

Cunningham
SINCE 1949

HYDRAULIC CYLINDERS



MODEL CM CONSTRUCTION – MARINE GRADE CYLINDERS 1½ THRU 16" BORES

3,500 p.s.i. Working Pressure

5,000 p.s.i. Non-Shock

MODEL CM SPECIFICATIONS

- HIGH TENSILE CHROME PLATED PISTON RODS
- PRECISION HONED STEEL TUBING
- URETHANE ROD AND PISTON SEALS
- HYTREL ROD WIPER

OPTIONS

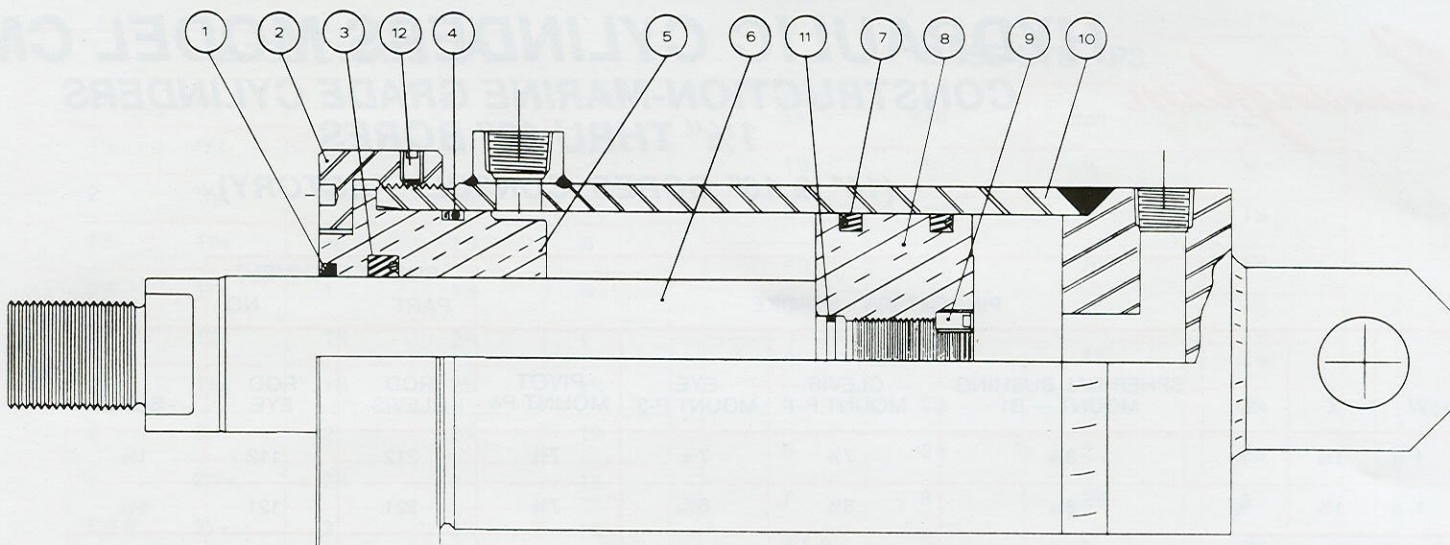
- CAST IRON PISTON RINGS
- STAINLESS STEEL HI TENSILE ROD
- SELF ALIGNING SPHERICAL BUSHINGS
- INTEGRAL COUNTERBALANCE VALVES
- INTEGRAL PILOT OPERATED CHECK VALVES
- S.A.E. STRAIGHT THREAD PORTS
- BRASS ROD SCRAPER
- CUSHIONS

CATALOG NO. 502 CM

Cunningham Manufacturing Co.

318 SOUTH WEBSTER STREET • SEATTLE, WASHINGTON 98108 • (206) 767-3713 • FAX (206) 762-3457

www.cunninghamcylinders.com

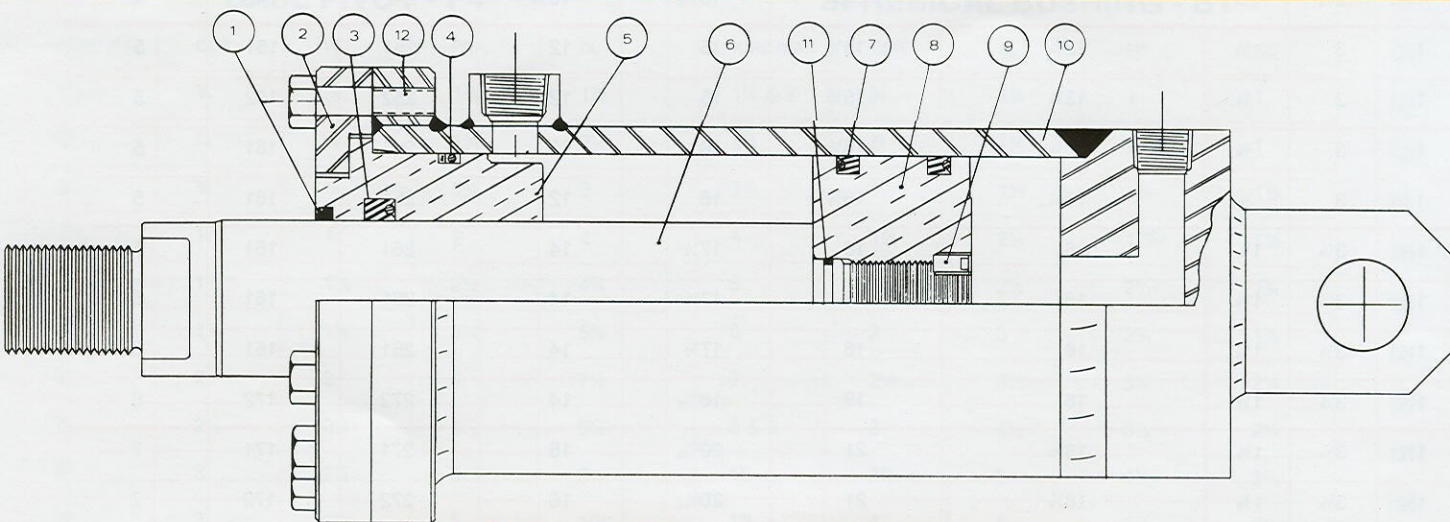


MODEL CM – PARTS LIST

1 1/2" BORE THRU 9" BORE

| | | | |
|------|------------|-------|---------------------|
| CM-1 | Rod Wiper | CM-7 | Piston Seal |
| CM-2 | Lock Ring | CM-8 | Piston |
| CM-3 | Rod Seal | CM-9 | Piston Lock Screw |
| CM-4 | Head Seal | CM-10 | Tube Assembly |
| CM-5 | Rod Head | CM-11 | Piston ID Seal |
| CM-6 | Piston Rod | CM-12 | Lock Ring Set Screw |

IMPORTANT: When ordering parts please give complete nameplate data as to bore, stroke, rod diameter and serial number. Serial Numbers are also stamped on rear heads.



MODEL CM – PARTS LIST

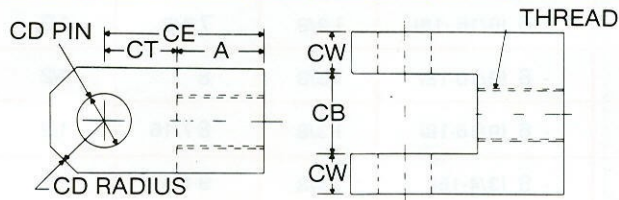
10" AND 12" BORE

| | | | |
|------|------------|-------|-------------------|
| CM-1 | Rod Wiper | CM-7 | Piston Seal |
| CM-2 | Clamp Ring | CM-8 | Piston |
| CM-3 | Rod Seal | CM-9 | Piston Lock Screw |
| CM-4 | Head Seal | CM-10 | Tube Assembly |
| CM-5 | Rod Head | CM-11 | Piston ID Seal |
| CM-6 | Piston Rod | CM-12 | Head Bolts |

CMC does not authorize the approval of CMC cylinders in any of the following applications: aircraft, personnel lifts, aerial ladders, or amusement park devices.

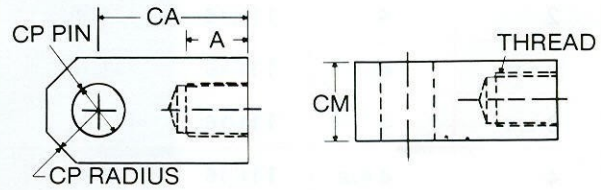
ROD CLEVIS - P1

| CYLINDER BORE | CLEVIS NUMBER | THREAD | A | CB | CD PIN | CE | CT | CW |
|---------------|---------------|---------|----|-------|--------|--------|--------|----|
| 1½ | 212 | ½ - 20 | ¾ | 1³⁄₁₆ | ½ | 1½ | ¾ | ½ |
| 1½ 2, 2½ | 221 | ¾ - 16 | 1½ | 1⁵⁄₁₆ | ¾ | 2½ | 1 | ⅝ |
| | 223 | 1 - 14 | 1½ | 1⁵⁄₁₆ | ¾ | 2½ | 1 | ⅝ |
| ¾ | 231 | 1 - 14 | 1½ | 1⁵⁄₁₆ | 1 | 2¹⁵⁄₁₆ | 1⁵⁄₁₆ | ¾ |
| ¾ - 4 | 241 | 1¼ - 12 | 2 | 2¹⁄₁₆ | 1½ | 3¾ | 1¾ | 1 |
| | 242 | 1½ - 12 | 2 | 2¹⁄₁₆ | 1½ | 3¾ | 1¾ | 1 |
| 5 | 251 | 1½ - 12 | 2¼ | 2⁹⁄₁₆ | 1¾ | 4½ | 2¼ | 1¼ |
| | 252 | 1¾ - 12 | 2¼ | 2⁹⁄₁₆ | 1¾ | 4½ | 2¼ | 1¼ |
| 5, 6 | 261 | 1⅞ - 12 | 3 | 2⁹⁄₁₆ | 2 | 5½ | 2½ | 1¼ |
| 6, 7 | 271 | 2¼ - 12 | 3½ | 3¹⁄₁₆ | 2½ | 6½ | 3 | 1½ |
| | 272 | 2½ - 12 | 3½ | 3¹⁄₁₆ | 2½ | 6½ | 3 | 1½ |
| 7, 8 | 281 | 2½ - 12 | 3½ | 3¹⁄₁₆ | 3 | 6¾ | 3¼ | 1½ |
| 7, 8, 9 | 282 | 3 - 12 | 3½ | 3¹⁄₁₆ | 3 | 6¾ | 3¼ | 1½ |
| 10 | 2101 | 3¼ - 12 | 3½ | 4¹⁄₁₆ | 3½ | 7¾ | 4¼ | 2 |
| 12 | 2121 | 3½ - 12 | 4 | 4⁹⁄₁₆ | 4 | 8¹³⁄₁₆ | 4¹³⁄₁₆ | 2¼ |



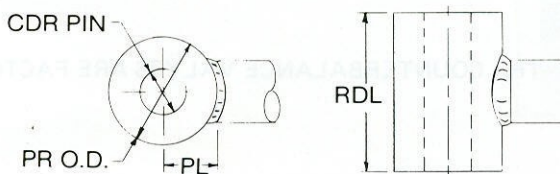
ROD EYE - P3

| CYLINDER BORE | EYE NUMBER | THREAD | A | CA | CP PIN | CM |
|---------------|------------|---------|----|--------|--------|----|
| 1½ | 112 | ½ - 20 | ¾ | 1½ | ½ | ¾ |
| 1½, 2, 2½ | 121 | ¾ - 16 | 1½ | 2¹⁄₁₆ | ¾ | 1¼ |
| 2, 2½ | 133 | 1 - 14 | 1½ | 2¹³⁄₁₆ | 1 | 1½ |
| ¾ | 133 | 1 - 14 | 1½ | 2¹³⁄₁₆ | 1 | 1½ |
| | 141 | 1¼ - 12 | 2 | 3⁷⁄₁₆ | 1½ | 2 |
| ¾ - 4 | 142 | 1½ - 12 | 2 | 3⁷⁄₁₆ | 1½ | 2 |
| | 151 | 1½ - 12 | 2¼ | 4 | 1¾ | 2½ |
| 5 | 152 | 1¾ - 12 | 2¼ | 4 | 1¾ | 2½ |
| | 161 | 1⅞ - 12 | 3 | 5 | 2 | 2½ |
| 5, 6 | 161 | 1⅞ - 12 | 3 | 5 | 2 | 2½ |
| 6, 7 | 171 | 2¼ - 12 | 3½ | 5¹³⁄₁₆ | 2½ | 3 |
| | 172 | 2½ - 12 | 3½ | 5¹³⁄₁₆ | 2½ | 3 |
| 8 | 181 | 2½ - 12 | 3½ | 6⅞ | 3 | 3 |
| 7, 8, 9 | 192 | 3 - 12 | 3½ | 6½ | 3 | 3½ |
| 10 | 1101 | 3¼ - 12 | 3½ | 7⅞ | 3½ | 4 |
| 12 | 1121 | 3½ - 12 | 4 | 9⅞ | 4 | 4½ |



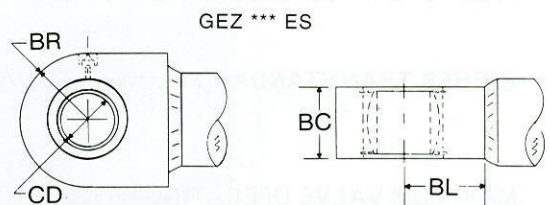
ROD PIVOT - P4

| BORE DIA. | CDR | PL | PR | RDL |
|-----------|-----|----|----|-----|
| 1½ | ¾ | ⅞ | 1¾ | 1⅞ |
| 2 | ¾ | ⅞ | 1¾ | 2½ |
| 2½ | ¾ | ⅞ | 1¾ | 2½ |
| ¾ | 1 | 1 | 2 | 3 |
| 4 | 1½ | 1¼ | 2½ | 4 |
| 5 | 1¾ | 1½ | 3¼ | 5 |
| 6 | 2 | 2 | 4 | 5 |
| 7 | 2½ | 2¼ | 4½ | 6 |
| 8 | 3 | 2½ | 5 | 6 |
| 9 | 3 | 2½ | 5 | 6 |
| 10 | 3½ | 2¾ | 5½ | 8 |
| 12 | 4 | 3 | 6 | 9 |



SPHERICAL BUSHING - B1*

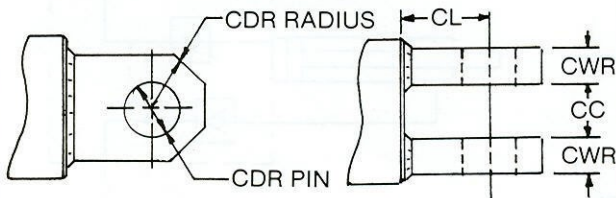
| CYLINDER BORE | EYE NO. | BEARING (SKF) | BC | BL | BR | CD PIN |
|---------------|---------|---------------|----|----|--------|--------|
| 1½, 2 | 2B1W | 012 | 1 | 1¼ | 1 | ¾ |
| 2½ | 2B1W | 012 | 1 | 1¼ | 1 | ¾ |
| ¾ | 3B1W | 100 | 1½ | 1½ | 1¾ | 1 |
| 4 | 4B1W | 106 | 1¾ | 2¼ | 1¹³⁄₁₆ | 1¾ |
| 5 | 5B1W | 112 | 1¾ | 2½ | 2⁵⁄₁₆ | 1¾ |
| 6 | 6B1W | 200 | 1⅞ | 3 | 2¾ | 2 |
| 7 | 7B1W | 208 | 2¼ | 3½ | 3¼ | 2½ |
| 8, 9 | 8B1W | 300 | 2¾ | 4¼ | 3⅞ | 3 |
| 10 | 10B1W | 308 | 3⅞ | 5 | 4⅝ | 3½ |
| 12 | 12B1W | 400 | 3½ | 6 | 5½ | 4 |



Snap rings, spherical bushings, grease fittings are supplied with the cylinder.

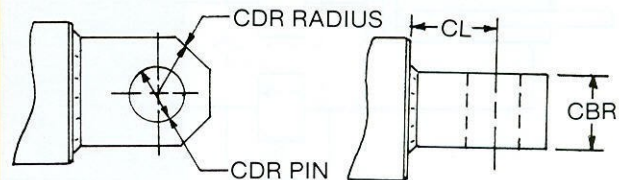
BASE CLEVIS - P1

| BORE | CC | CDR | CL | CWR |
|-------|---------------------------------|-----|----|--------------------------------|
| 1½ | 1 ¹ / ₁₆ | ½ | ¾ | ½ |
| 2 | 1 ⁹ / ₁₆ | ¾ | 1¼ | 5 ⁸ / ₁₆ |
| 2½ | 1 ³ / ₁₆ | ¾ | 1¼ | 5 ⁸ / ₁₆ |
| 3¼ | 1 ³ / ₁₆ | 1 | 1½ | ¾ |
| 4 | 1 ⁵ / ₁₆ | 1¾ | 2½ | 1 |
| 5 | 1 ⁹ / ₁₆ | 1¾ | 2¼ | 1¼ |
| 6 | 2 ⁵ / ₁₆ | 2 | 2½ | 1¼ |
| 7 | 2 ¹³ / ₁₆ | 2½ | 3 | 1½ |
| 8 & 9 | 3 ¹ / ₁₆ | 3 | 3¼ | 1½ |
| 10 | 4 ¹ / ₁₆ | 3½ | 4 | 2 |
| 12 | 4 ⁹ / ₁₆ | 4 | 4½ | 2¼ |



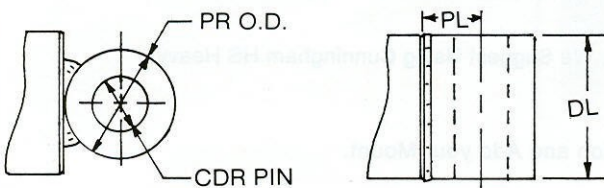
BASE EYE - P3

| BORE DIA. | CBR | CDR | CL |
|-----------|-----|-----|----|
| 1½ | ¾ | ½ | ¾ |
| 2 | 1¼ | ¾ | 1¼ |
| 2½ | 1¼ | ¾ | 1¼ |
| 3¼ | 1½ | 1 | 1½ |
| 4 | 2 | 1¾ | 2½ |
| 5 | 2½ | 1¾ | 2¼ |
| 6 | 2½ | 2 | 2½ |
| 7 | 3 | 2½ | 3 |
| 8 & 9 | 3 | 3 | 3¼ |
| 10 | 4 | 3½ | 4 |
| 12 | 4½ | 4 | 4½ |



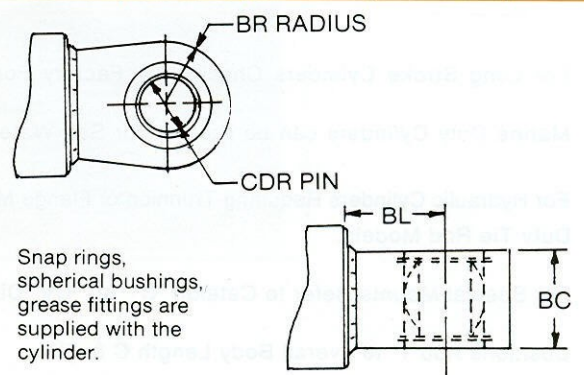
BASE PIVOT - P4

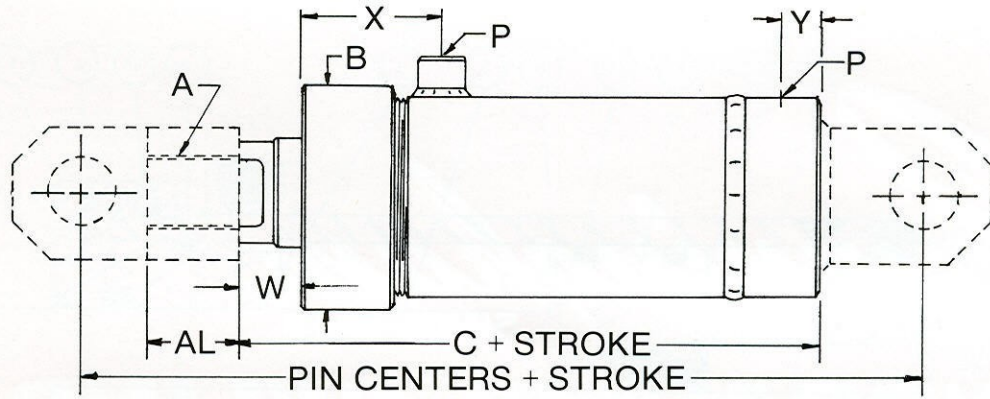
| BORE DIA. | CDR | PL | PR | DL |
|-----------|-----|--------------------------------|----|--------------------------------|
| 1½ | ¾ | 7 ⁸ / ₁₆ | 1¼ | 1 ⁷ / ₈ |
| 2 | ¾ | 7 ⁸ / ₁₆ | 1¼ | 2½ |
| 2½ | ¾ | 7 ⁸ / ₁₆ | 1¼ | 3 |
| 3¼ | 1 | 1 | 2 | 4 |
| 4 | 1¾ | 1¼ | 2½ | 4¾ |
| 5 | 1¾ | 1 ⁵ / ₈ | 3¼ | 5 ⁵ / ₈ |
| 6 | 2 | 2 | 4 | 7 ⁷ / ₈ |
| 7 | 2½ | 2¼ | 4½ | 8 ⁵ / ₈ |
| 8 | 3 | 2½ | 5 | 9 ⁵ / ₈ |
| 9 | 3 | 2½ | 5 | 10 ⁵ / ₈ |
| 10 | 3½ | 2¾ | 5½ | 12 |
| 12 | 4 | 3 | 6 | 14¼ |



SPHERICAL BUSHING - B1

| BORE DIA. | CDR | BL | BR | BC |
|-----------|-----|----|---------------------------------|-------------------------------|
| 1½ & 2 | ¾ | 1¼ | 1 | 1 |
| 2½ | ¾ | 1¼ | 1 | 1 |
| 3¼ | 1 | 1½ | 1¾ | 1¾ |
| 4 | 1¾ | 2¼ | 1 ¹³ / ₁₆ | 1¾ |
| 5 | 1¾ | 2½ | 2 ⁵ / ₁₆ | 1¾ |
| 6 | 2 | 3 | 2¾ | 1 ⁷ / ₈ |
| 7 | 2½ | 3½ | 3¼ | 2¼ |
| 8 & 9 | 3 | 4¼ | 3 ⁷ / ₈ | 2¾ |
| 10 | 3½ | 5 | 4 ⁵ / ₈ | 3 ⁵ / ₈ |
| 12 | 4 | 6 | 5½ | 3½ |





| BORE | MODEL | ROD | A THD. | AL | B | C | P (NPT) | (OPT.) SAE ST. THD. |
|------|-------|-----|------------|----|-----|--------|---------|---------------------|
| 1½ | CM | ¾ | ½ - 20 | ¾ | 2¼ | 5% | ¼ | - 4 (7/16 - 20) |
| 1½ | CM | 1 | ¾ - 16 | 1½ | 2¼ | 5% | ¼ | - 4 (7/16 - 20) |
| 2 | CM | 1 | ¾ - 16 | 1½ | 2½ | 6¼ | ¾ | - 6 (9/16 - 18) |
| 2 | CM | 1½ | 1 - 14 | 1½ | 2½ | 6¼ | ¾ | - 6 (9/16 - 18) |
| 2½ | CM | 1 | ¾ - 16 | 1½ | 3½ | 6% | ½ | - 8 (¾ - 16) |
| 2½ | CM | 1½ | 1 - 14 | 1½ | 3½ | 6% | ½ | - 8 (¾ - 16) |
| 2½ | CM | 1¾ | 1 - 14 | 1½ | 3½ | 6% | ½ | - 8 (¾ - 16) |
| ¾ | CM | 1½ | 1 - 14 | 1½ | 4½ | 7 1/16 | ½ | - 8 (¾ - 16) |
| ¾ | CM | 1¾ | 1¼ - 12 | 2 | 4½ | 7 1/16 | ½ | - 8 (¾ - 16) |
| ¾ | CM | 2 | 1½ - 12 | 2 | 4½ | 7 1/16 | ½ | - 8 (¾ - 16) |
| 4 | CM | 1¾ | 1¼ - 12 | 2 | 5¼ | 7 7/8 | ¾ | - 12 (1 1/16 - 12) |
| 4 | CM | 2 | 1½ - 12 | 2 | 5¼ | 7 7/8 | ¾ | - 12 (1 1/16 - 12) |
| 4 | CM | 2½ | 1½ - 12 | 2 | 5¼ | 7 7/8 | ¾ | - 12 (1 1/16 - 12) |
| 5 | CM | 2 | 1½ - 12 | 2¼ | 6½ | 8¾ | ¾ | - 12 (1 1/16 - 12) |
| 5 | CM | 2½ | 1¾ - 12 | 2¼ | 6½ | 8¾ | ¾ | - 12 (1 1/16 - 12) |
| 5 | CM | 3 | 1 7/8 - 12 | 3 | 6½ | 8¾ | ¾ | - 12 (1 1/16 - 12) |
| 5 | CM | 3½ | 1 7/8 - 12 | 3 | 6½ | 8¾ | ¾ | - 12 (1 1/16 - 12) |
| 6 | CM | 2½ | 1 7/8 - 12 | 3 | 8 | 10 | ¾ | - 12 (1 1/16 - 12) |
| 6 | CM | 3 | 1 7/8 - 12 | 3 | 8 | 10 | ¾ | - 12 (1 1/16 - 12) |
| 6 | CM | 3½ | 1 7/8 - 12 | 3 | 8 | 10 | ¾ | - 12 (1 1/16 - 12) |
| 6 | CM | 4 | 2½ - 12 | 3½ | 8 | 10 | ¾ | - 12 (1 1/16 - 12) |
| 7 | CM | 3 | 2¼ - 12 | 3½ | 9 | 11½ | 1 | - 16 (1 5/16 - 12) |
| 7 | CM | 3½ | 2½ - 12 | 3½ | 9 | 11½ | 1 | - 16 (1 5/16 - 12) |
| 7 | CM | 4 | 2½ - 12 | 3½ | 9 | 11½ | 1 | - 16 (1 5/16 - 12) |
| 7 | CM | 5 | 3 - 12 | 3½ | 9 | 11½ | 1 | - 16 (1 5/16 - 12) |
| 8 | CM | 3½ | 2½ - 12 | 3½ | 10¼ | 12 5/8 | 1 | - 16 (1 5/16 - 12) |
| 8 | CM | 4 | 3 - 12 | 3½ | 10¼ | 12 5/8 | 1 | - 16 (1 5/16 - 12) |
| 8 | CM | 5 | 3 - 12 | 3½ | 10¼ | 12 5/8 | 1 | - 16 (1 5/16 - 12) |
| 8 | CM | 5½ | 3 - 12 | 3½ | 10¼ | 12 5/8 | 1 | - 16 (1 5/16 - 12) |
| 9 | CM | 4 | 3 - 12 | 3½ | 11¼ | 13 | 1 | - 16 (1 5/16 - 12) |
| 10 | CM | 5 | 3¼ - 12 | 3½ | 15½ | 15 | 1¼ | - 20 (1 5/8 - 12) |
| 12 | CM | 5½ | 3½ - 12 | 4 | 18½ | 17 7/8 | 1½ | - 20 (1 5/8 - 12) |



HYDRAULIC CYLINDERS MODEL CM

CONSTRUCTION-MARINE GRADE CYLINDERS

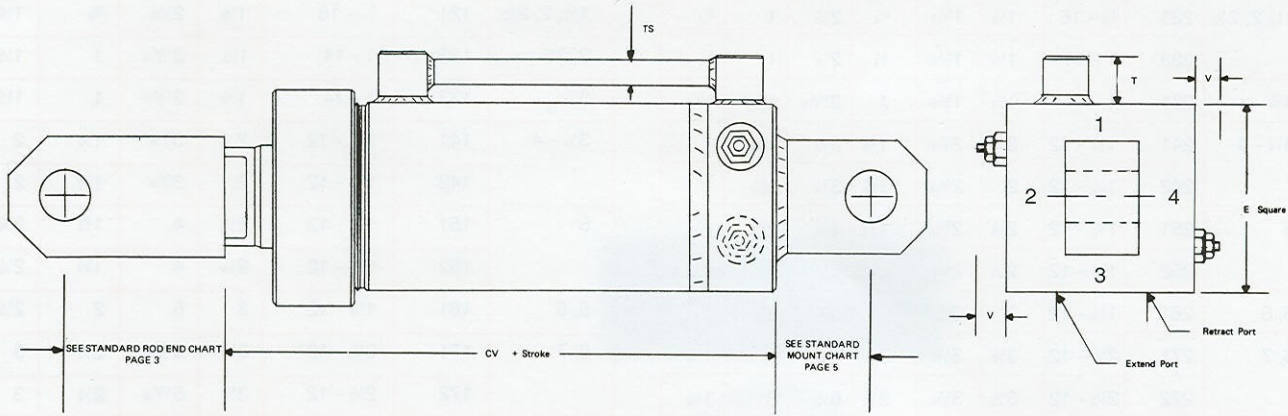
1½" THRU 12" BORES

(14" & 16" BORES, CONSULT FACTORY)

| | | | PINCENTERS + STROKE | | | | | ROD ATTACHMENT PART NO. | | |
|----|----|----|------------------------------|------------------|---------------|----------------|------------|-------------------------|------|--|
| W | X | Y | SPHERICAL BUSHING MOUNT — B1 | CLEVIS MOUNT P-1 | EYE MOUNT P-3 | PIVOT MOUNT P4 | ROD CLEVIS | ROD EYE | BORE | |
| 1 | 1¾ | ½ | 8⅞ | 7⅞ | 7⅞ | 7⅞ | 212 | 112 | 1½ | |
| 1 | 1¾ | ½ | 8⅞ | 8½ | 8⅞ | 7⅞ | 221 | 121 | 1½ | |
| 1 | 2⅛ | ⅝ | 8¾ | 9⅝ | 9⅞ | 8 | 221 | 121 | 2 | |
| 1 | 2⅛ | ⅝ | 8¾ | 9⅝ | 10⅝ | 8 | 223 | 133 | 2 | |
| 1 | 2⅛ | ⅝ | 8⅞ | 9¾ | 9⅞ | 8⅞ | 221 | 121 | 2½ | |
| 1 | 2⅛ | ⅝ | 8⅞ | 9¾ | 10⅞ | 8⅞ | 223 | 133 | 2½ | |
| 1 | 2⅛ | ⅝ | 8⅞ | 10⅞ | 10⅞ | 8⅞ | 231 | 133 | 2½ | |
| 1⅝ | 2¼ | ¾ | 10⅞ | 11½ | 11⅞ | 9⅞ | 231 | 133 | 3¼ | |
| 1⅝ | 2¼ | ¾ | 10⅞ | 12⅝ | 12 | 9⅞ | 241 | 141 | 3¼ | |
| 1⅝ | 2¼ | ¾ | 10⅞ | 12⅝ | 12 | 9⅞ | 242 | 142 | 3¼ | |
| 1 | 2⅝ | ¾ | 12⅞ | 13¾ | 13⅞ | 10⅞ | 241 | 141 | 4 | |
| 1 | 2⅝ | ¾ | 12⅞ | 13¾ | 13⅞ | 10⅞ | 242 | 142 | 4 | |
| 1 | 2⅝ | ¾ | 12⅞ | 13¾ | 13⅞ | 10⅞ | 242 | 142 | 4 | |
| 1 | 3 | ¾ | 13¾ | 15½ | 15 | 12 | 251 | 151 | 5 | |
| 1 | 3 | ¾ | 13¾ | 15½ | 15 | 12 | 252 | 152 | 5 | |
| 1 | 3 | ¾ | 13¾ | 16½ | 16 | 12 | 261 | 161 | 5 | |
| 1 | 3 | ¾ | 13¾ | 16½ | 16 | 12 | 261 | 161 | 5 | |
| 1½ | 3¼ | 1⅞ | 16 | 18 | 17½ | 14 | 261 | 161 | 6 | |
| 1½ | 3¼ | 1⅞ | 16 | 18 | 17½ | 14 | 261 | 161 | 6 | |
| 1½ | 3¼ | 1⅞ | 16 | 18 | 17½ | 14 | 261 | 161 | 6 | |
| 1½ | 3¼ | 1⅞ | 16 | 19 | 18⅝ | 14 | 272 | 172 | 6 | |
| 1¾ | 3⅝ | 1⅞ | 18½ | 21 | 20⅝ | 16 | 271 | 171 | 7 | |
| 1¾ | 3⅝ | 1⅞ | 18½ | 21 | 20⅝ | 16 | 272 | 172 | 7 | |
| 1¾ | 3⅝ | 1⅞ | 18½ | 21 | 20⅝ | 16 | 272 | 172 | 7 | |
| 1¾ | 3⅝ | 1⅞ | 18½ | 21¼ | 21 | 16 | 282 | 192 | 7 | |
| 1¾ | 4 | 1¾ | 21⅞ | 22⅝ | 22 | 17⅞ | 281 | 181 | 8 | |
| 1¾ | 4 | 1¾ | 21⅞ | 22⅝ | 22⅞ | 17⅞ | 282 | 192 | 8 | |
| 1¾ | 4 | 1¾ | 21⅞ | 22⅝ | 22⅞ | 17⅞ | 282 | 192 | 8 | |
| 1¾ | 4 | 1¾ | 21⅞ | 22⅝ | 22⅞ | 17⅞ | 282 | 192 | 8 | |
| 1⅞ | 4 | 1¾ | 21½ | 23 | 22¾ | 18 | 282 | 192 | 9 | |
| 1⅞ | 5¼ | 1¼ | 25 | 26¾ | 26⅞ | 20½ | 2101 | 1101 | 10 | |
| 2 | 5½ | 1⅞ | 29⅞ | 31⅞ | 31½ | 23⅞ | 2121 | 1121 | 12 | |

MODEL CMV

INTEGRAL COUNTER BALANCE OR PILOT OPERATED CHECK VALVES



| CYLINDER BORE | E SQUARE | "V" | | P NPT | OPTIONAL STRAIGHT THREAD S.A.E. PORT | "T" | CV PLUS STROKE | "TS" STD. TUBE O.D. SIZE |
|---------------|----------|------------|------------|-------|--------------------------------------|-------|----------------|--------------------------|
| | | C.B. VALVE | P.O. CHECK | | | | | |
| 2 | 4 | 1 11/16 | 1 11/16 | 3/8 | - 6 (9/16-18) | 1 3/8 | 7 7/8 | 1/2 |
| 2 1/2 | 4 | 1 11/16 | 1 11/16 | 3/8 | - 6 (9/16-18) | 1 3/8 | 8 | 1/2 |
| 3 1/4 | 4 | 1 11/16 | 1 11/16 | 3/8 | - 6 (9/16-18) | 1 3/8 | 8 7/16 | 1/2 |
| 4 | 4 5/8 | 1 11/16 | 1 11/16 | 1/2 | - 8 (3/4-16) | 1 5/8 | 9 1/4 | 1/2 |
| 5 | 5 3/4 | 1 11/16 | 1 11/16 | 1/2 | - 8 (3/4-16) | 1 5/8 | 10 | 5/8 |
| 6 | 7 | 1 11/16 | 1 11/16 | 3/4 | -12 (1 1/16-12) | 1 3/4 | 10 7/8 | 5/8 |
| 7 | 8 | 1 11/16 | 1 11/16 | 3/4 | -12 (1 1/16-12) | 1 3/4 | 11 7/8 | 3/4 PIPE |
| 8 | 9 1/4 | 1 11/16 | 1 11/16 | 3/4 | -12 (1 1/16-12) | 1 3/4 | 12 1/2 | 3/4 PIPE |
| 10 | 12 | 1 11/16 | 1 11/16 | 3/4 | -12 (1 1/16-12) | 1 3/4 | 15 | 3/4 PIPE |
| 12 | 14 | 1 11/16 | 1 11/16 | 3/4 | -12 (1 1/16-12) | 1 3/4 | 17 7/8 | 3/4 PIPE |

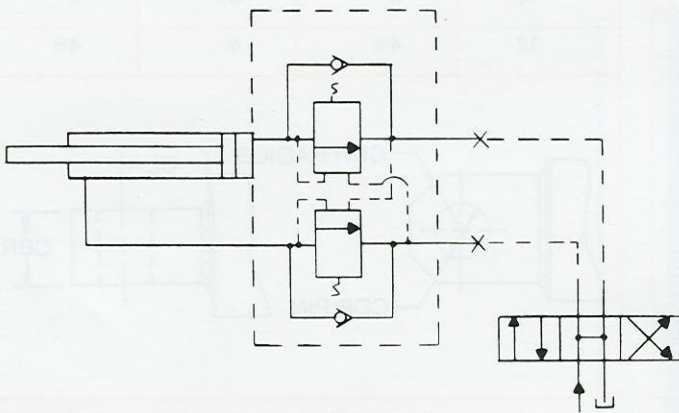
REFER TO PAGES 3, 4 AND 5 FOR ADDITIONAL DIMENSIONS.

- **NOTE:** COUNTERBALANCE VALVES HAVE A FLOW RATING OF 20 GPM WITH 120 PSI PRESSURE DROP. 30 GPM WITH 200 PSI PRESSURE DROP.
- PILOT OPERATED CHECK VALVES FLOW RATE IS 20 GPM WITH 80 PSI PRESSURE DROP. 30 GPM WITH 250 PSI PRESSURE DROP.
- HIGHER THAN STANDARD FLOW RATE VALVES ARE AVAILABLE ON SPECIAL ORDER.
- MAXIMUM VALVE OPERATING PRESSURE IS 3,000 PSI. THE COUNTERBALANCE VALVES ARE FACTORY SET AT 3,000 PSI UNLESS OTHERWISE ADVISED.
- STRAIGHT THREAD PORTS ARE A NO COST OPTION.

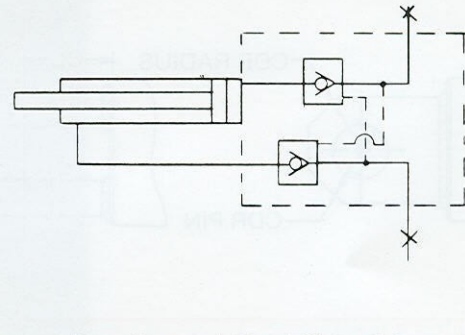
INTEGRAL COUNTERBALANCE VALVE OR PILOT OPERATED CHECK VALVES

USE COUNTERBALANCE VALVES TO RESTRAIN FLOW TO KEEP A LOAD FROM RUNNING AHEAD OF THE PUMP, PREVENTING CAVITATION. THEY SERVE AS SAFETY DEVICES IN CASE OF LINE BREAKAGE, PROVIDE THERMAL PROTECTION WITH OPEN CENTER VALVES AND CAN FUNCTION AS DECELERATION VALVES WITH CIRCUIT SHOWN.

PILOT TO OPEN CHECK VALVES WILL POSITIVELY LOCK THE LOAD IN POSITION, BUT WILL RELEASE THE LOAD UPON APPLICATION OF PRESSURE TO THE OPPOSITE PORT WHICH IS CROSS PILOTTED. DO NOT USE IF OVERHAULING CONDITION EXISTS.



Integral Counterbalance Valve Schematic



Integral Pilot Operated Check Valve Schematic

Ordering Data Required for Model CM

1. QUANTITY
2. BASE MOUNTING (Clevis, Eye or Spherical Bushing)
3. ROD END (Clevis, Eye, Threaded or Spherical Bushing)
4. BORE DIAMETER
5. STROKE
6. PORT LOCATION (As shown or in line with Pins)
7. OPTIONAL FEATURES:
 - Stainless Rod
 - Stop Tube
 - Rod Boots
 - Integral Valves

- For Long Stroke Cylinders Check With Factory For Recommended Rod Size and Stop Tube.
- Marine Duty Cylinders can be Painted for Salt Water Service. Stainless Rod is Recommended.
- For Hydraulic Cylinders Requiring Trunnion or Flange Mounts, We Suggest Using Cunningham HS Heavy Duty Tie Rod Models.
- For Special Mounts Refer to Catalog "C" or "CV" Dimension and Add your Mount.
- Cushions Add 1" to overall Body Length C & CV.