

PIN TO PIN MOUNT CYLINDER

DEFINITION

Pin-to-Pin cylinders have a pivot pin at both the base end and the rod end. This allows the cylinder to pivot freely at both connection points as it extends and retracts.

ADVANTAGES

- Easy installation and removal with simple pin connections
- Ideal for applications with changing alignment during operation
- Compact design for limited space applications
- Handles high side loads when paired with spherical bearings

APPLICATION

- Dump trailers and trucks (front-end hoist cylinders)
- Agricultural equipment lift arms
- Mobile equipment with pivoting linkages



TRUNNION MOUNT CYLINDER

DEFINITION

A Trunnion mount uses pivot pins fixed to the cylinder body rather than the ends. These pins are positioned either at the mid-section (mid-trunnion) or near the base/rod ends, allowing the cylinder body to rotate in fixed trunnion brackets

APPLICATION

- Industrial presses
- Material handling booms
- OEM equipment where mounting clearance is critical



ADVANTAGES

- Reduces bending loads on the piston rod by keeping the load path aligned
- Ideal for applications where the cylinder body must pivot but space is limited at the ends
- Allows for longer stroke lengths without excessive side load

Feature	Pin-to-Pin Mount	Trunnion Mount
Pivot Location	At base and rod ends	On the cylinder body (mid or end)
Installation	Simple pin insertion	Requires trunnion brackets
Side Load Capacity	Moderate (higher with spherical bearings)	Higher due to better load alignment
Space Requirements	More length needed	Shorter overall mounting length
Common Use	Dump trailers, ag equipment	Industrial presses, long-stroke booms

TELESCOPIC TYPE

FEE FRONT EYE (PIN TO PIN)

Type:	Front-End Telescopic Hydraulic Cylinder
Action:	Single Acting
Rod End:	Piston eye with cross pin
Base End:	Bottom eye with cross pin
Stages	3 to 5 moving stages
Nominal stage OD range:	5" to 9"
Rod:	Standard Chrome Plated Rod Steel 1045
Pressure:	3500 PSI
Application:	Dump trailers, tipper trucks, agricultural and vocational hauling
Replacement	HYVA® FEE-type front-end cylinders



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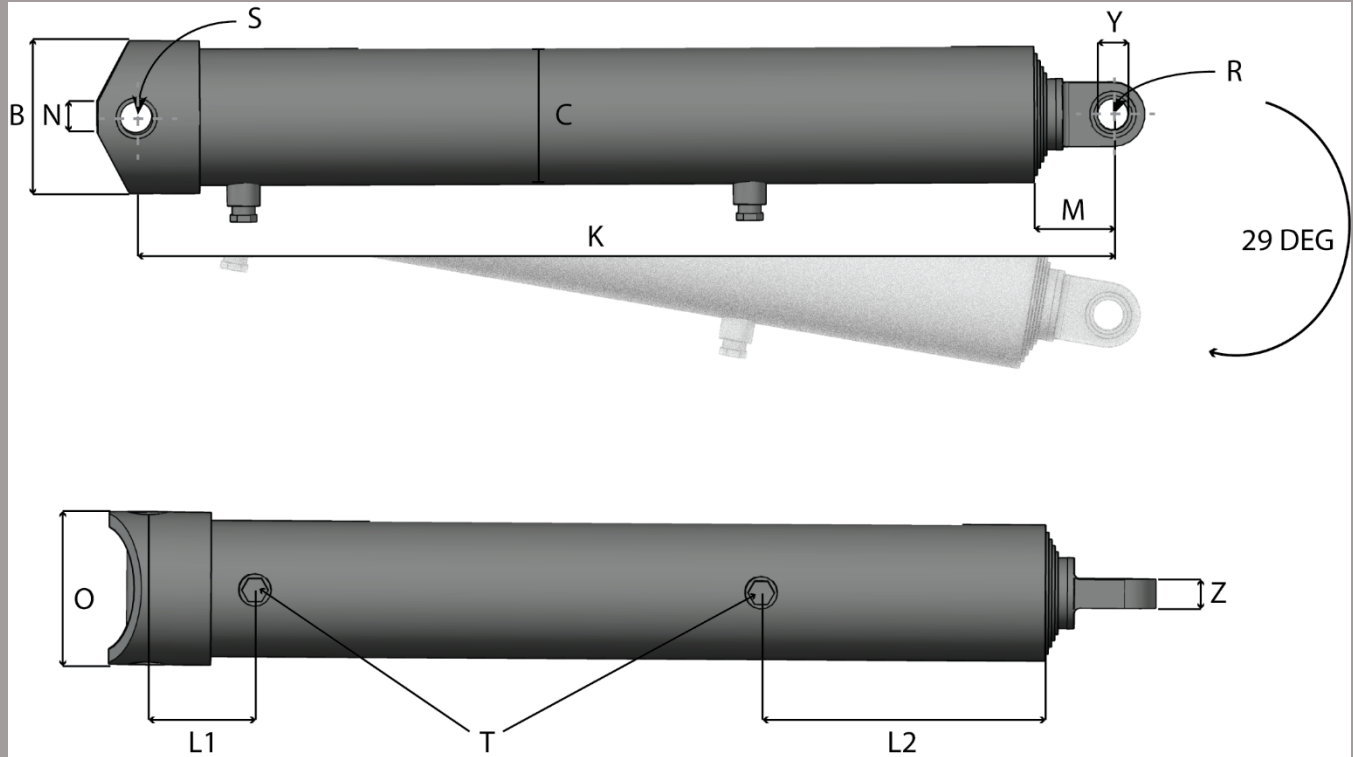


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*ALL VALUES ARE IN INCHES

**ALL NUMBERS GIVEN ARE NOMINAL VALUES AND SHOULD BE USED FOR REFERENCE ONLY. ALL PRODUCT SPECIFICATIONS ARE SUBJECT TO CHANGE WITHOUT PRIOR NOTICE.

3 STAGE			FRONT EYE (PIN TO PIN) SINGLE ACTING TELESCOPIC HYDRAULIC CYLINDER - 3500 PSI															
Model	LBS	K*	Total Gal.	O	B	C	L1	L2	Z	M*	S	T	N	Y	R	Last stage	Stroke	Max PSI
SAT A5-3-83-FEE	163	42.31	4.2	6.63	5.69	5.13	13	-	1.63	4	2.19	1	2.13	2	2.06	2.83	83.2	3626
SAT A6-3-83-FEE	196	42.31	5.8	7	6.56	5.63	13	-	1.63	4	2.19	1	2.13	2	2.06	3.58	83.2	3626
SAT A6-3-96-FEE	236	51.19	7.1	7	6.56	5.88	13	17.69	1.63	4	2.19	1	2.06	2	2.06	3.58	96	3626
SAT A6-3-101-FEE	223	48.25	7.1	7	6.56	5.88	13	17.69	1.63	4	2.19	1	2.06	2	2.06	3.58	100.9	3626
SAT A6-3-110-FEE	236	51.19	7.7	7	6.56	5.88	13	17.69	1.63	4	2.19	1	2.13	2	2.06	3.58	109.6	3626
SAT A6-3-119-FEE	249	54.13	8.5	7	6.56	5.88	13	17.69	1.63	4	2.19	1	2.06	2	2.06	3.58	118.6	3626
SAT A6-3-124-FEE-HD	262	57.06	9.0	7	6.56	5.88	13	17.69	1.63	4	2.19	1	2.13	2	2.06	3.58	123.6	3626
SAT A6-3-134-FEE-HD	278	60.44	9.5	7	6.56	5.88	13	17.69	1.63	4	2.19	1	2.13	2	2.06	3.58	133.7	3626
SAT A7-3-110-FEE	282	51.19	10.6	8.25	7.38	6.69	13	17.69	1.63	4	2.19	1	2.13	2	2.06	4.33	109.6	3626
SAT A7-3-119-FEE-SKE	300	53.13	11.4	8.25	7.38	6.69	13	17.69	1.63	3	2.19	1	2.06	2	1.77	4.33	118.6	3626
SAT A7-3-127-FEE-SKE	315	56.13	12.4	8.25	7.38	6.69	13	17.69	1.63	3	2.19	1	2.06	2	1.77	4.33	127.3	3626
SAT A7-3-137-FEE	333	60.44	13.2	8.25	7.38	6.69	13	17.69	1.63	4	2.19	1	2.06	2	2.06	4.33	137.5	3626
SAT A7-3-147-FEE	351	63.56	14.3	8.25	7.38	6.69	13	17.69	1.63	4	2.19	1	2.06	2	2.06	4.33	146.8	3626

4 STAGE			FRONT EYE (PIN TO PIN) SINGLE ACTING TELESCOPIC HYDRAULIC CYLINDER - 3500 PSI															
Model	LBS	K*	Total Gal.	O	B	C	L1	L2	Z	M *	S	T	N	Y	R	Last stage	Stroke	Max PSI
SAT A6-4-158-FEE	278	54.13	9.8	7	6.56	5.88	13	17.69	1.63	4	2.19	1	2.06	2	2.06	2.83	158.4	3626
SAT A7-4-135-FEE	298	48.25	11.4	8.25	7.38	6.69	13	17.69	1.63	4	2.19	1	2.13	2	2.06	3.58	134.8	3626
SAT A7-4-146-FEE	315	51.19	12.4	8.25	7.38	6.69	13	17.69	1.63	4	2.19	1	2.06	2	2.06	3.58	146.4	3626
SAT A7-4-158-FEE	333	54.13	13.5	8.25	7.38	6.69	13	17.69	1.63	4	2.19	1	2.13	2	2.06	3.58	158.4	3626
SAT A7-4-170-FEE	353	57.06	14.3	8.25	7.38	6.69	13	17.69	1.63	4	2.19	1	2.06	2	2.06	3.58	170	3626
SAT A7-4-183-FEE	373	60.44	15.6	8.25	7.38	6.69	13	17.69	1.63	4	2.19	1	2.06	2	2.06	3.58	183.6	3626
SAT A8-4-146-FEE	379	51.31	16.6	9.44	8.25	7.56	11.69	17.69	1.63	4	2.19	1	2.06	2	2.06	4.33	146.4	3626
SAT A8-4-158-FEE	401	54.31	18.0	9.44	8.25	7.56	6.69	17.69	1.63	4	2.19	1	2.06	2	2.06	4.33	158.4	3626
SAT A8-4-170-FEE	423	57.25	19.3	9.44	8.25	7.56	6.69	17.69	1.63	4	2.19	1	2.06	2	2.06	4.33	170	3626
SAT A8-4-183-FEE	448	60.56	20.6	9.44	8.25	7.56	6.69	17.69	1.63	4	2.19	1	2.06	2	2.06	4.33	183.6	3626

5 STAGE			FRONT EYE (PIN TO PIN) SINGLE ACTING TELESCOPIC HYDRAULIC CYLINDER – 3500 PSI															
Model	LBS	K*	Total Gal.	O	B	C	L1	L2	Z	M*	S	T	N	Y	R	Last stage	Stroke	Max PSI
SAT A8-5-169-FEE	465	50.25	22.2	9.44	9.25	8.44	6.69	17.69	1.63	5.38	2.38	1	2.06	2	2.06	4.33	168.7	3626
SAT A8-5-190-FEE	522	54.81	25.4	9.44	9.25	8.44	6.69	17.69	1.63	4	2.38	1	2.13	2	2.06	4.33	190.3	3626
SAT A8-5-213-FEE	551	57.75	28.0	9.44	9.25	8.44	6.69	17.69	1.63	4	2.38	1	2.06	2	2.06	4.33	212.7	3626
SAT A8-5-222-FEE	567	59.50	29.1	9.44	9.25	8.44	6.69	17.69	1.63	4	2.38	1	2.06	2	2.06	4.33	221.7	3626
SAT A8-5-230-FEE	582	61.13	30.1	9.44	9.25	8.44	6.69	17.69	1.63	4	2.38	1	2.06	2	2.06	4.33	229.7	3626
SAT A8-5-245-FEE	613	64.25	32.2	9.44	9.25	8.44	6.69	17.69	1.63	4	2.38	1	2.06	2	2.06	4.33	245.2	3191
SAT A8-5-255-FEE	639	67	33.5	9.44	9.25	8.44	6.69	17.69	1.63	4	2.38	1	2.06	2	2.06	4.33	255.2	2756
SAT A8-5-255-FEE-LKE	642	68.13	33.5	9.44	9.25	8.44	6.69	17.69	1.63	5.06	2.38	1	2.06	2	2.06	4.33	255.5	2756
SAT A8-5-269-FEE	666	69.75	35.4	9.44	9.25	8.44	6.69	17.69	1.63	4	2.38	1	2.06	2	2.06	4.33	268.7	2756
SAT A8-5-269-FEE-LKE	668	70.88	35.4	9.44	9.25	8.44	6.69	17.69	1.63	5.06	2.38	1	2.06	2	2.06	4.33	268.7	2756
SAT A8-5-279-FEE-LK	694	77.63	36.7	9.44	9.25	8.44	6.69	17.69	1.63	9.50	2.38	1	2.06	2	2.06	4.33	279.1	2466
SAT A8-5-281-FEE	690	72.13	36.7	9.44	9.25	8.44	6.69	17.69	1.63	4	2.38	1	2.06	2	2.06	4.33	280.7	2466
SAT A9-5-230-FEE	697	61.13	38.6	10.63	10.19	9.44	6.69	17.69	2.06	4	2.50	1	2.06	2	2.44	5.08	229.7	3191
SAT A9-5-245-FEE	734	64.25	41.2	10.63	10.19	9.44	6.69	17.69	2.06	4	2.50	1	2.06	2	2.44	5.08	245.2	3191
SAT A9-5-255-FEE	765	67	43.1	10.63	10.19	9.44	6.69	17.69	2.06	4	2.50	1	2.06	2	2.44	5.08	255.2	3191
SAT A9-5-269-FEE	796	69.75	45.2	10.63	10.19	9.44	6.69	17.69	2.06	4	2.50	1	2.06	2	2.44	5.08	268.7	3191
SAT A9-5-269-FEE-LK	802	75.69	45.2	10.63	10.19	9.44	6.69	17.69	2.06	4	2.50	1	2.06	2	2.44	5.08	268.7	2756
SAT A9-5-279-FEE-LK	829	77.63	47.0	10.63	10.19	9.44	6.69	17.69	2.06	9.50	2.50	1	2.06	2	2.44	5.08	279.1	2756
SAT A9-5-281-FEE	825	72.13	47.3	10.63	10.19	9.44	6.69	17.69	2.06	4	2.50	1	2.06	2	2.44	5.08	280.7	2756
SAT A9-5-299-FEE-LK	893	82.75	50.5	10.63	10.19	9.44	6.69	17.69	2.06	9.13	2.50	1	2.06	2	2.44	5.08	299.1	2466
SAT A9-5-300-FEE	886	77.63	50.5	10.63	10.19	9.44	6.69	17.69	2.06	4	2.50	1	2.06	2	2.44	5.08	300.2	2466
SAT A9-5-320-FEE	933	81.56	53.9	10.63	10.19	9.44	6.69	17.69	2.06	4	2.50	1	2.06	2	2.44	5.08	320.2	2176
SAT A9-5-336-FEE	981	85.88	56.5	10.63	10.19	9.44	6.69	17.69	2.06	4	2.50	1	2.06	2	2.44	5.08	335.7	1958
SAT A9-5-336-FEE-LK	983	87.06	56.5	10.63	10.19	9.44	6.69	17.69	2.06	4	2.50	1	2.06	2	2.44	5.08	335.7	1958

TELESCOPIC TYPE

FRONT END WITH OUTER COVER

(TRUNNION MOUNT)



Type:	Front-End Telescopic Hydraulic Cylinder
Action:	Single Acting
Stages	3 - 5
Rod end:	Trunnion mount
Base end:	Trunnion mount
Nominal Stroke	100" - 194"
Rod:	Standard Chrome Plated Rod Steel 1045
Application:	HYVA FC replacement



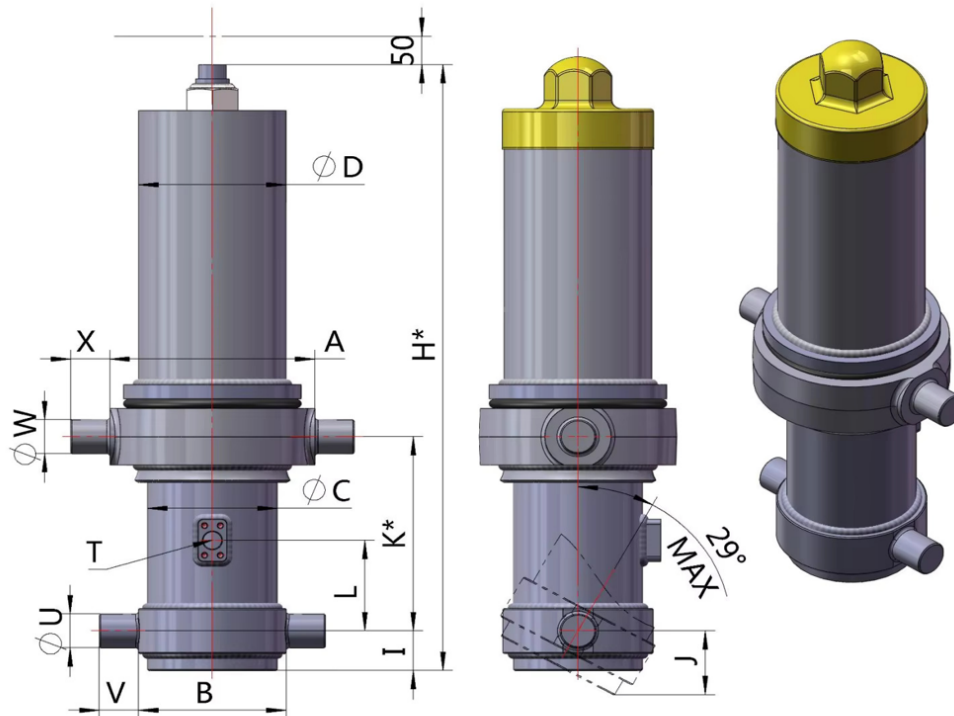
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* incl. 20 [-5; +30] mm pull out.

FRONT END SINGLE ACTING TELESCOPIC CYLINDER WITH OUTER COVER

MODEL	PRESSURE (BAR)	MAX THRUST (KN)	A	B	C	D	H	I	J	K	L	T	U	V	W	X
SAT 129-3-3460-FC	190	248.2	340	201	151	219	1484	60	91	343	160	1"SAE	60	65	60	65
SAT 129-3-3880-FC	190	248.2	340	201	151	219	1644	60	91	343	160	1"SAE	60	65	60	65
SAT 129-3-4270-FC	190	248.2	340	201	151	219	1744	60	91	343	160	1"SAE	60	65	60	65
SAT 129-4-4280-FC	190	248.2	340	201	151	219	1339	60	91	343	160	1"SAE	60	65	60	65
SAT 129-4-4620-FC	190	248.2	340	201	151	219	1484	60	91	343	160	1"SAE	60	65	60	65
SAT 129-4-5180-FC	190	248.2	340	201	151	219	1644	60	91	343	160	1"SAE	60	65	60	65
SAT 149-3-3880-FC	190	331.2	340	201	171	245	1644	60	96	343	160	1"SAE	60	65	60	65
SAT 149-3-4270-FC	190	331.2	340	201	171	245	1774	60	96	343	160	1"SAE	60	65	60	65
SAT 149-4-4280-FC	190	331.2	340	201	171	245	1399	60	96	343	160	1"SAE	60	65	60	65
SAT 149-4-4620-FC	190	331.2	340	201	171	245	1484	60	96	343	160	1"SAE	60	65	60	65
SAT 149-4-4940-FC	190	331.2	340	201	171	245	1564	60	96	343	160	1"SAE	60	65	60	65
SAT 149-4-5180-FC	190	331.2	340	201	171	245	1644	60	96	343	160	1"SAE	60	65	60	65
SAT 149-4-5460-FC	190	331.2	340	201	171	245	1714	60	96	343	160	1"SAE	60	65	60	65
SAT 169-4-4280-FC	190	426	340	245	192	245	1394	65	106	343	160	1"SAE	60	65	60	65
SAT 169-4-4620-FC	190	426	340	245	192	245	1479	65	106	343	160	1"SAE	60	65	60	65
SAT 169-4-4940-FC	190	426	340	245	192	245	1559	65	106	343	160	1"SAE	60	65	60	65
SAT 169-4-5180-FC	190	426	340	245	192	245	1639	65	106	343	160	1"SAE	60	65	60	65
SAT 169-4-5460-FC	190	426	340	245	192	245	1709	65	106	343	160	1"SAE	60	65	60	65
SAT 169-5-5355-FC	190	426	340	245	192	245	1394	65	106	343	160	1"SAE	60	65	60	65
SAT 169-5-5780-FC	190	426	340	245	192	245	1479	65	106	343	160	1"SAE	60	65	60	65
SAT 169-5-6180-FC	190	426	340	245	192	245	1559	65	106	343	160	1"SAE	60	65	60	65
SAT 169-5-6830-FC	190	426	340	245	192	245	1709	65	106	343	160	1"SAE	60	65	60	65
SAT 169-5-7130-FC	190	426	340	245	192	245	1769	65	106	343	160	1"SAE	60	65	60	65
SAT 169-5-7630-FC	170	381.2	340	245	192	245	1899	65	106	343	160	1"SAE	60	65	60	65
SAT 169-5-8130-FC	170	381.2	340	245	192	245	1999	65	106	343	160	1"SAE	60	65	60	65
SAT 169-5-9030-FC	150	336.3	340	245	192	245	2209	65	106	343	160	1"SAE	60	65	60	65
SAT 169-5-9530-FC	135	302.7	340	245	192	245	2309	65	106	343	160	1"SAE	60	65	60	65
SAT 191-4-5460-FC	190	544.1	360	245	215	273	1712	70	116	343	160	1"SAE	60	65	60	65
SAT 191-5-5780-FC	190	544.1	360	245	215	273	1482	70	116	343	160	1"SAE	60	65	60	65
SAT 191-5-6180-FC	190	544.1	360	245	215	273	1562	70	116	343	160	1"SAE	60	65	60	65
SAT 191-5-7130-FC	190	544.1	360	245	215	273	1772	70	116	343	160	1"SAE	60	65	60	65
SAT 191-5-7630-FC	190	544.1	360	245	215	273	1902	70	116	343	160	1"SAE	60	65	60	65
SAT 191-5-8130-FC	190	544.1	360	245	215	273	2002	70	116	343	160	1"SAE	60	65	60	65
SAT 191-5-9030-FC	170	486.8	360	245	215	273	2212	70	116	343	160	1"SAE	60	65	60	65
SAT 191-5-9530-FC	150	430	360	245	215	273	2312	70	116	343	160	1"SAE	60	65	60	65
SAT 214-5-9030-FC	170	611.1	360	270	242	273	2197	85	135	343	160	1"SAE	65	65	60	65
SAT 214-5-9530-FC	150	539.2	360	270	242	273	2297	85	135	343	160	1"SAE	65	65	60	65
SAT 214-5-12200-FC	150	539.2	360	270	242	273	2967	85	135	343	160	1"SAE	65	65	60	65

TELESCOPIC TYPE

FRONT END WITH SINGLE EYE

(TRUNNION BASE)



Type:	Front-End Telescopic Hydraulic Cylinder
Action:	Single Acting
Stages	3 - 5
Rod end:	Pin mount
Base end:	Trunnion mount
Nominal Stroke	100" - 194"
Rod:	Standard Chrome Plated Rod Steel 1045
Application:	HYVA FE replacement



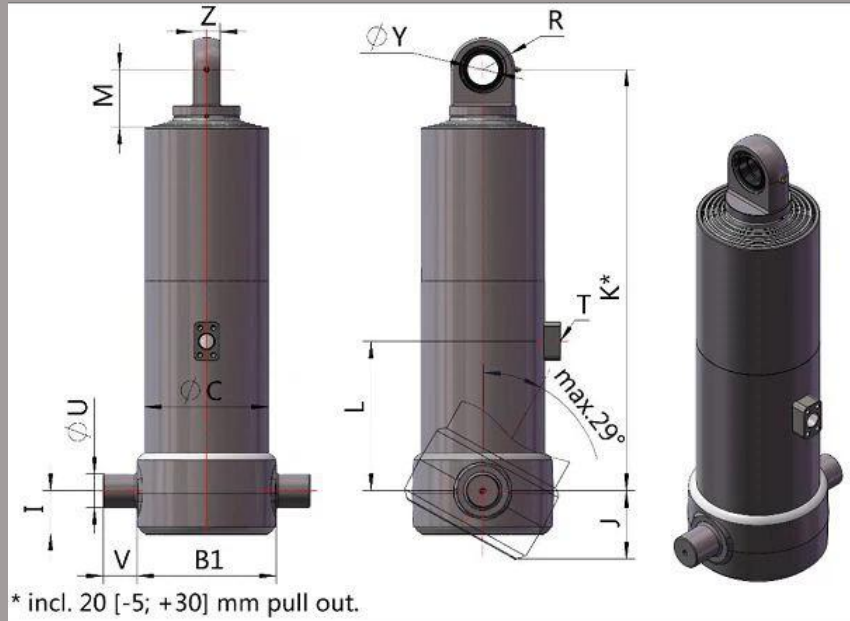
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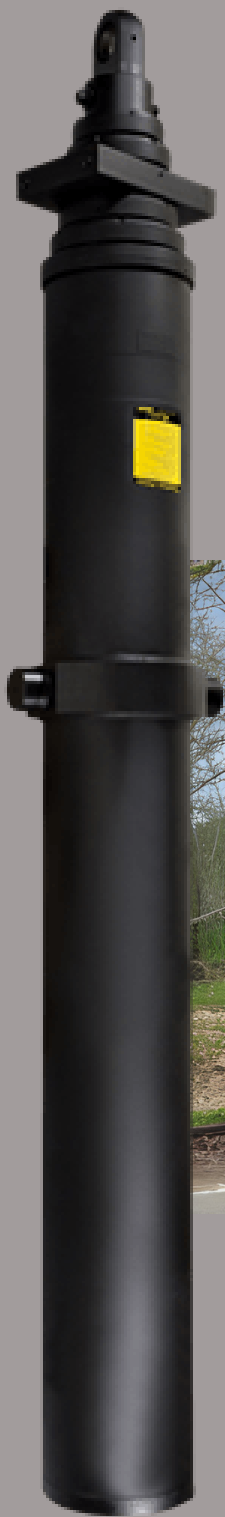




FRONT END SINGLE ACTING TELESCOPIC CYLINDER WITH SINGLE EYE															
MODEL	PRESSURE (BAR)	MAX TRHUST (KN)	B1	C	I	J	K	M	R	L	T	U	V	Y	Z
SAT 110-3-3205-FE	190	180.5	163	129	60	91	1449	100	52	160	I"SAE	60	65	50	42
SAT 110-3-3460-FE	190	180.5	163	129	60	91	1609	100	52	160	I"SAE	60	65	50	42
SAT 129-3-3460-FE	190	248.2	201	151	60	91	1449	100	52	160	I"SAE	60	65	50	42
SAT 129-3-3880-FE	190	248.2	201	151	60	91	1609	100	52	160	I"SAE	60	65	50	42
SAT 149-3-2900-FE	190	331.2	201	171	60	96	1320	135	52	160	I"SAE	60	65	50	42
SAT 149-3-3200-FE	190	331.2	201	171	60	96	1420	135	52	160	I"SAE	60	65	50	42
SAT 149-3-3500-FE	190	331.2	201	171	60	96	1520	135	52	160	I"SAE	60	65	50	42
SAT 149-3-3880-FE	190	331.2	201	171	60	96	1644	135	52	160	I"SAE	60	65	50	42
SAT 149-3-4280-FE	190	331.2	201	171	60	96	1777	135	52	160	I"SAE	60	65	50	42
SAT 149-4-4280-FE	190	331.2	201	171	60	96	1450	160	52	160	I"SAE	60	65	50	42
SAT 149-4-4620-FE	190	331.2	201	171	60	96	1484	135	52	160	I"SAE	60	65	50	42
SAT 149-4-4940-FE	190	331.2	201	171	60	96	1529	100	52	160	I"SAE	60	65	50	42
SAT 169-4-4280-FE	190	426	245	192	65	106	1394	135	52	160	I"SAE	60	65	50	42
SAT 169-4-4620-FE	190	426	245	192	65	106	1479	135	52	160	I"SAE	60	65	50	42
SAT 169-4-4940-FE	190	426	245	192	65	106	1529	100	52	160	I"SAE	60	65	50	42
SAT 169-4-5180-FE	190	426	245	192	65	106	1604	100	52	160	I"SAE	60	65	50	42
SAT 169-5-5355-FE	190	426	245	192	65	106	1394	100	52	160	I"SAE	60	65	50	42
SAT 169-5-5780-FE	190	426	245	192	65	106	1459	100	52	160	I"SAE	60	65	50	42
SAT 169-5-6180-FE	190	426	245	192	65	106	1497	100	52	160	I"SAE	60	65	50	42
SAT 169-5-6830-FE	190	426	245	192	65	106	1674	100	52	160	I"SAE	60	65	50	42
SAT 169-5-7130-FE	190	426	245	192	65	106	1734	100	52	160	I"SAE	60	65	50	42
SAT 169-5-7630-FE	170	381.2	245	192	65	106	1834	100	52	160	I"SAE	60	65	50	42
SAT 169-5-8130-FE	170	381.2	245	192	65	106	1934	100	52	160	I"SAE	60	65	50	42
SAT 191-5-6180-FE	190	544.1	245	215	70	116	1527	100	52	160	I"SAE	60	65	50	42
SAT 191-5-7130-FE	190	544.1	245	215	70	116	1717	100	52	160	I"SAE	60	65	50	42
SAT 191-5-7630-FE	190	544.1	245	215	70	116	1817	100	52	160	I"SAE	60	65	50	42
SAT 191-5-9030-FE	150	429.6	245	215	70	116	2177	100	52	160	I"SAE	60	65	50	42
SAT 214-5-7130-FE	190	683	270	242	85	135	1722	100	62	160	I"SAE	65	65	60	52
SAT 214-5-7630-FE	170	611.1	270	242	85	135	1857	100	62	160	I"SAE	65	65	60	52

TELESCOPIC TYPE

DOUBLE ACTING CYLINDER



Type:	Telescopic Hydraulic Cylinder
Action:	Double Acting
Rod End:	Configurable (piston eye, clevis, trunnion, or custom per application)
Base End:	Configurable (cross tube, trunnion, flange, or custom)
Bore:	2.50" to 10.50"
Stroke:	Up to 500"
Tubing:	High-strength D.O.M. (Drawn Over Mandrel)
Pressure:	2000 PSI



SAME DAY
SHIPPING



1 YEAR
WARRANTY



CONTACT NOW

