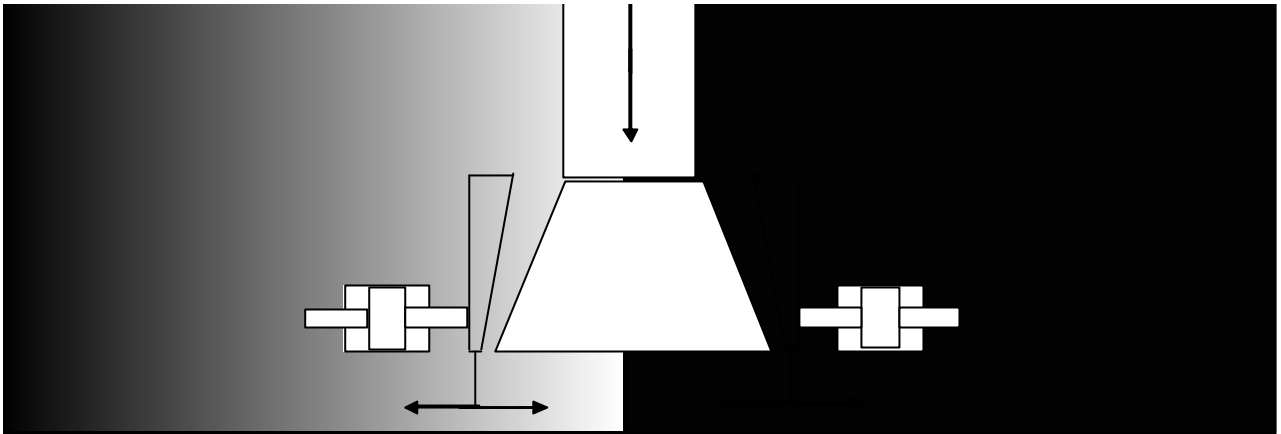


# 3DX

THE NEW DEFORMABLE DIE RING SYSTEM . . .

. . . FROM BMC CONTROLS



# 3DX

Now you have a *choice*

**A**bout 25 years ago a brilliant inventor, Harald Feuerherm introduced his 'PWDS' deformable die ring system. Initially the marketing of the product was done in conjunction with Moog GMBH, and eventually directly by 'Buro Feuerherm'. The system has been proven to make significant improvements to parison wall thickness by flexing a special die ring into programmed ovality.

In offering our own system we felt it was important not to do a 'me too' but to try and introduce some new ideas. Initially we concentrated on improving reliability as we were particularly concerned about cylinder wear and leakage problems. We subsequently discovered that new materials, heat treatment and nitrogen ion bombardment could also make improvements to the flexible ring.

Many of you are already aware of our expertise in parison programming technology. In addition to representing Moog we have also designed and manufactured parison programmers for specialist applications.

Blow Moulding companies now have a choice of supplier which not only brings the prospect of more competitive prices, but perhaps more importantly new 'up to the minute' technology to give you the edge over your competitors. We offer the complete package of deformable ring, its mounting system, parison programmer, and all related components.

#### *Summary of features*

1. Flexible ring treated with latest ion-implantation process gives longer life and improved crack resistance
2. New hydraulic cylinder design enables users to remove and remount cylinder without calling for expensive specialist help
3. Special thermal isolation system protects servovalve and cylinder from head heat without creating a 'cold spot' on the die
4. Cylinder incorporates 'drain glands' to channel any leakage back to tank. This considerably increases the time between seal change service
5. Latest Moog 'Direct Drive Technology' servovalve is much more accurate and reliable than traditional servovalves
6. Choice of parison programming systems, popular slide type controls or touch screen
7. Hydraulic interlock to prevent damage to the flexible ring on accidental cold starts
8. Installation, and service from BMC Controls whose engineers have over 20 years experience supplying hundreds of Moog parison programming systems.

## WHAT CAN **3DX** DO FOR YOUR PROCESS?

### *WEIGHT SAVING*

*Up to 10% material saving by programming out unnecessary sections*

### *FASTER CYCLE TIME*

*Cooling significantly improved by reducing the slow cooling sections*

*Stronger Containers*

*Internal Stresses reduced due to uneven cooling*

## WHICH CONTAINERS CAN BENEFIT THE MOST?

*Almost all containers from 10 Lt upwards that have to pass stringent quality and strength tests. The system is particularly useful for 'UN' drums.*

*Deformable die ring technology is virtually essential for technical mouldings such as automotive fuel tanks due to their highly asymmetric design.*

## HOW DOES THE SYSTEM WORK?

*The heart of the system is a die ring made from a special grade of steel, heat treated for optimum flexibility, and then subjected to an ion implantation process. The rings shape is dynamically altered by two or more servo cylinders. These are controlled by a unit very similar to a conventional parison programmer.*

*The cylinders can squeeze and stretch the ring and by programmer settings the ring can also exhibit a 'shifting' action. The net result is the control you need to radially program the parison thickness.*

*This system works in synchronism with your existing parison programmer*



## FREQUENTLY ASKED QUESTIONS

### How many systems have been sold?

Although we have just launched this product we have already sold two systems to leading machine manufacturers for 25 Lt. drum applications.

### Is installation assistance available?

Yes, we offer on-site installation, commissioning and optimization.

### Will we sell to China?

Yes, and to any country in the world.

### What about patents?

The original PWDS system was made public around 1979, so the basic patents have expired.

### Is the statically flexible core required?

It's your choice. The device known as 'SFDR' is not intended to be re-adjusted from one moulding to another, its main advantage is in optimising shape without the time consuming process of machining the core.

If you are skilled at producing profiled cores then you may feel that the 'SFDR' is unnecessary.

### Does the system require a separate hydraulic supply?

No. By using the latest Moog DDV servovalves we have overcome a source of unreliability with traditional systems. We recommend that the 3DX system is supplied from the pressure presently feeding the wall thickness servovalve.

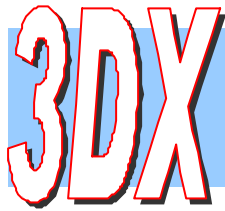
Because the 3DX only requires a very small amount of oil we recommend that the supply/return pipes are 10mm (3/8").

### Does the 3DX system include a programming system?

No, it doesn't, but as agents for Moog for over 20 years, we can help you select the best control system for your application

### What is the smallest flexible ring that can be produced ?

Theoretically there is no lower limit, but the amount of possible deformation reduces with diameter to the point that no useful deformation can be achieved.



## FREQUENTLY ASKED QUESTIONS

### Who uses deformable die ring systems?

Producers of most containers with 'UN' certification because the system enables requirements like 'drop test' to be achieved at minimum container weights.

Containers like 25 lt jerry cans and 'L' ring drums are perfect examples of the most popular applications for deformable die ring systems.

The system also gives the critical wall thickness control needed to produce complex technically shaped parts like automotive fuel tanks.

### Are the cylinders built to withstand high temperatures?

Yes, not only do our cylinders incorporate the latest high-temperature seals, we have also fitted 'drain glands' to send any leakage back to tank. This means that the small leaks that start with initial seal wear do not cause a problem.

We have also taken the trouble to insulate the cylinder from the source of heat which further reduces seal problems and oil being 'cooked' in the servovalve.

### Can different profiles be applied to each side of the ring?

Yes, but this is normally only necessary for asymmetrically shaped mouldings e.g. car fuel tanks. The control system requires two channels of profile generator.

### Can the 3DX be fitted to any type of blow moulding machine?

Yes, however the results you get from deformable die ring systems can be affected by the head design.

The system is not intended to fix a faulty head, nor can it improve material mixing or improve the quality of the parison. It can only work with what it is given, but it will do what it is designed to do—to dynamically vary the wall thickness of the parison to achieve better material distribution on the moulding.

Will it fit your machine? *Probably, Call us to discuss...*

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