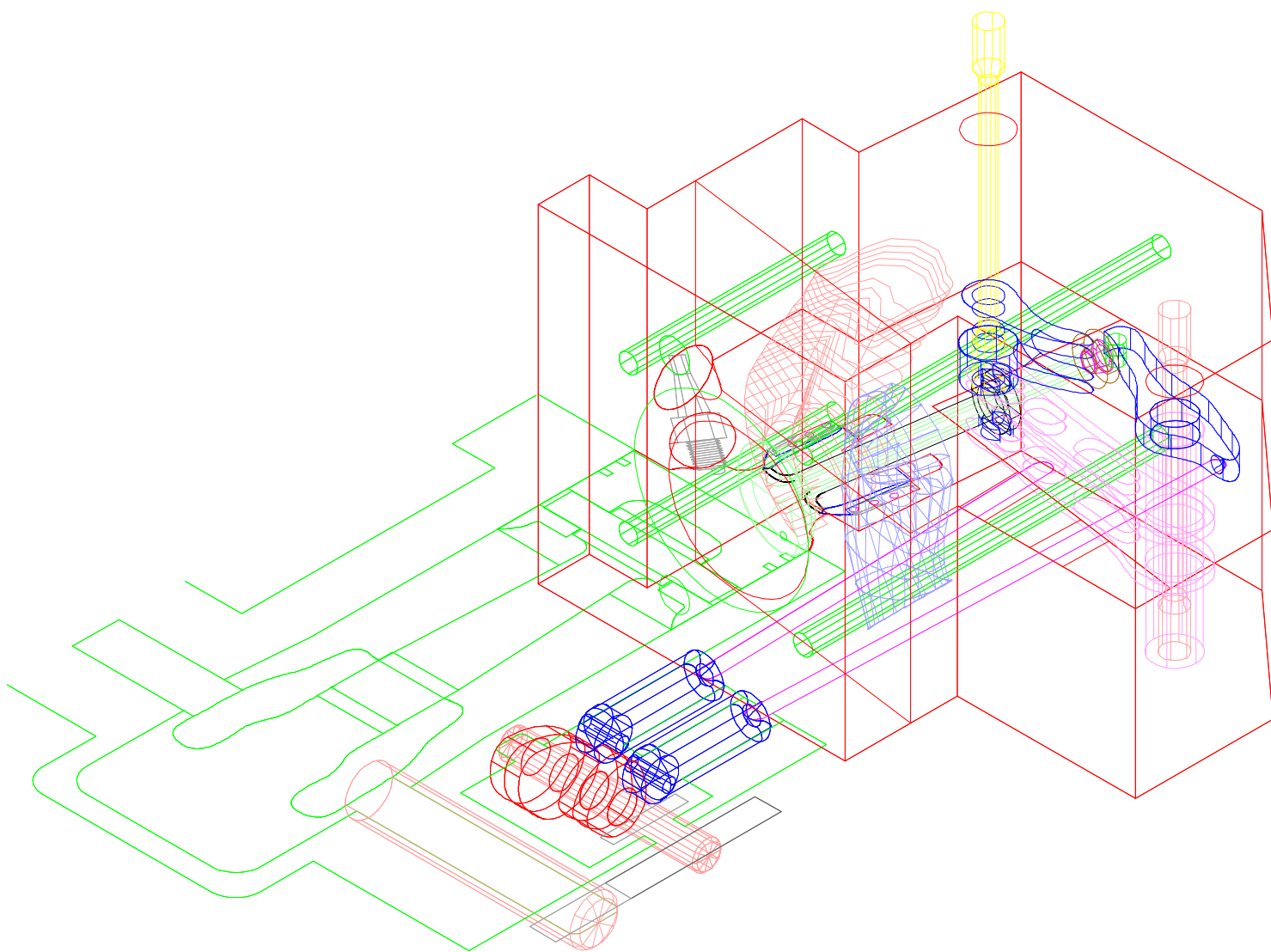


2-25-04

Parts List for Harley Twin Cam Head Design
Head is Made in Two Sections
Using Uniport Valve (Patent #5,782,215)
Designer: Mark Engelmann
PO Box 921
Council Bluffs, IA 51502
Uniportvalve@peoplepc.com

Part Name	Description	Make / buy / or alter
Hcold	head section that includes exhaust and intake passage	cnc
H3hot	head sect that includes the port	cnc
V4auxnew	auxiliary valve	lathe
V5cyl	cylindrical valve	lathe
V6pop	regular poppet valve	buy or alter
R7aux	rocker for auxiliary valve	cnc
R8rkr	rocker for R. poppet valve	buy
R9fgr	rocker finger that transmits force from torsion bar	alter
B10aux	torsion bar for Aux. Valve	lathe and mill
B11pop	torsion bar for R. poppet valve	lathe and mill
P12lng	push rod on R. poppet	buy
P13sh	push rod on Aux. Valve	buy
F14hyd	follower for R. poppet valve	buy
F15sld	follower for Aux. Valve (solid)	buy
C16frt	cam shaft	cnc
S16cmp	compression spring for cyl. Valve	order
M18cld	mesh seal on cold side of spring	order
M19hot	mesh seal on hot side of spring	order
E20rtn	retainer on R. poppet valve	alter
E21key2	standard retainer keys (2 needed)	buy
E22mns4	'moons' that engage Aux. Valve (4 needed)	alter
E23sty2	levers to keep torsion bars stationary	make
E24aux2	parts attached to aux valve which are engaged by moons	make
Gear Camshaft conversion kit		buy



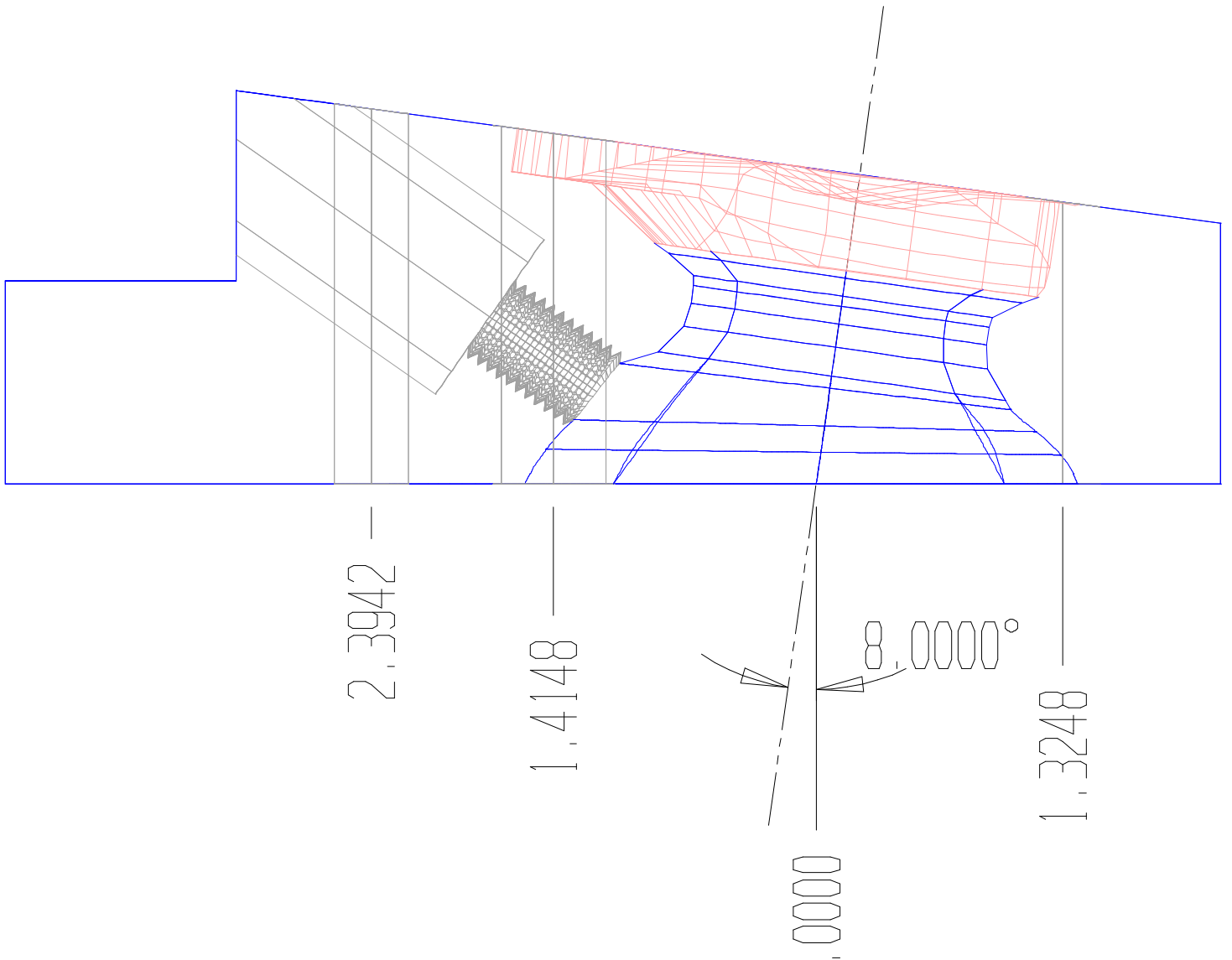
Project: Harley Twin Cam Head Design

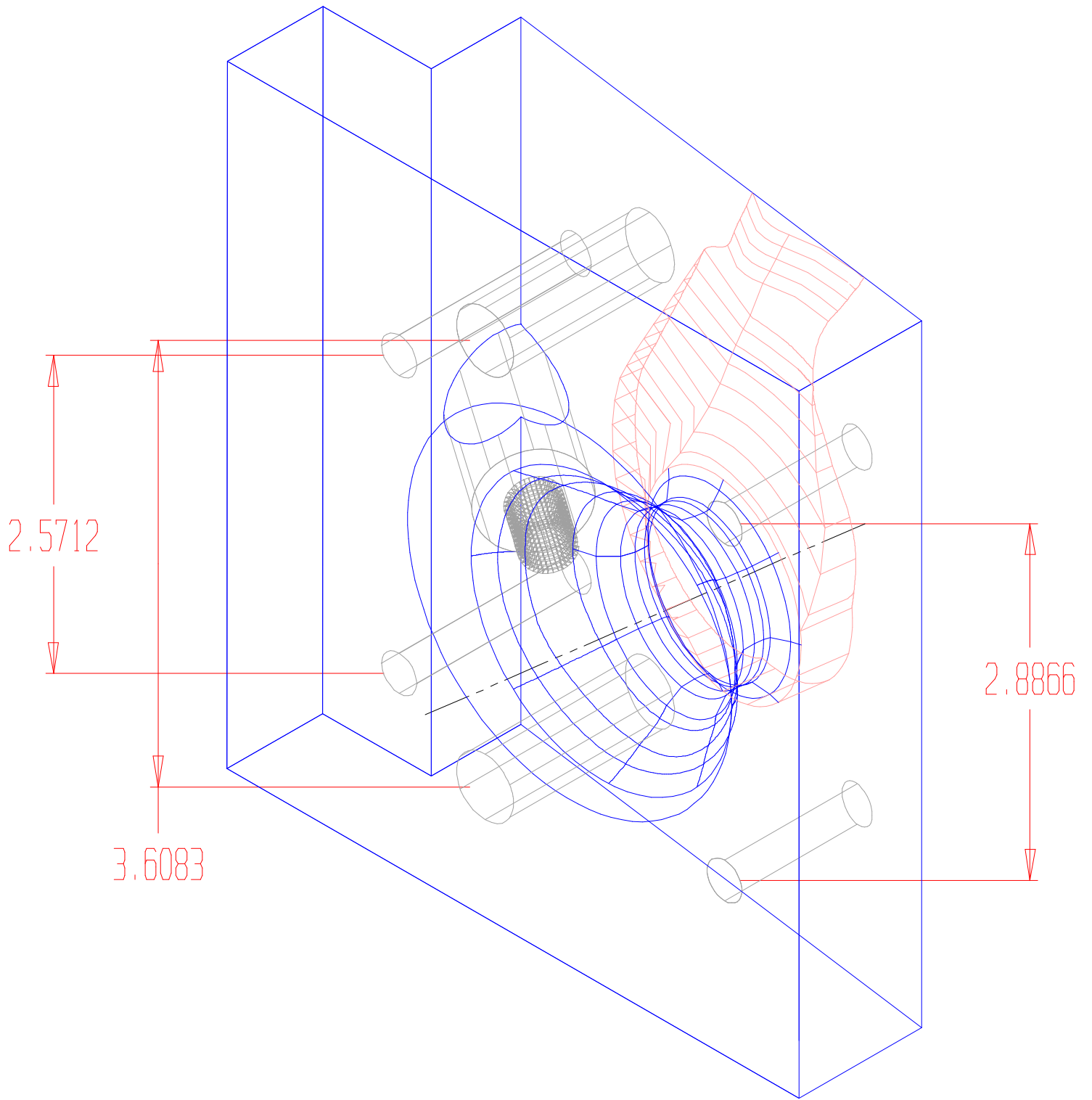
Using: Uniport Valve (Patent # 5,782,215)

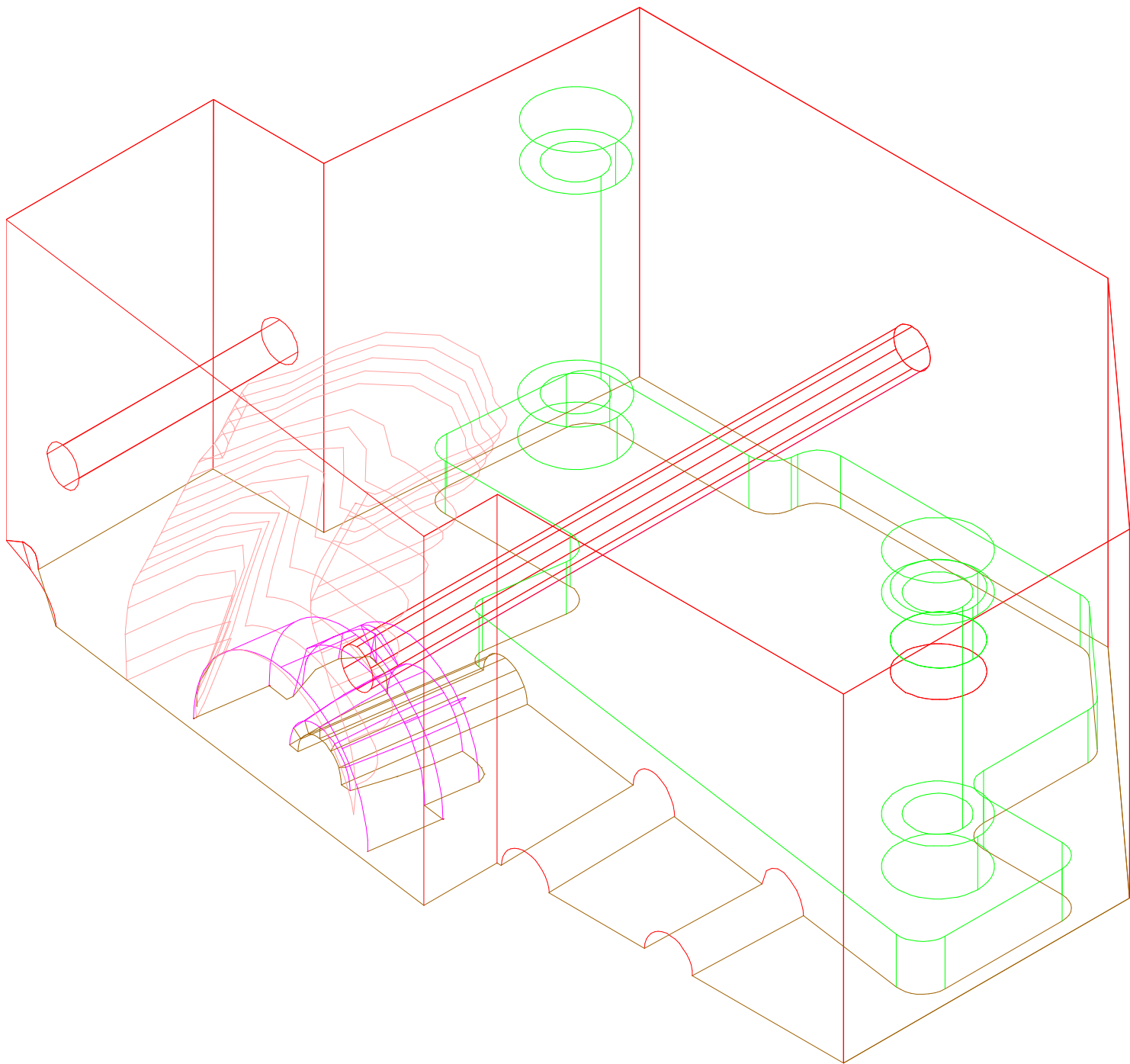
Draft#: 1 11-8-03

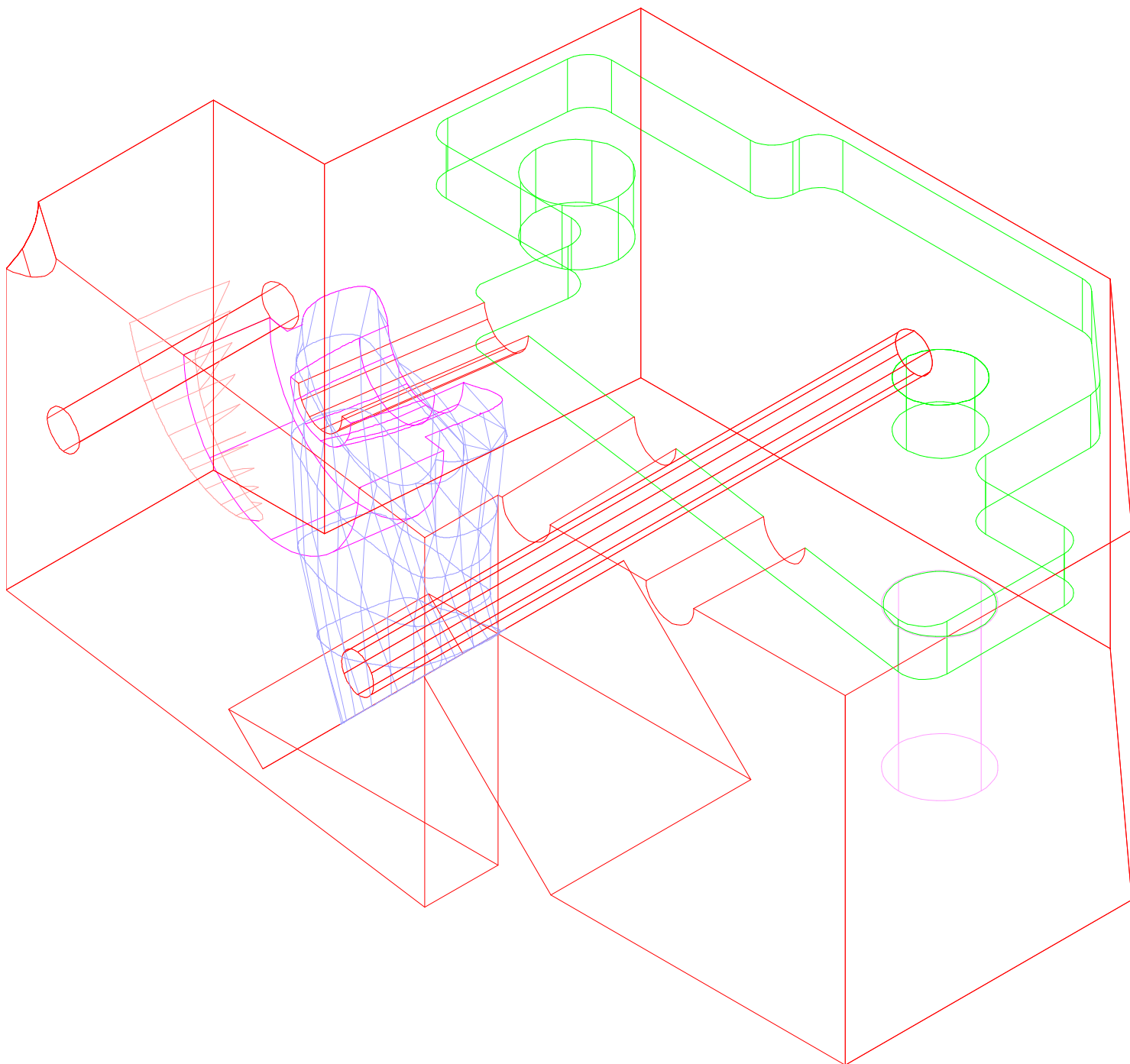
Part #: H3hot - Head section that includes valve port

Designer: Mark Engelmann / Council Bluffs, IA









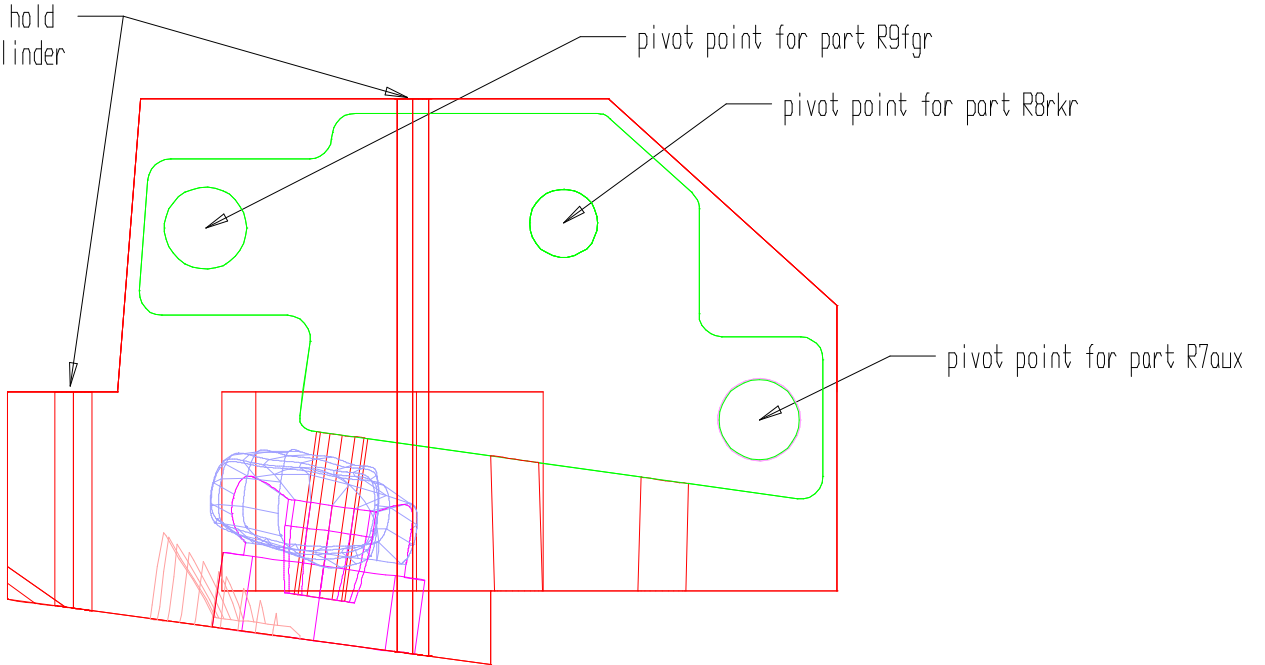
Project: Harley Twin Cam Head Design
Using: Uniport Valve (Patent #5,782,215)
Draft#:2 2-23-04
Part #: Hcold - (half view - showing exhaust passage)
Designer: Mark Engelmann / Council Bluffs, IA

holes for bolts that hold
the head onto the cylinder

pivot point for part R9fgr

pivot point for part R8rkr

pivot point for part R7aux



Project: Harley Twin Cam Head Design

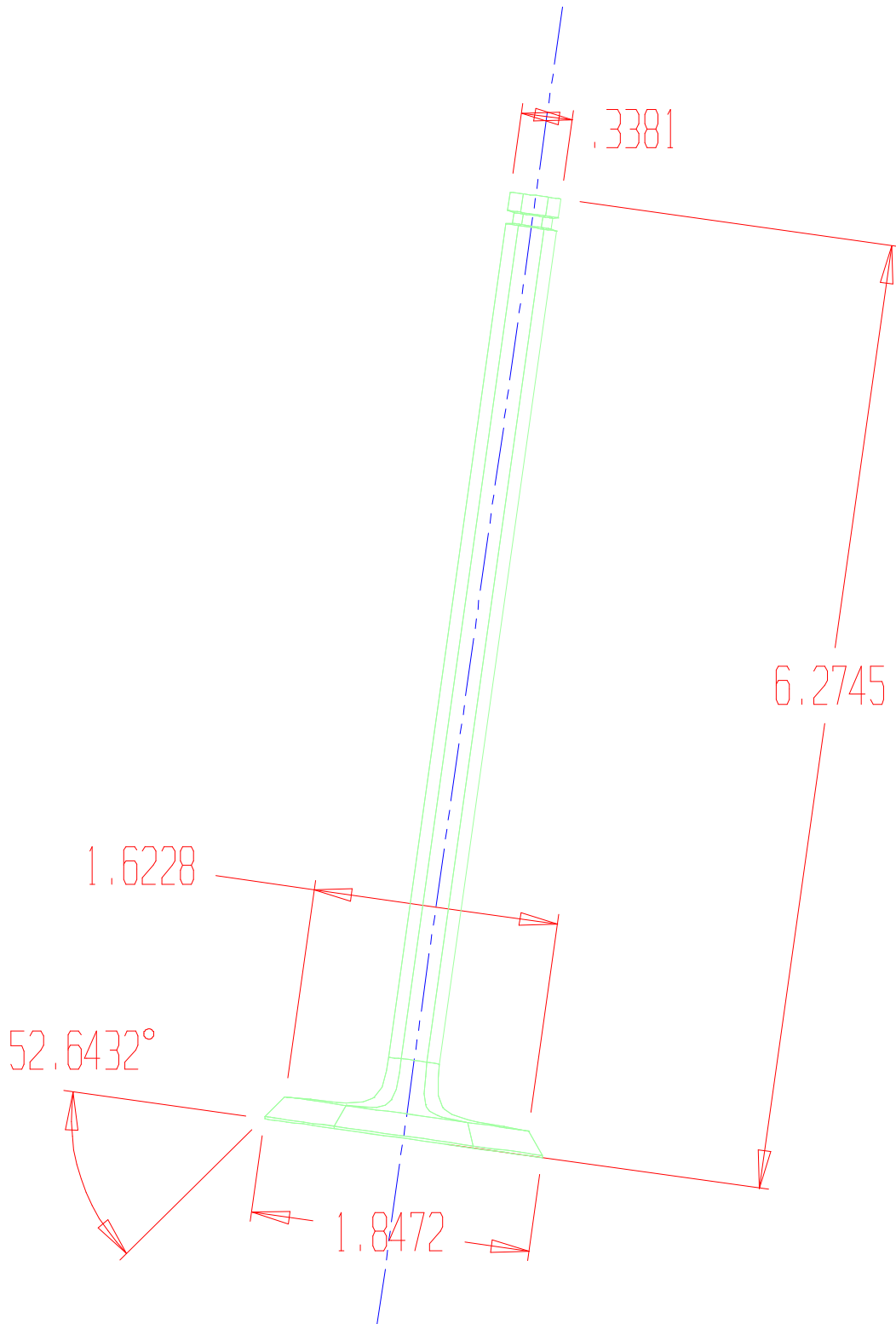
Using: Uniport Valve (Patent # 5,782,215)

Draft#: 1

11-8-03

Part #: V6pop- Regular Poppet Valve

Designer: Mark Engelmann / Council Bluffs, IA



Project: Harley Twin Cam Head Design

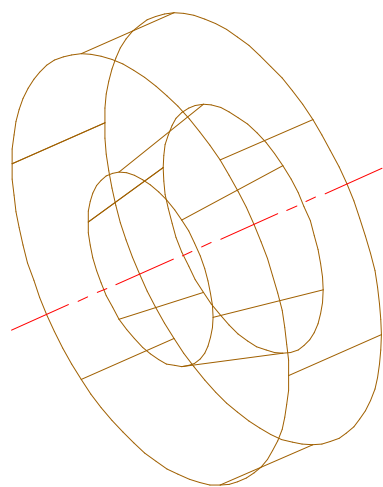
Using: Uniport Valve (Patent #5,782,215)

Draft #: 1

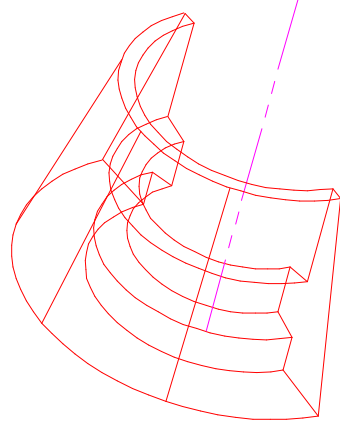
11-8-03

Part #: E20rtn - 'Spring Retainer'

Designer: Mark Engelmann / Council Bluffs, IA



Project: Harley Twin Cam Head Design
Using: Unipart Valve (Patent # 5,782,215)
Draft#: 1 11-8-03
Part #: E21key2 - Spring Retainer key for E20rtn
Designer: Mark Engelmann / Council Bluffs, IA



Project: Harley Twin Cam Head Design

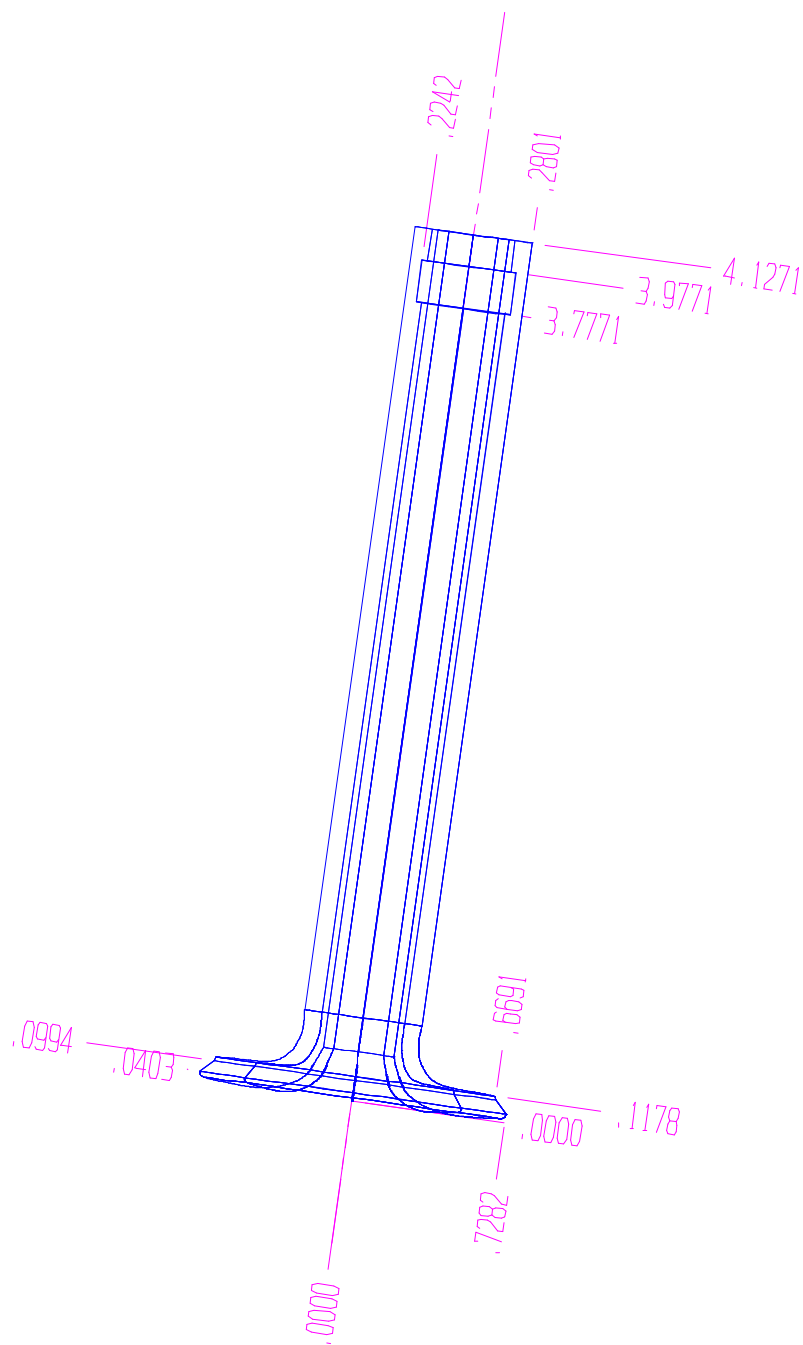
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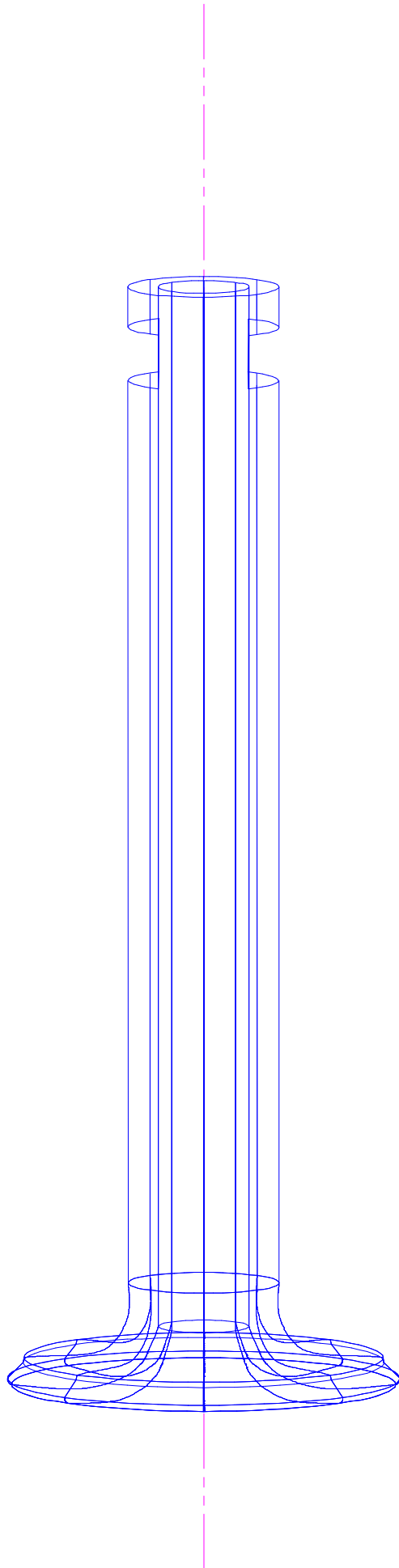
Draft#: 2

11-20-03

Part #: V4auxnew - Auxiliary Poppet Valve

Designer: Mark Engelmann / Council Bluffs, IA





Project: Harley Twin Cam Head Design

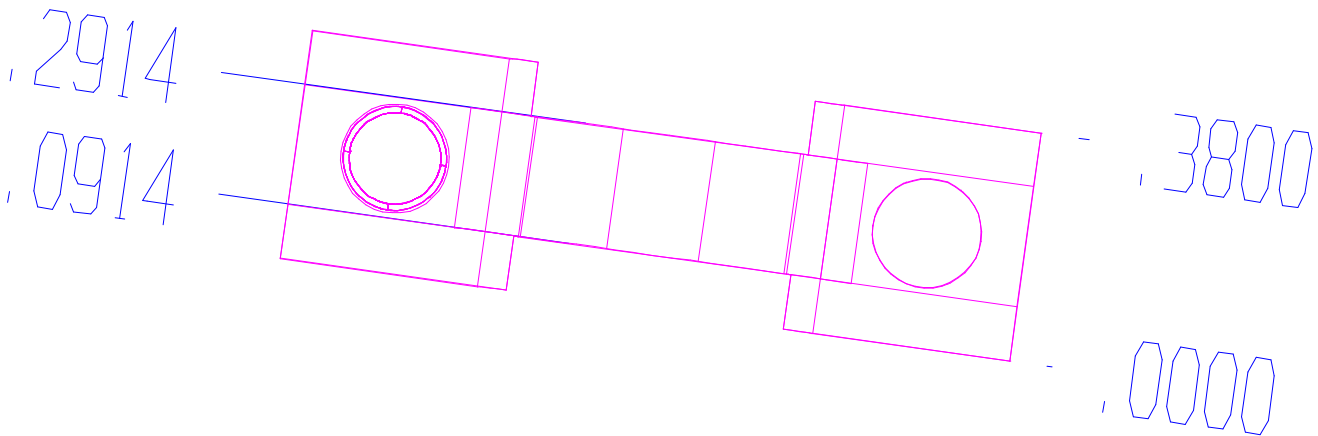
Using: Uniport Valve (Patent #5,782,215)

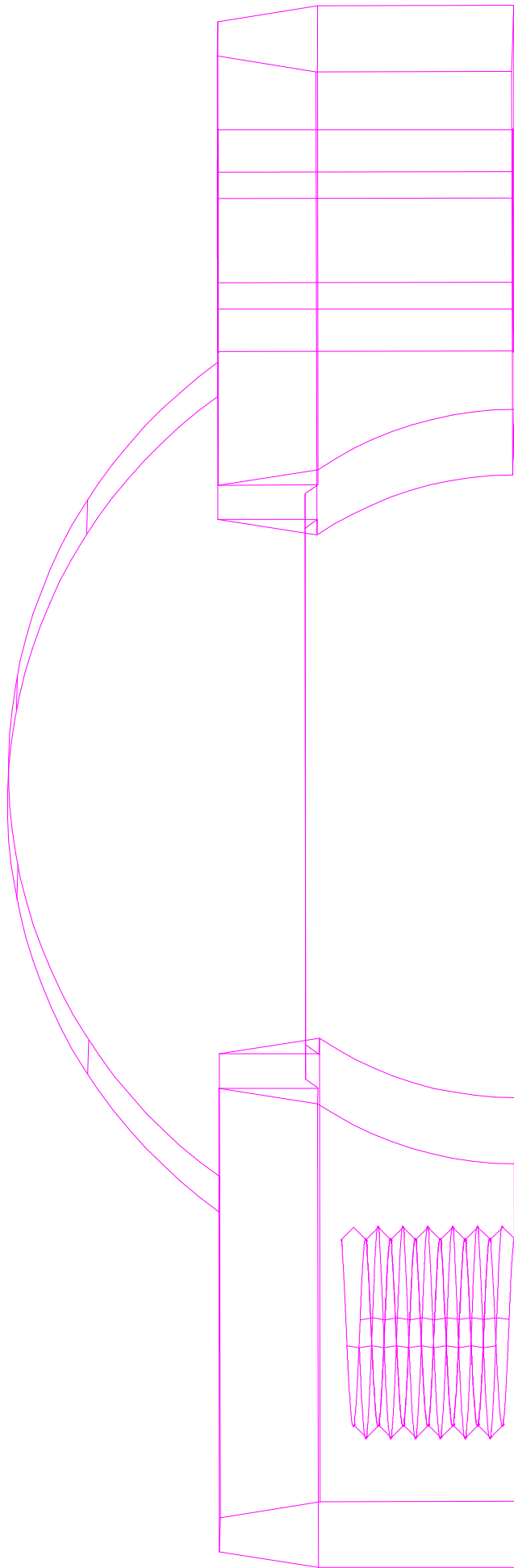
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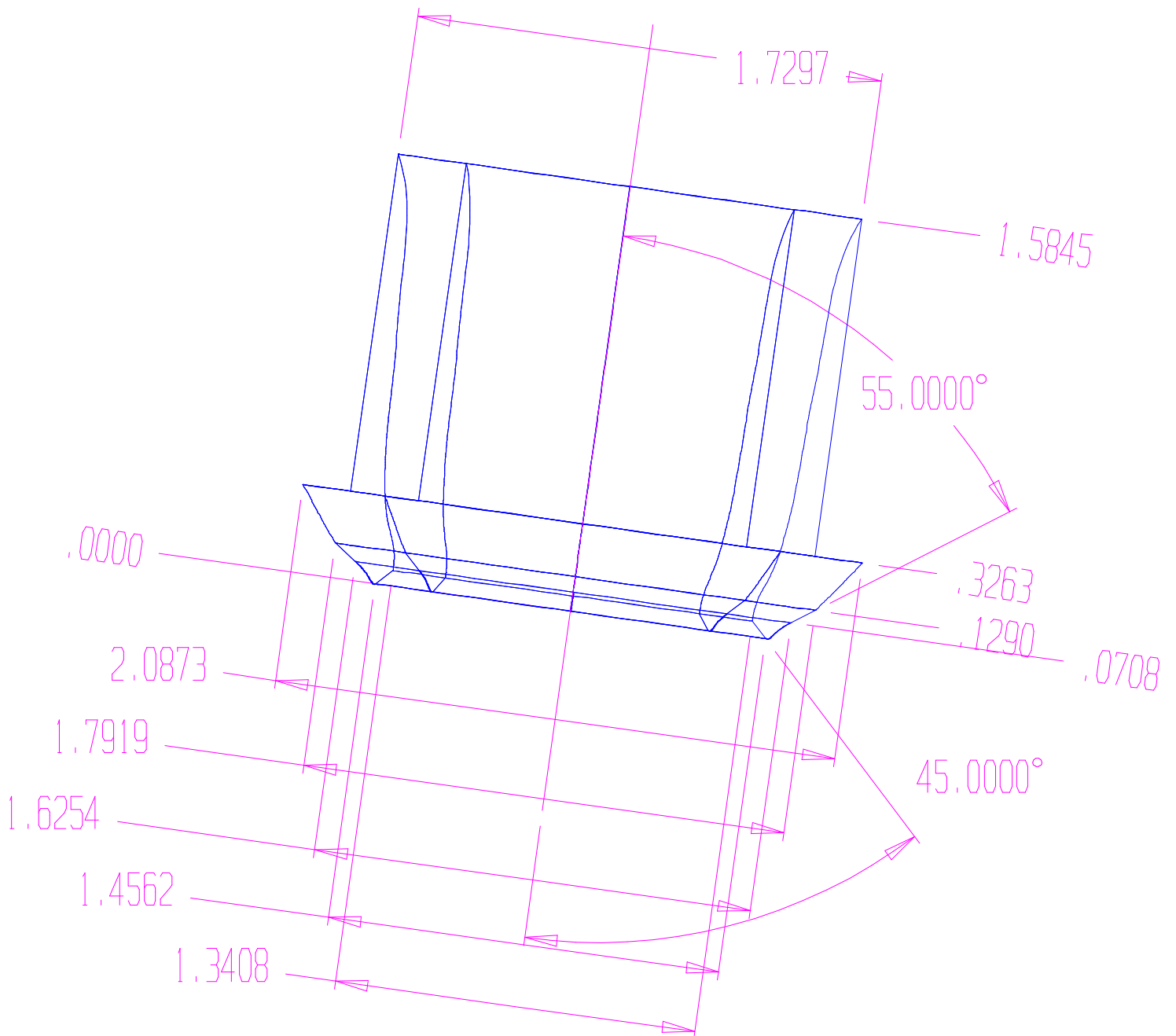
Part #: E24aux2 - Surface for E22mns4 to contact

Designer: Mark Engelmann / Council Bluffs, IA





Project: Harley Twin Cam Head Design
Using: Uniport Valve (Patent #5,782,215)
Draft#: 1 11-8-03
Part #: V5cyl - Cylindrical Valve
Designer: Mark Engelmann / Council Bluffs, IA



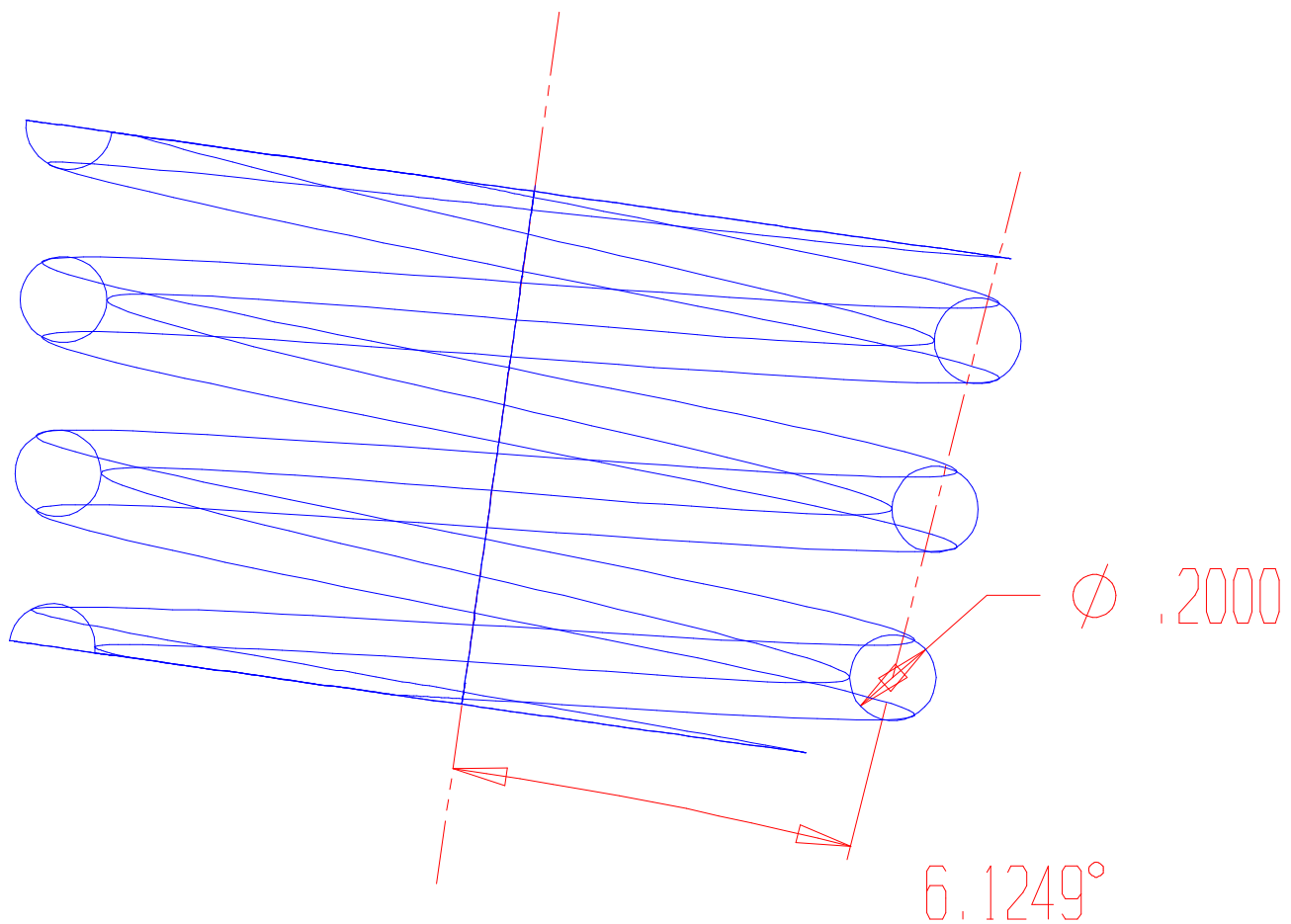
Project: Harley Twin Cam Head Design

Using: Uniport Valve (Patent # 5,782,215)

Draft#: 1 11-8-03

Part #: S17cmp - Compression spring that engages V5cyl

Designer: Mark Engelmann / Council Bluffs, IA



Project: Harley Twin Cam Head Design

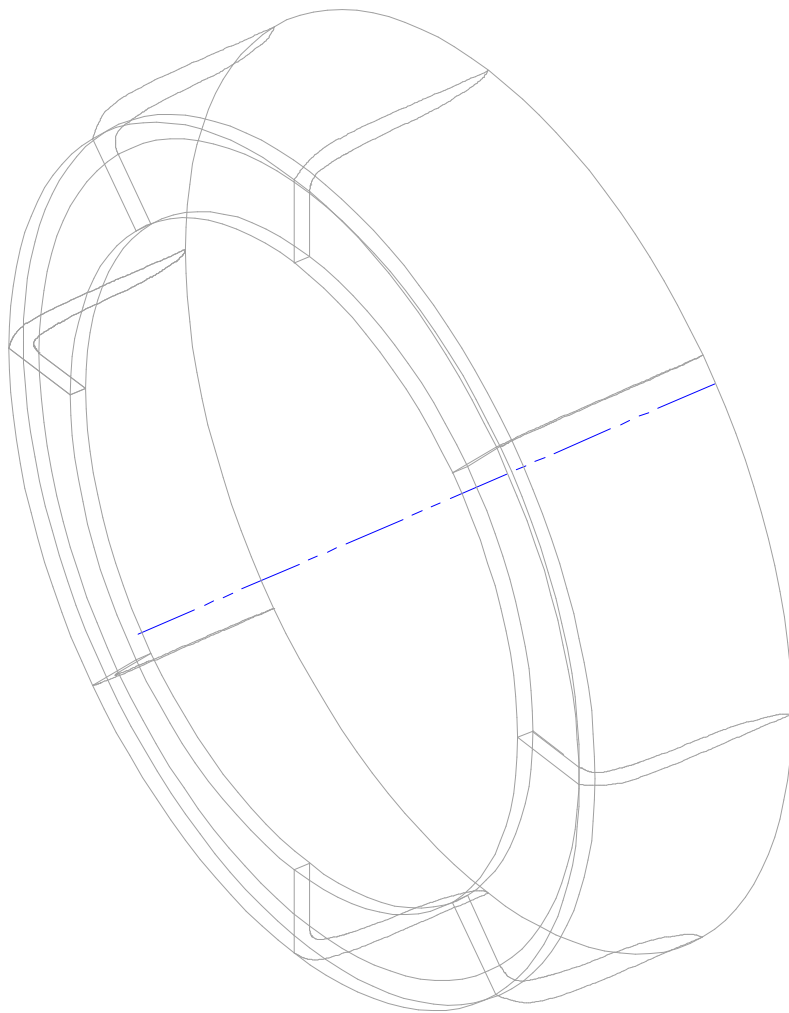
Using: Uniport Valve (Patent #5,782,215)

Draft#: 1

11-8-03

Part #: M18cld - Mesh seal around S17cmp on 'cold' side

Designer: Mark Engelmann / Council Bluffs, IA



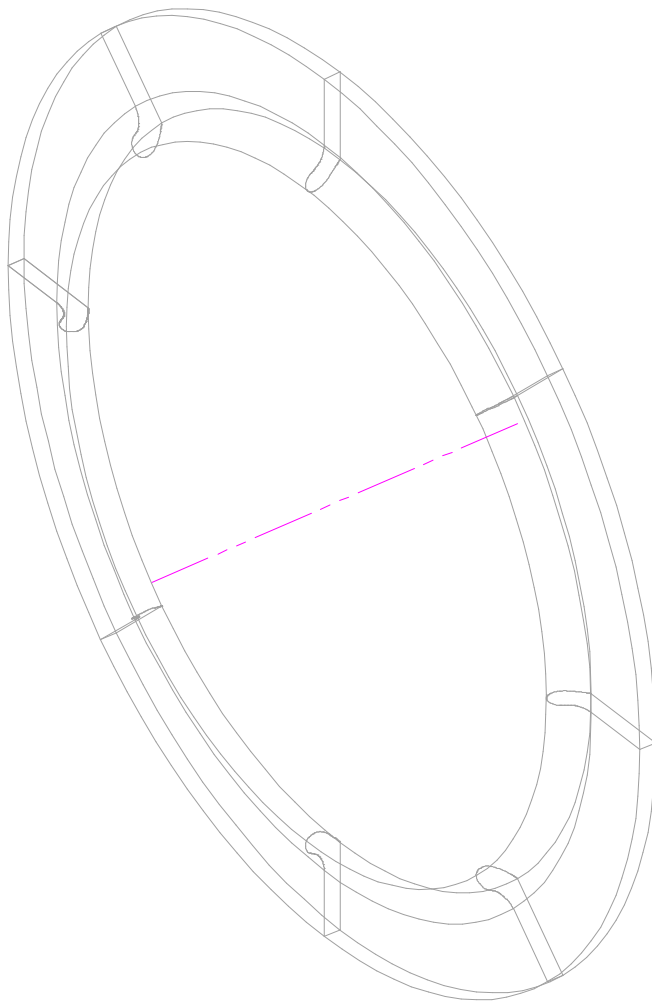
Project: Harley Twin Cam Head Design

Using: Uniport Valve (Patent #5,782,215)

Draft#: 1 11-8-03

Part#: M19hot - Mesh seal around S17cmp on 'hot' side

Designer: Mark Engelmann / Council Bluffs, IA



Project: Harley Twin Cam Head Design

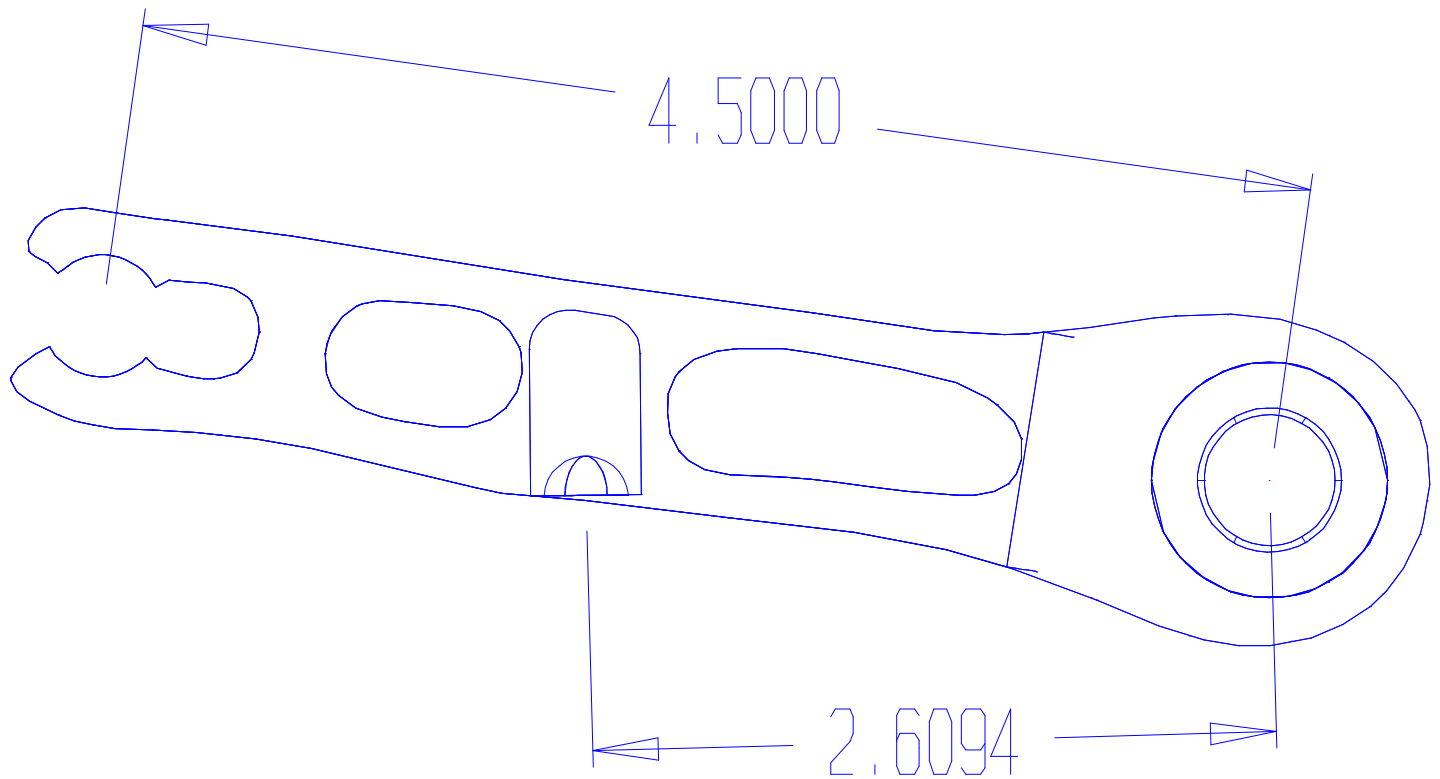
Using: Uniport Valve (Patent #5,782,215)

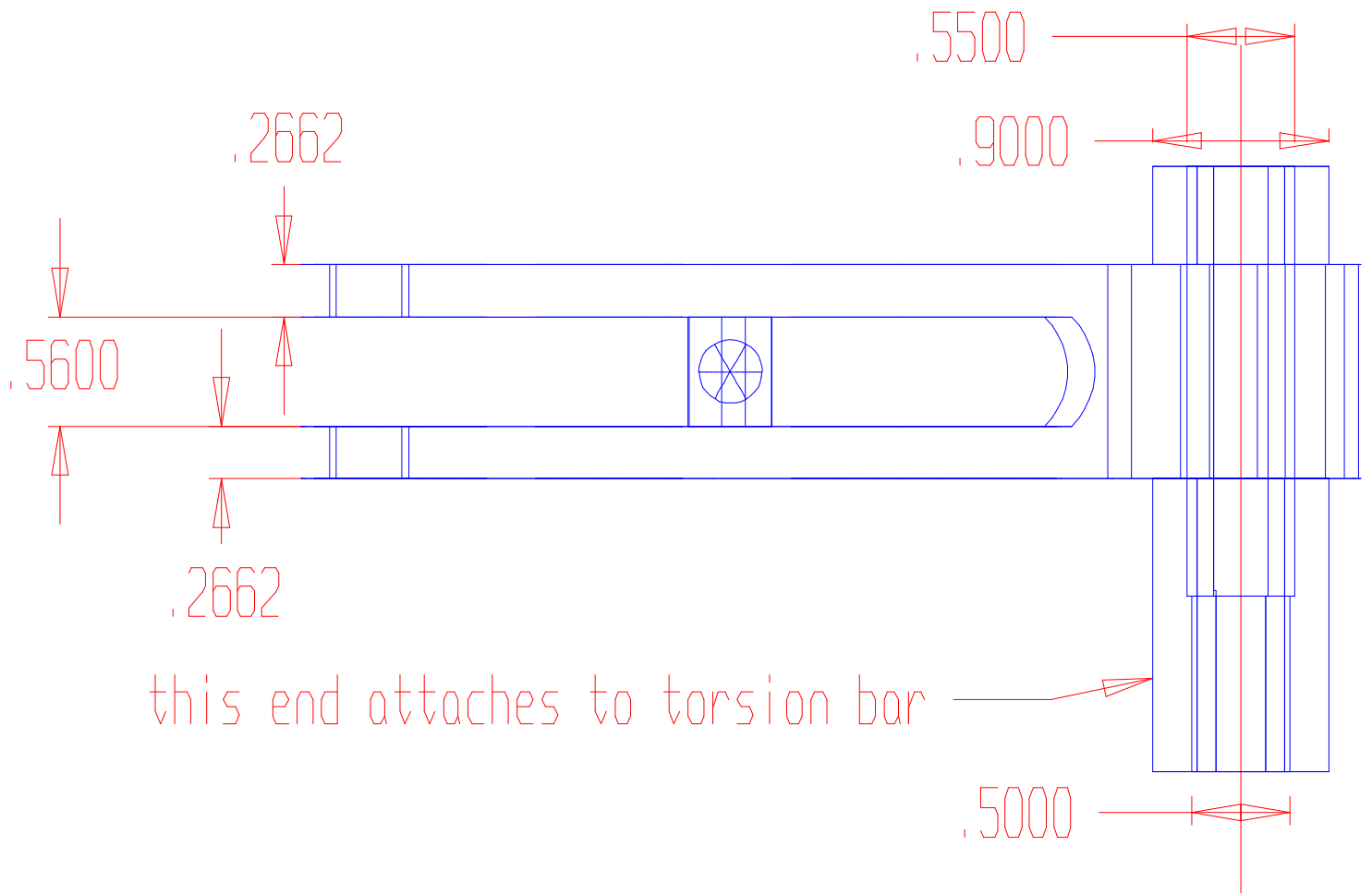
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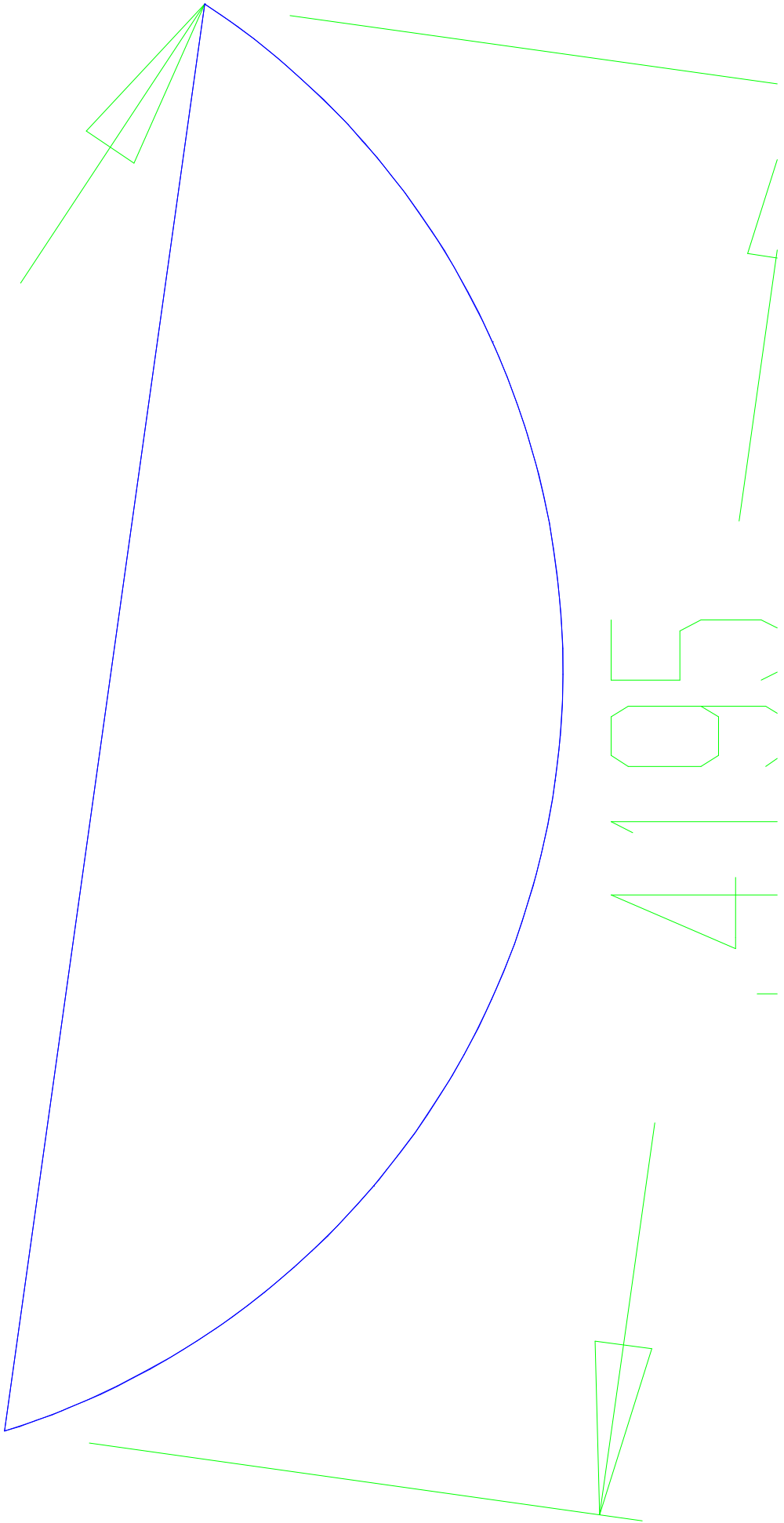
Part #: R7aux - Rocker for V4aux

Designer: Mark Engelmann / Council Bluffs, IA





2324

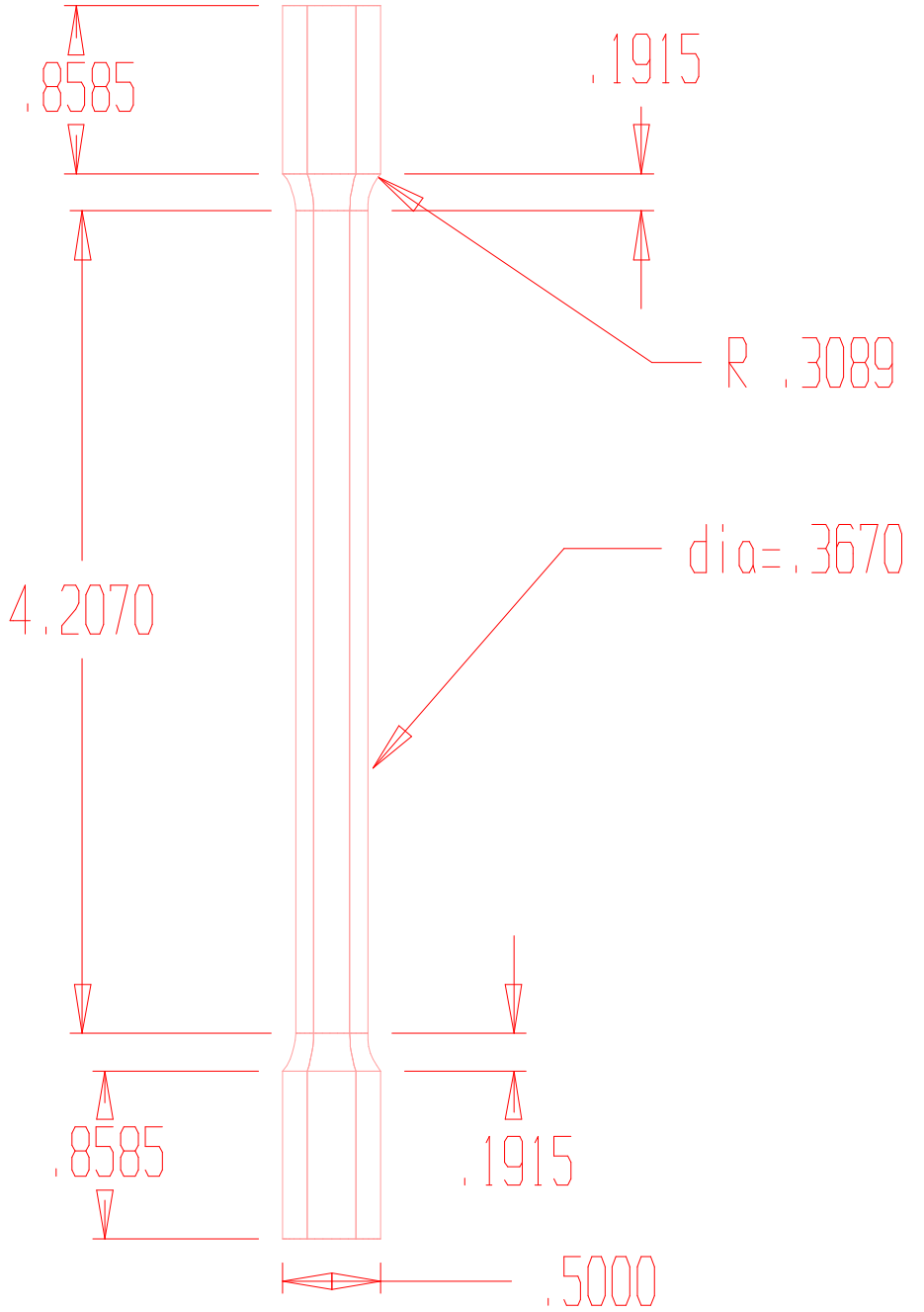


4195

Project: Harley Twin Cam Head Design
Using: Uniport Valve (Patent # 5,782,215)
Draft#: 1 11-89-03
Part #: P13sh - Push rod for Aux. Valve
Designer: Mark Engelmann / Council Bluffs, IA



Project: Harley Twin Cam Head Design
Using: Uniport Valve (Patent 5,782,215)
Draft#: 1 11-8-03
Part #: B10aux - Torsion Bar for V4aux
Designer: Mark Engelmann / Council Bluffs, IA



Project: Harley Twin Cam Head Design

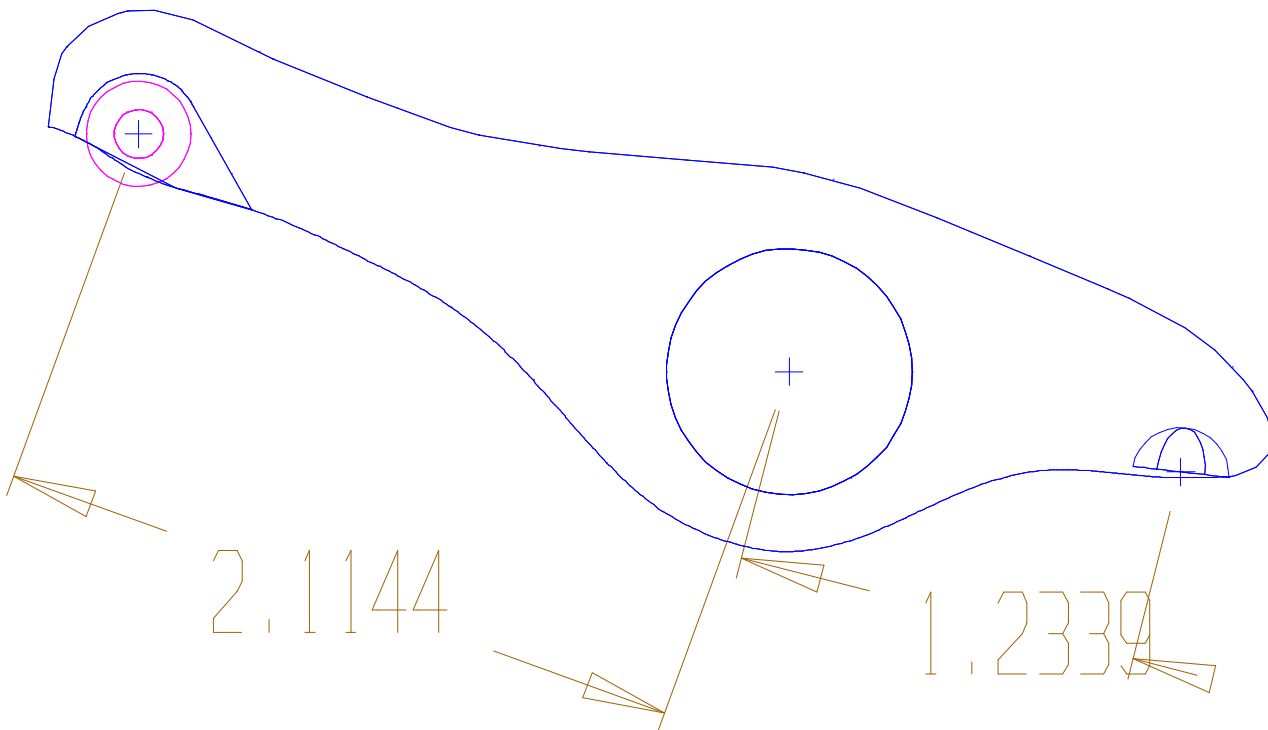
Using: Uniport Valve (Patent # 5,782,215)

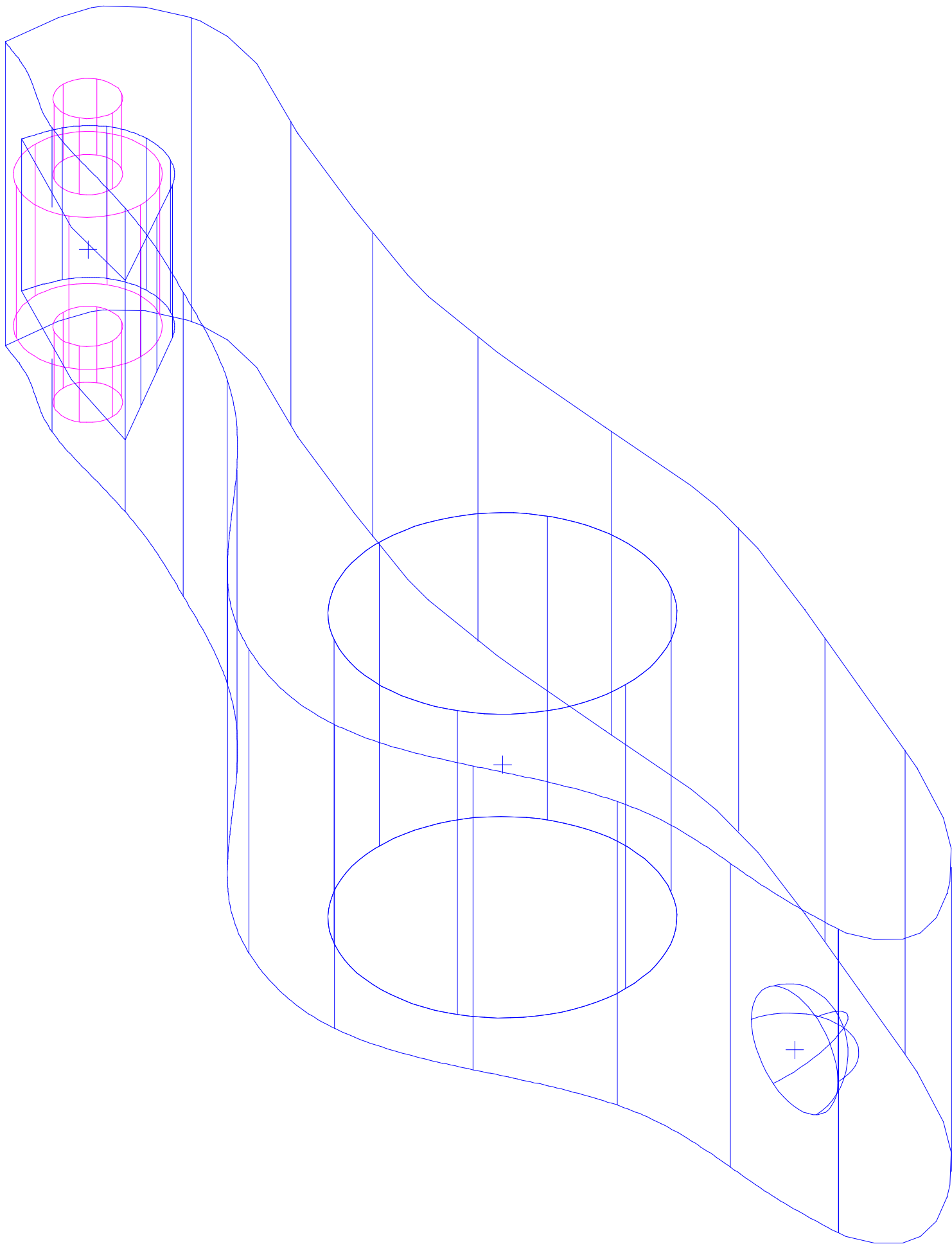
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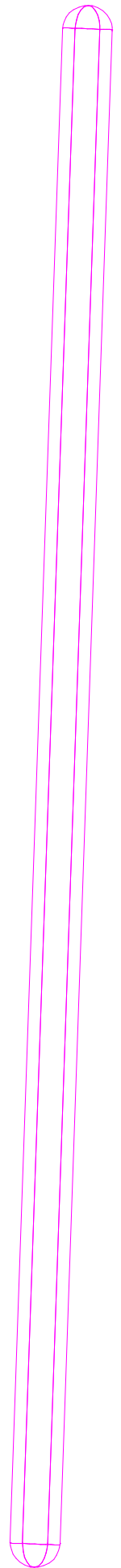
Part #: R8rkr - Rocker for V6pop

Designer: Mark Engelmann / Council Bluffs, IA





Project: Harley Twin Cam Head Design
Using: Uniport Valve (Patent # 5,782,215)
Draft#: 1 11-8-03
Part #: P12Ing - Push Rod for R. Poppet Valve
Designer: Mark Engelmann / Council Bluffs, IA



Project: Harley Twin Cam Head Design

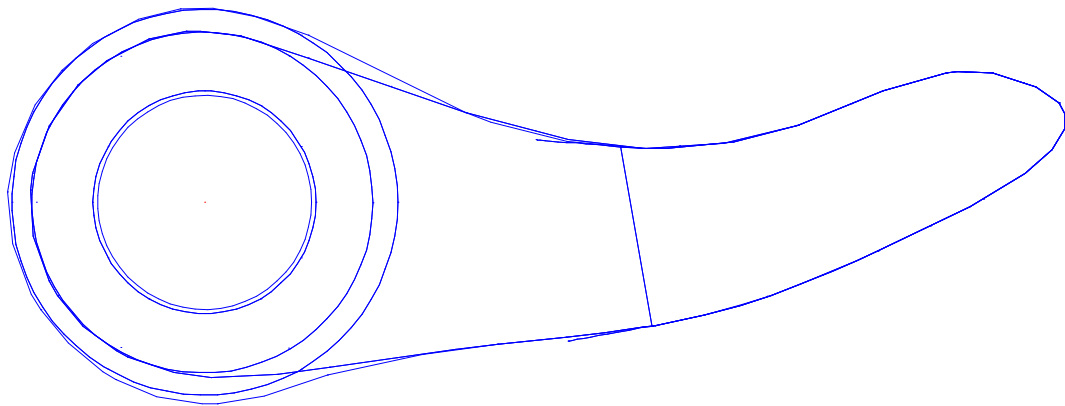
Using: Uniport Valve (Patent #5,782,215)

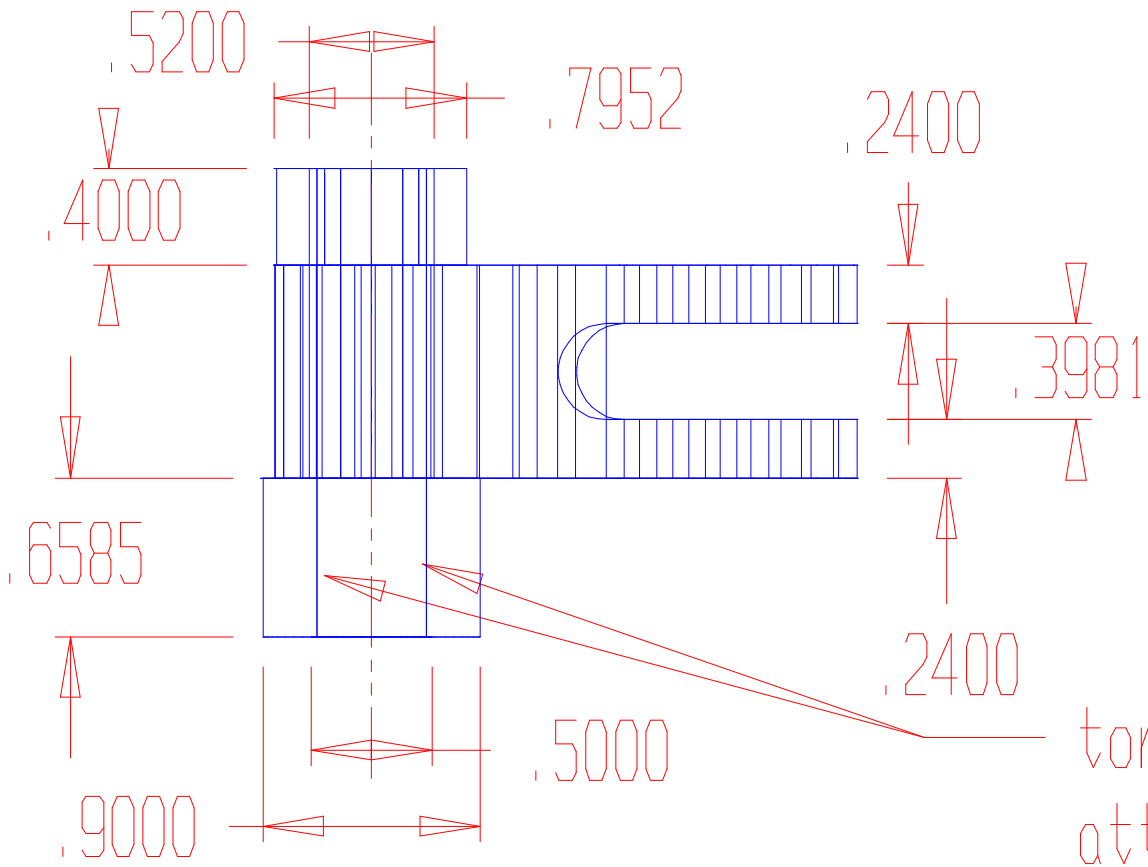
Draft#: 1

11-8-03

Part #: R9fgr - Finger that transmits torsion bar force

Designer: Mark Engelmann / Council Bluffs, IA





torsion bar
attached here

Project: Harley Twin Cam Head Design
Using: Uniport Valve (Patent #5,782,215)
Draft#: 1 11-8-03
Part #: B11pop - Torsion Bar for V6pop
Designer: Mark Engelmann / Council Bluffs, IA

