers  
[more] \*

HEUFT *reflexx* technology for high-performance image processing  
[more] \*

Specially developed rejection system  
[more] \*



\* [more] detailed information on [www.heuft.com/ph](http://www.heuft.com/ph)

