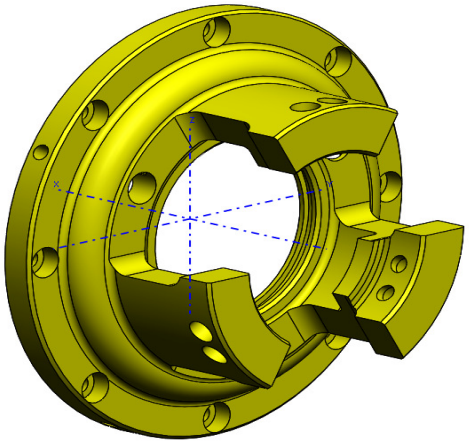
SPEEDGRIP
CHUCK CO.

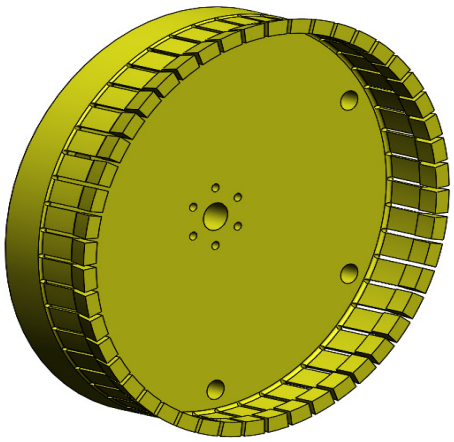
“Finger” Chucks

Collection of internal and external gripping “Finger” chuck design examples created for a variety of parts and operations

Finger collet chucks

A hybrid of diaphragms & s.o.e. collets





Traditional diaphragm chuck

1. 3 or 6 grip fingers
2. Uses inserts
3. Small amount of finger movement
4. High precision for 2nd operations
5. Tends to cloverleaf the part
6. No sliding taper for actuation
7. Primarily external

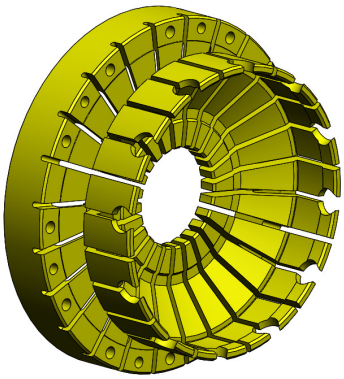
Traditional s.o.e. collet chuck

1. Many collet segments
2. Does not use inserts
3. Large amount of finger movement
4. High precision for 2nd operations
5. Tends to round the part
6. Sliding taper for actuation
7. Internal or external

Finger collet

Similar to diaphragm

1. No sliding taper For actuation
2. Primarily external



Similar to s.o.e. collet chuck

1. Many grip fingers
2. Does not use inserts
3. Large amount of finger movement

Unique to finger collet

1. Compensating: primarily for first operations
2. Tends not to round the part

Finger collet chucks

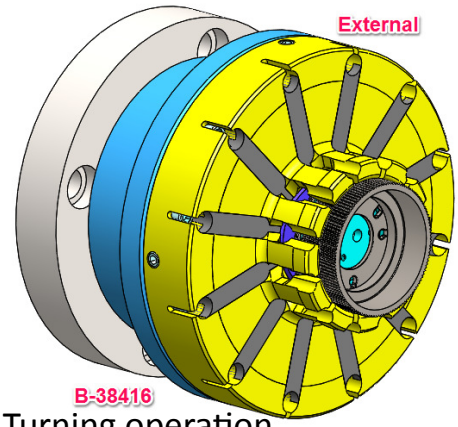
A hybrid of diaphragms & s.o.e. collets

Application Guidelines

1. Common applications: stamped parts, powdered metal parts, die castings, other thin walled parts where the customer desires the 1st operation turned surface to be as round as possible.
2. Internal gripping finger collets tend to lift the part off the work stop
3. External gripping finger collets tend to lightly pull the part down against the work stop
4. Part tolerances or load clearances of 2-3mm (.08-.12) are common
5. This is a compensating chuck, therefore best suited for 1st operations, not best for holding relationships with previously machined surfaces.

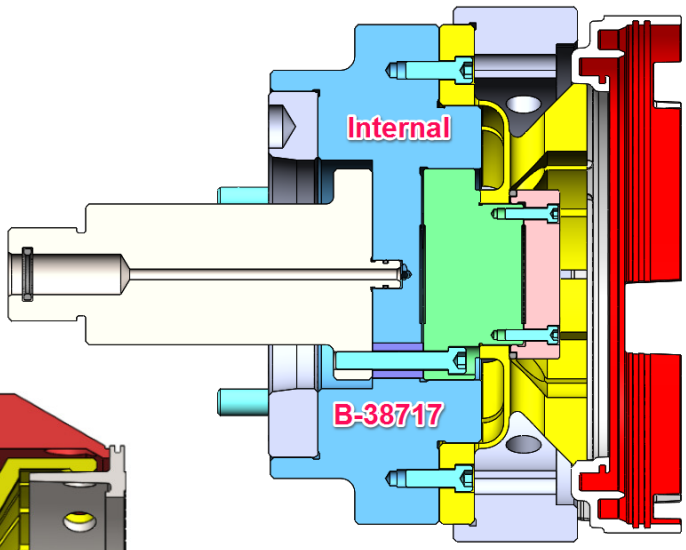
Finger collet chucks

A hybrid of diaphragms & s.o.e. collets



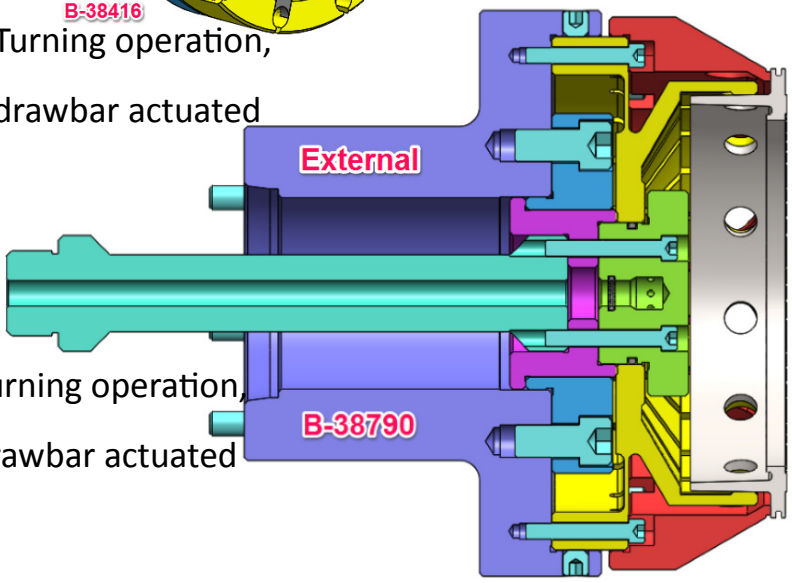
Turning operation,

drawbar actuated



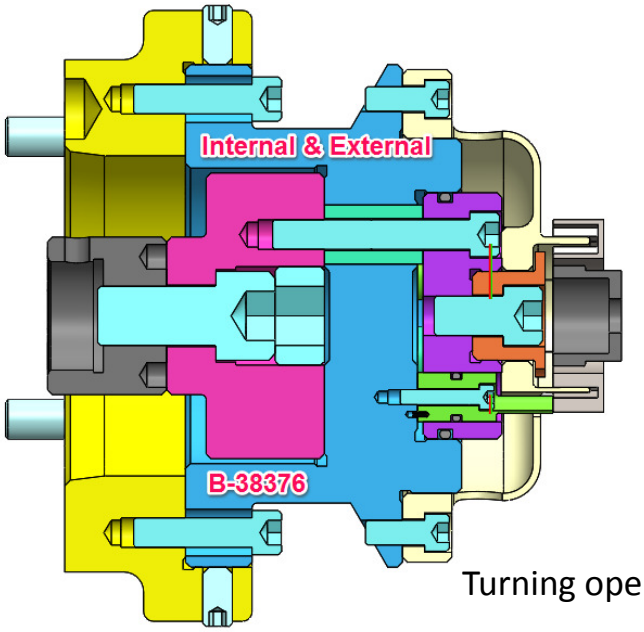
Turning operation,

drawbar actuated



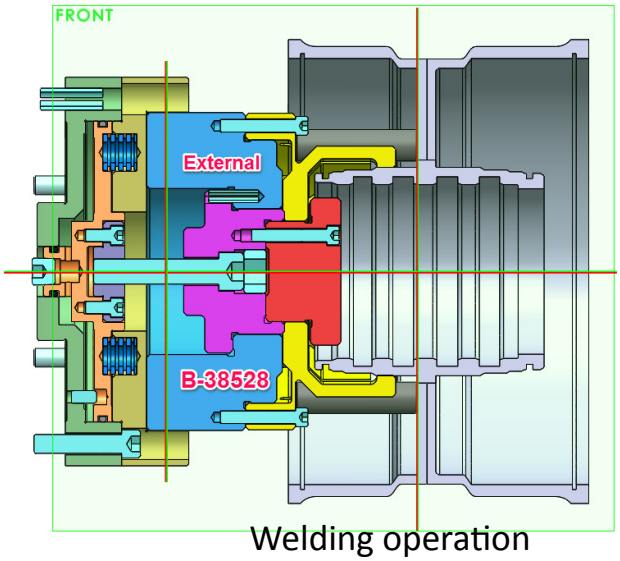
Turning operation,

drawbar actuated



Turning operation,

drawbar actuated

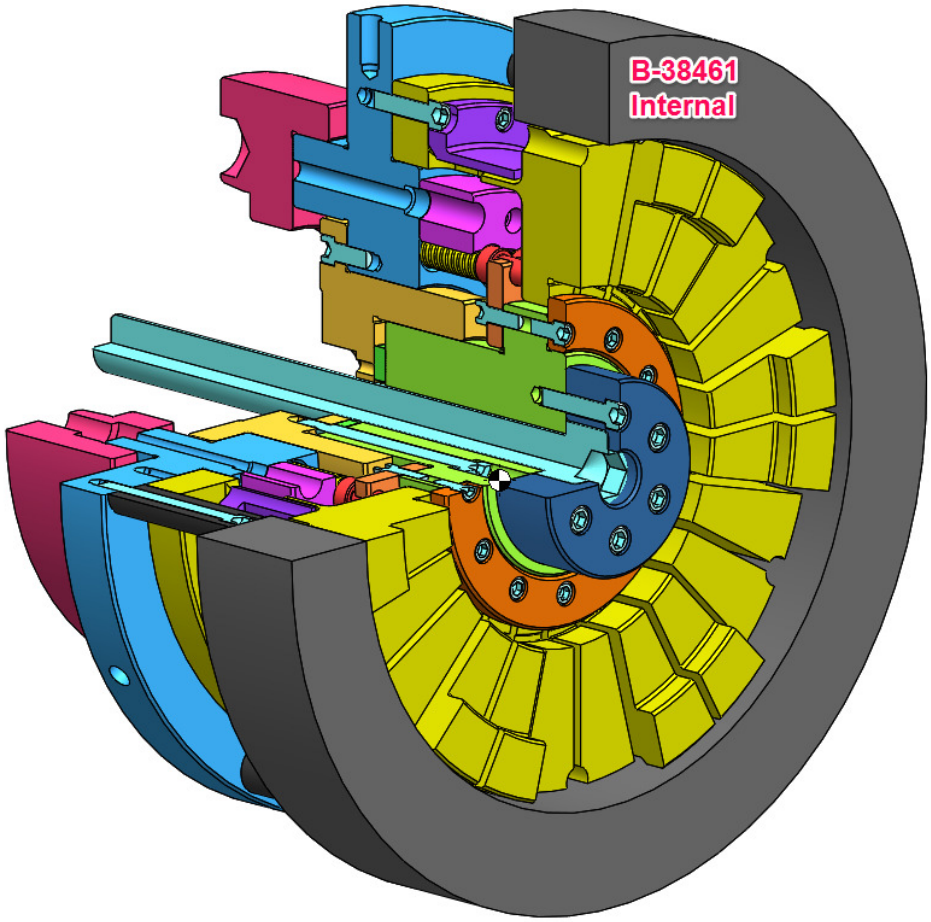


Welding operation

on a standard actuator

Finger collet chucks

The Next Generation. . .



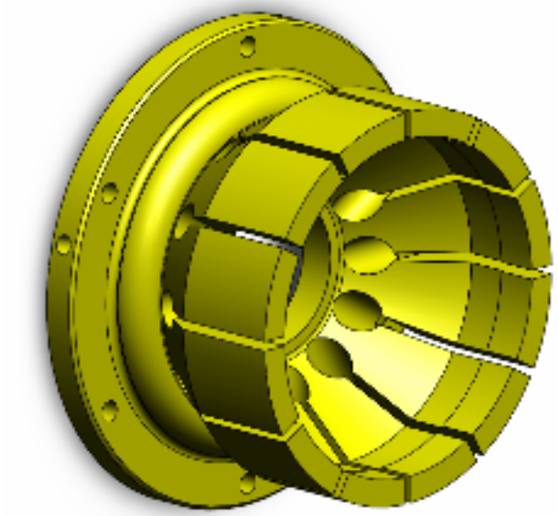
Customer: Major North American gear manufacturer

Application: Turning Ø14.00 4340 forged rings, up to .100 out of round

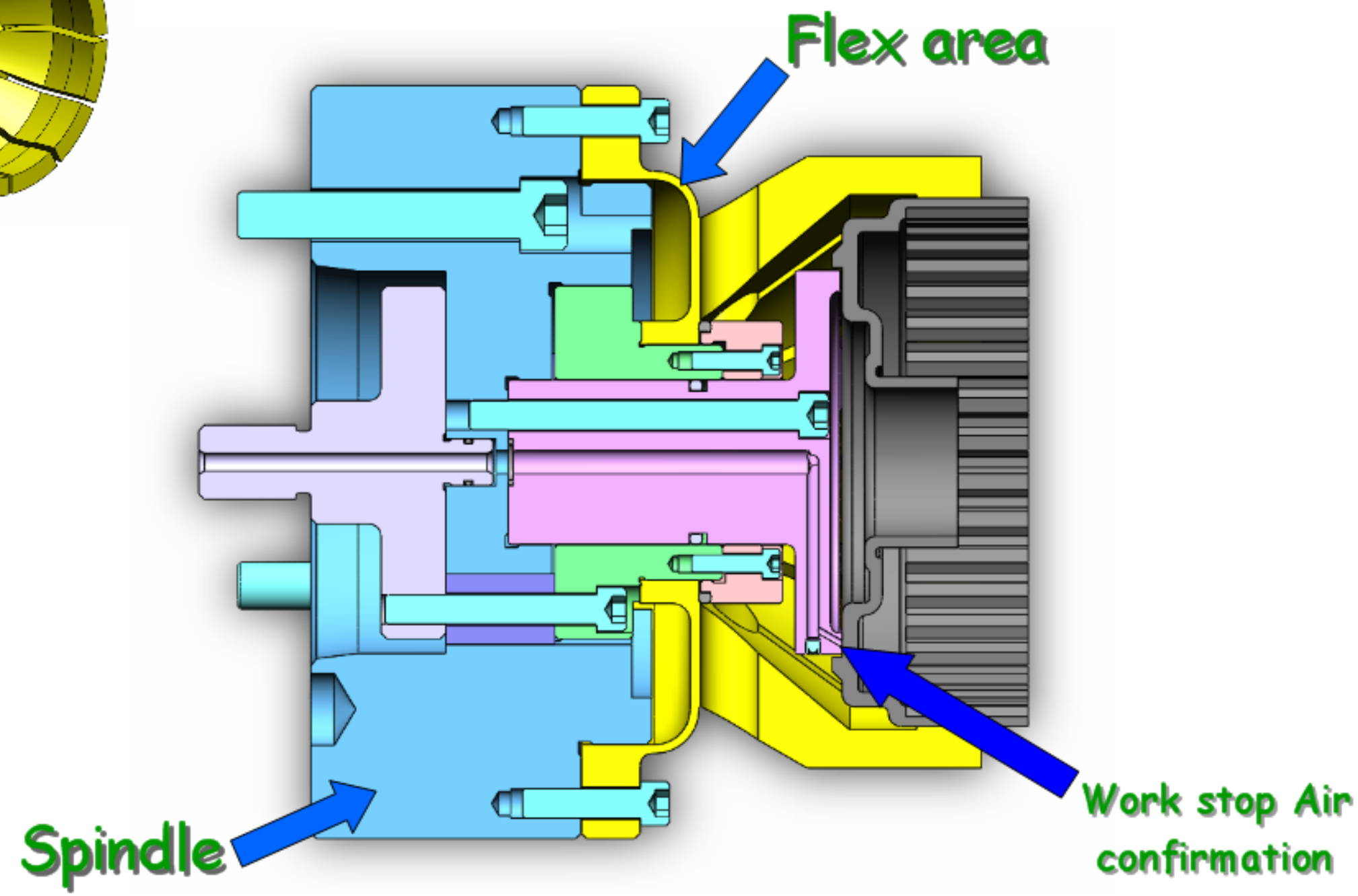
Requirement: Eliminate 2 operations. < .003 free state out of round in 1 operation.

Chuck: Internal finger collet. Each segment independently actuated by its own die spring. 10 part runoff results. Free state roundness .0004-.0027

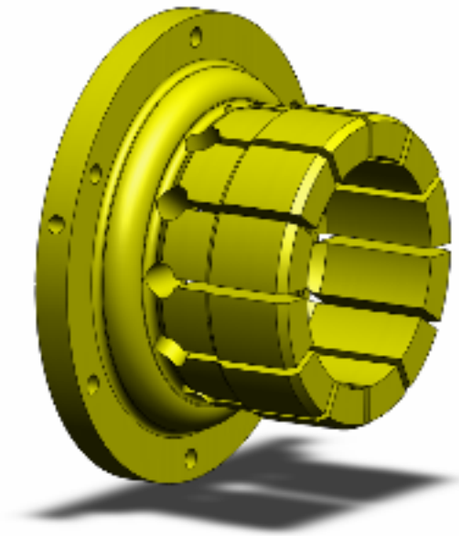
Remarks: Customer very well satisfied. Ordered 2 more finger collets to run more parts through the cell.



B-36827 (o.d. grip)

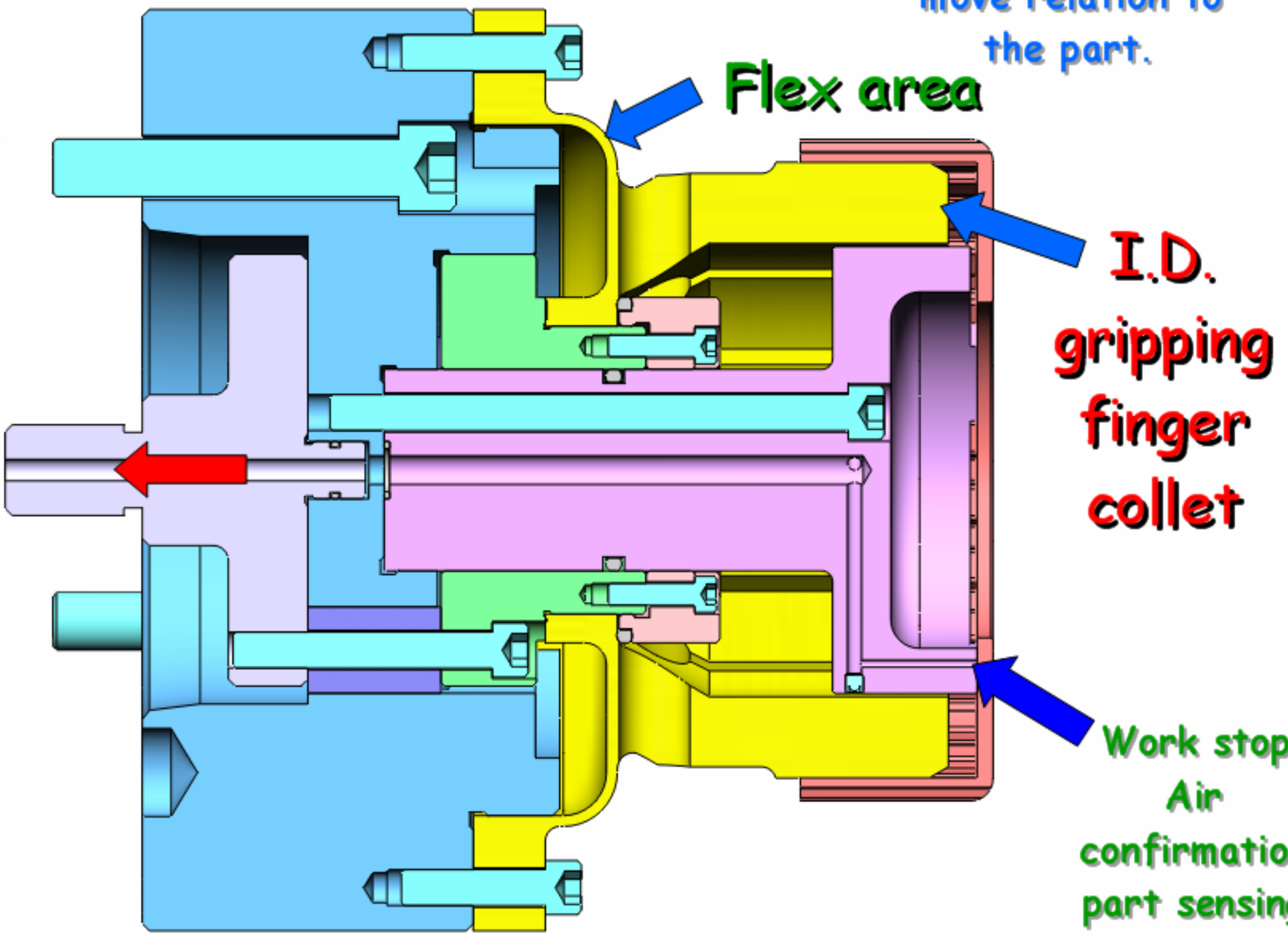


External finger chuck
Drawbar actuation

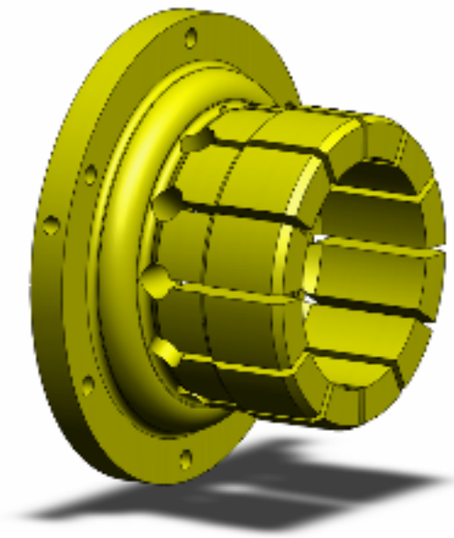


B-36827 (i.d. grip)

No pull down - The diaphragm does not move relation to the part.

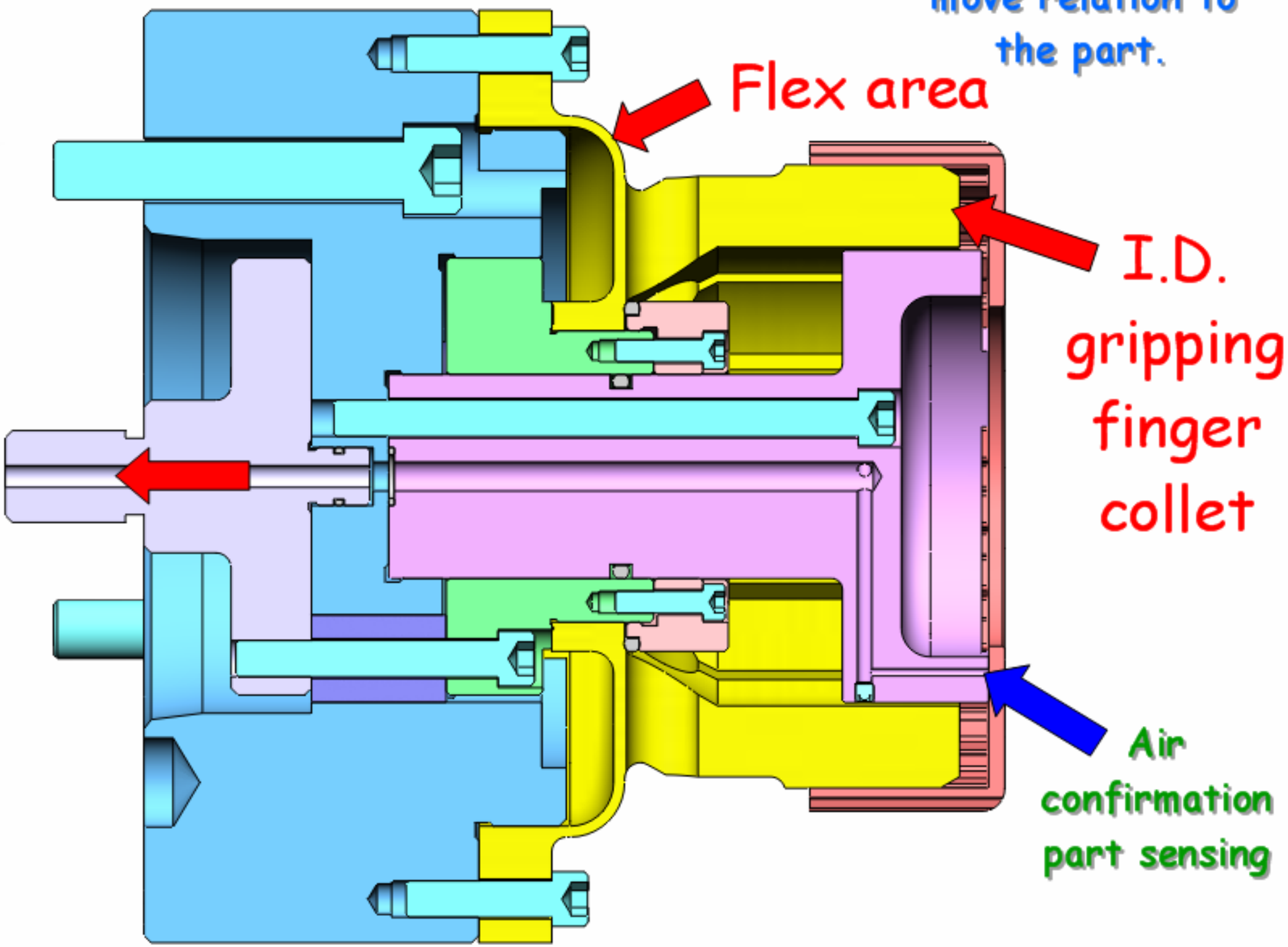


Internal finger chuck
Drawbar actuation

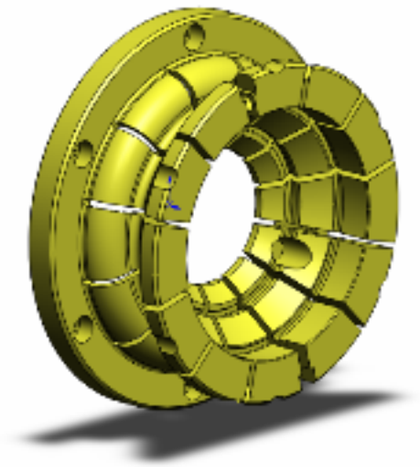


B-36827

No pull down - The diaphragm does not move relation to the part.

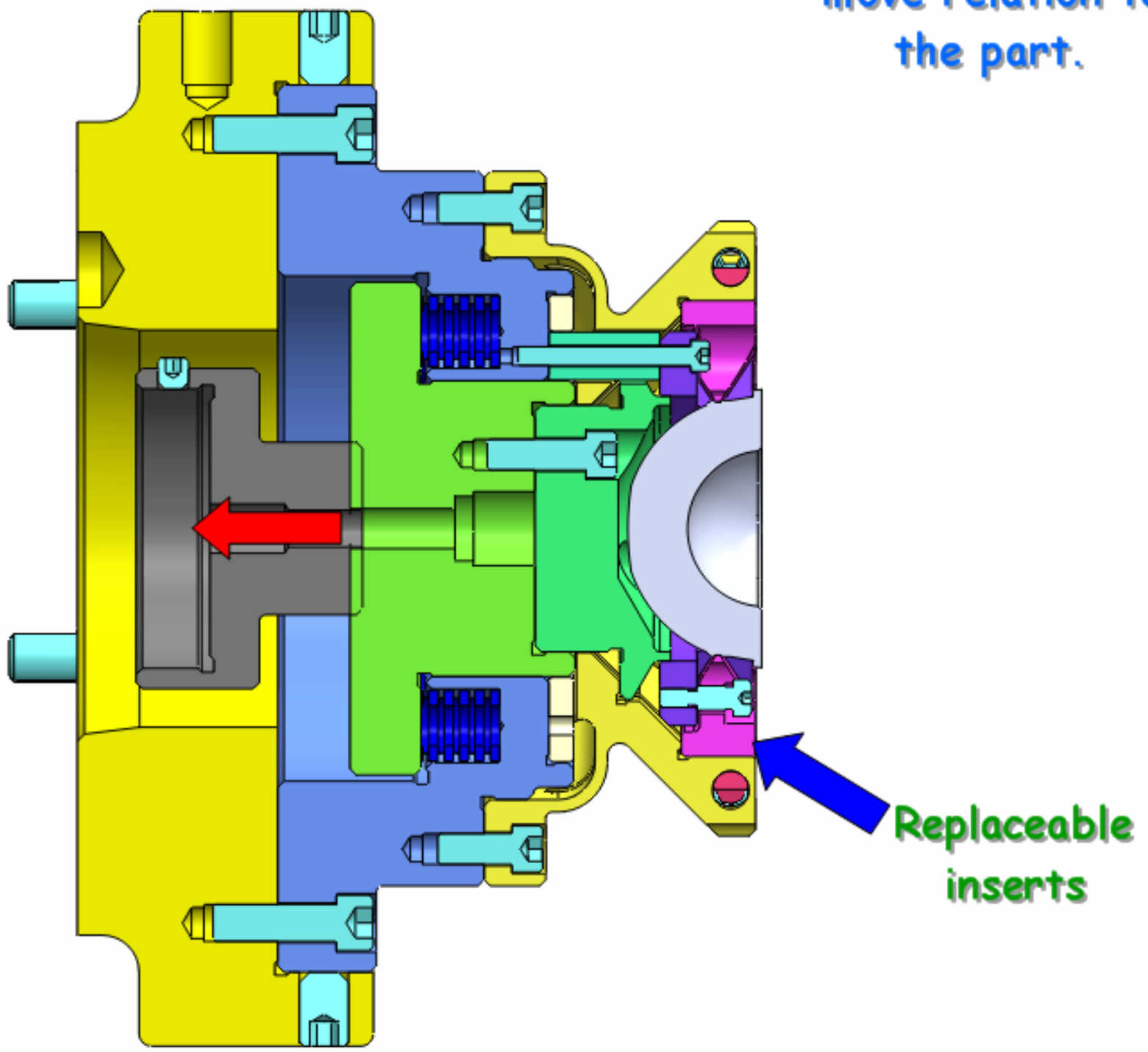


Internal finger chuck
Drawbar actuation

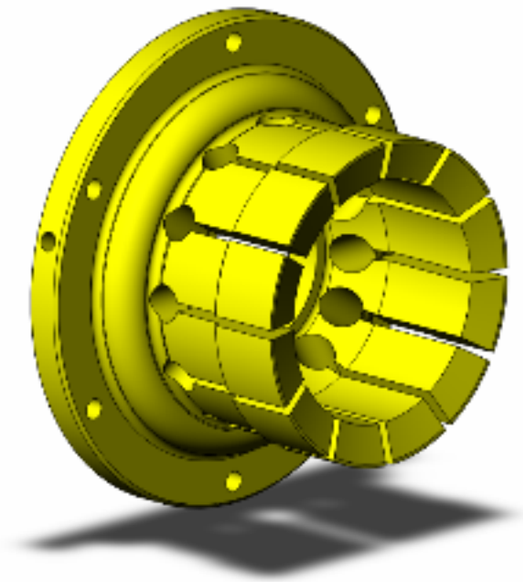


B-36970

No pull down - The diaphragm does not move relation to the part.

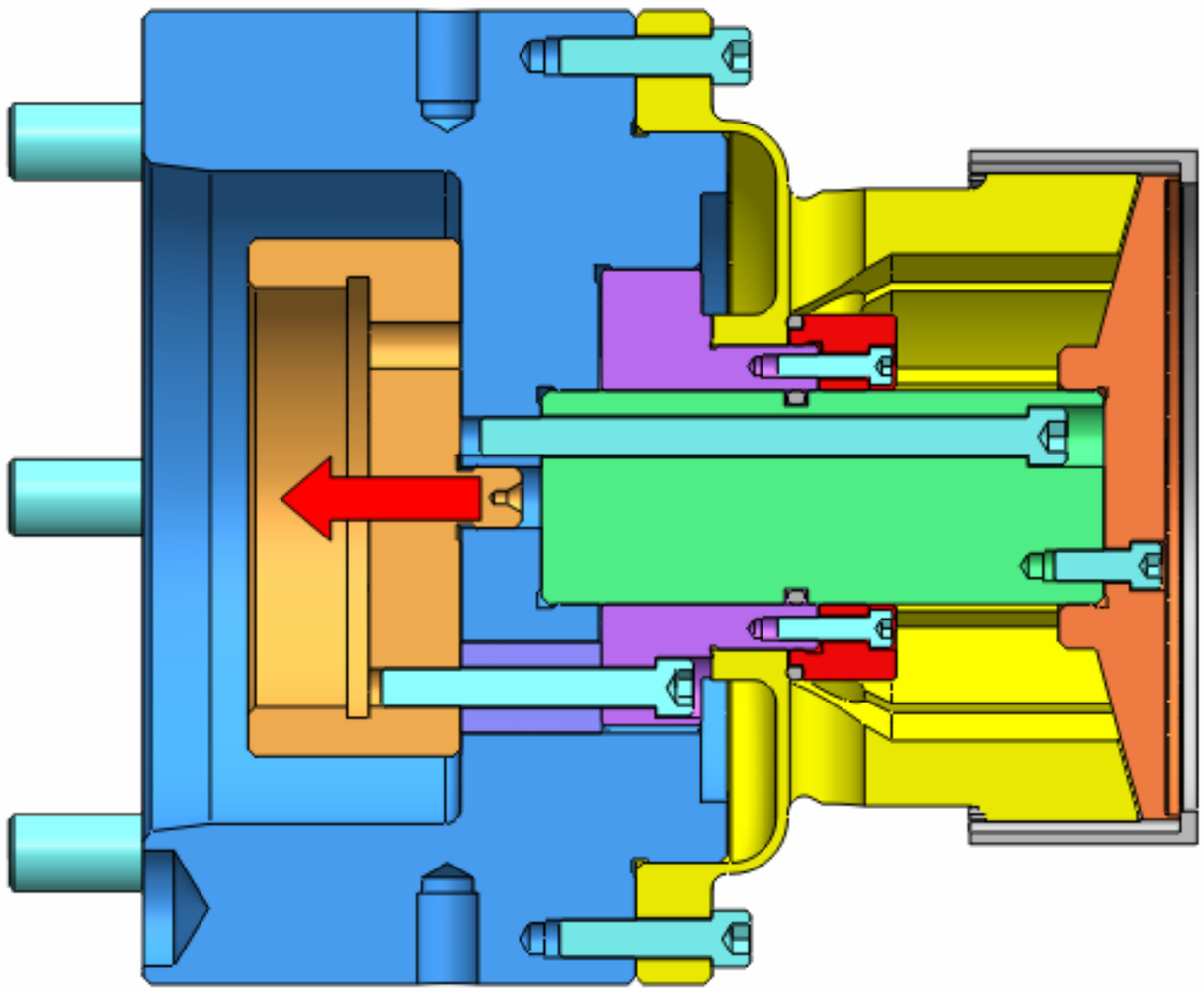


External finger chuck
Drawbar actuation



B-37132

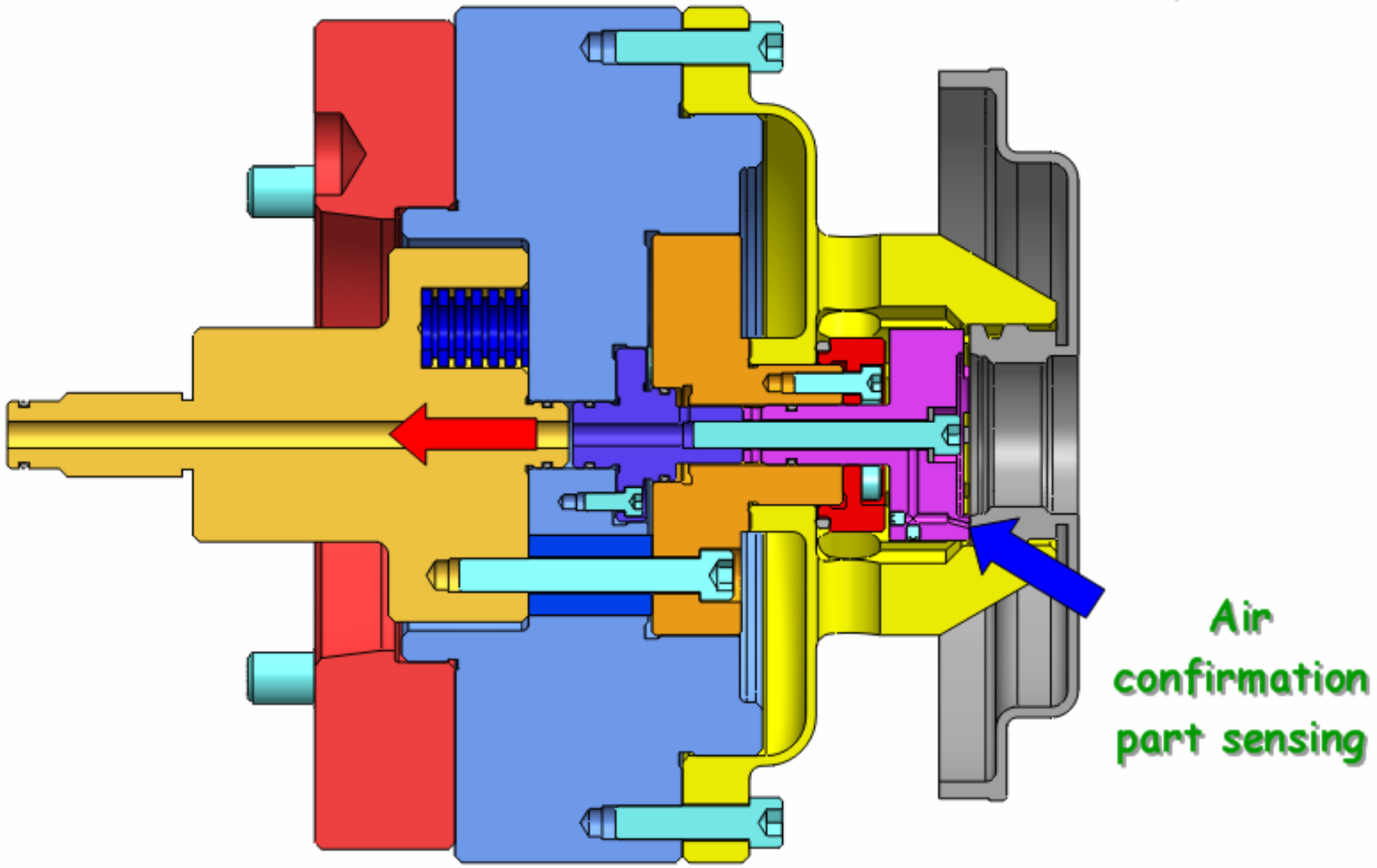
No pull down - The diaphragm does not move relation to the part.



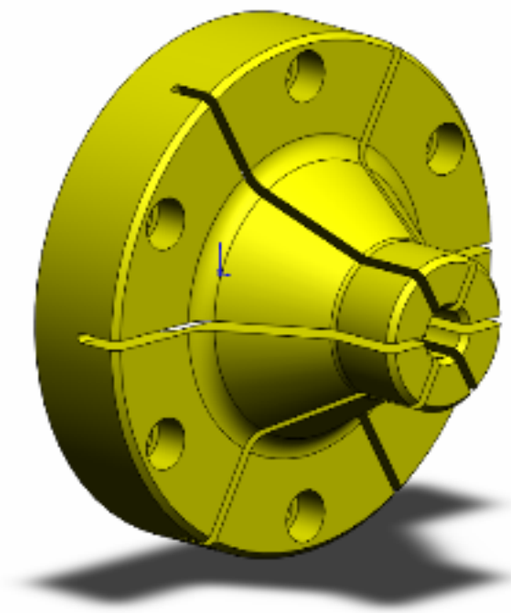
Internal finger chuck
Drawbar actuation

B-37189

No pull down - The diaphragm does not move relation to the part.

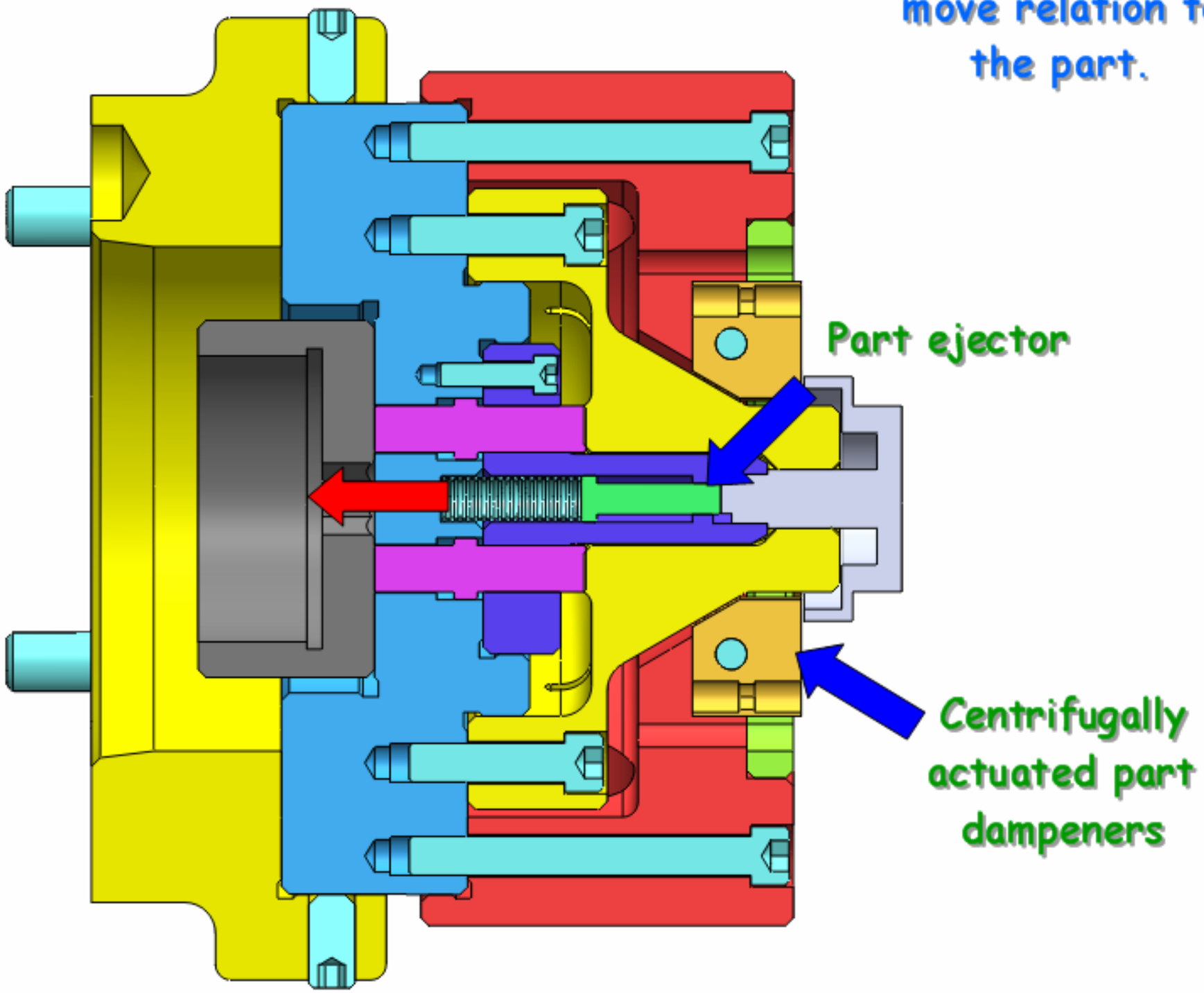


External finger chuck
Drawbar actuation

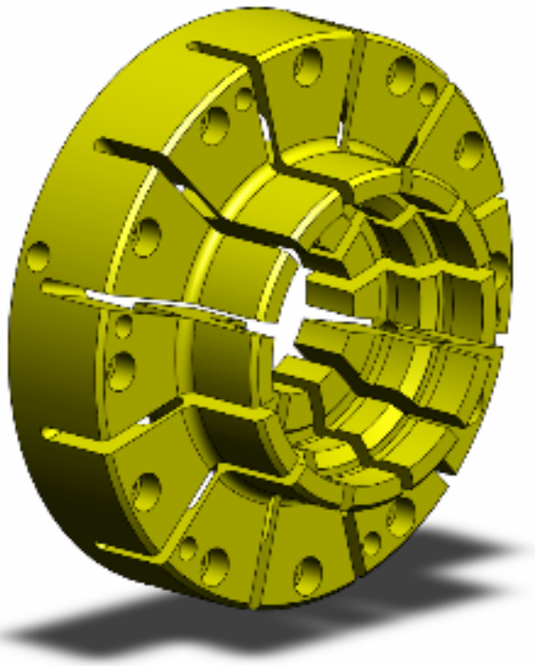


B-37511

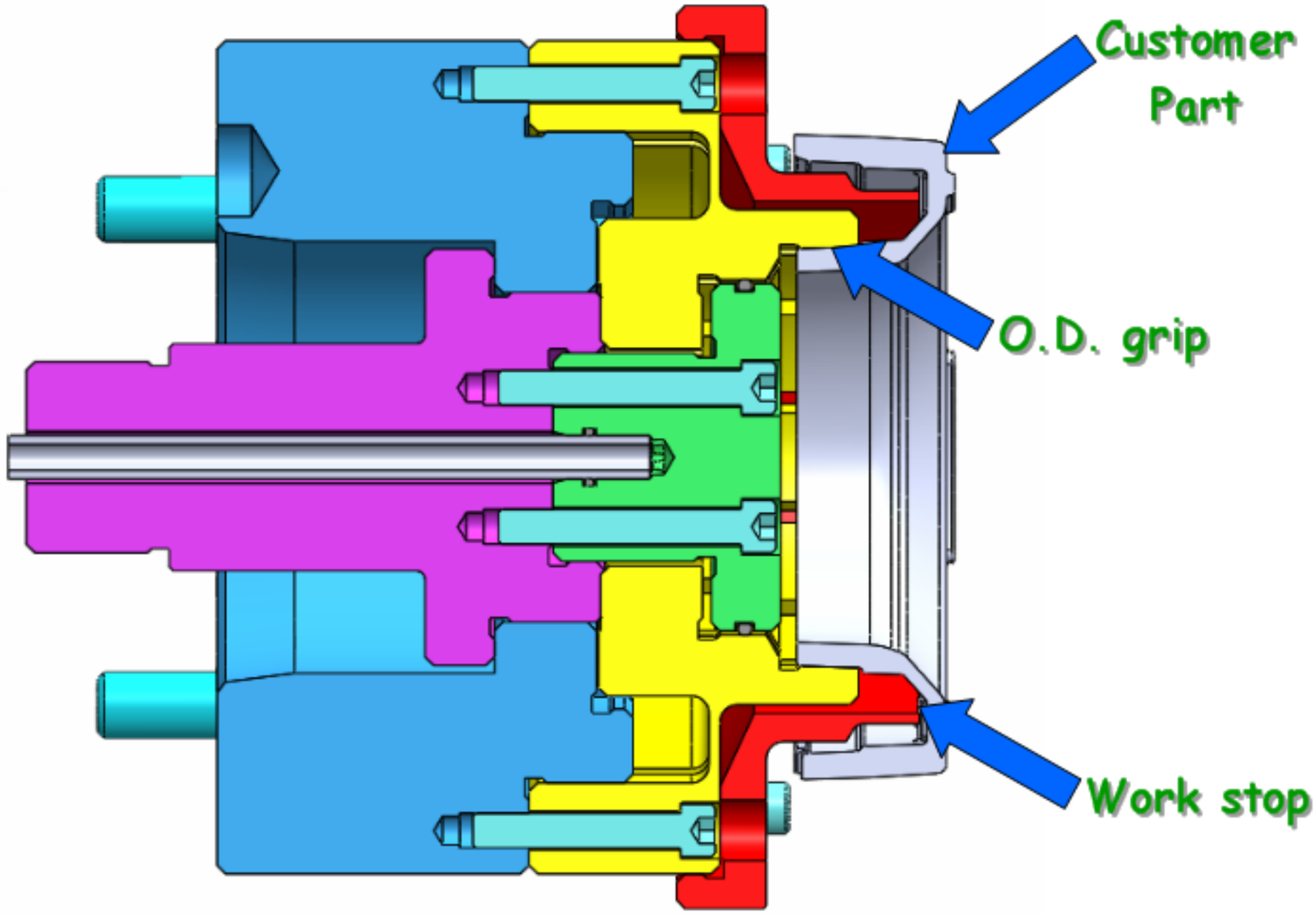
No pull down - The diaphragm does not move relation to the part.



External finger chuck
Drawbar actuation



B-38089 (o.d. grip)



External finger chuck
Drawbar actuation