



SINGLE-ACTING TELESCOPIC
CYLINDERS
PIN-PIN | TRUNNION



PIN-PIN MOUNT

HIGH PERFORMANCE IN A LIGHTER CYLINDER

The combination of strict machining tolerances, solid stop contact faces, and larger overlap between the stages have resulted in one of the strongest and most stable cylinder columns currently available in the market. These improvements help increase safety for dumping application.



KEY FEATURES

- No packing or head nuts on each stage. Only one head nut that doesn't need adjustments.
- Stages are machined and precision ground inside and out to allow for optimal seal and wiper performance
- Tight machining tolerances cause smaller tube clearances that result in increased rigidity
- One of the lightest cylinders on the market which translates to greater payloads, less oil consumption, and faster dumping
- Low maintenance requirements offer many years of top performance without additional expenses
- Self-bleeding design for an easier installation process

APPLICATIONS

- Dump Trucks/Trailers
- Refuse Trucks
- Vacuum Trucks

TRUNNION MOUNT

STRONGER, STABLER, AND GREATER PAYLOAD

Muncie Power's Trunnion Mount cylinders offers many features, such as increased capacity in the dump body because of significant reduction or elimination of the dog house. With the strict machining tolerances, solid stop contact faces, and larger overlap between stages, these cylinders are one of the strongest and most stable cylinders in the market.



KEY FEATURES

- One of the lightest cylinders on the market which translates to greater payloads, less oil consumption, and faster dumping
- Stages are machined and precision ground inside and out to allow for optimal seal and wiper performance
- No packing or head nuts on each stage. Only one head nut that doesn't need adjustments
- Tight machining tolerances cause smaller tube clearances that result in increased rigidity
- Easily remove outer cover for ease of service
- Low maintenance requirements offer many years of top performance without additional expenses
- Self-bleeding design for an easier installation process

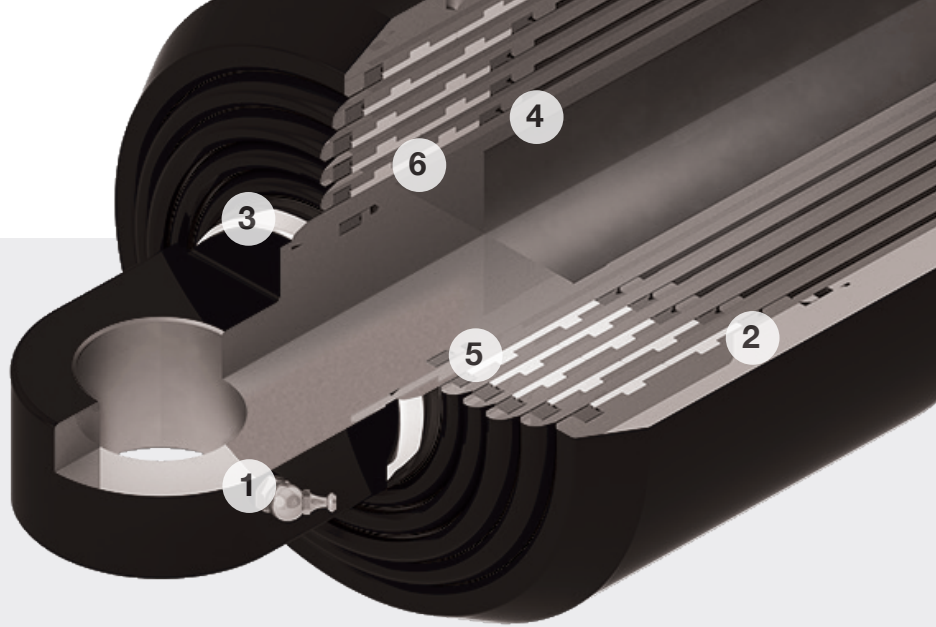
APPLICATIONS

- Dump Trucks/Trailers
- Refuse Trucks
- Vacuum Trucks

CYLINDER BREAKDOWN PIN-PIN AND TRUNNION

PIN-PIN

1. Standard grease zerk
2. Solid stop
3. Chromed final stage
4. High pressure seal
5. Double lip wiper
6. Slider for bearing stability for top and bottom



TRUNNION

- | | | |
|-------------------------------------|---|---------------------------|
| 1. Industry standard trunnion mount | 4. Lower bearing supports | 8. Chromed final stage |
| 2. Guide with anti-rattle buffer | 5. Precision machined and ground stages | 9. Upper bearing supports |
| 3. Machined solid stop | 6. Protective cover | 10. Protective cap |
| | 7. High pressure seal | 11. Wiper |



QUALITY MATERIALS PIN-PIN AND TRUNNION

- All steel tubing is made from seamless hot rolled steel, resulting in higher tensile tubes for increased column strength and stiffness
- Stages have no welded seams, allowing for higher pressure capabilities
- Steel quality increases resistance to mechanical stress and increases the life of your cylinder
- Seals and wipers are made of polyurethane and feature a double lip design, assuring optimum performance in all climate conditions (-40° F to 212° F/-40° C to 100° C)
- Phenolic resin sliders are the strongest in the market; they are compatible with all types of hydraulic oils approved by pump makers and capable of withstanding high and low pressures

PIN-PIN MOUNT

MODEL NUMBER CONSTRUCTION

8 - 5 - 265 - A - 00

SERIES (NOMINAL DIAMETER)

(8, 7, 6, 5)

NUMBER OF STAGES

(5, 4, 3)

DESIGN CODE

00 – Generation 1

30 – Series 5

MOUNT TYPE

A – Pin-Pin

NOMINAL STROKE (in.)

100"–285"

Note: Some options are limited to specific models;
please contact customer service for more information



PIN-PIN DIMENSIONS IMPERIAL MEASUREMENTS

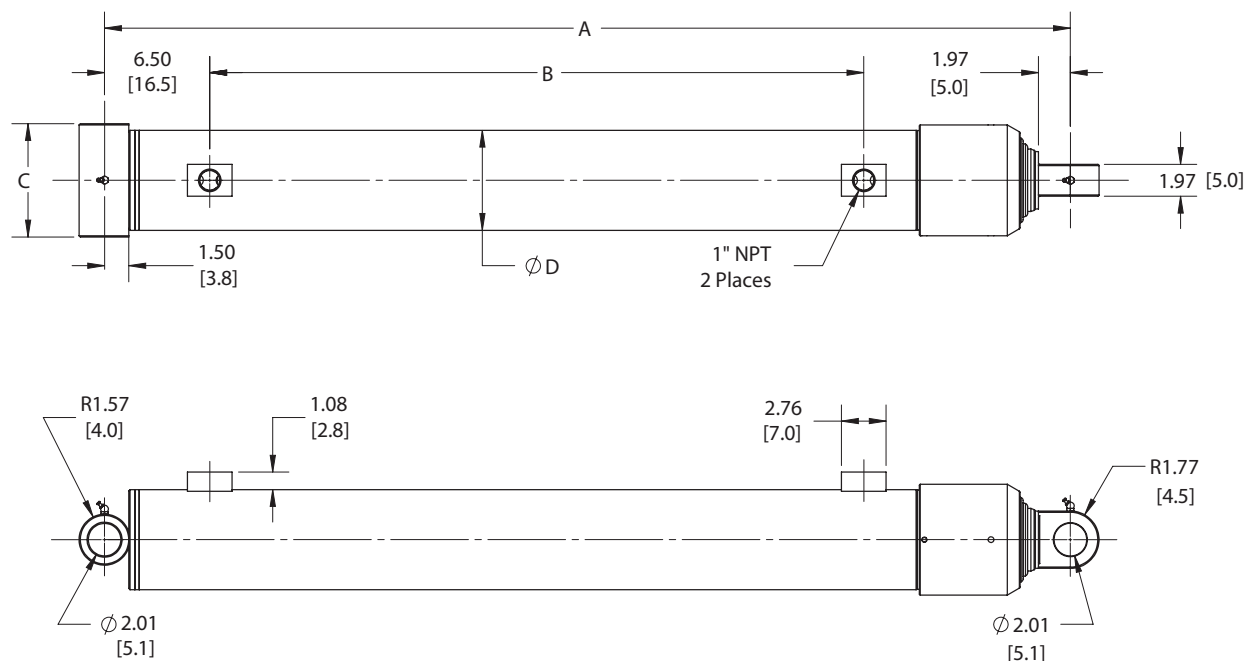
Model Number	Stroke Length (in.)	A = Closed/ Open Length (in.)	B (in.)	C (in.)	D (in.)	Stage Diameter (in.) 1 / 2 / 3 / 4 / 5	Gallons to Extend	Cylinder Weight (lbs.)
5-3-084-A30	83	39.96* / 123.42	26.96*	6.69	5.37	4.57 / 3.86 / 3.11	4.29	176
5-3-104-A00	103.23	47.32 / 150.55	28.3	7.00	5.39	4.57 / 3.86 / 3.11	5.26	220
6-3-084-A00	84.02	39.57 / 123.59	20.3	7.00	6.18	5.31 / 4.57 / 3.86	6.12	189
6-3-104-A00	102.28	47.32 / 149.60	28.3	7.00	6.18	5.31 / 4.57 / 3.86	7.35	255
6-3-110-A00	109.61	49.76 / 159.37	30.8	7.00	6.18	5.31 / 4.57 / 3.86	7.93	278
6-3-120-A00	118.35	52.48 / 170.83	33.5	7.00	6.18	5.31 / 4.57 / 3.86	8.55	280
6-3-126-A00	126.02	54.96 / 180.98	36.0	7.00	6.18	5.31 / 4.57 / 3.86	9.18	300
6-3-130-A00	128.46	55.75 / 184.21	36.0	7.00	6.18	5.31 / 4.57 / 3.86	9.24	300
6-3-140-A00	140.00	59.80 / 199.80	40.6	7.00	6.18	5.31 / 4.57 / 3.86	10.19	329
7-3-110-A00	109.69	49.92 / 159.61	30.8	8.23	6.93	6.06 / 5.31 / 4.57	10.62	303
7-4-135-A30	133.46	48.46* / 181.92	35.46*	8.23	6.95	6.06 / 5.31 / 4.57 / 3.86	11.41	335
7-4-156-A00	157.68	52.91 / 210.59	33.5	8.23	6.93	6.06 / 5.31 / 4.57 / 3.86	13.43	365
7-4-161-A00	162.99	55.39 / 218.38	36.5	8.23	6.93	6.06 / 5.31 / 4.57 / 3.86	14.14	374
7-4-167-A00	167.01	55.39 / 222.40	36.5	8.23	6.93	6.06 / 5.31 / 4.57 / 3.86	14.44	374
8-4-170-A00	168.98	56.65 / 225.63	36.7	9.49	7.87	6.85 / 6.06 / 5.31 / 4.57	19.15	467
8-5-169-A00	168.94	47.95 / 216.89	28.4	9.49	7.87	6.85 / 6.06 / 5.31 / 4.57 / 3.86	16.87	425
8-5-190-A00	188.98	53.98 / 242.96	32.1	9.49	7.87	6.85 / 6.06 / 5.31 / 4.57 / 3.86	18.70	464
8-5-220-A00	219.92	59.88 / 279.80	39.1	9.49	7.87	6.85 / 6.06 / 5.31 / 4.57 / 3.86	21.74	531
8-5-235-A00	235.00	64.53 / 299.53	44.9	9.49	7.87	6.85 / 6.06 / 5.31 / 4.57 / 3.86	23.34	584
8-5-250-A00	246.89	68.35 / 315.24	44.9	9.49	7.87	6.85 / 6.06 / 5.31 / 4.57 / 3.86	24.53	588
8-5-265-A00	265.83	69.72 / 335.55	48.7	9.49	7.87	6.85 / 6.06 / 5.31 / 4.57 / 3.86	26.35	620
8-5-285-A00	285.98	75.87 / 361.85	56.8	9.49	7.87	6.85 / 6.06 / 5.31 / 4.57 / 3.86	29.55	690

*0.79 in. pull out included – reference data sheets

INDICATES ONLY AVAILABLE IN SERIES 5

GENERATION 1 PIN-PIN DIMENSIONAL DRAWINGS

NOTE: Generation 1 drawing units: in.[cm]



PIN-PIN DIMENSIONS METRIC MEASUREMENTS

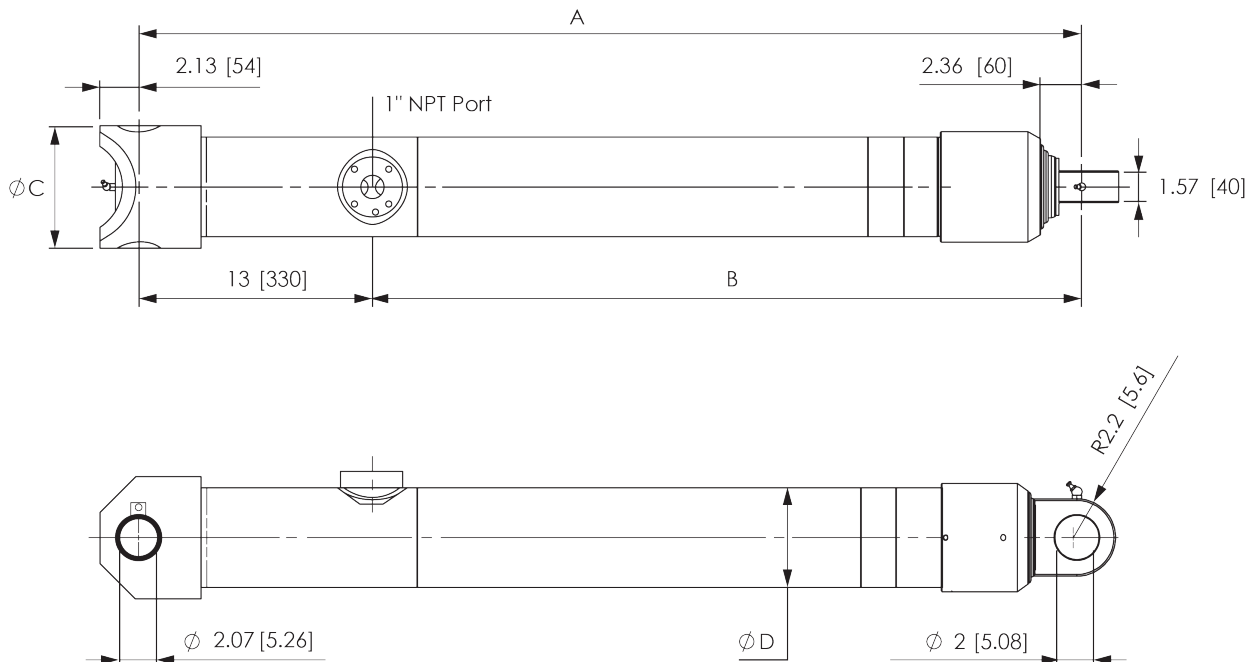
Model Number	Stroke Length (cm.)	A = Closed/ Open Length (cm.)	B (cm.)	C (cm.)	D (cm.)	Stage Diameter (cm.)	Liters to Extend	Cylinder Weight (Kg.)
5-3-084-A30	212.0	101.5* / 313.5	68.5*	17.0	13.65	11.60 / 9.80 / 7.90	16.22	80
5-3-104-A00	262.2	120.2 / 328.4	71.9	17.78	13.69	11.60 / 9.80 / 7.90	19.91	100
6-3-084-A00	213.4	100.5 / 313.9	51.6	17.78	15.70	13.49 / 11.60 / 9.80	23.16	86
6-3-104-A00	259.8	120.2 / 380.1	71.9	17.78	15.70	13.49 / 11.60 / 9.80	27.82	116
6-3-110-A00	278.4	126.4 / 404.8	78.2	17.78	15.70	13.49 / 11.60 / 9.80	30.02	126
6-3-120-A00	300.6	133.3 / 433.9	85.1	17.78	15.70	13.49 / 11.60 / 9.80	32.36	127
6-3-126-A00	320.1	139.6 / 459.7	91.4	17.78	15.70	13.49 / 11.60 / 9.80	34.74	136
6-3-130-A00	326.3	141.6 / 467.9	91.4	17.78	15.70	13.49 / 11.60 / 9.80	34.74	136
6-3-140-A00	355.6	151.9 / 507.5	103.1	17.78	15.70	13.49 / 11.60 / 9.80	38.57	149
7-3-110-A00	278.6	126.8 / 405.4	78.2	20.90	17.60	15.39 / 13.49 / 11.60	40.20	137
7-4-135-A30	339.0	123.1* / 462.1	90.1	20.90	17.70	15.39 / 13.49 / 11.60 / 9.80	43.19	152
7-4-156-A00	400.5	134.4 / 534.9	85.0	20.90	17.60	15.39 / 13.49 / 11.60 / 9.80	50.83	166
7-4-161-A00	414.0	140.7 / 544.7	92.6	20.90	17.60	15.39 / 13.49 / 11.60 / 9.80	53.52	170
7-4-167-A00	424.2	140.7 / 564.9	92.6	20.90	17.60	15.39 / 13.49 / 11.60 / 9.80	54.65	170
8-4-170-A00	429.2	143.9 / 573.1	93.1	24.10	19.99	17.40 / 15.39 / 13.49 / 11.60	72.50	212
8-5-169-A00	429.1	121.8 / 550.9	72.0	24.10	19.99	17.40 / 15.39 / 13.49 / 11.60 / 9.80	63.85	193
8-5-190-A00	480.0	137.1 / 617.1	81.6	24.10	19.99	17.40 / 15.39 / 13.49 / 11.60 / 9.80	70.78	210
8-5-220-A00	558.6	152.1 / 710.7	99.3	24.10	19.99	17.40 / 15.39 / 13.49 / 11.60 / 9.80	82.28	241
8-5-235-A00	596.9	163.9 / 760.8	114.1	24.10	19.99	17.40 / 15.39 / 13.49 / 11.60 / 9.80	88.34	265
8-5-250-A00	627.1	173.6 / 800.7	114.1	24.10	19.99	17.40 / 15.39 / 13.49 / 11.60 / 9.80	92.85	267
8-5-265-A00	675.2	177.1 / 852.3	123.8	24.10	19.99	17.40 / 15.39 / 13.49 / 11.60 / 9.80	99.73	281
8-5-285-A00	726.4	192.7 / 919.1	144.3	24.10	19.99	17.40 / 15.39 / 13.49 / 11.60 / 9.80	111.85	313

*2 cm. pull out included – reference data sheets

INDICATES ONLY AVAILABLE IN SERIES 5

SERIES 5 PIN-PIN DIMENSIONAL DRAWINGS

NOTE: Series 5 drawing units: in.[cm]



SEAL AND REBUILD KITS PIN-PIN

Seal kits contain all seals and wipers needed for each stage of the cylinder. Rebuild kits contain all seals, wipers, and bearing supports needed for each stage of the cylinder.

Note: Please contact customer service for more info if your cylinder model number isn't paired with a kit.

Model No.	Rebuild Kit No.	Seal Kit No.
5-3-***-A00	RBK-53-00	GSK-53-00
6-3-***-A00	RBK-63-00	GSK-63-00
7-4-***-A00	RBK-74-00	GSK-74-00
8-4-***-A00	RBK-84-00	GSK-84-00
8-5-***-A00	RBK-85-00	GSK-85-00

SERIES 5 ONLY

Model No.	Rebuild Kit No.	Seal Kit No.
5-3-***-A30	RBK-53-30	GSK-53-30
6-3-***-A30	RBK-5.53-30	GSK-5.53-30
7-4-***-A30	RBK-6.54-30	GSK-6.54-30
8-4-***-A30	RBK-7.54-30	GSK-7.54-30
8-5-***-A30	RBK-85-30	GSK-85-30

ADDITIONAL INSTALLATION HARDWARE PIN-PIN

ALL PIN-PIN CYLINDERS

PIN-EYE MOUNT SPACERS

Part Number	Description
18T42906-181025	3.00 OD X 1.81 ID X 0.25 W
18T42906-181050	3.00 OD X 1.81 ID X 0.50 W
18T42906-181075	3.00 OD X 1.81 ID X 0.75 W
18T42906-181100	3.00 OD X 1.81 ID X 1.00 W
18T42906-212025	3.00 OD X 2.12 ID X 0.25 W
18T42906-212050	3.00 OD X 2.12 ID X 0.50 W
18T42906-212075	3.00 OD X 2.12 ID X 0.75 W
18T42906-212200	3.00 OD X 2.12 ID X 1.00 W

A00 PIN-PIN CYLINDERS ONLY

PIN-EYE BUSHING FOR TOP PIN

Part Number	Description
18T42905-131200	2.00 OD X 1.31 ID X 2.00 W
18T42905-150150	2.00 OD X 1.50 ID X 1.50 W
18T42905-150200	2.00 OD X 1.50 ID X 2.00 W
18T42905-168200	2.00 OD X 1.68 ID X 2.00 W
18T42905-175150	2.00 OD X 1.75 ID X 1.50 W
18T42905-175200	2.00 OD X 1.75 ID X 2.00 W

PIN-EYE BUSHING FOR LOWER PIN

Part Number	Description
18T43492-150700	2.00 OD X 1.51 ID X 6.80 W
18T43492-168700	2.00 OD X 1.69 ID X 6.80 W
18T43492-175700	2.00 OD X 1.76 ID X 6.80 W

TRUNNION MOUNT

MODEL NUMBER CONSTRUCTION

6.5 - 4 - 160 - B - 30

SERIES

(7.5, 6.5, 5.5)

NUMBER OF STAGES

(4, 3)

DESIGN CODE

30 - Series 5

MOUNT TYPE

B - Trunnion

NOMINAL STROKE (in.)

100"-194"

Note: Some options are limited to specific models;
please contact customer service for more information



SERIES 5 TRUNNION DIMENSIONS IMPERIAL MEASUREMENTS

Model Number	Stroke Length (in.)	A (in.)	B (in.)	C (in.)	D (in.)	E (in.)	F (in.)	G (in.)	H (in.)	Stage Diameter (in.) 1 / 2 / 3 / 4 / 5	Gallons to Extend (gal.)	Cylinder Weight (lbs.)
5.5-3-100-B30	100.4	47.48*	5.51*	39.61	7	1.87	1.26	9	7.63	5.31 / 4.57 / 3.86	7.28	309
5.5-3-138-B30	135.8	59.29*	5.51*	51.42	7	1.87	1.26	9	7.63	5.31 / 4.57 / 3.86	9.85	375
5.5-3-138-B33	135.8	29.29*	13.78*	43.15	7	1.87	1.26	9	7.63	5.31 / 4.57 / 3.86	9.78	370
6.5-4-146-B30	146.8	51*	7.68*	40.75	7.91	2.24	1.5	10.2	8.63	6.06 / 5.31 / 4.57 / 3.86	12.68	428
6.5-4-160-B30	161	54.53*	7.68*	44.29	7.91	2.24	1.5	10.2	8.63	6.06 / 5.31 / 4.57 / 3.86	13.78	459
6.5-4-170-B30	169.7	56.69*	7.68*	46.46	7.91	2.24	1.5	10.2	8.63	6.06 / 5.31 / 4.57 / 3.86	14.52	472
6.5-4-180-B30	180.7	59.45*	7.68*	49.21	7.91	2.24	1.5	10.2	8.63	6.06 / 5.31 / 4.57 / 3.86	15.46	498
7.5-4-194-B30	194.5	65.39*	9.65*	53.19	9.02	2.24	1.5	12.8	9.63	6.85 / 6.06 / 5.31 / 4.57	21.93	719

*0.79 in. pull out included – reference data sheets

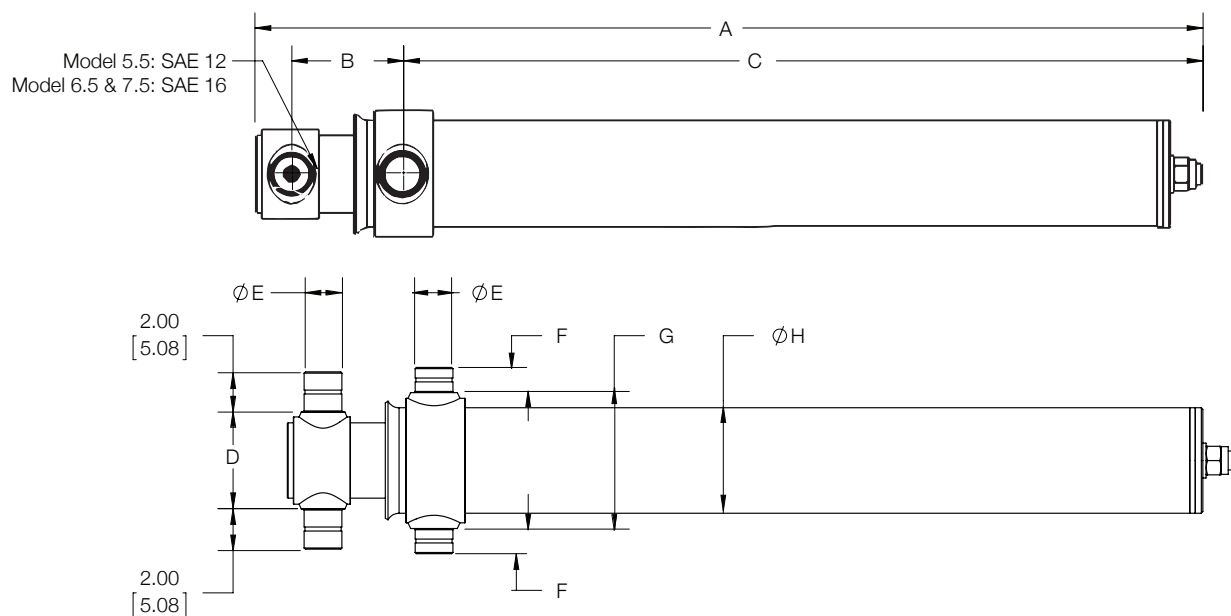
SERIES 5 TRUNNION DIMENSIONS METRIC MEASUREMENTS

Model Number	Stroke Length (cm.)	A (cm.)	B (cm.)	C (cm.)	D (cm.)	E (cm.)	F (cm.)	G (cm.)	H (cm.)	Stage Diameter (cm.) 1 / 2 / 3 / 4 / 5	Liters to Extend	Cylinder Weight (Kg.)
5.5-3-100-B30	225	120.6*	14.0*	100.6	17.78	4.76	3.2	22.86	19.37	13.5 / 11.6 / 9.8	27.55	140
5.5-3-138-B30	345	150.6*	14.0*	130.6	17.78	4.76	3.2	22.86	19.37	13.5 / 11.6 / 9.8	37.27	170
5.5-3-138-B33	345	150.6*	35.0*	109.6	17.78	4.76	3.2	22.86	19.37	13.5 / 11.6 / 9.8	37	168
6.5-4-146-B30	373	129.5*	19.5*	103.5	20.1	5.7	3.8	25.9	21.91	15.4 / 13.5 / 11.6 / 9.8	48	194
6.5-4-160-B30	409	138.5*	19.5*	112.5	20.1	5.7	3.8	25.9	21.91	15.4 / 13.5 / 11.6 / 9.8	52.14	208
6.5-4-170-B30	431	144.0*	19.5*	118	20.1	5.7	3.8	25.9	21.91	15.4 / 13.5 / 11.6 / 9.8	54.95	214
6.5-4-180-B30	459	151.0*	19.5*	125	20.1	5.7	3.8	25.9	21.91	15.4 / 13.5 / 11.6 / 9.8	58.52	226
7.5-4-194-B30	494	166.1*	24.5*	135.1	22.9	5.7	3.8	32.5	24.5	17.4 / 15.4 / 13.5 / 11.6	82.99	326

*2 cm. pull out included – reference data sheets

SERIES 5 TRUNNION DIMENSIONAL DRAWINGS

5.5-7.5 Models



SEAL AND REBUILD KITS TRUNNION

Seal kits contain all seals and wipers needed for each stage of the cylinder. Rebuild kits contain all seals, wipers, and bearing supports needed for each stage of the cylinder.

Note: Please contact customer service for more info if your cylinder model number isn't paired with a kit.

Cylinder Model	Rebuild Kit No.	Seal Kit No.
5.5-3-XXX-B30	RBK-5.53-30	GSK-5.53-30
6.5-4-XXX-B30	RBK-6.54-30	GSK-6.54-30
7.5-4-XXX-B30	RBK-7.54-30	GSK-7.54-30

SPECIAL ORDER CYLINDERS

Muncie Power has a variety of special order Pin-pin and Trunnion Mount cylinders designed and available for your needs.

Contact customer service for more details at 800-367-7867.

PIN-PIN MOUNT

Diameter in. (cm.)	Stroke in. (cm.)
5-9 (12.7-22.9)	83-286 (212-726.4)

TRUNNION MOUNT

Diameter in. (cm.)	Stroke in. (cm.)
3.5-7.5 (8.9-19.1)	82-182 (208-4622.3)

CYLINDER CALCULATIONS FOR DUMP BODIES

These calculations provide approximate values. Final calculations and product selection should be determined by a qualified engineer and engineering drawing.

When selecting a hydraulic cylinder for replacement, it is the responsibility of the purchaser, installer, and user to verify all dimensions, mounting, and performance features of the replacement cylinder are appropriate for the application.

PIN-PIN CYLINDERS

A = Dump hinge pin to center of load in inches

D* = Dump body to frame angle

B = Dump hinge pin to cylinder base pin in inches

S = Stroke of cylinder

*Normal minimum dump angle is 45° and normal maximum dump angle is 57°.

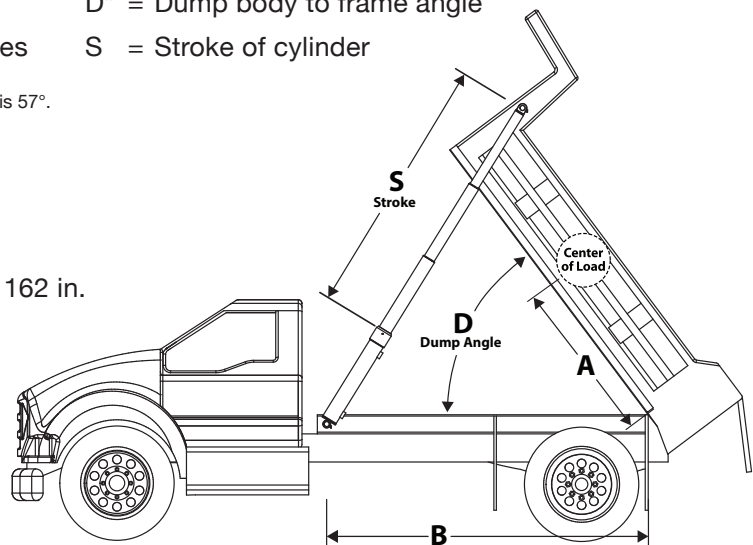
REQUIRED FORCE

Force required to lift a load = [Load (lbs.) × A] / B

Example: Load = 40,000 lbs., A = 85 in., and B = 162 in.

Force Required = [40,000 lbs. × 85 in.] / 162 in.

Force Required = 20,988 lbs.



STROKE

Approximate Stroke (inches) = B × D

Example: B = 162 in. and Desired Dump Angle = 49°

Approximate Cylinder Stroke = 162 in. × 0.830

Approximate Cylinder Stroke = 135 in.

Dump Angle	42°	43°	44°	45°	46°	47°	48°	49°	50°	51°	52°	53°	54°	55°	56°	57°
D	.715	.733	.750	.765	.780	.797	.813	.830	.845	.861	.877	.892	.903	.923	.939	.954

LIFTING CAPACITY FOR EACH STAGE DIAMETER (LBS)

Stage Dia. (in.)	Eff. Area (in. ²)	800 PSI	1,000 PSI	1,500 PSI	2,000 PSI	2,500 PSI	3,000 PSI	3,625 PSI
6.85	36.85	29,482	36,853	55,279	73,706	92,132	110,550	133,581
6.06	28.84	23,074	28,843	43,264	57,685	72,107	86,520	104,545
5.31	22.15	17,716	22,145	33,218	44,290	55,363	66,450	80,294
4.57	16.40	13,122	16,403	24,604	32,806	41,007	49,200	59,450
3.86	11.70	9,362	11,702	17,553	23,404	29,255	35,100	42,413
3.11	7.60	6,077	7,596	11,395	15,193	18,991	22,800	27,550

Note: Maximum pressure 3,625 PSI (250 BAR)

Note: A properly designed system should operate at approximately 800 PSI or less during the start of the lift. The load imposed on a cylinder by a dump body is dynamic; therefore, your system pressure will be changing to accommodate the difference in force required to lift the changing load. You will see system pressure increase as your cylinder extends from stage to stage. You will also see a decrease in cycle time due to the effective volume change from stage to stage as the cylinder extends (your cylinder will move faster).

TRUNNION CYLINDERS

A = Dump hinge pin to center of load in inches
 B = Dump hinge pin to cylinder base pin in inches

D* = Dump body to frame angle
 S = Stroke of cylinder

*Normal minimum dump angle is 45° and normal maximum dump angle is 57°.

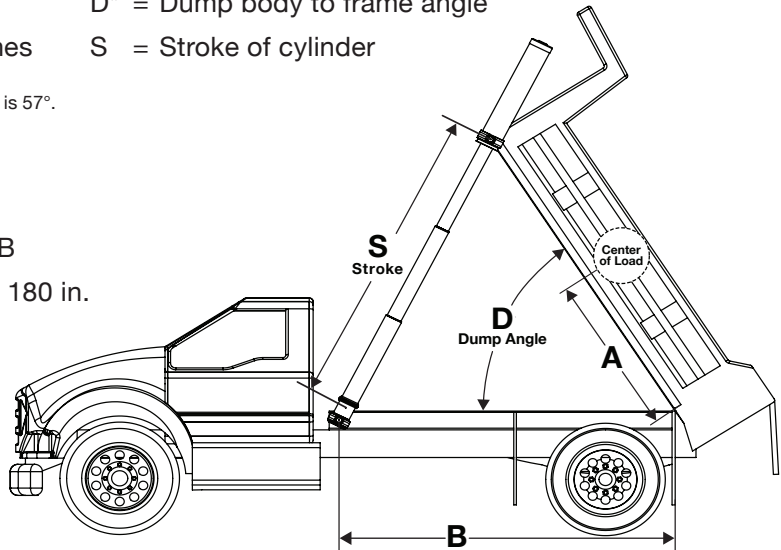
REQUIRED FORCE

Force required to lift a load = [Load (lbs.) x A] / B

Example: Load = 40,000 lbs., A = 90 in., and B = 180 in.

Force Required = [40,000 lbs. x 90 in.] / 180 in.

Force Required = 20,988 lbs.



STROKE

Approximate Stroke (inches) = B x D

Example: B = 180 in. and Desired Dump Angle = 50°

Approximate Cylinder Stroke = 162 in. x 0.767

Approximate Cylinder Stroke = 138 in.

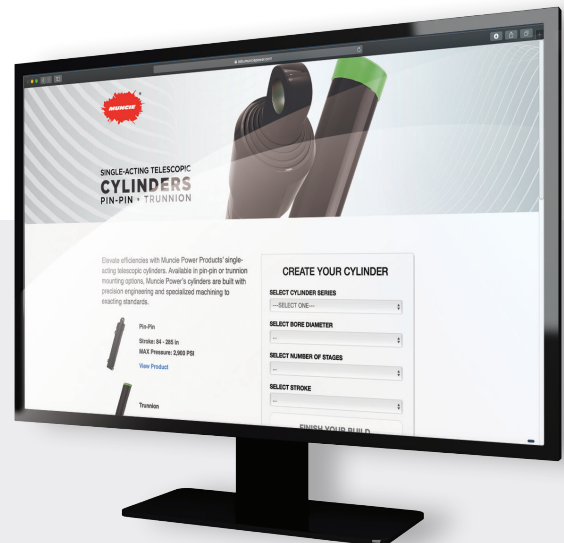
Dump Angle	42°	43°	44°	45°	46°	47°	48°	49°	50°	51°	52°	53°	54°	55°	56°	57°
D	.670	.683	.696	.708	.720	.732	.744	.756	.767	.778	.789	.800	.810	.821	.830	.840

LIFTING CAPACITY FOR EACH STAGE DIAMETER (LBS)

Stage Dia. (in.)	Eff. Area (in. ²)	800 PSI	1,000 PSI	1,500 PSI	2,000 PSI	2,500 PSI	3,000 PSI	3,625 PSI
6.85	36.85	29,482	36,853	55,279	73,706	92,132	110,550	133,581
6.06	28.84	23,074	28,843	43,264	57,685	72,107	86,520	104,545
5.31	22.15	17,716	22,145	33,218	44,290	55,363	66,450	80,294
4.57	16.40	13,122	16,403	24,604	32,806	41,007	49,200	59,450
3.86	11.70	9,362	11,702	17,553	23,404	29,255	35,100	42,413
3.11	7.60	6,077	7,596	11,395	15,193	18,991	22,800	27,550

Note: Maximum pressure 3,625 PSI (250 BAR)

Note: A properly designed system should operate at approximately 800 PSI or less during the start of the lift. The load imposed on a cylinder by a dump body is dynamic; therefore, your system pressure will be changing to accommodate the difference in force required to lift the changing load. You will see system pressure increase as your cylinder extends from stage to stage. You will also see a decrease in cycle time due to the effective volume change from stage to stage as the cylinder extends (your cylinder will move faster).



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