

Technical Data

Standards:	Meets or exceeds JIC and NFPA Standards
Nominal Pressure:	up to 1,500 psi for CDT1 (see chart) up to 3,000 psi for CDT4
Bore Diameter:	1" to 14" diameter
Piston Rod Diameter:	1/2" to 5-1/2" for CDT1 5/8" to 10" for CDT4
Mounting:	18 standard NFPA mountings
Stroke:	up to 120"
Connection Port:	SAE straight thread standard (ISO 11926-1) other options on request
Hydraulic Fluid:	Mineral oil (HL, HLP) Phosphate Ester (HFD-R, HFA) Water glycol (HFC)
Fluid Temp. Range:	-4°F up to 176°F standard
Stroke Velocity:	up to 20 in/s (consult factory for higher velocity applications)

Pressure Ratings – CDT1

Cylinder Bore	Standard Rod	Max. PSI Max. Duty Service
1	1/2	1,500†
1-1/2	1	1,500†
2	1	1,500†
2-1/2	1	1,500*†
3-1/4	1	1,500†
4	1-3/8	1,000
5	1-3/4	750
6	1-3/4	750
8	2	500

* With 5/8" rod, 1,000 psi
† MF1 & MF2 max. operating pressure 1,000 psi

Pressure Ratings – CDT4

Bore	Rod	Nominal	Shock**
1-1/2	5/8	3,000	5,000
2	1		
2-1/2	1		
3-1/4	1-3/8		
4	1-3/4		
5	2		
6	2-1/2		
7	3		
8	3-1/2		
10	4-1/2		
12	5-1/2		
14	7		

** See data sheet RA 17 041 for exceptions to 5,000 psi ratings

Model CDT1

Series 1X

Nominal pressure: 1500 psi

- **Duty:** Up to 1,500 psi
- **Standards:** Meets or exceeds all JIC and NFPA requirements
- **Bore Sizes:** 1-1/2" – 2-1/2"
- **Piston Rods:** 1/2" – 4"
- **Mountings:** 9 standard NFPA mountings
- **Ports:** SAE o-ring straight thread ports
- **Stroke:** Standard strokes furnished in 1/8" increments. Normal stroke tolerance + 1/16" / - 0". Closer stroke tolerances available; consult factory.



- **Rod End Threads:** Standard KK1. Other rod end styles optional.
- **Cushions:** Available for all bore sizes, at both ends.

Ordering Code

CD T1 / / / Z 1X/S 1 1 H H M W W *

Single rod cylinder =CD

Series: =T1

Mounting types

Rect. flange at head =MF1

Rect. flange at cap =MF2

Clevis mounting =MP1

Side lug =MS2

Side tapped =MS4

Basic version =MX0

Ext. tie rods, both ends =MX1

Ext. tie rods, at cap =MX2

Ext. tie rods, at head =MX3

Bore Dia. Ø 1.50 to 4.00 inch

Piston rod Ø 0.63 to 2.50 inch

Stroke length in inches (ex. 12.00)

Design principle

Head and cap connected by tie rods =Z

Series

10 to 19 unchanged installation and connection dimensions =1X

Port connections/ types

SAE straight thread port (ISO 11926-1) =S

Further details in clear text

Option 2

W= Without options

Option 1

W= Without options

Seal version

Suitable for mineral oil to DIN 51 524 HL, HLP & HFA

M= Polyurethane seal system

End position cushioning

U= Without

D= Both sides, adjustable

Piston rod end²⁾

H= Small male thread KK1

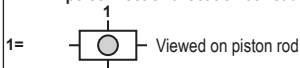
Piston rod version

H= Surface-hardened and hard chromium plated¹⁾

Pipe connection / location at base



Pipe connection / location at head



Degree of contamination: Max. permissible degree of contamination of the pressure fluid is to NAS 1638 class 10. We therefore recommend a filter with a minimum retention rate of $\beta_{10} \geq 75$.

Stroke speed: 20 in/sec (dependent on the connection port)

Air bleed standard: Secured against removal, 2" – 4" bore sizes only

¹⁾Piston rod 5/8" to 3", surface hardened and chromium plated.

²⁾With extreme shock loads the piston rod threads have to be selected, taking the fatigue limits into account. Rod and clevis, installed parts, etc. must always be firmly clamped against the piston rod shoulder.

Model CDT4

Series 1X

Nominal pressure: 3000

Non shock rating: 5000 psi

- **Standards:** Meets or exceeds all JIC and NFPA requirements
- **Bore Sizes:** 1-1/2" – 6"
- **Piston Rods:** 5/8" – 3"
- **Mountings:** 12 standard NFPA mountings
- **Ports:** SAE o-ring straight thread ports
- **Stroke:** Standard strokes furnished to nearest 1/8". Normal stroke tolerance +1/16" / -0"



Model CDT4

Ordering Code

Order Example:

CDT4ME5/2.00/1.00/12.00Z1X/S11HH MW/W*

CD T4 / / / Z 1X/S 1 1 H H M W/W *

Single rod cylinder =CD

Series: =T4

Mounting types

Basic version =MX0

Fork clevis mounting =MP1

Rect. flange at head =MF1

Rect. flange at cap =MF2

Rect. flange at head =ME5

Trunnion at head =MT1

Trunnion at cap =MT2

Foot mounting =MS2

Side tapped =MS4

Ext. tie rods, both ends =MX1

Ext. tie rods, at cap =MX2

Ext. tie rods, at head =MX3

Bore Dia. Ø (AL) 1.50 to 6.00 inch

Piston rod Ø (MM) 0.63 to 3.00 inch

Stroke length in inches (ex. 12.00)

Design principle

Head and cap connected by tie rods =Z

Series

10 to 19 unchanged installation and connection dimensions =1X

Port connections/ types

SAE straight thread port (ISO 11926-1) =S

Further details in clear text

Option 2

W= Without options

Option 1

W= Without options

Seal version

Suitable for mineral oil

M= Polyurethane seal system

End position cushioning

U= Without

D= Both sides, adjustable

Piston rod end²⁾

H= Small male thread KK1

Piston rod version

H= Surface-hardened and hard chromium plated¹⁾

Pipe connection / location at base



Pipe connection / location at head



¹⁾Piston rod 5/8" to 3", surface hardened and chromium plated.

²⁾With extreme shock loads the piston rod threads have to be selected, taking the fatigue limits into account. Rod and clevis, installed parts, etc. must always be firmly clamped against the piston rod shoulder.

Model CDT3

Series 1X

Nominal pressure: 160 bar (16 MPa)

- ISO 6020/2, DIN 24 554, NF E 48-016
- Maximum operating pressure up to 210 bar
- Ten mounting types
- **Piston Ø:** 25 to 100 mm
- **Piston Rod Ø:** 12 to 70 mm
- Stroke lengths up to 1.5 meters
- Self-adjusting end position cushioning



Model CDT3

Ordering Code

Order Example: CDT3MP1/80/56/350/Z1X/B1HHDMMWW*

CDT3 / / / Z1X/B1HHDMMWW*

Double acting cylinder =CD

Series: =T3

Mounting types

Fork clevis mounting =MP1

Rect. flange at head =ME5

Rect. flange at cap =ME6

Foot mounting =MS2

Piston Ø (AL) 25 to 100 mm

Piston rod Ø (MM) 12 to 70 mm

Stroke length in mm

Design principle

Head and cap connected by tie rods =Z

Series

10 to 19 unchanged installation and connection dimensions =1X

Port connections/ types

SAE straight thread port (ISO 11926-1) =B

Technical Data

Standards: The cylinder installation and mounting types conform to the standards ISO 6020/2, DIN 24 554, and NF E 48-016.

Nominal pressure: 160 bar

Static proof pressure: 240 bar

Higher operating pressures, consult factory.

Max. operating pressure up to: 210 bar (dependent on cylinder version and the application, suitable for operating pressures up to 210 bar)

Installation position: Various

Pressure fluid: Mineral oils DIN 51 524 (HL, HLP) Phosphate ester (HFD-R)

Hydraulic fluid temperature range: -20 °C to +80 °C

Viscosity range: 2.8 to 380 mm²/s

Further details in clear text

Option 2

W= Without options

Option 1

W= Without options

Seal version

Suitable for mineral oil to DIN 51 524 HL, HLP & HFA

M= Standard seal system

End position cushioning

D= Both sides, self-adjusting

Piston rod end⁵⁾

H= Thread (ISO/DIN) for self-aligning clevis CGKA

Piston rod version

H= Surface-hardened and hard chromium plated

Pipe connection / location at base



Viewed on piston rod

1) Location "3" obtained by rotating the cylinder

Degree of contamination: Max. permissible degree of contamination of the pressure fluid is to NAS 1638 class 10. We therefore recommend a filter with a minimum retention rate of $\beta_{10} \geq 75$.

Stroke speed: 0.5 m/s (dependent on the connection port)

Bleeding standard: Secured against unscrewing (Piston - Ø 40 to 100 mm)

Acceptance: Each cylinder is tested to Rexroth standards. Cylinders, outside the above parameters are also available, if required.

Linear Positioning Hydraulic Cylinder

Model CST4

Model CST4

Series 1X

Nominal pressure: 3000 psi

Non shock rating: 5000 psi

- **Standards:** Meets or exceeds all JIC and NFPA requirements
- **Installation position:** various
- **Pressure fluid:**
 - Mineral oils (HL, HLP)
 - Phosphate ester (HFD-R) (-4°F to +300°F)
 - HFA (41°F to 131°F)
 - Water glycol HFC (-4°F to 140°F)
- **Hydraulic fluid temperature range:** (-4°F to 176°F)



Model CST4

Ordering Code

CS T4 / / / Z 1X / / / / / / / / / *

Linear Positioning cylinder =CS

Series: =T4

Mounting types

Regular Head =ME5

Clevis mounting =MP1

Side Lug =MS2

Trunnion at int. pos.³⁾ =MT4

Bore Dia. Ø (AL) 2.00 to 6.00 in.⁵⁾

Piston rod Ø (MM) 1.38 to 4.00 inch

Stroke length in inches

(min. stroke length 2")

Design principle

Head and cap connected by tie rods =Z

Series

10 to 19 unchanged installation and connection dimensions =1X

Port connections/ types

SAE straight thread port (ISO 11926-1) =S

SAE Code 61 - 3000 psi 4-bolt flange =F

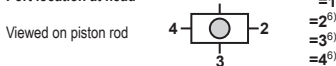
Integrated NG 6/D03 mount on cap at pos. 1 Only =P

Integrated NG 10/D05 mount on cap at pos. 1 Only =T

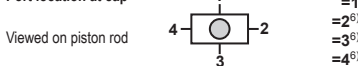
Integrated NG 16/D07 mount on cap at pos. 1 Only =U

Special (specify) =X

Port location at head



Port location at cap



Piston rod version

Surface-hardened and hard chromium plated¹⁾ =H

1) Only 5/8" to 4" diameter piston rods are case hardened and hard chrome plated.
2) With extreme shock loads the piston rod threads have to be selected, taking the fatigue limits into account. Rod and clevis, installed parts, etc. must always be firmly clamped against the piston rod shoulder.

3) State XV dimensions in inches in clear text.

4) Maximum working pressure limited to 2,000 psi when using fluorocarbon seal system option "V". Consult factory for higher pressures.

5) Other bore sizes available on request.

6) Port connections "P", "T" and "U" not possible.

7) Includes protective transducer cover installed on cap end of cylinder (except 2" bore).

8) Protective transducer cover not included as a standard feature when cylinder is provided with provisions only. Can be ordered as a separate item.

Further details in clear text

Option 2

- W= Without options
- K= Thrust key
- S= Stop tube (specify length)
Add. piston rod ext. state
- Y= LY dimensions in clear text
- B= Gland drain connection
- F= Analog 0 - 10 VDC output
- C= Analog 4 - 20 mA output
- G= Start/stop, RS422
Digital pulse width
- H= modulated, RS422
- D= 5µ SSI output
- X= Other outputs
(specify in clear text)

Option 1

- A= Test point, both sides
Balluff BTL-5
- B= transducer installed⁷⁾
- T= MTS transducer installed⁷⁾
Provisions only for Balluff⁸⁾
- G= BTL-5 transducer
Provisions only for
- H= MTS transducer⁸⁾

Seal version

Suitable for mineral oil
DIN 51 524 HL, HLP and HFA

T= Servo quality/reduced friction

Suitable for phosphate ester HFD-R

V= Fluorocarbon seal system⁴⁾

End position cushioning

- U= Without
- S= Both sides, adjustable

Piston rod end²⁾

- H= Small male thread KK1
- D= Intermediate male thread KK2
- E= Female thread KK2
- T= S.A.F.E., rod end
- X= Special (specify)