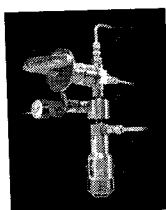


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Netherlands

Dopak Inc  
Houston TX  
USA

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### INDEX

- ✓ Company presentation Dovianus
- ✓ Introduction to sampling
- ✓ Sampling Systems
- ✓ Consumables and spares
- ✓ Documents for DOPAK Sampling Systems
- ✓ Options for DOPAK Sampling Systems



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### Dopak Inc

- ✓ Founded in 1926
- ✓ In sampling business since 1979
- ✓ CIRCOR Instrumentation Technologies (CIR)
- ✓ Office in Netherlands and Houston TX USA
- ✓ Worldwide local representatives
- ✓ ISO 9001 (2000) certified company
- ✓ ASME/(T)PED/ATEX standards



The Worldwide Standard in Sampling



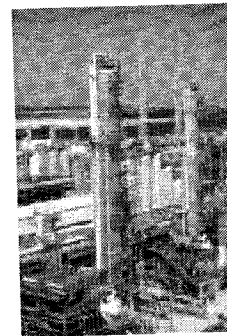
Dopak Inc  
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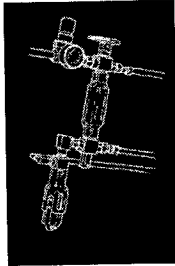
### Industries

- ✓ Bulk Chemicals (aromatics, olefins)
- ✓ Fine Chemicals
- ✓ Refineries
- ✓ Oils and gas
- ✓ LNG
- ✓ Pharmaceuticals
- ✓ Transport (shipping)
- ✓ Nuclear





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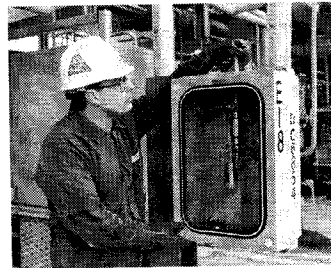
Dopak Inc  
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**Products**

DOPAK CLOSED VENT SAMPLING SYSTEMS FOR LIQUIDS, GASES AND LIQUIFIED GASES



Liquefied gas



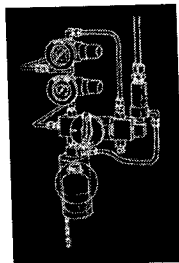
Gas



Liquids



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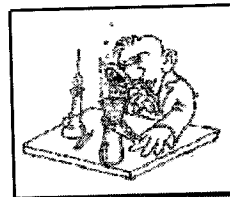
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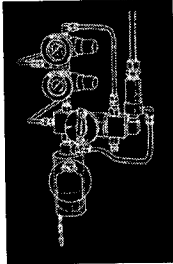
**Design requirements**

- ✓ Specification  
Pipe or instrumentation specification
- ✓ Criteria  
Design/operating pressure temperature, viscosity, phase, particles. Product properties
- ✓ Representativity  
Dead volume  
System purge  
External purge  
Contamination
- ✓ Safety





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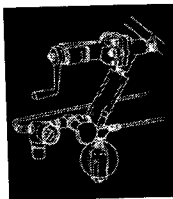
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### Objectives of sampling system

- ✓ Provide safety for the operator  
No contact with the product to be sampled  
Easy (one handle) operation
- ✓ Provide safety for the environment  
No spillage, no fumes
- ✓ Provide a 100% representative sample



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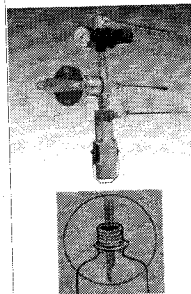


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### Sample containers - Bottles

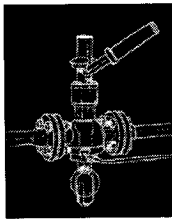


- ✓ Bottle closed with cap and septum
- ✓ Needle assembly/sleeve arrangement
- ✓ Closed vent
- ✓ Product at atmospheric pressure

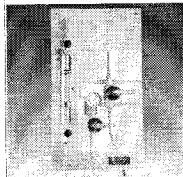




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### Sample containers - Cylinders



- ✓ Cylinder with valves and QC couplings
- ✓ Outage for liquids (external/internal)
- ✓ Closed vent / DESO QC
- ✓ Product at process pressure

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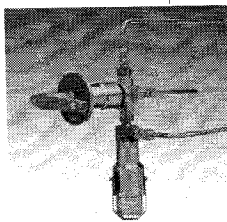
Liquefied gas



Gas



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### DPM series

#### Applications

- Liquids at lower pressure
- Sampling with lower vapour pressures
- Corrosive, hazardous liquids
- Viscous fluids, slurries
- Sampling from pipelines and tanks

#### Available Configurations

On/off

System purge

Back purge

Needle purge

Back/needle purge

System purge and continuous needle purge

In line, needle purge

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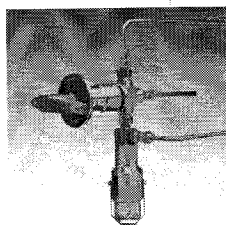
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Liquids



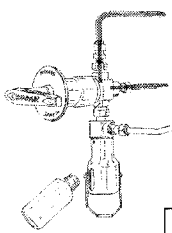
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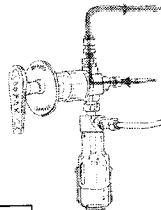
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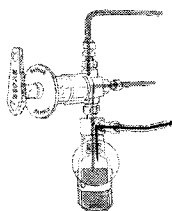


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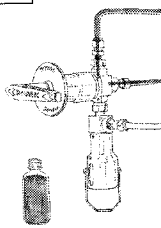


PURGE

DPM  
SYSTEM PURGE



SAMPLE



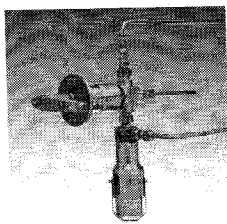
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Liquids



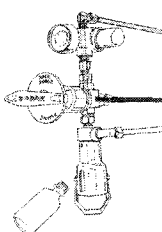
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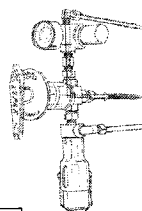
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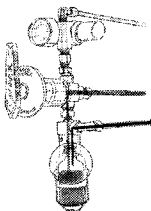


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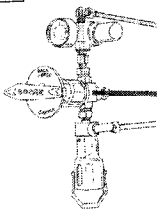


PURGE

DPM  
BACK PURGE



SAMPLE



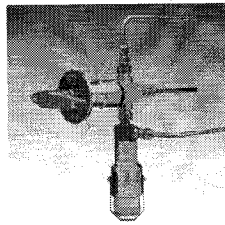
OFF



Liquids



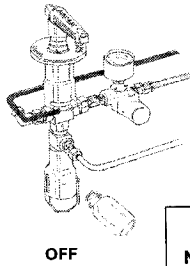
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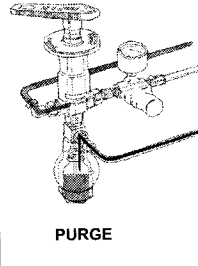
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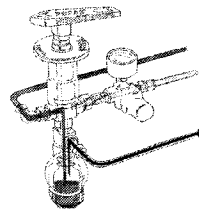


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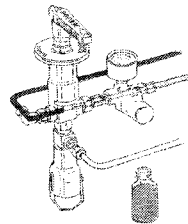
DPM  
NEEDLE PURGE



PURGE



SAMPLE



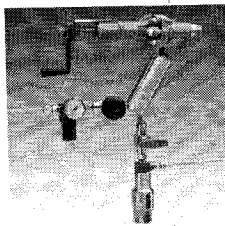
OFF



Liquids



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### DPJ series

#### Applications

- Fixed volume
- Corrosive, hazardous liquids
- Viscous fluids, slurries
- Sampling from pipelines, tanks, reactors
- Vacuum conditions
- Liquids at low and elevated pressures
- High temperature

#### Available Configurations

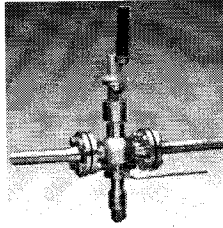
- Purge
- Fixed volume
- Fixed volume with heating/cooling jacket
- Solvent purge



Liquids



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**DPT series**

**Applications**

- In line liquid sampling
- Corrosive, hazardous liquids
- Viscous fluids, slurries
- Sampling from pipelines

**Available Configurations**

- In line, on/off
- In line, continuous needle purge

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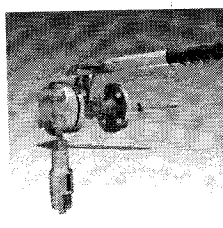
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Liquids



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**HD series**

**Applications**

- Liquids at lower pressure
- Sampling with low vapour pressures
- Corrosive, hazardous liquids
- Viscous fluids, slurries
- Sampling from pipelines and tanks
- Fire safe antistatic valves

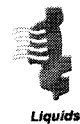
**Available Configurations**

- On/off

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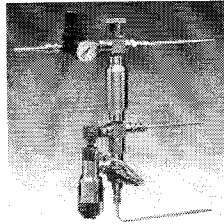


Liquids





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### S23 series

#### Applications

- Fixed volume sampling
- Liquid sampling at low and elevated pressures
- Corrosive, hazardous liquids
- Sampling from pipelines and pump around loop from reactors
- Small 1cc sampling

#### Available Configurations

- Threaded
- Welded/flanged
- Continuous needle purge
- Third coupled valve
- Cooling jacket
- HVP (High Vapour Phase)
- High temperature



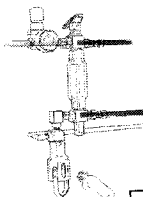
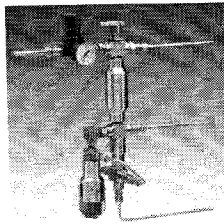
Dopak Inc  
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Dopak Inc  
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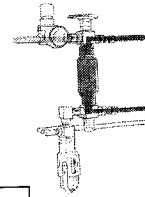
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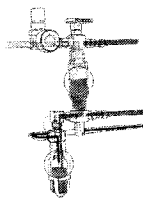


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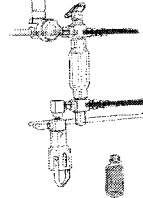


PURGE

S23  
Fixed volume sampler



SAMPLE



OFF



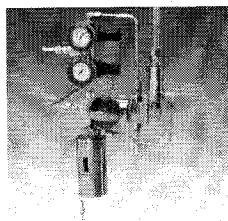
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### S32 series

#### Applications

Liquid sampling at low and elevated pressures  
Corrosive, hazardous liquids  
Sampling from process lines or from top of reactor  
below atmospheric conditions  
Viscous fluids, slurries

#### Available Configurations

Back purge vacuum  
Back purge venturi unit  
Back/needle purge vacuum  
Back/needle purge venturi unit  
Fixed volume  
Overflow vacuum  
Overflow vacuum, venturi unit

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Bergschenhoek  
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Dopak Inc  
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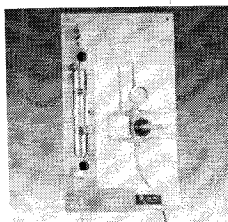
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Liquids



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Standard in Sampling



### S32-G series

#### Applications

Gas sampling

#### Available Configurations

System purge  
Bypass purge cylinder  
Process to flare

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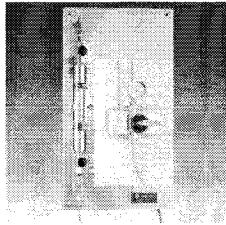
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Gas



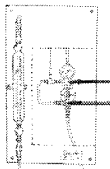
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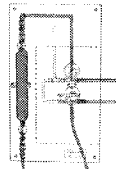
Dopak Inc  
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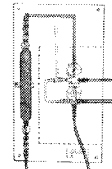
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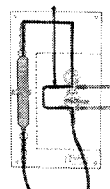
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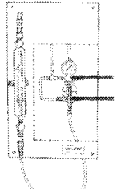
PURGE



OFF



VENT



OFF

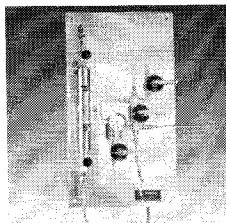
S32-G  
System Purge



Gas



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### S32-LG series

#### Applications

- Liquefied gas sampling
- Fixed external outage
- High vapour pressure liquids
- Zero quick connect vapour release

#### Available Configurations

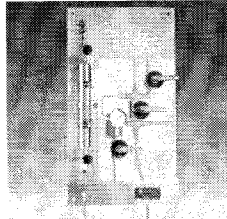
- System purge
- Vent to flare
- Outage tube
- Purge expansion
- Bypass purge cylinder



Liquefied gas



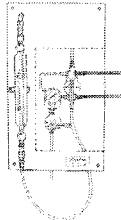
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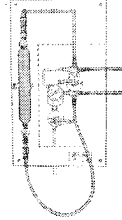
Dopak Inc  
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Dopak Inc  
Houston TX  
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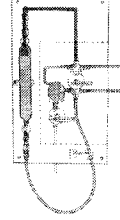
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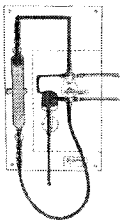
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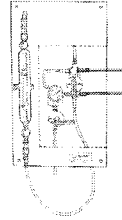
PURGE



EXPANSION



VENT



OFF

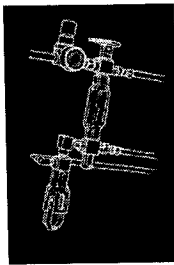
S32-LG  
System Purge



Liquefied gas



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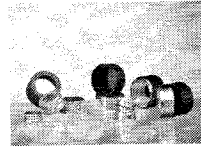
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Consumables and Spares



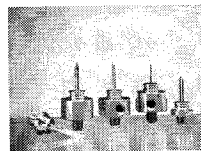
BOTTLES



CAPS



SEPTA



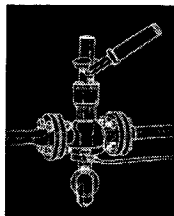
NEEDLE ASSEMBLIES



SLEEVES



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Standard in Sampling



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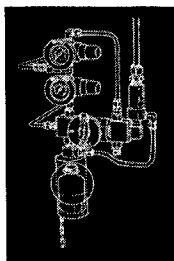
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### Documents for sampling systems

- ✓ Drawings with part list
- ✓ Material certification 3.1.B.
- ✓ Test certificates (pressure, function, etc)
- ✓ Installation, operation and maintenance manuals  
in local language
- ✓ Data sheets
- ✓ P&ID
- ✓ Welding documentation (WPS/PQR/WQR)
- ✓ Quality plans



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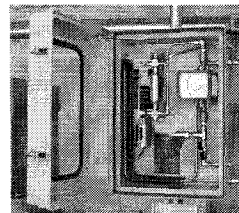
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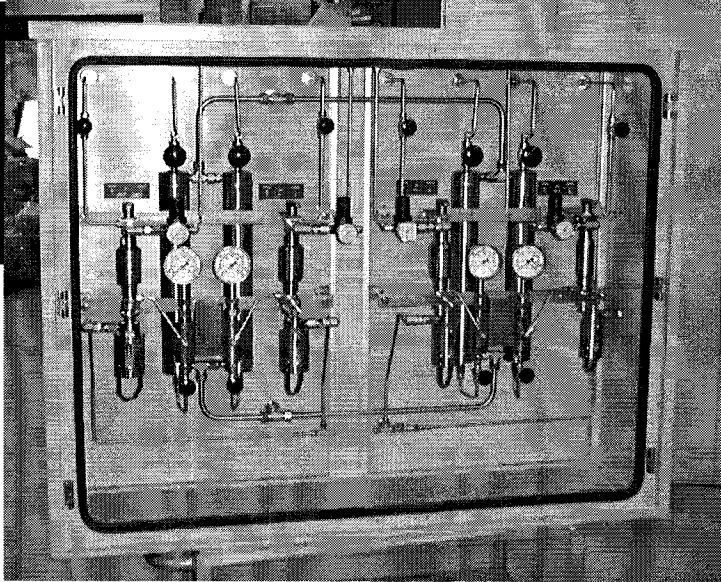
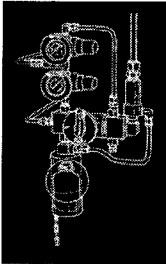
### DOPAK Options for sampling systems

- ✓ Enclosures
- ✓ Coolers, temperature indicators
- ✓ Block and isolation valves
- ✓ Mounting plates, pipe stands
- ✓ Carbon canister (emission filters)
- ✓ Exotic materials (SS316 standard)  
(HC, HB, I625, I825, Ti, PTFE, M400, A20)
- ✓ Spring return handles





The Worldwide  
Standard in Sampling



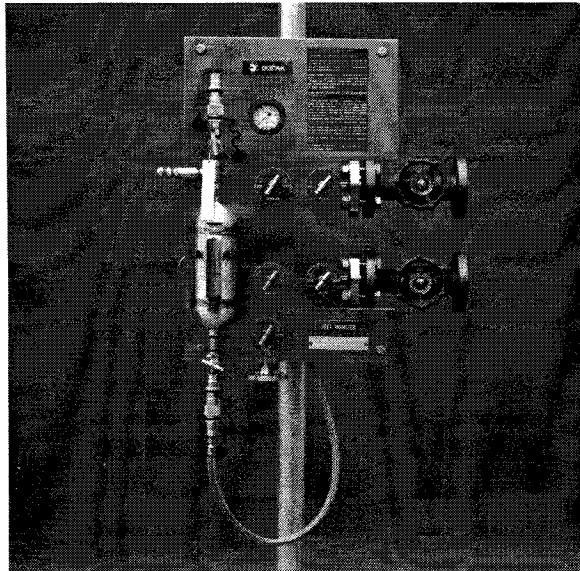
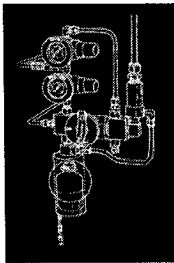
Dopak Inc  
Bergschenhoek  
Netherlands

Dopak Inc  
Houston TX  
USA

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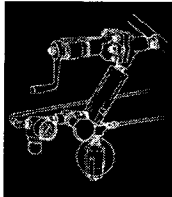
Dopak Inc  
Bergschenhoek  
Netherlands

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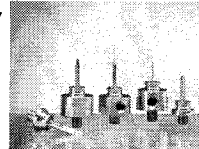
Dopak Inc  
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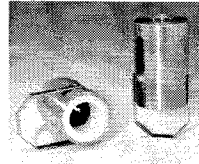
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### DOPAK VS OTHER SAMPLING SYSTEM SUPPLIERS

✓ DOPAK Single piece needle assembly without O-rings, without small parts which are difficult to maintain

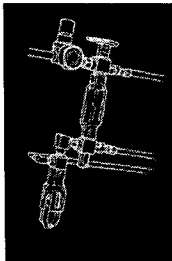


✓ DOPAK Sleeves with patented sliding guidance ring to ensure optimal piercing of the septum



✓ DOPAK uses standard "in the market available" valves

✓ DOPAK supplies a standard solution, engineered to customers need.



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Questions ?

Thank you for your attention

\*\*\* VISIT US AT WWW.DOPAK.COM \*\*\*



Liquids



Liquefied gas



Gas