

Offset Levers / Ball Knobs

Offset Levers

| Type | Handle | Lever |
|-------|--------|-----------------------------|
| LAGN | LAG | S45C Cathodic Paint (Black) |
| LAGNS | LAGS | SUS304 |

Handle Type: LAGN, LAGNS
Ball Knobs: LAG, LAGS

Tighten the nuts after positioning the lever.

| Part Number | Type | M (Coarse) | L1 | L2 | A° Selection (Tolerance±2°) | L3 | d | D | | | | H | | | | Unit Price | | | |
|-------------|-------|------------|--------------------------|--------------------------|-----------------------------|----|----|-------------|-----------|-------------|-----------|-------------|-----------|-------------|-----------|-------------|-----------|-------------|-----------|
| | | | | | | | | LAGN, LAGNS | LAG, LAGS | LAGN, LAGNS | LAG, LAGS | LAGN, LAGNS | LAG, LAGS | LAGN, LAGNS | LAG, LAGS | LAGN, LAGNS | LAG, LAGS | LAGN, LAGNS | LAG, LAGS |
| LAGN5 | LAGNS | 5 | 30 | 60 | 30 | 12 | 6 | 17 | 25 | 40 | 24 | | | | | | | | |
| LAGS10 | LAGS | 10 | 30-100 10mm Increment | 60-100 10mm Increment | 30 45 60 90 | 20 | 10 | 21 | 30 | 50 | 29 | | | | | | | | |
| LAGS12 | LAGS | 12 | | | | 25 | 12 | 25 | 35 | 65 | 34 | | | | | | | | |

Part Number - L1 - L2 - A°
LAGN5 - 30 - 60 - 30
LAGS10 - 80 - 100 - 90

Ball Knobs

| Type | Ball | Screw |
|------|----------------------|----------------|
| PBA | (Black) Phenol Resin | - |
| PCA | (Red) Melamine Resin | Brass (Insert) |
| BGW | EPDM (Mat Black) | Brass (Insert) |
| BKS | SUS304 | Buff Polished |
| BKA | Aluminum Alloy | Polishing |
| BKAW | Aluminum Alloy | Clear Anodize |
| BKAB | Aluminum Alloy | Black Anodize |

(Plastic, No Insert) PBA, PCA
(Plastic, With Insert) BKA, BKAW, BKAB
(Rubber, With Insert) BGW

Plastic (Black: Phenol / Red: Melamine)

| Part Number | Type | M (Coarse) | D | Ball Color | H | PBA | | | PCA | | | Unit Price |
|---------------------------------------|------|------------|-----------|------------|----|-----|-----|-----|-----|-----|------|------------|
| | | | | | | PBA | PCA | PBA | PCA | PCA | | |
| PBA (No Insert) PCA (Brass Insert) | 6 | 20 | 25 | R (Red) | 18 | 10 | 10 | 7 | | | | 1-100 |
| | | | | | | 10 | 10 | 15 | | | | |
| | | | | | | 16 | 10 | 20 | | | | |
| | | | | | | 18 | 10 | 7 | | | | |
| | | | | | | 23 | 12 | 15 | | | | |
| | | | | | | 28 | 16 | 30 | | | | |
| | 8 | 30 | B (Black) | 23 | 12 | 12 | 15 | | | | 1-50 | |
| | | | | | 16 | 12 | 30 | | | | | |
| | | | | | 32 | 16 | 40 | | | | | |
| | | | | | 28 | 18 | 30 | | | | | |
| | | | | | 32 | 18 | 40 | | | | | |
| | | | | | 37 | 18 | 55 | | | | | |
| 10 | 40 | | 37 | 18 | 15 | 55 | | | | | | |
| | | | | 37 | 18 | 15 | 50 | | | | | |

Ordering Example: Part Number - D - Ball Color
PBA12 - 40 - R
PCA6 - 25 - B
BGW6
BKS3
BKA10

Rubber

| Part Number | Type | M (Coarse) | D | H | Lf | Mass (g) | Unit Price |
|-------------|------|------------|----|------|------|----------|------------|
| BGW | | 6 | 20 | 18 | 10 | 10 | |
| | | 8 | 25 | 22.5 | 12.5 | 15 | |
| | | 10 | 32 | 29 | 16 | 25 | |
| | | 12 | 40 | 36 | 20 | 40 | |

Stainless Steel, Aluminum

| Part Number | Type | M (Coarse) | D | H | Lf | Mass (g) | | Unit Price | | | | |
|-------------|-----------------|------------|----|------|------|----------|-----|------------|-----|------|------|--|
| | | | | | | BKS | BKA | BKS | BKA | BKAW | BKAB | |
| BKS | Stainless Steel | 3 | 15 | *13 | *8 | 13 | 5 | | | | | |
| BKA | Aluminum | 4 | 20 | 18 | 9.1 | 31 | 11 | | | | | |
| BKAW | Aluminum | 5 | 20 | 18 | 9.1 | 30 | 11 | | | | | |
| BKAB | Aluminum | 6 | 25 | 22.5 | 11 | 60 | 21 | | | | | |
| | | 8 | 32 | 29 | 14.5 | 126 | 43 | | | | | |
| | | 10 | 40 | 37 | 18 | 215 | 85 | | | | | |

* H dimension and Lf dimension for BKS M3 are 13.5 and 7 respectively.

Stationary Handles

| Type | Shape | Handle | Screw |
|-------|-----------------|---------|--------------------------|
| GRAM | Threaded | Phenol | SUM23 Trivalent Chromate |
| GRAMS | Threaded | Phenol | SUS303 |
| GRAF | Tapped | Nylon 6 | S45C Trivalent Chromate |
| GRAFC | Tapped (Insert) | Nylon 6 | S45C Trivalent Chromate |

| Part Number | Type | M (Coarse) | D | D2 | d | d1 | d2 | A | ℓ | H | H1 | L | Lf | Lf1 | Mass (g) | | | Unit Price | | | |
|-------------|----------------------------|------------|----|----|----|------|------|-----|-----|----|----|----|----|-----|-------------|------|-------|------------|------|-------|-------|
| | | | | | | | | | | | | | | | GRAM, GRAMS | GRAF | GRAFC | GRAM | GRAF | GRAMS | GRAFC |
| GRAM | Threaded | 6 | 17 | 19 | 12 | 8 | 6.5 | 1.5 | 1.8 | 40 | 65 | 13 | 20 | 12 | 16 | 10 | 30 | | | | |
| GRAMS | Stainless Steel - Threaded | 8 | 21 | 24 | 17 | 11 | 8.5 | 2 | 4.5 | 50 | 80 | 16 | 26 | 16 | 32 | 20 | 40 | | | | |
| GRAF | Tapped | 10 | 25 | 20 | 13 | 10.5 | | | 5 | 65 | 80 | 20 | 33 | 20 | 61 | 37 | 45 | | | | |
| GRAFC | Tapped Type Insert | 12 | 28 | 28 | 21 | 16 | 12.5 | 2.5 | | 86 | 95 | 25 | 40 | 24 | 100 | 61 | 65 | | | | |

Stainless Steel Handles - Stationary / Revolving

| Type | Handle | Material | Surface Treatment |
|-------|------------|----------|------------------------|
| GRMSN | Stationary | SUS304 | Electrolytic Polishing |
| GRMS | Revolving | SUS304 | Electrolytic Polishing |

| Part Number | Type | M | D | d | H | L | W | A | Mass (g) | Unit Price | |
|-------------|------------|----|----|----|----|----|-----|----|----------|------------|-------|
| | | | | | | | | | | GRMS | GRMSN |
| GRMSN | Stationary | 5 | 10 | 8 | 39 | 6 | 6.5 | 6 | 25 | | |
| GRMS | Revolving | 6 | 13 | 10 | 50 | 7 | 8 | 7 | 55 | | |
| | | 8 | 16 | 13 | 60 | 8 | 10 | 8 | 100 | | |
| | | 10 | 20 | 16 | 70 | 10 | 12 | 10 | 180 | | |

Ergonomic Handles - Stationary / Revolving

| Type | Mechanism | Handle | Screw |
|-------|------------|----------------------|----------------------|
| GRMHF | Stationary | SS400 Chrome Plating | SS400 Chrome Plating |
| GRMK | Revolving | SS400 Shot Blasted | SS400 Chrome Plating |
| GRMAK | Revolving | A2024 | SS400 Chrome Plating |
| GRMKB | Revolving | Polypropylene | SS400 Chrome Plating |

| Part Number | Type | M (Coarse) | D | GRMK, GRMKB, GRMHF | GRMAK | d | H | H | W | L | Mass (g) | Unit Price | | | |
|-------------|------------|------------|----|--------------------|-------|----|------|----|------|-----|----------|------------|-----------|-----------|-----------|
| | | | | | | | | | | | | Stationary | Revolving | Revolving | Revolving |
| GRMHF | Stationary | 13 | 5 | | | 10 | 49 | 8 | 11 | 30 | | | | | |
| GRMK | Revolving | 16 | 6 | | | 13 | 55 | 8 | 14 | 48 | | | | | |
| GRMAK | Revolving | 20 | 8 | | | 16 | 62.5 | 10 | 15.5 | 97 | | | | | |
| GRMKB | Revolving | 25 | 10 | | | 16 | 87.3 | 12 | 18 | 192 | | | | | |

Revolving Handles with Caps

| Type | Handle | Screw | Accessory |
|------|----------------|---------------------------|-------------|
| GRM | Nylon6 (Black) | SCM435 Trivalent Chromate | Disc Spring |

How to Mount: Disc Spring, Handle, Collar, Bolt, Hex Wrench, Cap

| Part Number | Type | M (Coarse) | D | d | H | h | L | Mass (g) | Unit Price |
|-------------|------|------------|---|---|---|---|----|----------|------------|
| | | | | | | | | | |
| | | 6 | | | | | 13 | 30 | |
| | | 8 | | | | | 15 | 60 | |
| | | 10 | | | | | 20 | 100 | |

Ordering Example: Part Number
GRAM12
GRMS6
GRMK13
GRM5