

# DADCO®

## Guide Retainer Sets

## GRS Series



### Combined Guidance and Retention

- Cost savings over common pins, bushings and spools
- Four rod diameters: 25 mm, 30 mm, 36 mm and 50 mm
- Robust one-piece housing with top and bottom wipers
- Various stroke lengths to suit application requirements



DADCO produces top quality products at competitive prices and provides a superior level of customer service. Founded in 1958, DADCO is the highest volume producer of gas springs for press tools. DADCO's products are widely approved and used in global operations for many industries including metal stamping, automotive and plastic injection molding.

### Guide Retainer Sets

Designed for use in dies as a replacement for common pins, bushings and spools the Guide Retainer Set (GRS) Series features high quality guided components to ensure exceptionally long service life.

DADCO offers GRS in four models, designated by Guide Rod diameter, to accommodate different load capacities: GRS.25, GRS.30, GRS.36 and GRS. 50 (refer to page 7 for attachment capability information).



### Retainer Mount Choices

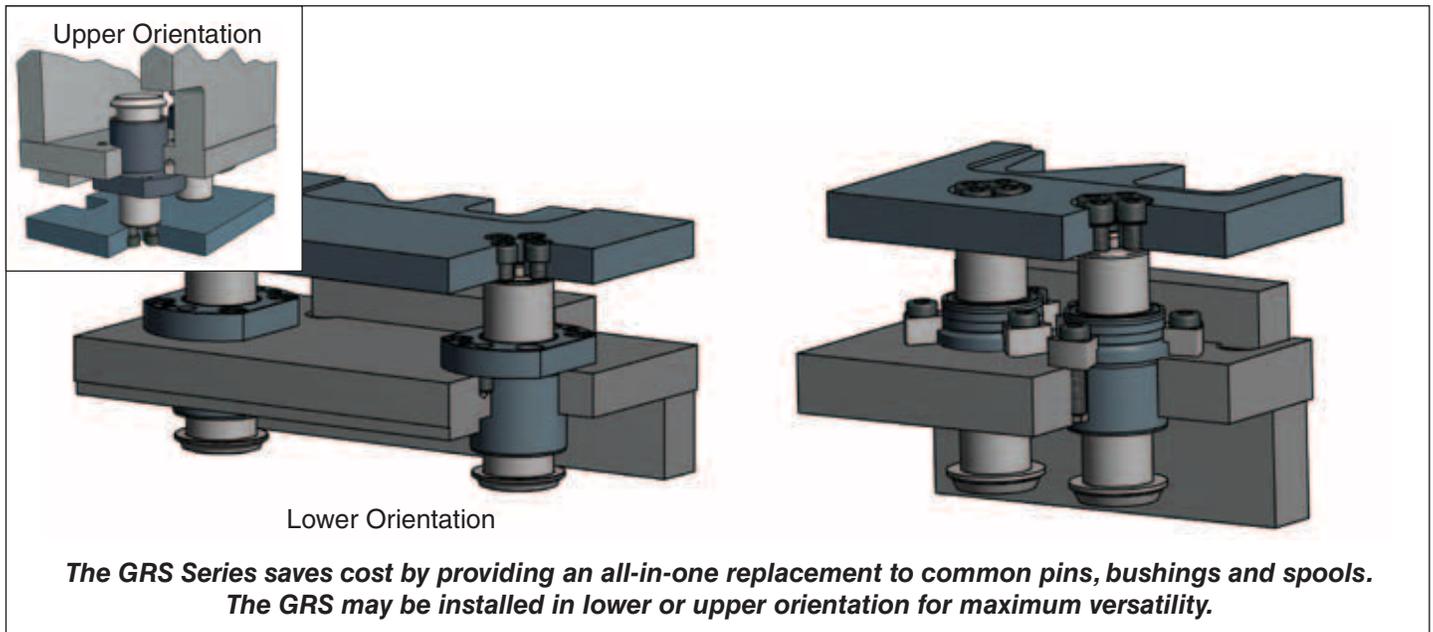
To provide additional mounting flexibility, Guide Retainer Sets are available in two different retainer mount options; Flange Mount and Toe Clamp.

The Flange Mount option, offered for all four rod diameters, has a one-piece Mount and Guide Retainer that is machined to close tolerances. Each Flange Mount has four mount holes and two dowel holes to facilitate installation.

The Toe Clamp option, offered for the GRS.30 and GRS.36 models, permits tight mounting configurations. Wide Toe Clamps in sets of two or Narrow Toe Clamps in sets of three may be ordered with the Guide Rod and Guide Retainer. Additional Toe Clamps may be purchased separately to accommodate personalized mount configurations (refer to page 7 for ordering information).

Model	Guide Rod Diameter	FM Flange	W2 Wide (Qty. 2) Toe Clamps	N3 Narrow (Qty. 3) Toe Clamps
GRS.25	25 mm .984"	✓		
GRS.30	30 mm 1.181"	✓	✓	✓
GRS.36	36 mm 1.417"	✓	✓	✓
GRS.50	50 mm 1.968"	✓		

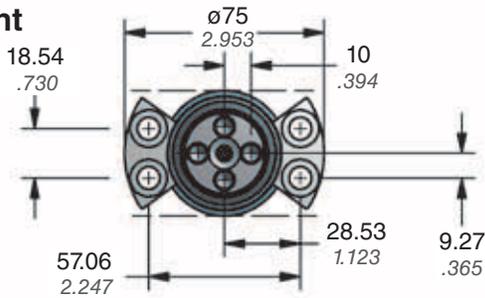
### Installation Examples



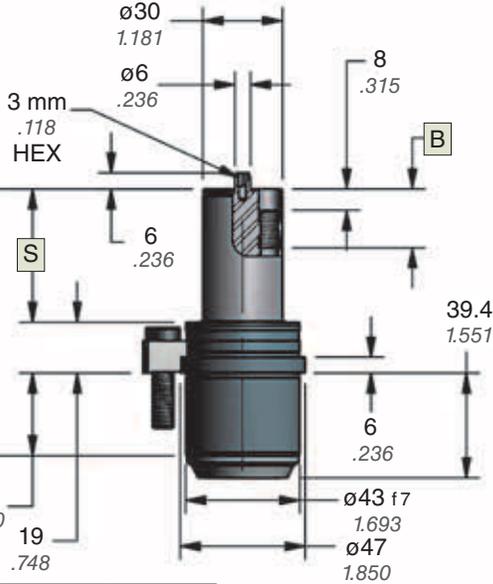
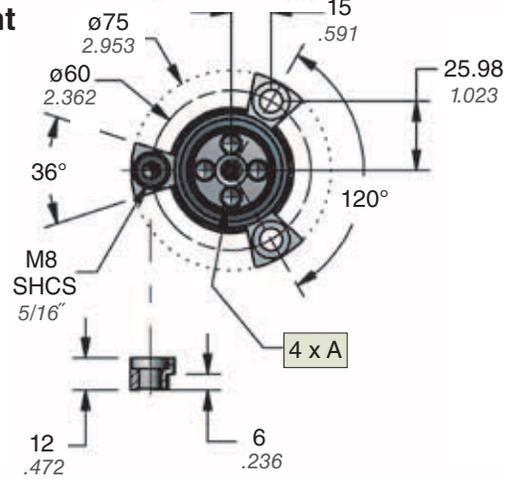
GRS.30 / GRS.36 - Toe Clamp

**GRS.30**

**W2 Mount**



**N3 Mount**

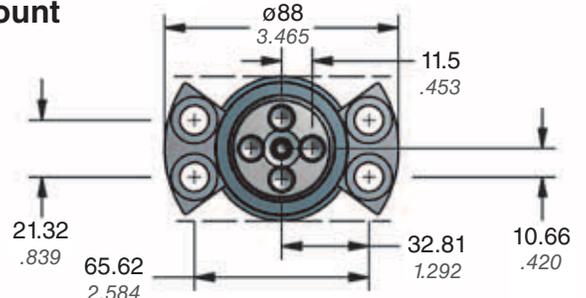


Guide Pin	A Thread	B Depth
M	M8	22
J		.87
E	5/16"-18	
K		

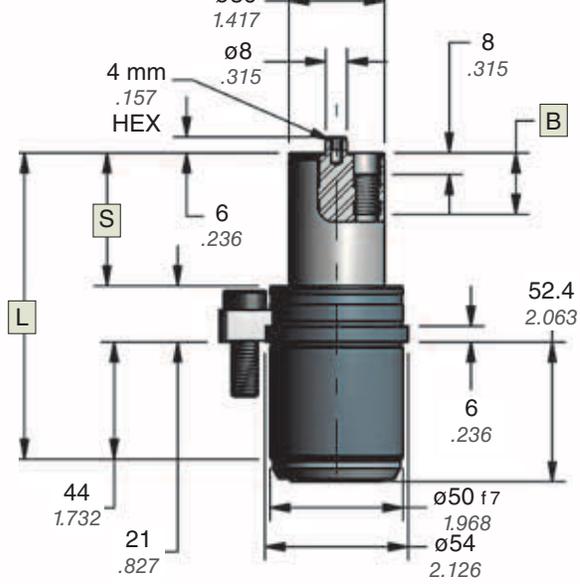
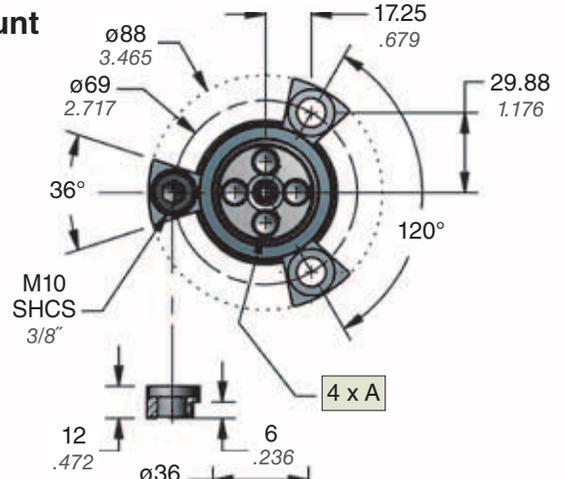
L (mm) = S (mm) + 50  
L (inch) = S (inch) + 1.968

**GRS.36**

**W2 Mount**



**N3 Mount**



Guide Pin	A Thread	B Depth
M	M10	23
J		.91
E	3/8"-16	
K		

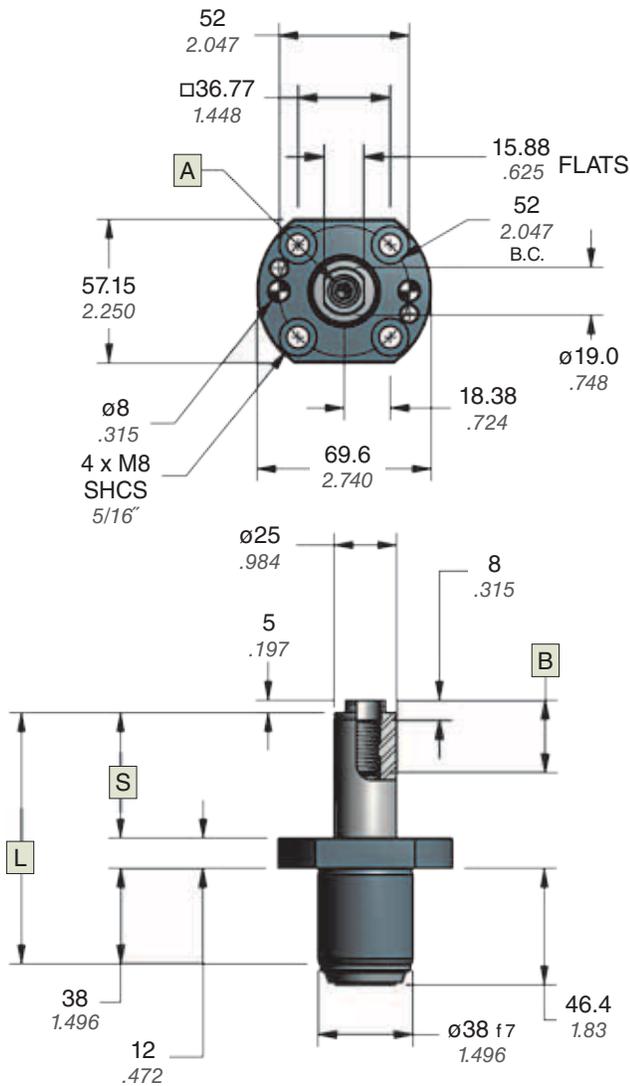
L (mm) = S (mm) + 65  
L (inch) = S (inch) + 2.559

**Ordering Example:**

Part Number: GRS.30 M. 0250 W2 Guide Retainer Mount Option: W2 or N3  
 GRS.30 or GRS.36 Stroke Length: 20.0 mm to 150.0 mm (0.75" to 6.00")  
 Guide Rod Option: increments of 0.1 mm  
 M = Metric, E = Imperial,  
 J = Metric without Rod End Dowel  
 K = Imperial without Rod End Dowel

Refer to page 7 for complete ordering example.

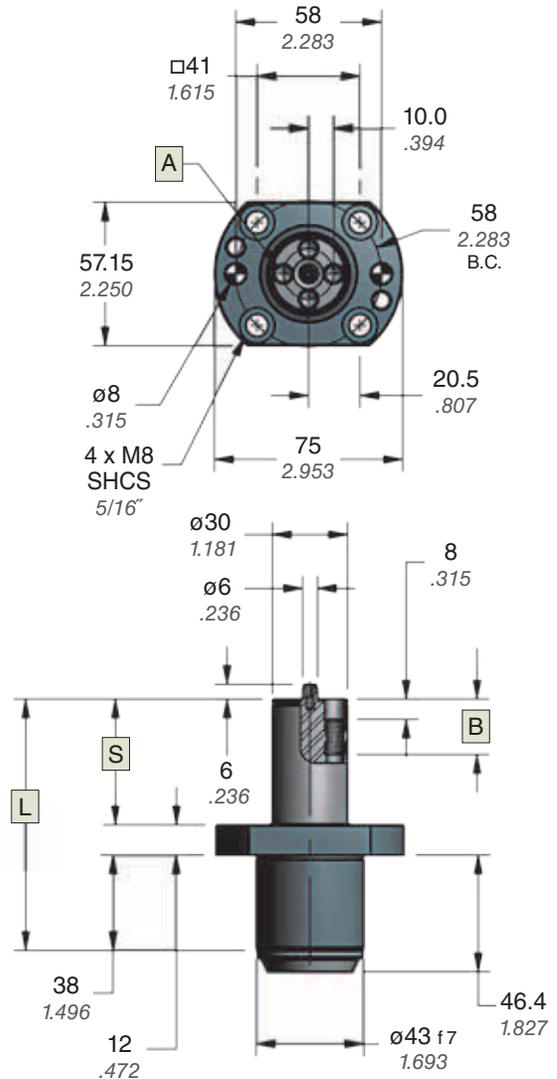
**GRS.25**



Guide Pin	A Thread	B Depth
M	M12	29
E	1/2"-13	1.14"

L (mm) = S (mm) + 50  
L (inch) = S (inch) + 1.968

**GRS.30**



Guide Pin	A Thread	B Depth
M	M8	22 .87"
J		
E	5/16"-18	22 .87"
K		

L (mm) = S (mm) + 50  
L (inch) = S (inch) + 1.968

**Ordering Example:**

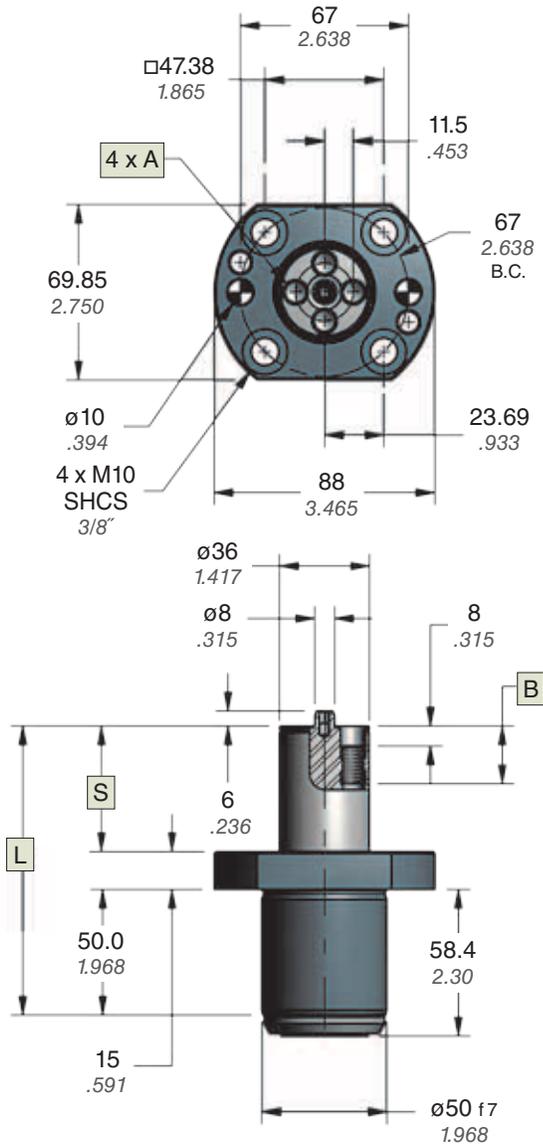
Part Number: GRS.30. M. 0250. FM  
 GRS.25 or GRS.30  
 Guide Rod Option: \_\_\_\_\_  
 M = Metric, E = Imperial,  
 J = Metric without Rod End Dowel  
 K = Imperial without Rod End Dowel

Guide Retainer Mount Option: FM  
 Stroke Length: 20.0 mm to 150.0 mm (0.75" to 6.00")  
 increments of 0.1 mm

Refer to page 7 for complete ordering example.

GRS.36 / GRS.50 - Flange Mount

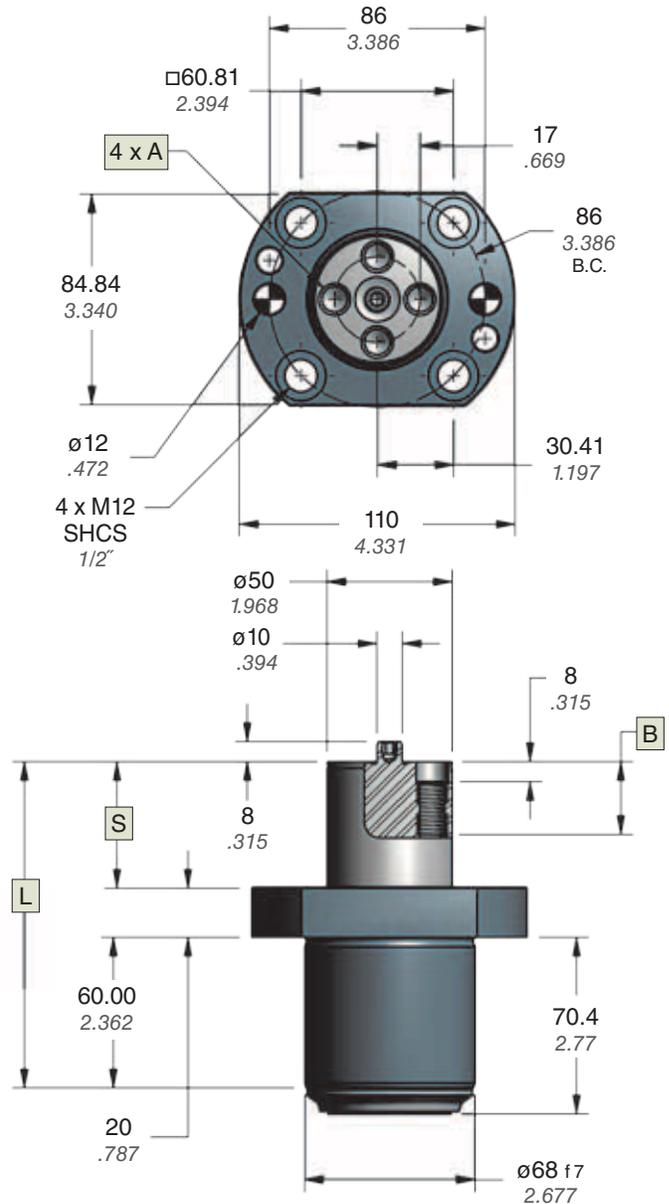
**GRS.36**



Guide Pin	A Thread	B Depth
M	M10	23 .91"
J		
E	3/8"-16	23 .91"
K		

L (mm) = S (mm) + 65  
L (inch) = S (inch) + 2.559

**GRS.50**



Guide Pin	A Thread	B Depth
M	M12	29 1.14"
J		
E	1/2"-13	29 1.14"
K		

L (mm) = S (mm) + 80  
L (inch) = S (inch) + 3.149

**Ordering Example:**

**Part Number:** GRS.36 M 0250 FM **Guide Retainer Mount Option:** FM  
 GRS.36 or GRS.50 **Stroke Length:** 20.0 mm to 150.0 mm (0.75" to 6.00")  
**Guide Rod Option:** increments of 0.1 mm  
 M = Metric, E = Imperial,  
 J = Metric without Rod End Dowel  
 K = Imperial without Rod End Dowel

Refer to page 7 for complete ordering example.

### Guide Rod Attachment Details

**GRS.25**  
(When used with Plate Adapter Cap, see below)

**GRS.30 / GRS.36 / GRS.50**

Part No.	GRS.30	GRS.36	GRS.50
<b>A</b>	3 .118	4 5/32"	5 3/16"
<b>B</b>	10 .394	11.5 .453	17.0 .669
<b>C</b>	ø34.0 1.339	ø41.0 1.614	ø54.0 2.126
<b>D</b>	ø6.0 .236	ø8.0 .315	ø10.0 .394
<b>E</b>	20.0 .787	23.0 .906	34.0 1.339

### Design Considerations

**GRS.25**

**Plate Adapter Cap D1853455**  
(Sold Separately)

**GRS.30 / GRS.36 / GRS.50**

The GRS series requires machining from only one side of the plate. All models have a small hex socket located in the center of the Guide Rod that facilitates alignment through the plate during installation and removal. The GRS.25 Guide Rod has flats to prevent rotation and may be installed with the Plate Adapter Cap (sold separately).

Verify that there is adequate clearance for travel during operation. Overstroking the rod or impacting the bottom of the Guide Retainer Set will cause permanent damage.

**Examples of GRS Secured with Toe Clamps**

Two GRS.30...N3's mounted to a plate.

Two GRS.30...W2's mounted to a plate.

DADCO Toe Clamp Mounts are compact, permitting GRS to be located in close proximity to one another. Toe Clamps should be evenly spaced around the retainer to balance the load. To purchase individual clamps refer to ordering examples on page 7.

## Maximum Attachment Capacity Per Guide Retainer Set

Consider the dynamic load factors on the guide unit fasteners. The guidelines below show attachment limits per GRS based on the press ram velocity. For increased capacity, install additional Guide Retainer Sets.

Guide Retainer Mount Option:		FM / W2				N3		Guide Retainer Mount Option:		FM / W2				N3	
Model:	GRS.25	GRS.30	GRS.36	GRS.50	GRS.30	GRS.36	Model:	GRS.25	GRS.30	GRS.36	GRS.50	GRS.30	GRS.36		
Ram Velocity	Metric Attachment Mass (kg)						Ram Velocity	Imperial Attachment Mass (lb.-mass)							
mm/s							fpm	in/s							
250	44	58	116	177	44	87	50	10	98	128	256	390	96	192	
500	11	15	29	44	11	22	100	20	24	32	64	98	24	48	
750	5	6	13	20	5	10	150	30	11	14	28	43	11	21	
1000	2.8	4	7	11	2.8	5	200	39	6	8	16	24	6	12	
Force (kN)						Force (tons)									
Static Load Rating (Mechanical Strength)	10	18	28	41	13	21	Static Load Rating (Mechanical Strength)	1.2	2.0	3.2	4.6	1.5	2.4		

## Stroke Length Recommendations

DADCO offers the Guide Retainer Sets in stroke lengths from 20.0 mm to 150.0 mm (0.75" to 6.00") in increments of 0.1 mm; DADCO recommends ordering stroke lengths in 5.0 mm or 0.25" increments when possible. Refer to charts below for the appropriate stroke length ordering code based on these suggestions. For more information contact DADCO.

### Metric

Stroke Length			Stroke Length		
S		Order Code	S		Order Code
mm	inch		mm	inch	
20.0	0.787	0200	85.0	3.346	0850
25.0	0.984	0250	90.0	3.543	0900
30.0	1.181	0300	95.0	3.740	0950
35.0	1.378	0350	100.0	3.937	1000
40.0	1.575	0400	105.0	4.134	1050
45.0	1.772	0450	110.0	4.331	1100
50.0	1.969	0500	115.0	4.528	1150
55.0	2.165	0550	120.0	4.724	1200
60.0	2.362	0600	125.0	4.921	1250
65.0	2.559	0650	130.0	5.118	1300
70.0	2.756	0700	135.0	5.315	1350
75.0	2.953	0750	140.0	5.512	1400
80.0	3.150	0800	150.0	5.906	1500

### Imperial

Stroke Length			Stroke Length		
S		Order Code	S		Order Code
inch	mm		inch	mm	
0.75	19.1	0191	3.25	82.6	0826
0.90	22.9	0229	3.50	88.9	0889
1.00	25.4	0254	3.60	91.4	0914
1.25	31.8	0318	3.75	95.3	0953
1.50	38.1	0381	4.00	101.6	1016
1.75	44.5	0445	4.25	108.0	1080
1.80	45.7	0457	4.50	114.3	1143
2.00	50.8	0508	4.75	120.7	1207
2.25	57.2	0572	5.00	127.0	1270
2.50	63.5	0635	5.25	133.4	1334
2.70	68.6	0686	5.40	137.2	1372
2.75	69.9	0699	5.50	139.7	1397
3.00	76.2	0762	6.00	152.4	1524

## Ordering Example:

**GRS. 36. M. 0250. FM**

### Series:

Guide Retainer Set

### Guide Rod Diameter:

Ø25, Ø30, Ø36 or Ø50

### Guide Rod Option:

M = Metric, E = Imperial,  
J = Metric without Rod End Dowel  
K = Imperial without Rod End Dowel

### Guide Retainer Mount Option:

FM = Flange Model

W2 = Wide Toe Clamps (Qty. 2) or N3 = Narrow Toe Clamps (Qty.3); *GRS.30 and GRS.36 only*

### Stroke Length:

20.0 mm to 150.0 mm (0.75" to 6.00");  
Example: 25.0 mm = 0250 or 1.00" = 0254

## Replacement Part Ordering Information:

### Guide Rod:

GRS.36.M.0250.RO= Standard Metric Guide Rod  
GRS.36.E.0250.RO= Standard Imperial Guide Rod  
GRS.36.J.0250.RO= Metric Guide Rod, no Rod End Dowel  
GRS.36.K.0250.RO= Imperial Guide Rod, no Rod End Dowel



**Guide Retainer:** GRS.36 = Flange Mount,  
GRS.36T = Toe Clamp Mount



### Lock Washer:

UMR08 UMR10

GRS.WM8 GRS.WM10

GRS.NM8 GRS.NM10

GRS.30	GRS.36
UMR08	UMR10
GRS.WM8	GRS.WM10
GRS.NM8	GRS.NM10

## GRS Series Features

**Attachment Holes**  
Guide Rod attachment holes accommodate long fasteners for additional thread engagement and increased impact resistance. Imperial threads are optional.

**Hex Socket**  
Located in center of rod for alignment during installation.

**Rod Dowel Option**  
Removable dowel at top of rod.

**Guide Rod**  
High strength alloy steel, super finished and pre-hardened to resist wear.

**Dowel Holes**  
Dowel holes are included on the Flange Mount for precise locating.

**Jack Screw Holes**  
Supplied on the Flange Mount model to assist in removing retainer from die during service.

**Bushings**  
Composite bushings offer guidance, high load capacity, smooth operation and are easily replaced.

**Excluder/Dampener**  
Wipes contaminants from Guide Rod and dampens impact at end of stroke travel.

**Rod Wiper**  
Wipes rod free of contaminants.

### GRS with Integral Flange Mount

One-piece high strength retainer with integral mount provides optimal alignment and rigidity.

**Precision Fit**  
The housing boss is machined to a close tolerance and may be used for positioning based on bore location.

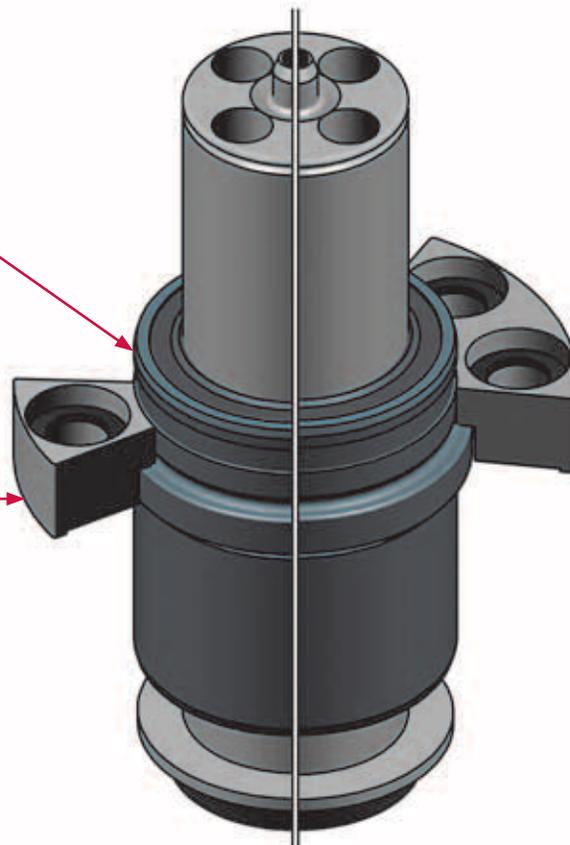
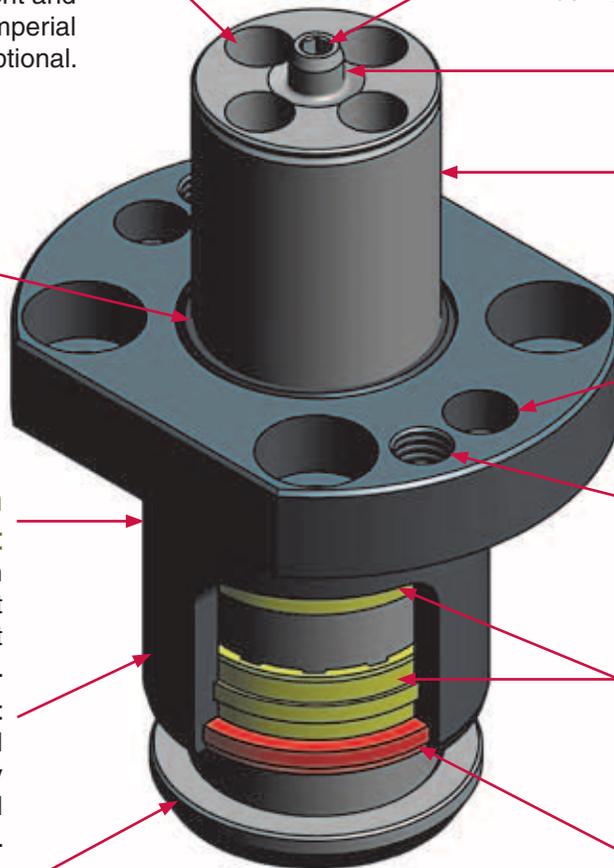
**Rod Retainer**  
Permanently affixed stop located at bottom of Guide Rod.

### GRS Secured with Toe Clamps

Reliable GRS construction in a compact, economical toe-clamp version.

**Narrow Toe Clamp Mount**  
The N3 Retainer Mount when ordered with the GRS includes three Narrow Toe Clamps – with lock washers – for securing SHCS.

**Wide Toe Clamp Mount**  
The W2 Retainer Mount when ordered with the GRS includes two Wide Toe Clamps – with lock washers – for securing SHCS.



*Patented*