SPEEDGRIP CHUCK CO.

Cameron

Precision Hydraulic Expanded Chucks and Arbors

Precision Hydraulic Expanded Chucks and Arbors

STANDARD TOLERANCES OF .0002" T.I.R.

SPG1011 RR312

Special Standard Features

- Standard Tolerances of .0002˝ T.I.R.
- Completely Repairable if Damaged or Worn.
- Can Be Actuated Manually, Using Machine Drawbar, and/or External Hydraulic Source.
- Unusual Flexibility : .006˝/.008˝ Average Expansion Provided*
- Positive Oil Retention
- Durability and Accuracy for Rough Machining to Final Inspection.

** Expansion Varies on Size Requirement*

Inner Liner
Unique nylon liner and o-ring placement designed for ease of service and manufacturing.

Thicker Slotted Shell
Slotted shell allows greater expansion capabilities.

Cameron
A SPEEDGRIP COMPANY

THE WORKHOLDING PRINCIPLE

The Cameron Hydraulic Arbor and Chuck Workholding Principle was developed by experienced workholding specialists to fill the need for simple, high-accuracy positive gripping chucks and arbors – tools which would give reliable performance and avoid breakage even in unskilled hands.

The unique metal flexing principle and patented sealing system for medium hydraulic actuating oil does it differently and better. Accidental tool breakage, minimal expansion and leakage, so characteristic of standard "grease-actuated" thin sleeved tools are practically eliminated.

The chuck and arbor shells are thicker, 3/16″ minimum. They are spring tempered hardened and ground to a precision fit.

Cameron's design is so simple and rugged that they will tolerate several times the normal "safe" expansion even without a workpiece. No moving parts means no wear and no concentricity loss.

Hollow-ground gripping surfaces straighten and hold the part in exact coincidence of centerline. No other hydraulic tool does this. Reliable repeatability and unusual gripping strength naturally result.

Cameron tools use medium grade hydraulic oil which allows fast return to normal even after extreme expansion. They can be actuated manually or automatically through mechanical means or by use of the machine hydraulics pressure using a standard Cameron Intensifier (illustrated on the following pages).

Cameron is always pleased to share its expertise with its customers. However, when making inquiries about chucking applications for various parts, it is essential that the customer supply prints of the parts to be machined. It is also important that we know the style machine on which the chuck or arbor is to be used, and how it is to be actuated (manually, automatically or with an intensifier).

Concentricity requirements must also be specified.

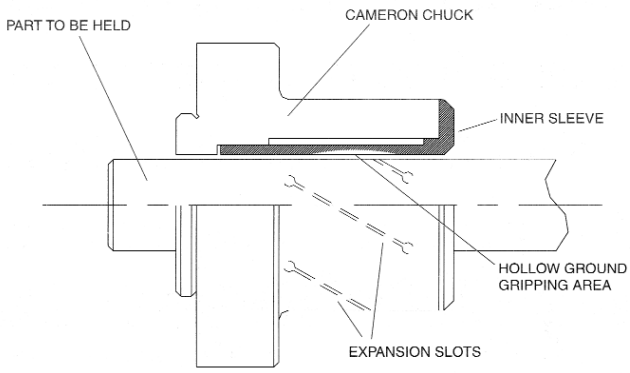
In brief Cameron tools offer:

1. Simple, fast action.
2. No moving parts – no concentricity loss from internal wear.
3. Assured repeatability and unusual flexibility.
4. Greater gripping power.
5. Positive oil retention.
6. Durability and accuracy for rough machining to final inspection.

Let us demonstrate these advantages in your own plant, at your convenience.

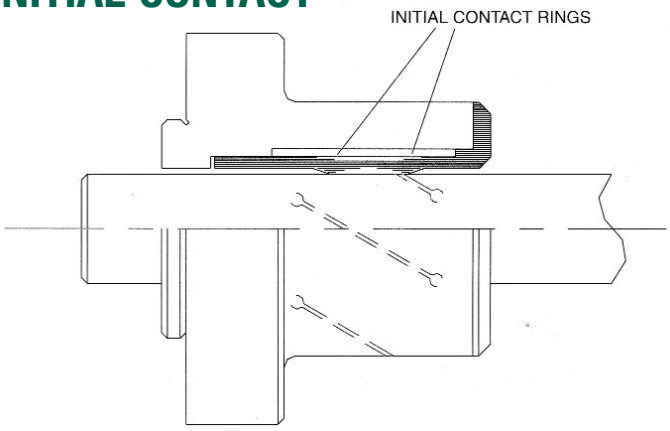
RELAXED POSITION

Hollow Ground Concept



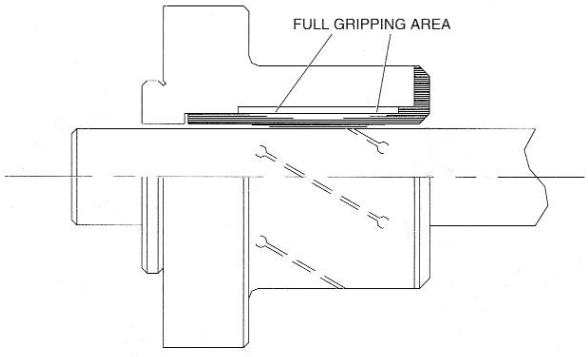
The relaxed tool has ample clearance for easy load and unload of the work part.

INITIAL CONTACT



As the tool is actuated, two rings on the hollow-ground gripping area make contact with the part, straightening and centering it automatically.

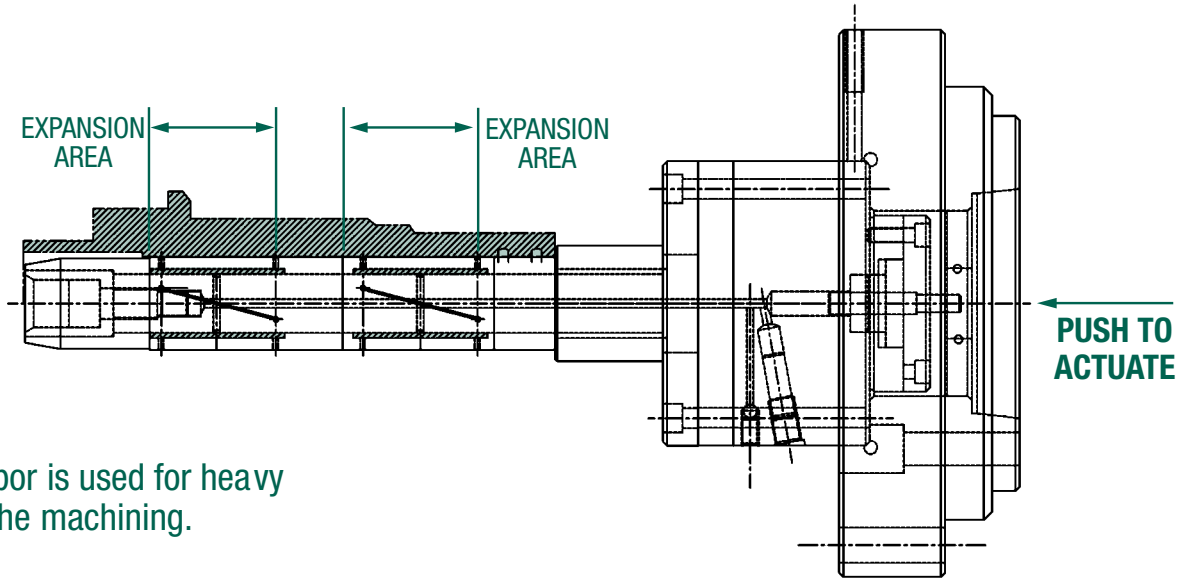
CLAMP POSITION



Full actuation causes the slotted shell to hold the part with its full gripping area. Parts are held firmly and accurately for any machining or gaging operation.

DUAL DIAMETER GRIP ARBOR

Drawbar Actuated – Mounted to A2 Spindle

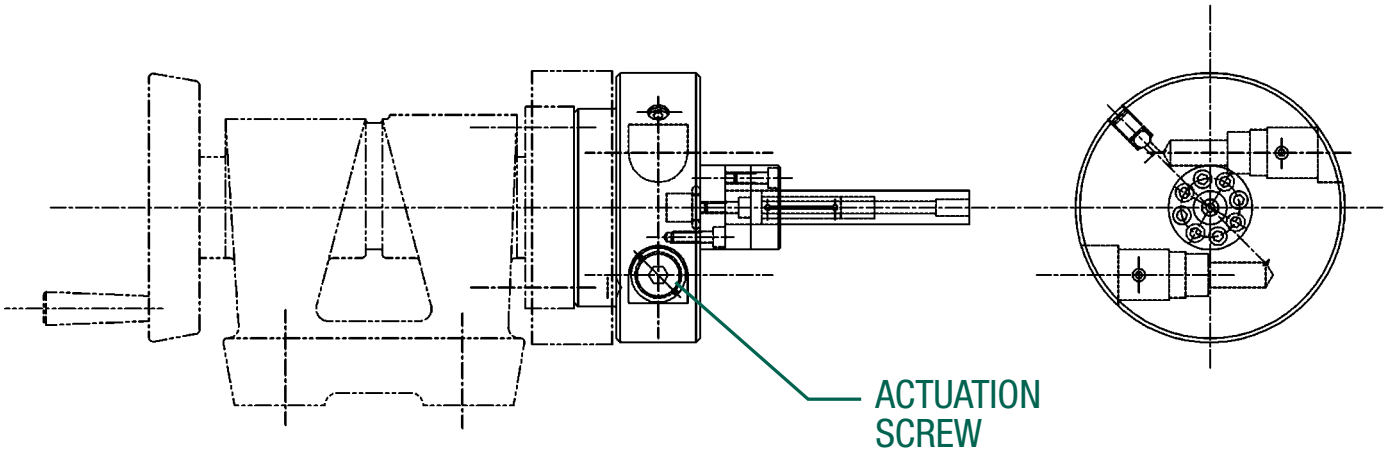


Arbor is used for heavy lathe machining.

Ref. Design 9030

MANUALLY ACTUATED INSPECTION ARBOR

Mounted to Zero Spindle

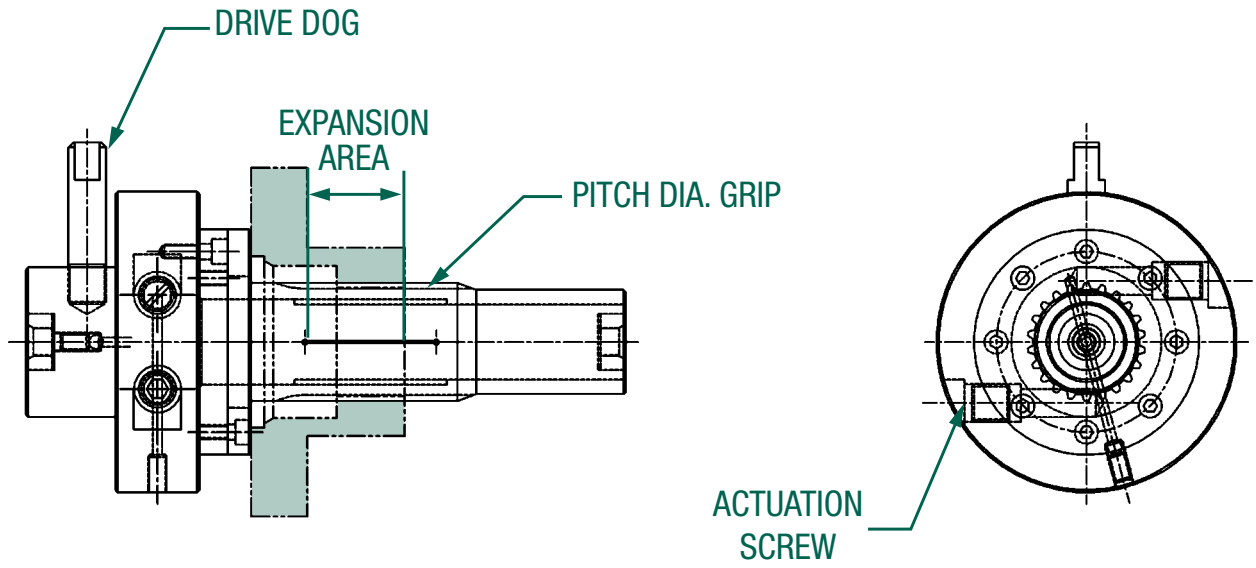


Arbor is used for inspecting military missile components.

Ref. Design 9013

MANUALLY ACTUATED BETWEEN CENTERS GRINDING ARBOR

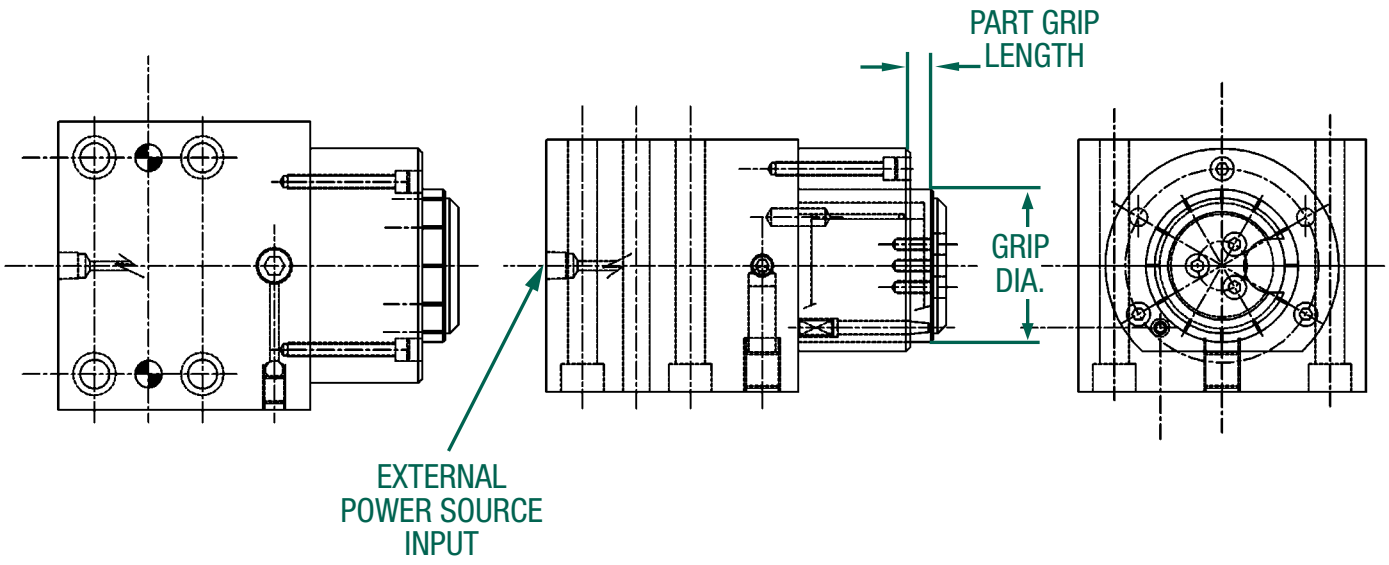
(SPLINED P.D. GRIP)



Ref. Design 9012

EXTERNAL POWER SOURCE ACTUATED ARBOR

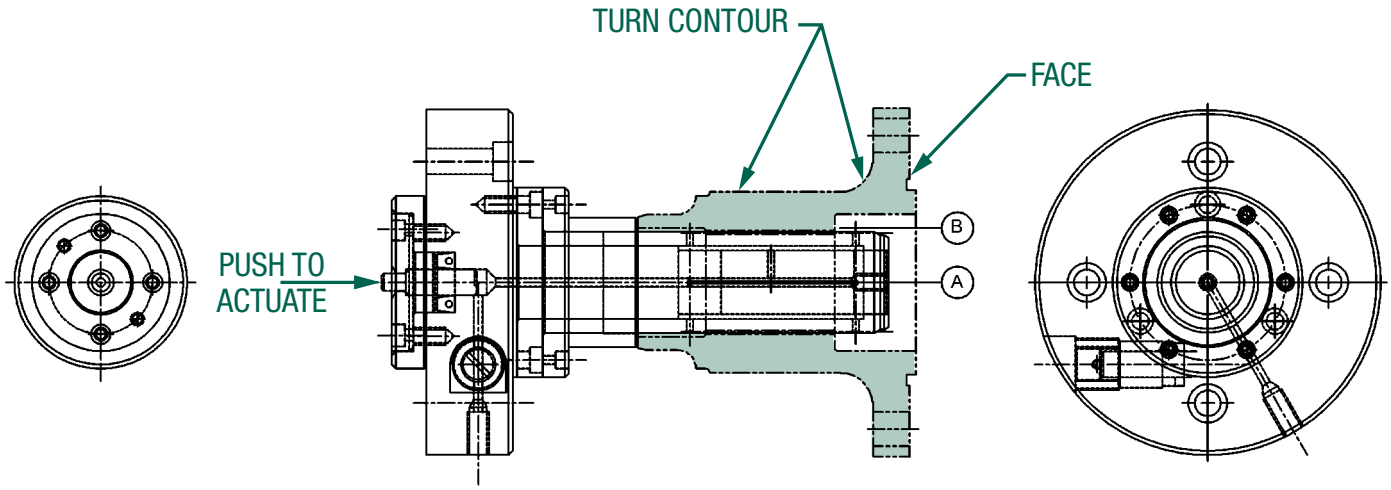
Mounted to Machining Center Index Table



Ref. Design 9022

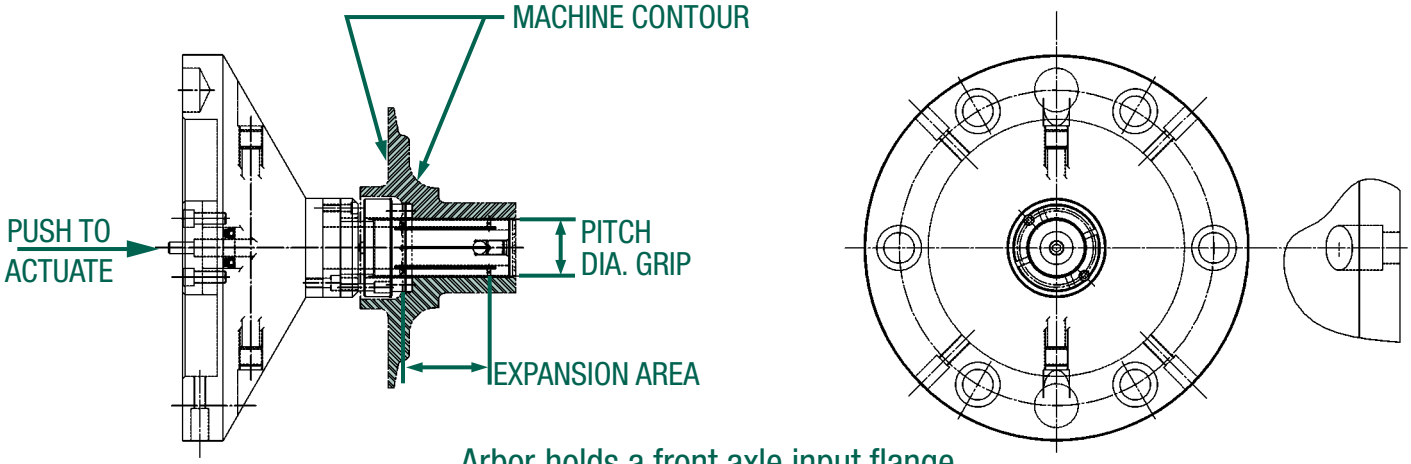
SPLINED PITCH DIAMETER GRIP ARBOR

Drawbar Actuated



Ref. Design 9025

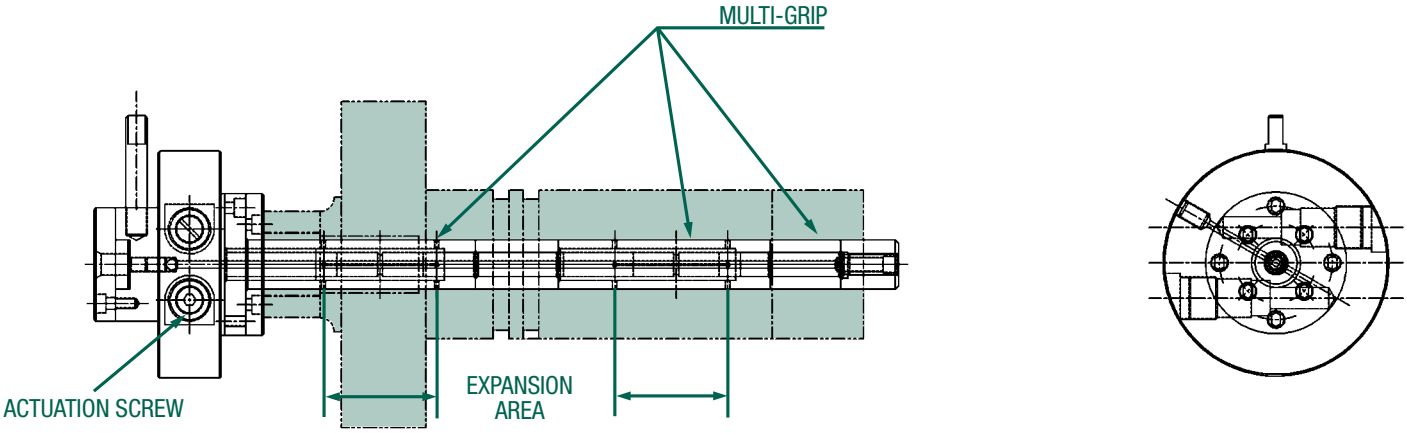
DRAWBAR PROBE ACTUATED SPLINED ARBOR



Arbor holds a front axle input flange.

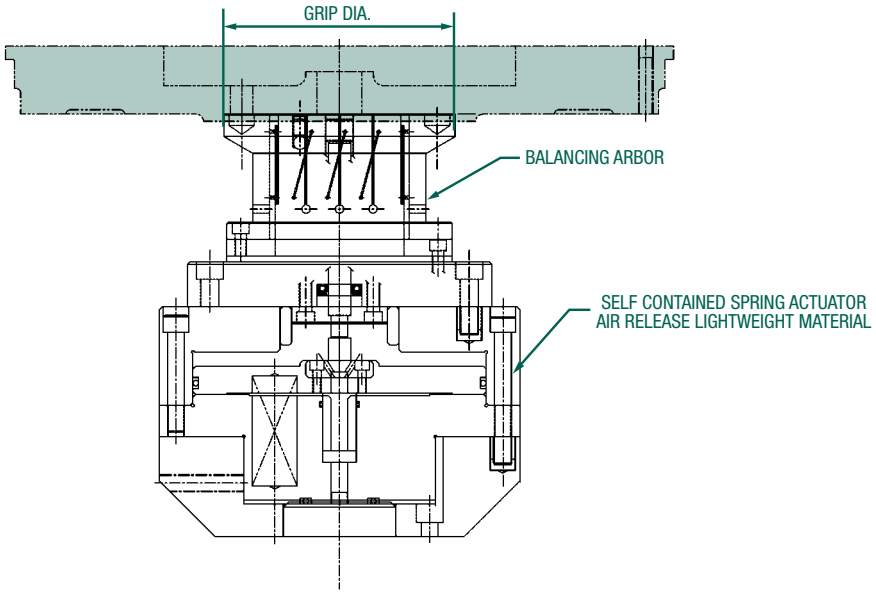
Ref. Design 8765

MULTI-GRIP MANUALLY ACTUATED GRIND ARBOR



Ref. Design 9019

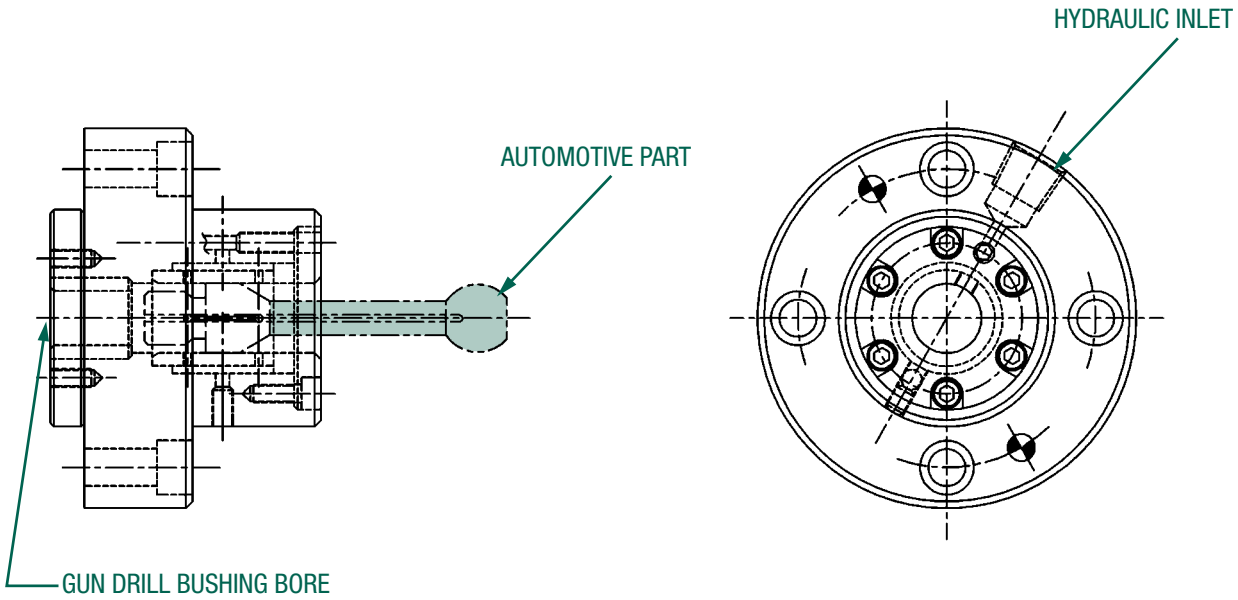
AUTOMOTIVE FLYWHEEL BALANCE ARBOR



Ref. Design 9018

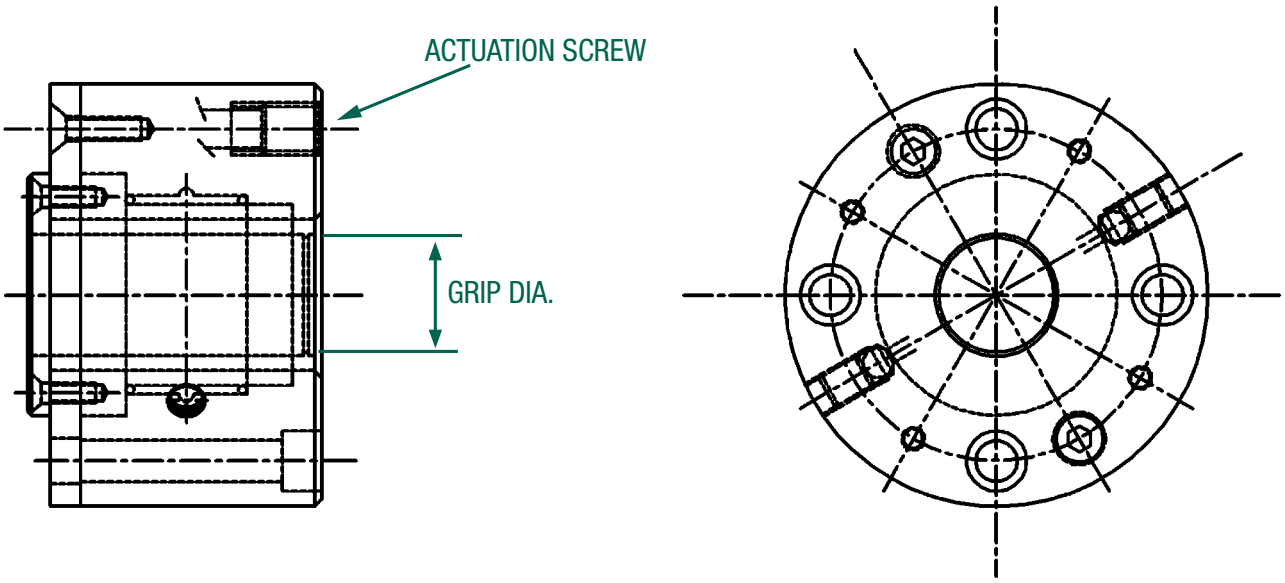
OPERATION – GUN DRILL
HYDRAULIC O.D. GRIP CHUCK

External Power Source Activated



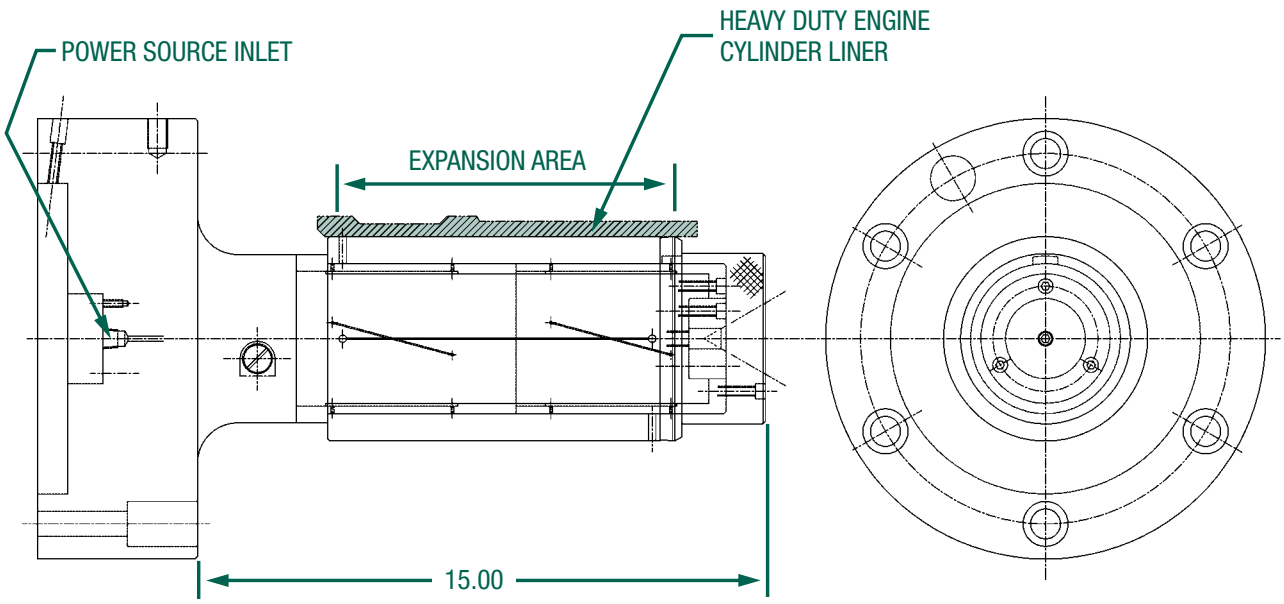
Ref. Design 9006

HSK TOOL HOLDER BALANCING CHUCK



Ref. Design 9011

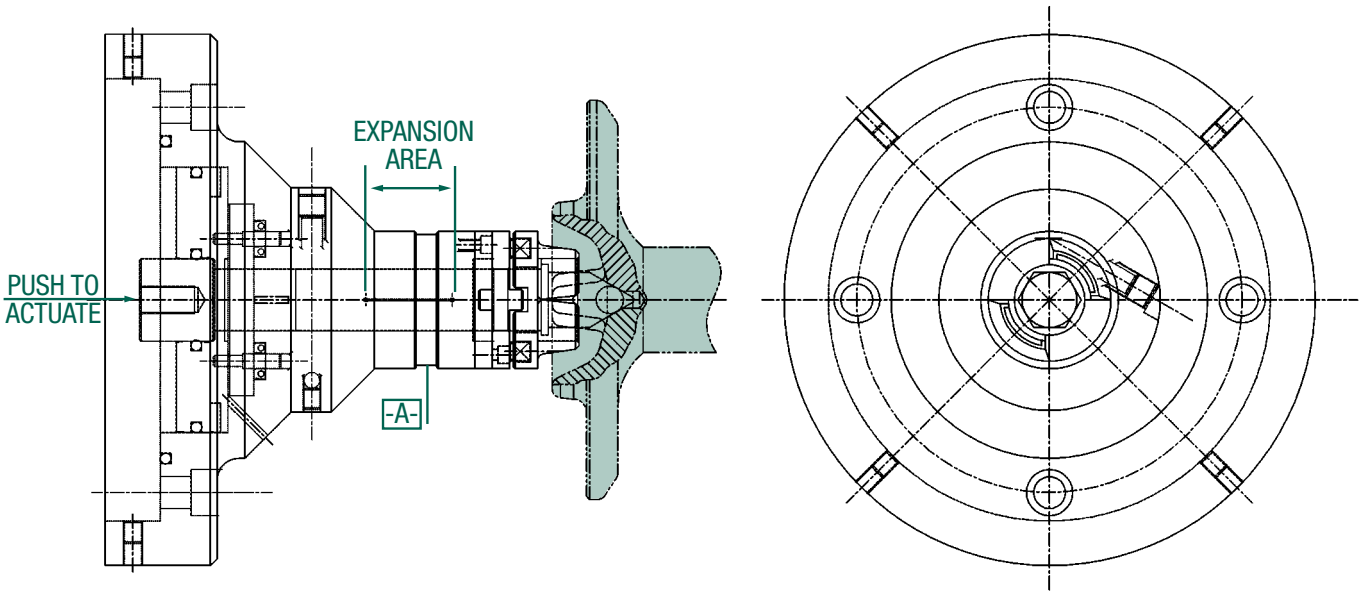
INTENSIFIER ASSISTED HYDRAULIC ARBOR



Ref. Design 8535

HYDRAULIC TAILSTOCK CENTERING ARBOR

For Automotive Axle Machining

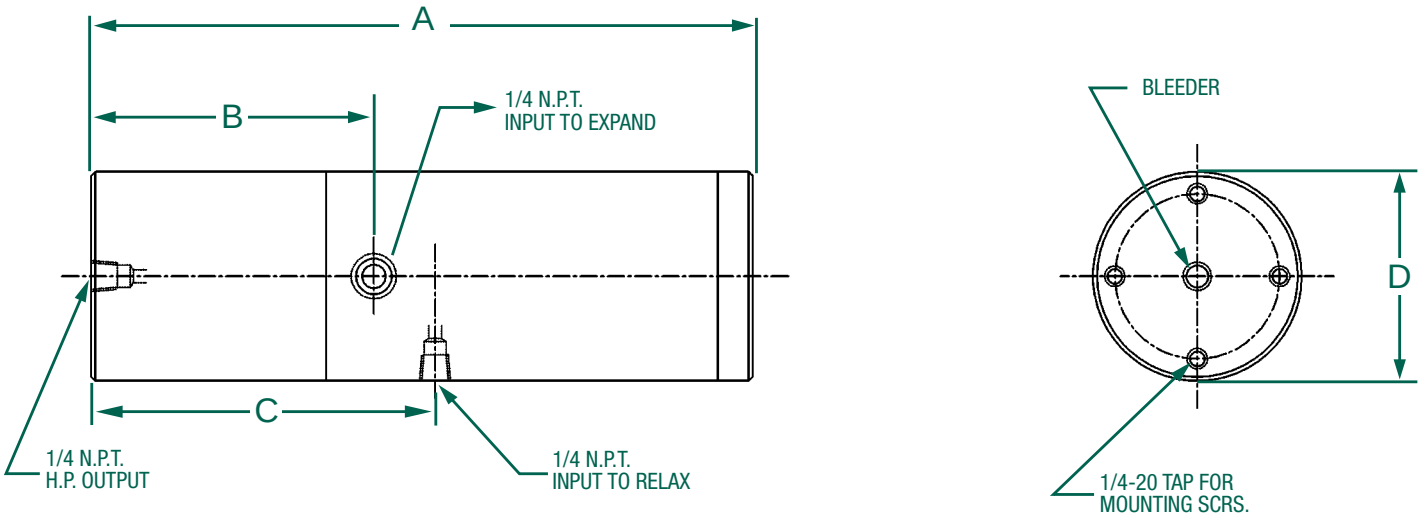


Ref. Design 8780

THE CAMERON INTENSIFIER

The purpose of the **Cameron Intensifier** is to multiply an existing machine hydraulic system (where no mechanical advantage is available such as a drawbar) in order to create higher P.S.I. workholding capabilities.

Example of Intensifier output (P.S.I.) Ref 10:1 ratio 250 P.S.I. inlet pressure to intensifier = approximately 2500 P.S.I. outlet pressure to arbor.



TOOL NO.	A DIM	B DIM	C DIM	D DIM
3711-.312-1.9 10:1 RATIO	9.50	4.06	4.94	2.38
3711-.312-1.9-16 16:1 RATIO	9.50	4.06	4.94	2.50
3711-.312-2.9 10:1 RATIO	11.50	5.06	5.94	2.38
3711-.562-1.9 10:1 RATIO	9.50	4.06	4.94	3.00
3711-.312-2.9 10:1 RATIO	11.50	5.06	5.94	3.00
3711-.750-6.12 5.4:1 RATIO	17.12	7.81	8.68	4.00

NOTE: High Pressure output is normally 1800-2800 PSI, depending on required tightness of grip. Input to expand pressure is normally 250-500 PSI, which determines the output for H.P. (see "Ratio" under Tool No.). Input to relax pressure approximately 300 PSI.

NOTES

SPEEDGRIP CHUCK: Internal and external gripping collet chucks, diaphragm chucks, finger chucks, and between center mandrels.

CAMERON: Internal and external hydraulic chucks and arbors with collet chucks from our Sabertooth line.

MADISON FACE DRIVER: Standard drivers and pins along with special design face drivers and our Hydra-Drive line for extreme accuracy requirements.

Our workholding equipment is very versatile and ideal for turning, drilling and milling operations, gear cutting and finishing, balancing, inspection equipment, and many uses on fixtures and tombstones.

Our standard lines offer in stock chucks, collets, mandrels, actuators, adapters, drivers, and pins for immediate delivery.

Many applications can be fully accommodated using our off-the-shelf standard items.

Our engineers will custom-design solutions for your special workholding applications and have a multitude of existing drawings available for your review.

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