



I.T.I. HYDRAULIK

CATALOGUE

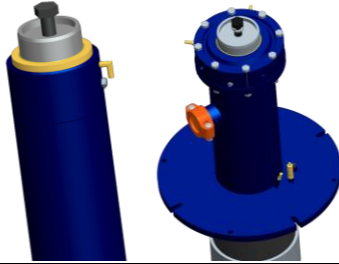

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I.T.I. HYDRAULIK JACK UNITS

With 35 years of experience in fabricating & servicing hydraulic equipment, I.T.I. HYDRAULIK carries a complete line of jacks for hydraulic elevators. Resistance and capacity calculations are made for every quotation request. The product we offer is fully warranted against any manufacturing defects. A large inventory of parts allows us for a quick delivery.

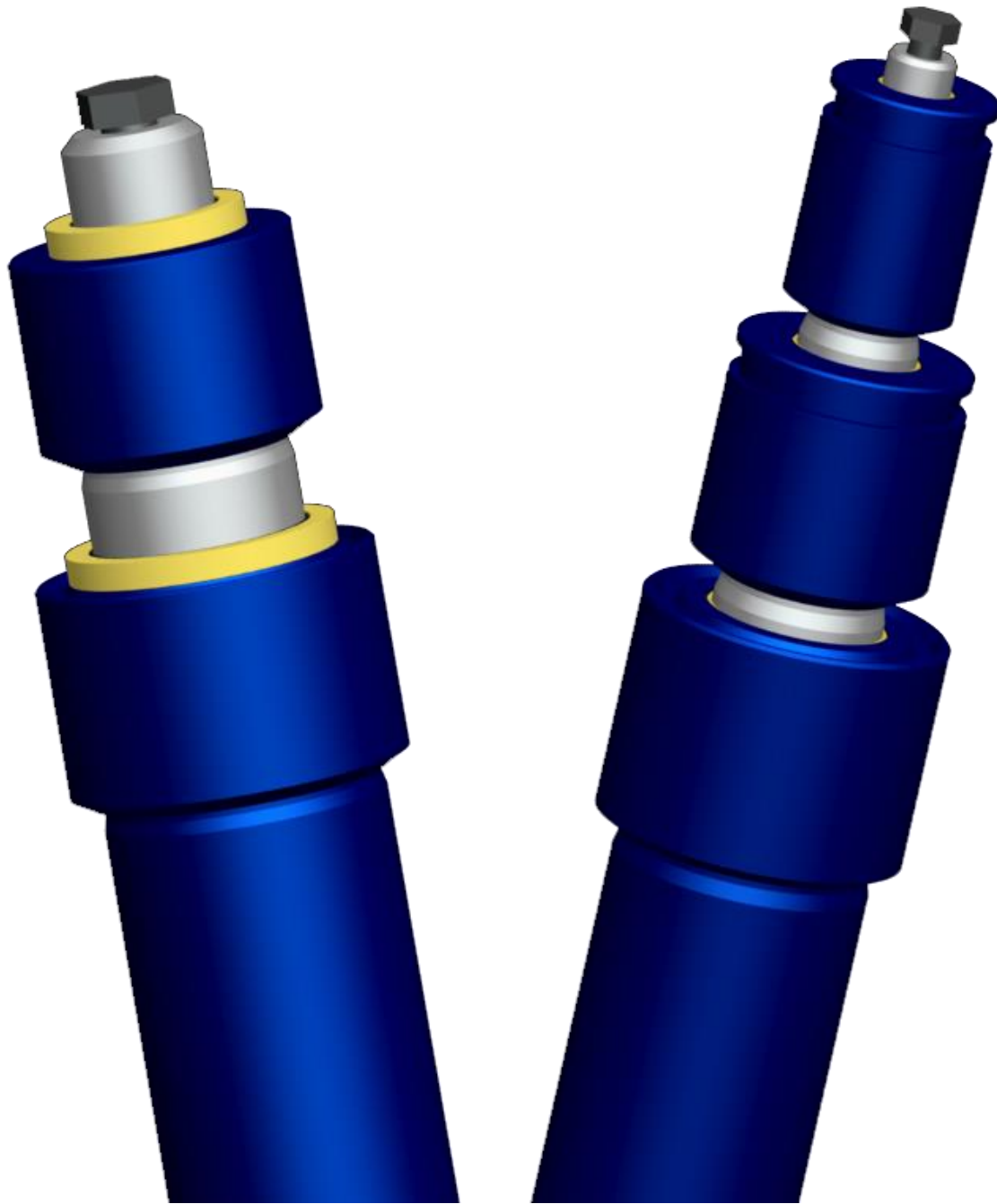
	Telescopic (2, 3 or 4 Sections)	Single Stage (Holeless or In-Ground)	Small Lift Application
			
In-ground model	Available	Available	Unavailable
Piston diameter	1" to 8" (1 st section)	3 1/2" to 15 7/8"	1 1/2" to 3 1/2"
Wall thickness	Wide range of sizes	Wide range of sizes	Wide range of sizes
Gross load	Up to 30 000 lbs	Up to 100 000 lbs	Up to 5 000 lbs
Material and welding	Only highest quality material is used. Each jack is tested and assembled according to the CSA B-44 (Canada) and ASME A-17.1 (American) standards. Compliance with Canadian Welding Bureau Certification.		
Piston	Each piston is finished and polished with a specially designed belt in order to eliminate friction. Every jack is very carefully inspected before packing.		
Cylinder joints		Three types available: Threaded (with or without welding required), welded or bolted ring. The joints of the jack are fabricated so that adjustments are more precise, without any danger of jamming during assembly. Therefore, the joints are more rigid.	
Corrosion protection	We can protect the jack against corrosion caused by chemical agents or electrolysis with a PVC casing or a tape coat.		
Additional information	Followers guides can be included for each section to provide an increase stiffness of the cylinder during the extension. While deploying, the telescopic jack in two, three or four sections keeps a constant speed over its entire travel. It is thus suitable for merchandise elevators as well as for passengers. The synchronized jack can be installed behind, beside or under the elevator car as well as in restricted areas. When it is installed under the car, it reduces the hole by 65% to 75%.	For alignment of the jack after installation, a special feature is built-in the casing to keep the piston centered. When retracted, all you have to do is to put a plumb on top of the piston. The casing may be partially in-ground for the holeless jack.	Low cost, same quality.

I.T.I. HYDRAULIK can build other models with special sizes upon request



I.T.I. HYDRAULIK (Les Industries Tournébo Inc.)
 3611 Route 346, STE-JULIENNE (QUÉBEC)
 CANADA J0K 2T0
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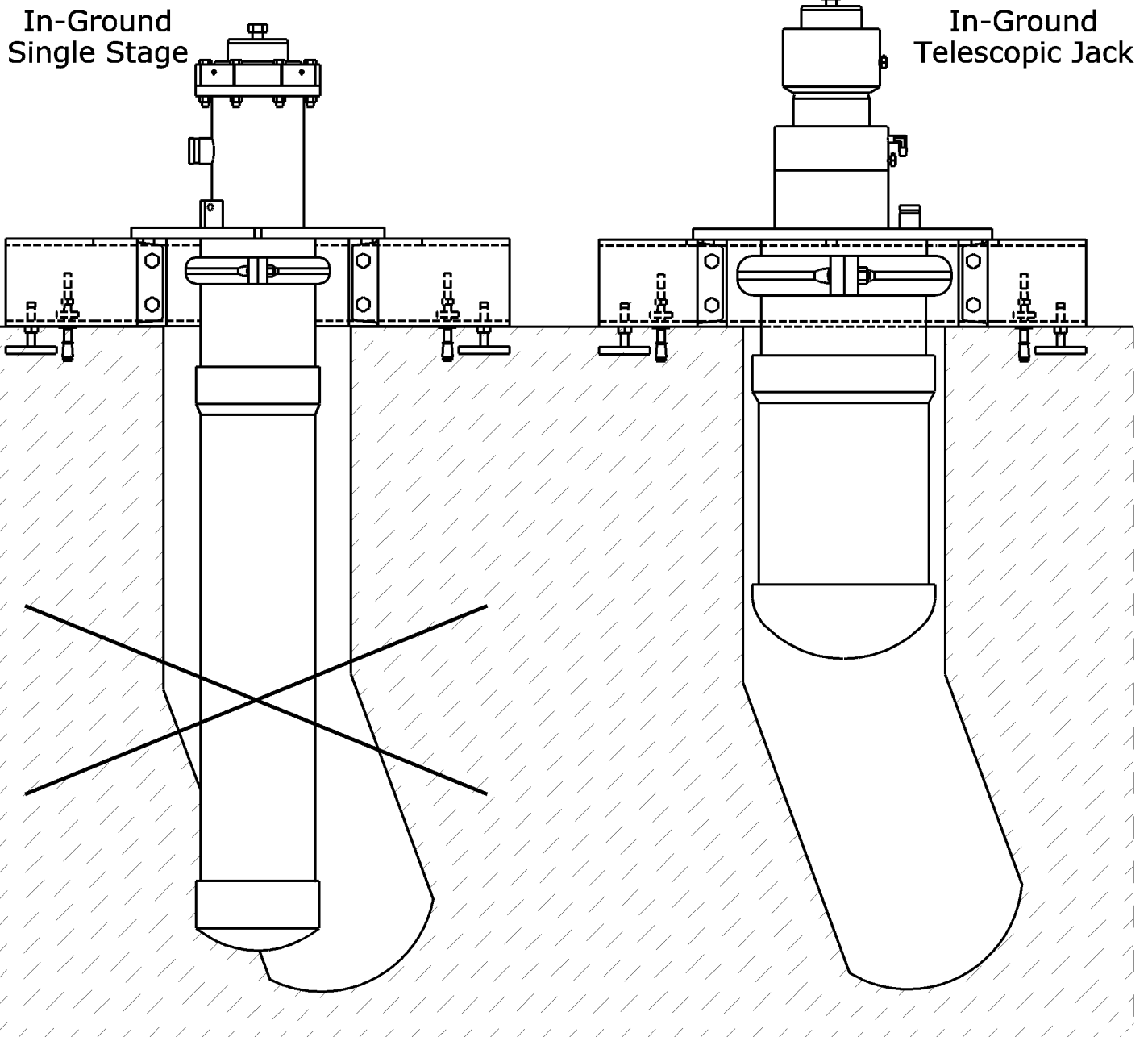
SYNCHRONIZED TELESCOPIC JACK



- Manufactured in 2, 3 or 4 sections
- Assembled, tested, and adjusted at the factory
- Reduce the hole by 65% to 75% for holed option
- Constant speed while ascending/descending
- Up to 30 000 lbs capacity



ADVANTAGES OF OUR IN-GROUND TELESCOPIC JACKS



Advantages:

Time and cost of boring	The in ground hole depth is reduced by at least 50 percent.
Space and handling	It's closed length is just about half of the required stroke.
Steadiness	Keeps a constant speed throughout the entire travel, up to 80'.
Time and cost of assembly	Completely assembled and tested at our site.
Corrosion protection	With a PVC envelope as per codes CSA-B44 and ASME 17.1.
Sealing performance	Improved much beyond standards thanks to the latest seals material technology.
Technical support	This is our area of expertise. Immediate assistance with advice and spare parts.

All at **no extra cost**



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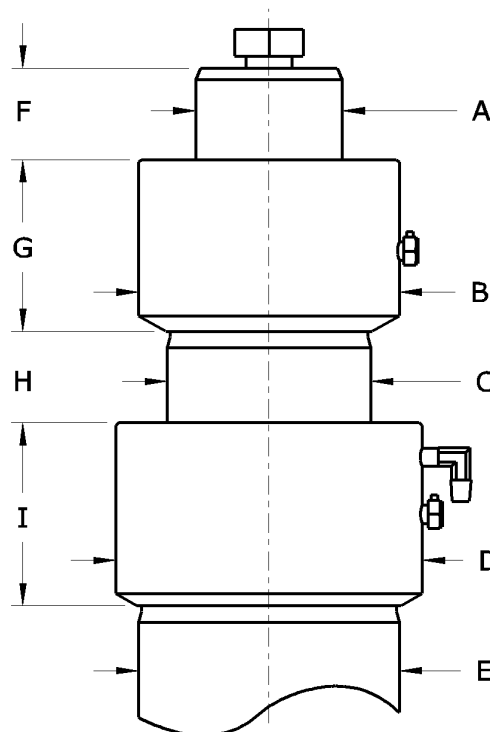
SYNCHRONIZED TELESCOPIC JACK - 2 SECTIONS

ϕ A	ϕ B	ϕ C	ϕ D	ϕ E	F	G	H	I
1 1/2 SP	3	2	4	3	1 1/4	3 3/4	1 1/4	4
1 1/2	3 1/2	2 5/8	4 1/2	3 1/2	1 1/2	3 3/4	1 1/2	4
1 3/4	4	2 3/4	5	3 3/4	1 1/2	3 3/4	1 1/2	4
2	4	2 7/8	5	4	1 1/2	3 3/4	1 1/2	4
2 SP	4 1/2	3 1/2	5 1/2	4 1/2	2	3 3/4	2	4
2 1/2	5	3 3/4	6	5	2	4	2	4 1/4
3	5	4	6 1/2	5 1/2	2	4	2	4 1/4
3 SD	5 1/2	4 5/8	7	6	2	4	2	4 1/4
3 1/2 SP	6 1/2	5 1/2	8	7	2	4	2	4 1/4
4	7	5 3/4	8 1/2	7 1/2	2	4 1/4	2	4 1/2
4 1/2	7	6	8	8	2	4 1/2	2	5 1/2
5	7 1/2	6 1/4	9	9	2	4 1/2	2	5 1/2
5 SP	8 1/2	7 1/2	10	10	2	4 1/2	2	5 3/4
5 1/2	7 1/2	6 1/2	9 1/2	9 1/2	2	4 1/2	2	5 3/4
6	9	8	11	11	2	4 1/2	2	5 3/4

Other models available upon request

UPPER PISTON WALL THICKNESSES AVAILABLE:

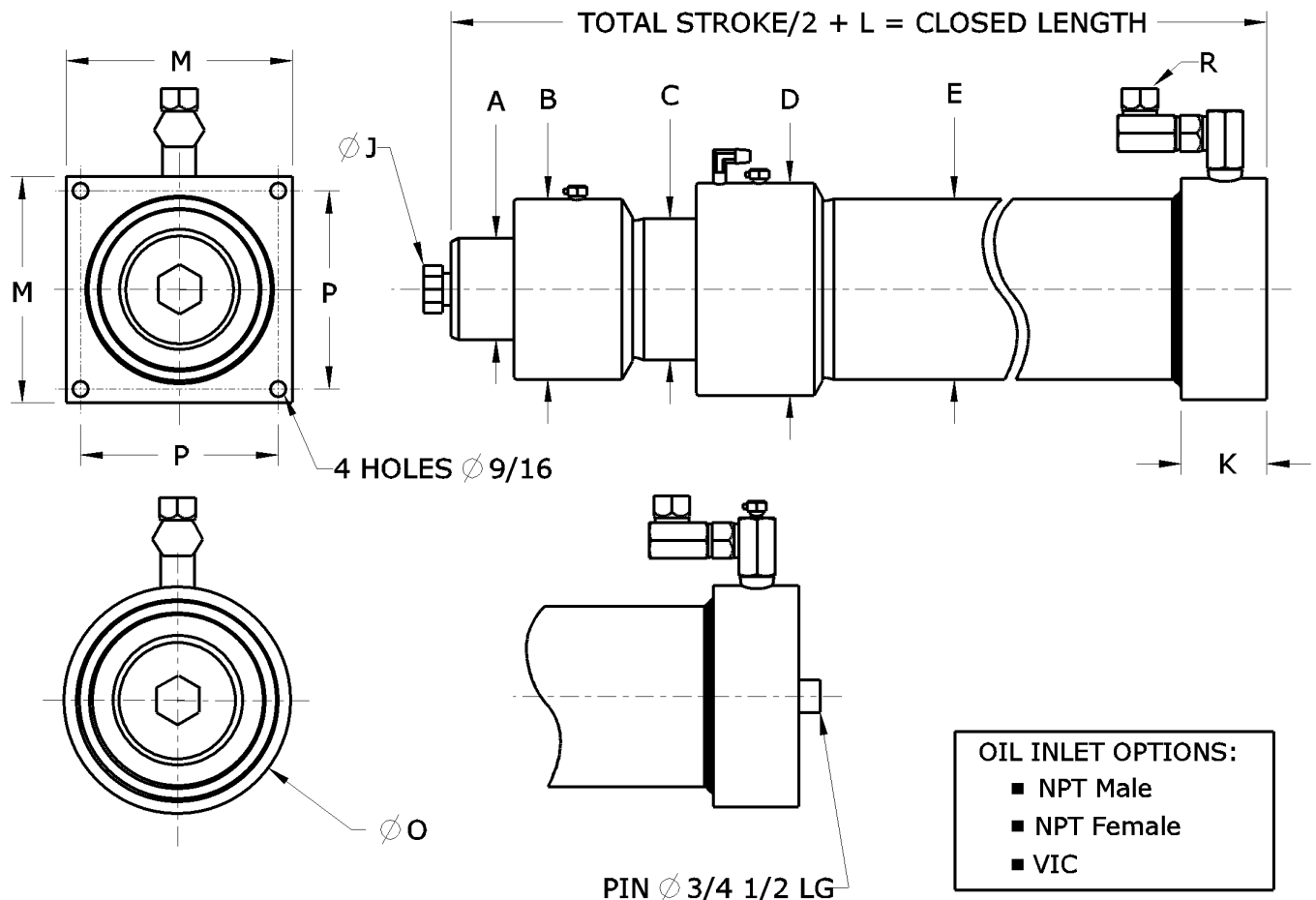
- 1/4
- 3/8
- 1/2
- SOLID (Only for ϕ 2 1/2 and smaller)



SYNCHRONIZED TELESCOPIC JACK - 2 SECTIONS

A	J	K	L	M	O	P	R
∅ PISTON	∅ BOLT	BASE THICKNESS	DEAD LENGTH	BASE WIDTH	∅ ROUND BASE	HOLES DISTANCE	∅ OIL INLET
1 1/2 SP	1/2 NC	1 1/2	16	4 X 4	4	3	1/2 NPT
1 1/2	1/2 NC	1 1/2	17	6 X 6	4 1/2	5	1/2 NPT
1 3/4	3/4 NC	1 1/2	17	6 X 6	5	5	1/2 NPT
2	3/4 NC	1 1/2	19	6 X 6	5	5	1/2 NPT
2 SP	3/4 NC	3	21	6 X 6	5 1/2	5	2 VIC
2 1/2	1 NC	3	23	7 X 7	6	6	2 VIC
3	1 NC	3	24	7 X 7	7	6	2 VIC
3 SD	1 NC	3	24	7 X 7	7	6	2 VIC
3 1/2 SP	1 1/4 NC	3	26	8 X 8	8	7	2 VIC
4	1 1/4 NC	3	27	9 X 9	8 1/2	8	2 VIC
4 1/2	1 1/4 NC	3	28	9 X 9	9	8	2 VIC
5	1 1/4 NC	3	31 1/2	11 X 11	11	10	2 VIC
5 SP	1 1/4 NC	3	31 1/2	11 X 11	11	10	2 VIC
5 1/2	1 1/4 NC	3	32 1/2	11 X 11	11	10	2 VIC
6	1 1/4 NC	3	36	12 X 12	12	11	2 VIC

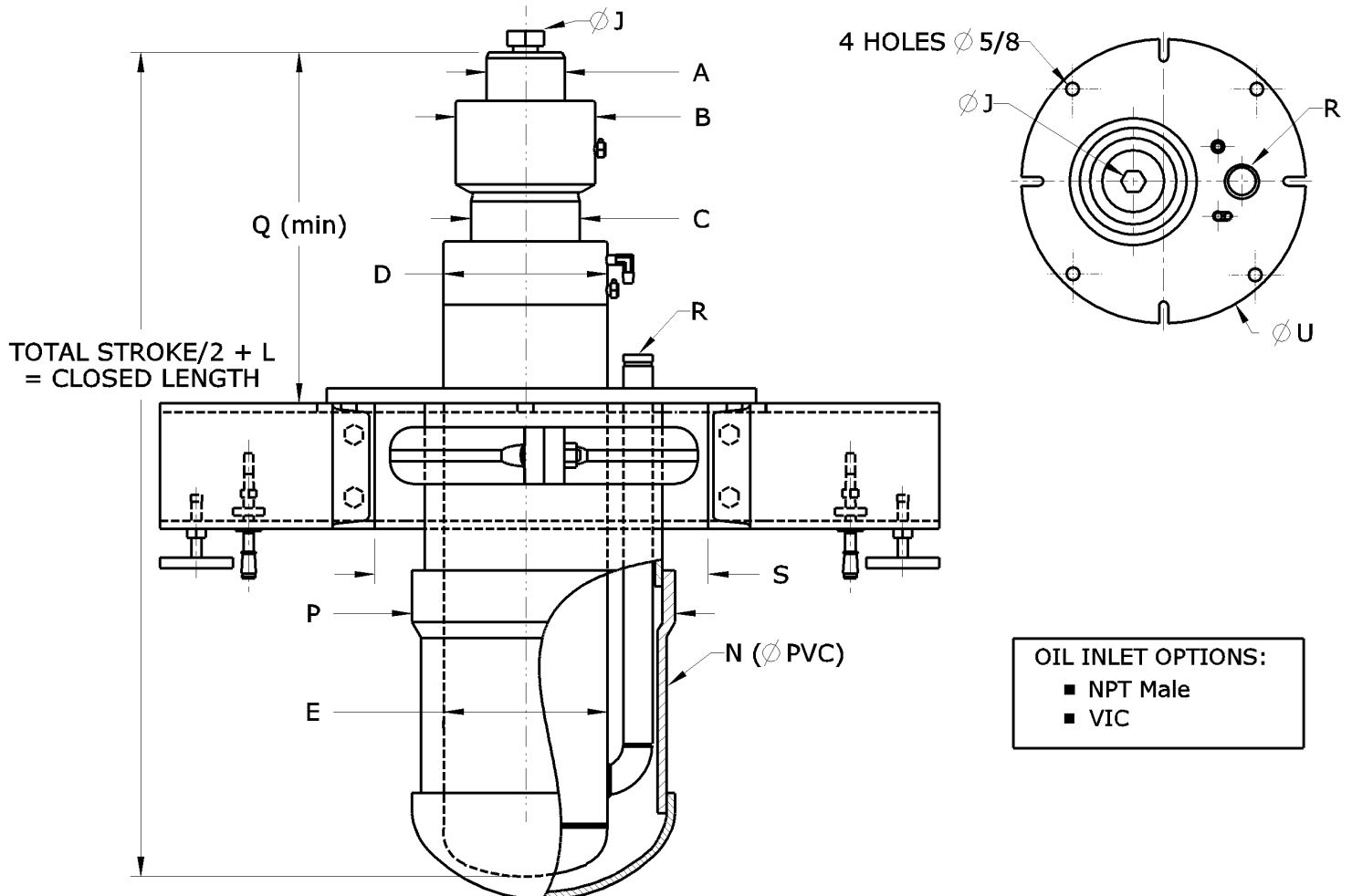
Other models available upon request



SYNCHRONIZED IN-GROUND TELESCOPIC JACK - 2 SECTIONS

A	J	L	N	P	Q	R	S	U
Ø PISTON	Ø BOLT	DEAD LENGTH	Ø PVC	Ø PVC (BELL END)	SUPPORT POSITION	OIL INLET	PIT CHANNEL OPENNING	Ø SUPPORT
1 1/2 SP	1/2 NC	18	8	9 1/4	13	3/4 NPT	15	18 3/4
1 1/2	1/2 NC	19	8	9 1/4	13	3/4 NPT	15	18 3/4
1 3/4	3/4 NC	19 1/2	8	9 1/4	13	3/4 NPT	15	18 3/4
2	3/4 NC	21 1/2	10	11 1/2	14	2 VIC	20	23 3/4
2 SP	3/4 NC	23 1/2	10	11 1/2	14	2 VIC	20	23 3/4
2 1/2	1 NC	26	10	11 1/2	14	2 VIC	20	23 3/4
3	1 NC	27	12	13 5/8	14	2 VIC	20	23 3/4
3 SD	1 NC	27 1/2	12	13 5/8	14	2 VIC	20	23 3/4
3 1/2 SP	1 1/4 NC	30	12	13 5/8	14	2 VIC	20	23 3/4
4	1 1/4 NC	31	14	15	14	2 VIC	23	26 3/4
4 1/2	1 1/4 NC	32	14	15	14	2 VIC	23	26 3/4
5	1 1/4 NC	34	16	17	14	2 1/2 VIC	23	26 3/4
5 SP	1 1/4 NC	38	16	17	14	2 1/2 VIC	23	26 3/4
5 1/2	1 1/4 NC	36	18	19 1/4	14	2 1/2 VIC	28	32
6	1 1/4 NC	39	18	19 1/4	14	2 1/2 VIC	28	32

Other models available upon request

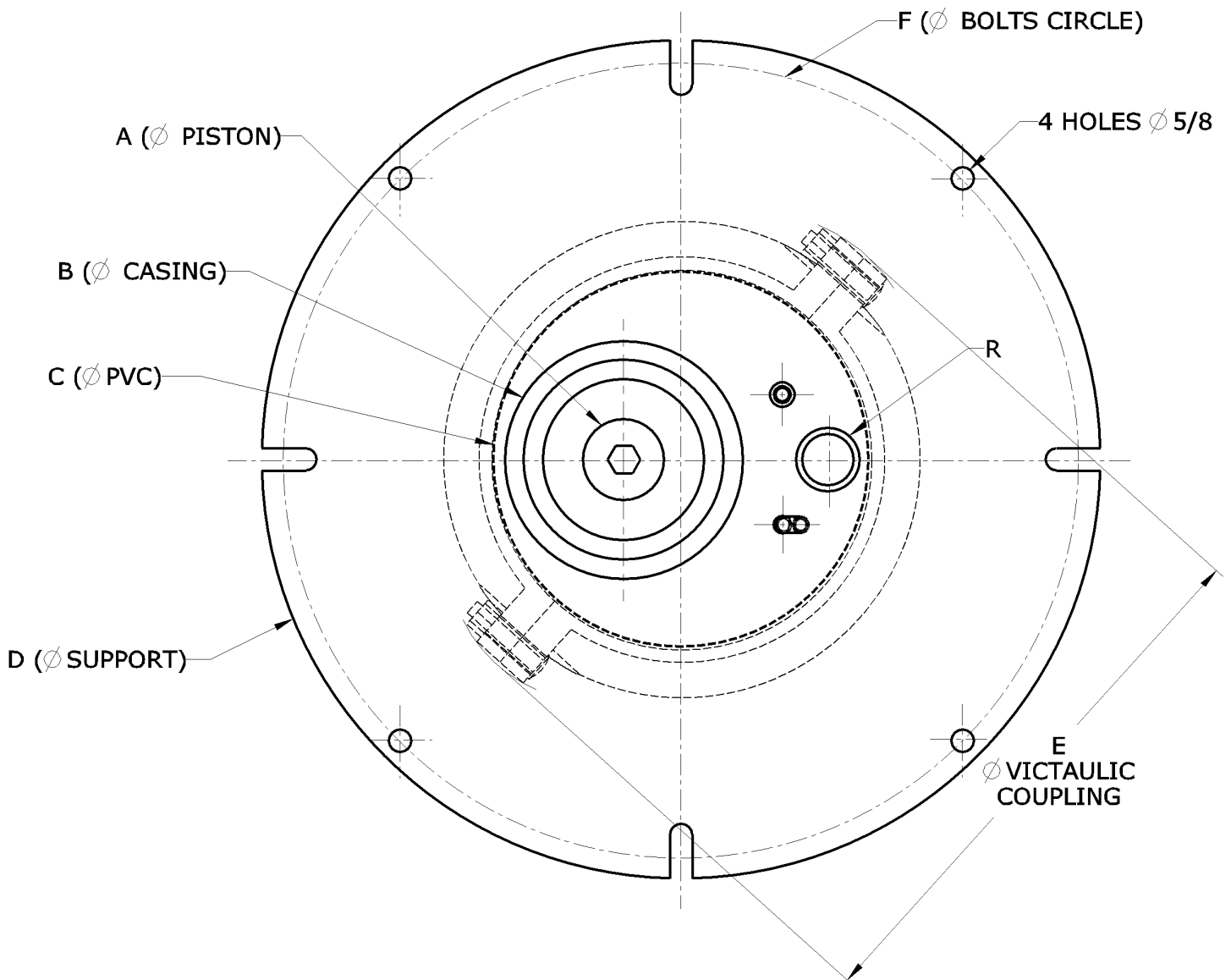


OIL INLET OPTIONS:

- NPT Male
- VIC

2 STAGE TELESCOPIC JACK - PVC AND SUPPORT

A	B	C	D	E	F	R
∅ PISTON	∅ CASING	∅ PVC	∅ SUPPORT	∅ VICTAULIC COUPLING	∅ BOLTS CIRCLE	∅ OIL INLET
2 1/2	5	10	23 3/4	16 3/4	22 1/2	2 VIC
3	5 1/2	12	23 3/4	19	22 1/2	2 VIC
3 SD	6	12	23 3/4	19	22 1/2	2 VIC
3 1/2 SP	7	12	23 3/4	19	22 1/2	2 VIC
4	7 1/2	14	26 3/4	20	25 1/2	2 VIC
4 1/2	8	14	26 3/4	20	25 1/2	2 VIC
5	9	16	26 3/4	22 3/8	25 1/2	2 VIC



CALCULATION SHEET for 2 STAGE TELESCOPIC JACK

Working pressure (psi) = **K1** X [GL(lbs)] + **K2** X [TotalStroke(ft.)]

Flow (gpm) = **K3** X [Speed(ft./min)]

Required power (HP) = [Working_Pressure(psi)] X [Flow(gpm)] X 0.0007

Required oil volume (gal) = **K3** X [TotalStroke(ft.)]

Pre-filled oil volume (gal) = **K4** X [TotalStroke(ft.)]

Table of the constants

Model	Type	1 st piston wall thickness	K1	K2	Oil required gal/Ft K3	Pre-filled oil gal/Ft K4
T2-2 1/2	A	1/4	0,138	0,851	0,413	0,216
	B	3/8		1,024		
	C	1/2		1,174		
	D	Solid		1,603		
T2-3	A	1/4	0,112	0,797	0,510	0,252
	B	3/8		0,975		
	C	1/2		1,134		
T2-3SD	A	1/4	0,093	0,734	0,617	0,346
	B	3/8		0,881		
	C	1/2		1,013		
T2-3 1/2SP	A	1/4	0,066	0,652	0,862	0,507
	B	3/8		0,780		
	C	1/2		0,896		
T2-4	A	1/4	0,057	0,622	1,000	0,563
	B	3/8		0,751		
	C	1/2		0,871		
T2-4 1/2	A	1/4	0,050	0,595	1,147	0,620
	B	3/8		0,724		
	C	1/2		0,844		
T2-5SP	A	1/4	0,035	0,525	1,652	0,997
	B	3/8		0,626		
	C	1/2		0,721		

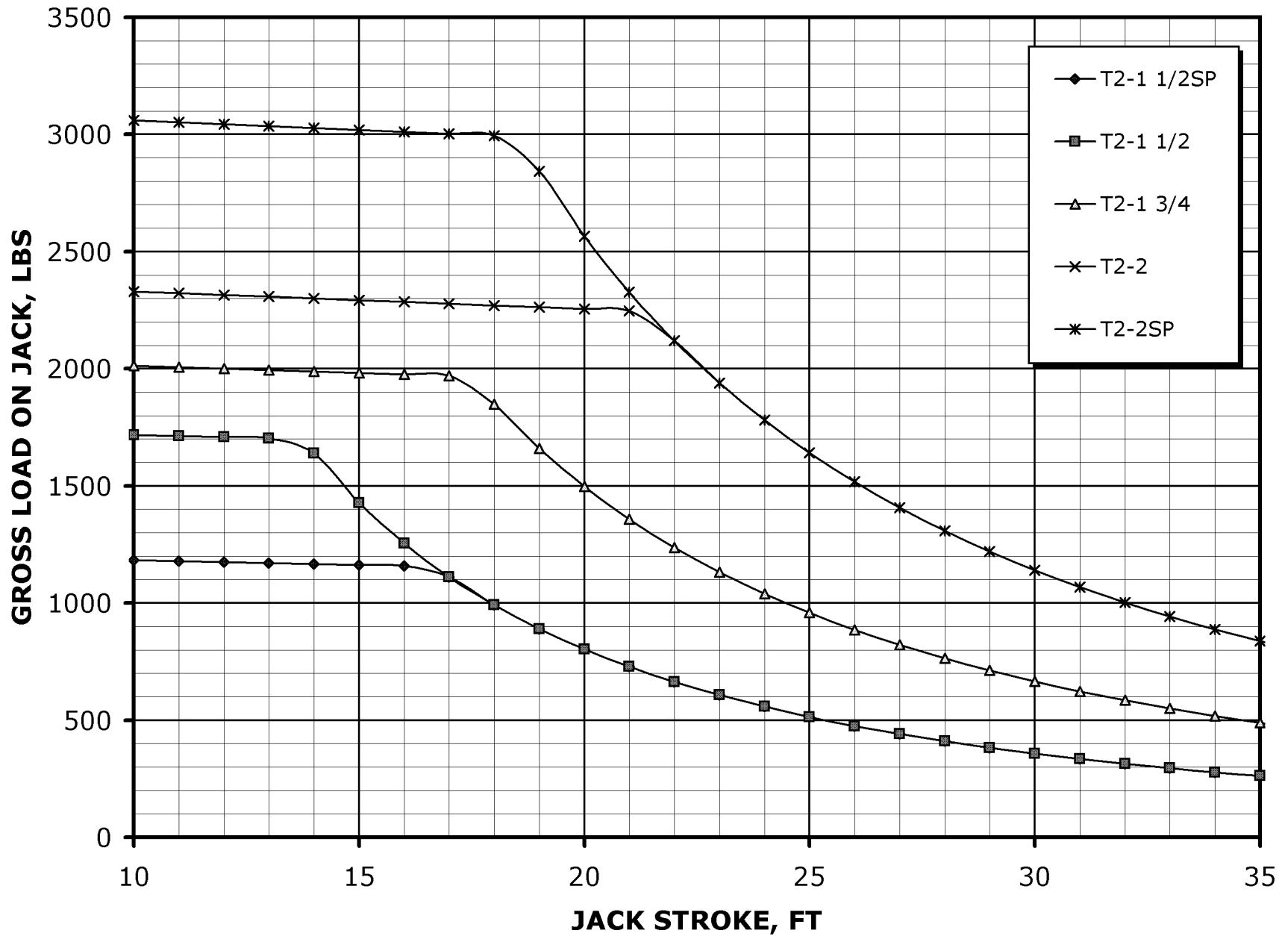
GL = Gross load (lbs)

TotalStroke = Total jack stroke (ft.)

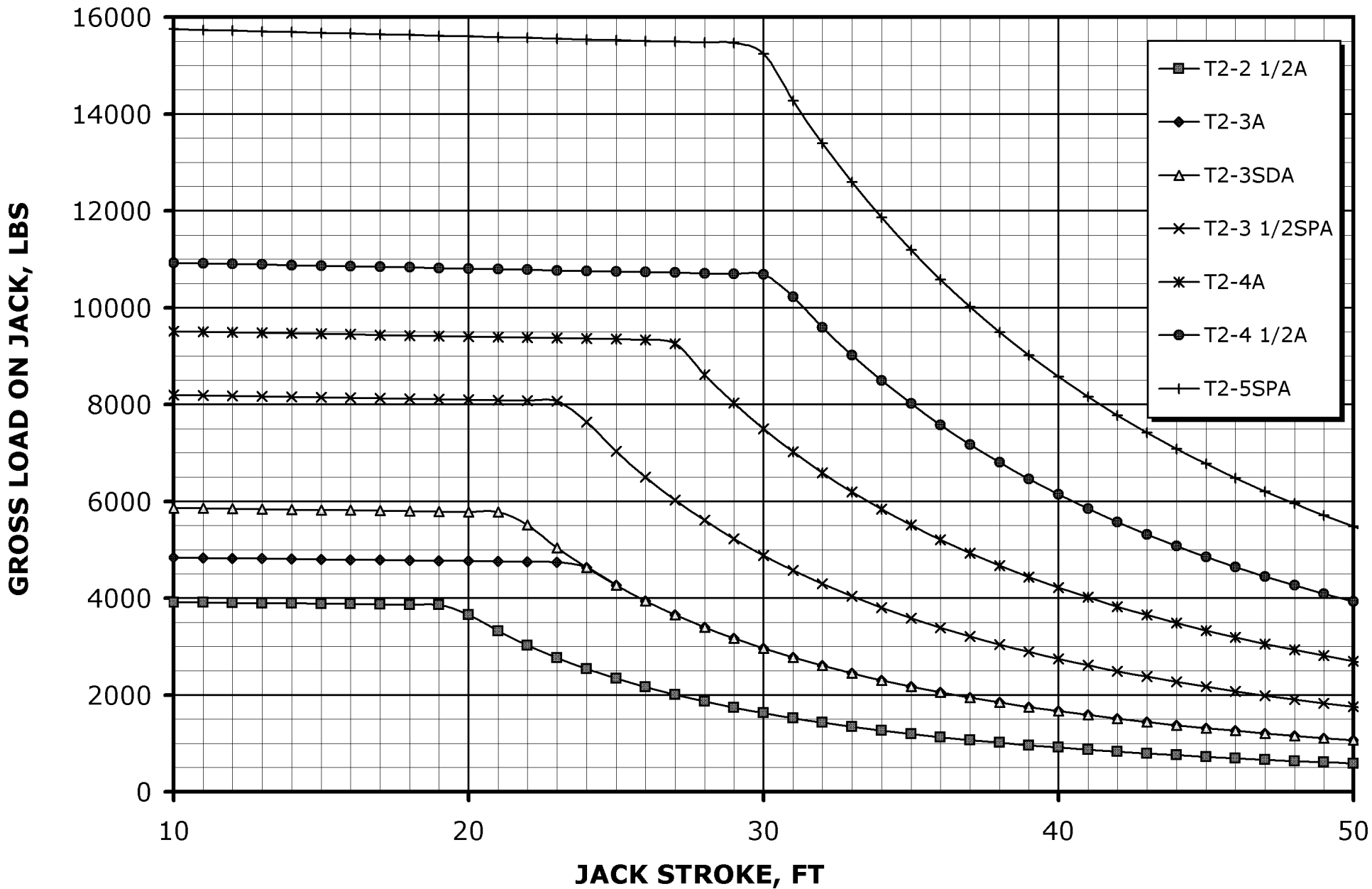
Speed = Speed deployment of the jack (ft./min)



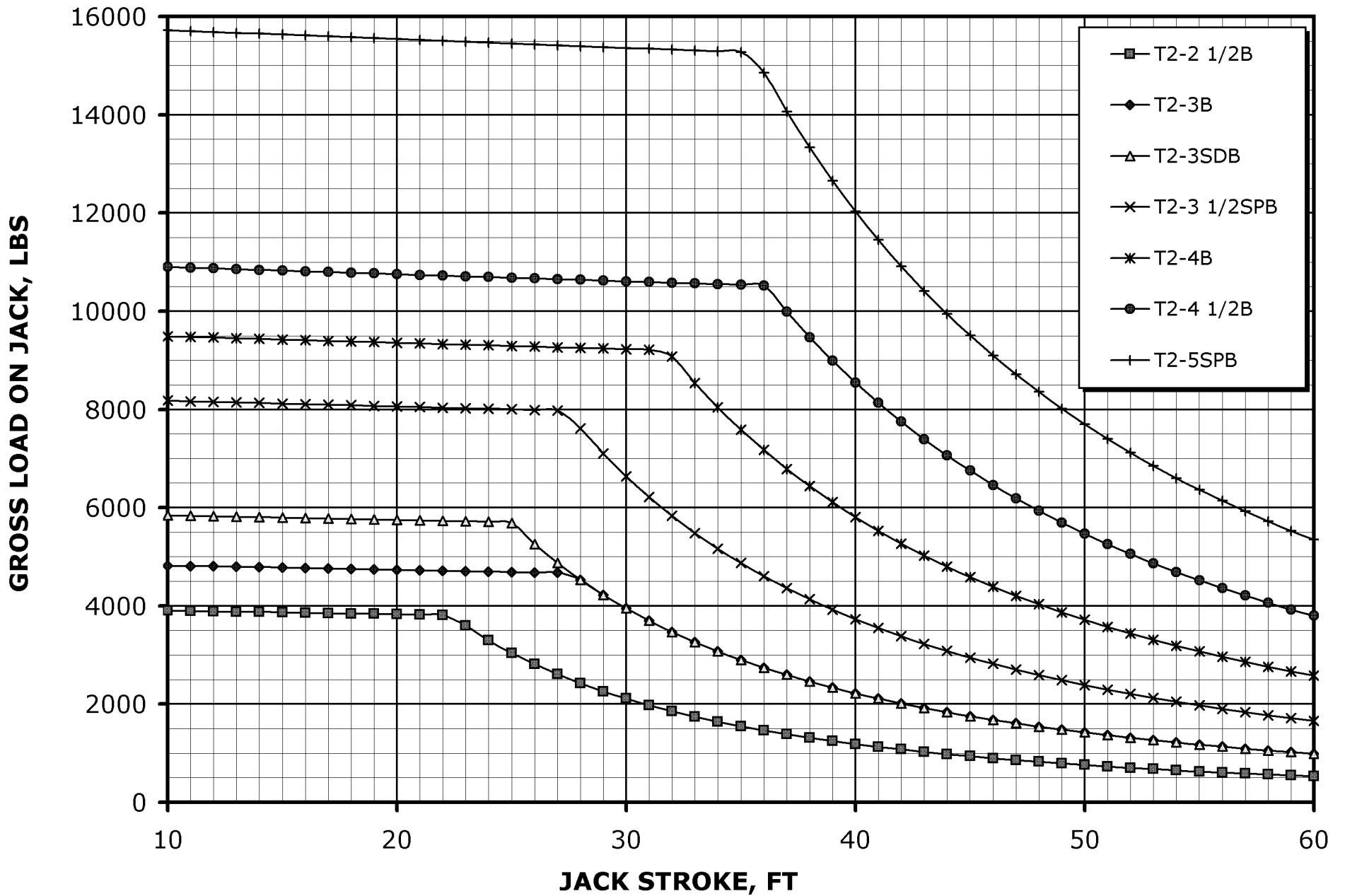
2 STAGE SYNCHRONIZED TELESCOPIC JACK SELECTION CHART
 ROD - FIRST SECTION SOLID
 (BASED ON WORKING PRESSURE OF 550 PSI)



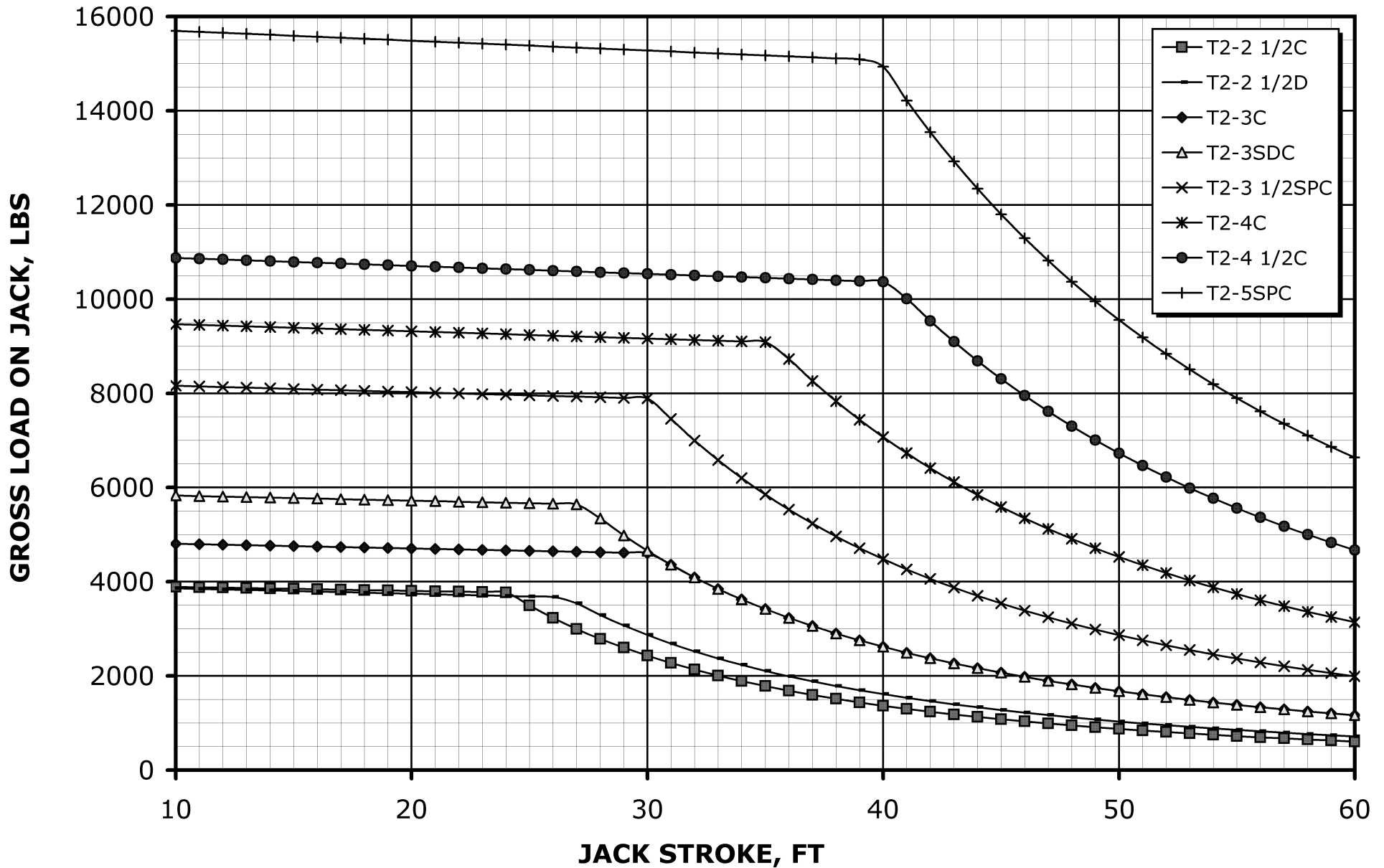
2 STAGE SYNCHRONIZED TELESCOPIC JACK SELECTION CHART
TYPE A - FIRST SECTION 1/4" WALL THICKNESS
 (BASED ON WORKING PRESSURE OF 550 PSI)



2 STAGE SYNCHRONIZED TELESCOPIC JACK SELECTION CHART
TYPE B - FIRST SECTION 3/8" WALL THICKNESS
 (BASED ON WORKING PRESSURE OF 550 PSI)



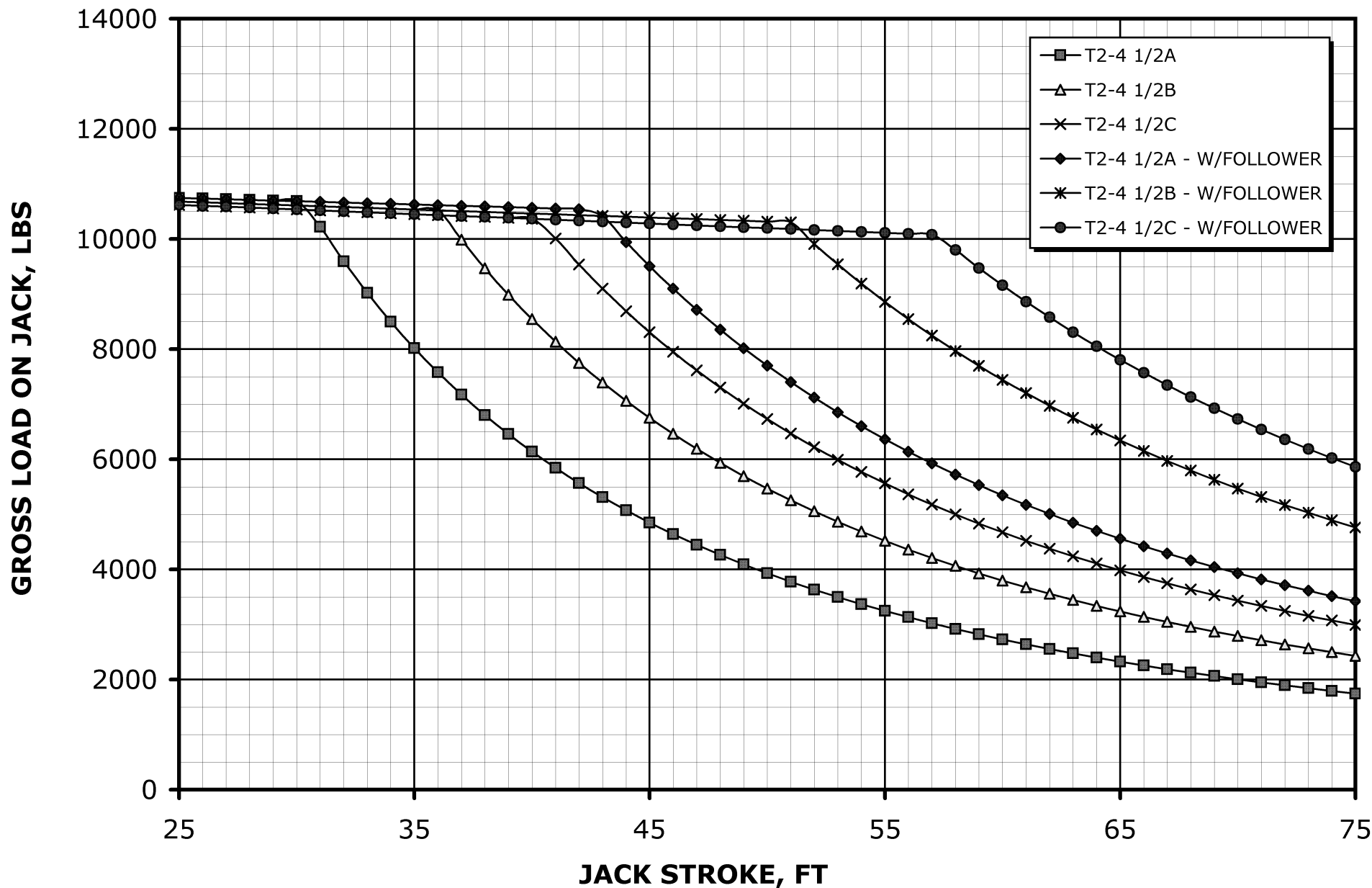
2 STAGE SYNCHRONIZED TELESCOPIC JACK SELECTION CHART
TYPE C & D* - FIRST SECTION 1/2" WALL THICKNESS
 (BASED ON WORKING PRESSURE OF 550 PSI)
 *D full section Shaft, only for T2-2 1/2



SYNCHRONIZED TELESCOPIC JACK SELECTION CHART

T2-4 1/2

(BASED ON WORKING PRESSURE OF 550 PSI)

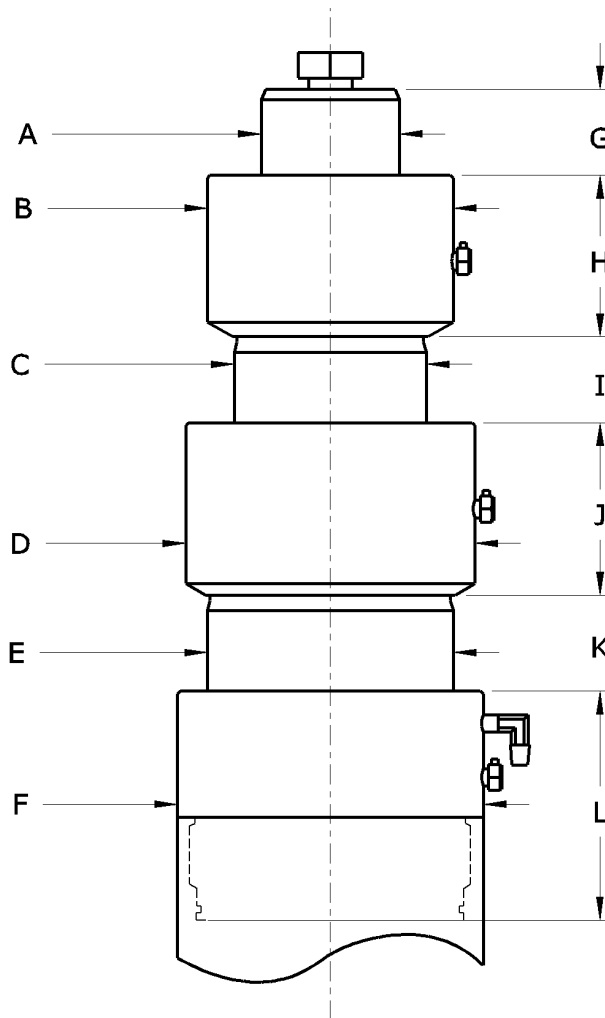


SYNCHRONIZED TELESCOPIC JACK - 3 SECTIONS

\varnothing A	\varnothing B	\varnothing C	\varnothing D	\varnothing E	\varnothing F	G	H	I	J	K	L
1 1/2 SP	3	2	4	3	4 1/2	1 1/4	3 3/4	1 1/4	4	1 1/4	4
1 3/4	4	2 3/4	5	3 3/4	5 1/2	1 1/2	3 3/4	1 1/2	4	1 1/2	4 1/4
2	4	2 7/8	5 1/2	4 1/4	6	1 1/2	3 3/4	1 1/2	4	1 1/2	4 1/2
2 SP	4 1/2	3 1/2	5 1/2	4 1/2	6 1/2	1 1/2	3 3/4	1 1/2	4	1 1/2	4 1/2
2 1/2	5	3 3/4	6 1/2	5 3/8	7 1/2	2	4	2	4 1/4	2	5 1/2
3	5	4	6 1/2	5 1/2	8	2	4	2	4 1/4	2	5 3/4
3 1/2	6	4 7/8	7 1/2	6 3/4	10	2	4	2	4 1/2	2	5 3/4
3 1/2 SP	6 1/2	5 1/2	8 1/2	7 1/2	11	2	4	2	4 1/2	2	5 3/4
4 1/2	7	6	9 1/2	8	12	2	4 1/2	2	5 1/2	2	5 3/4

Other models available upon request

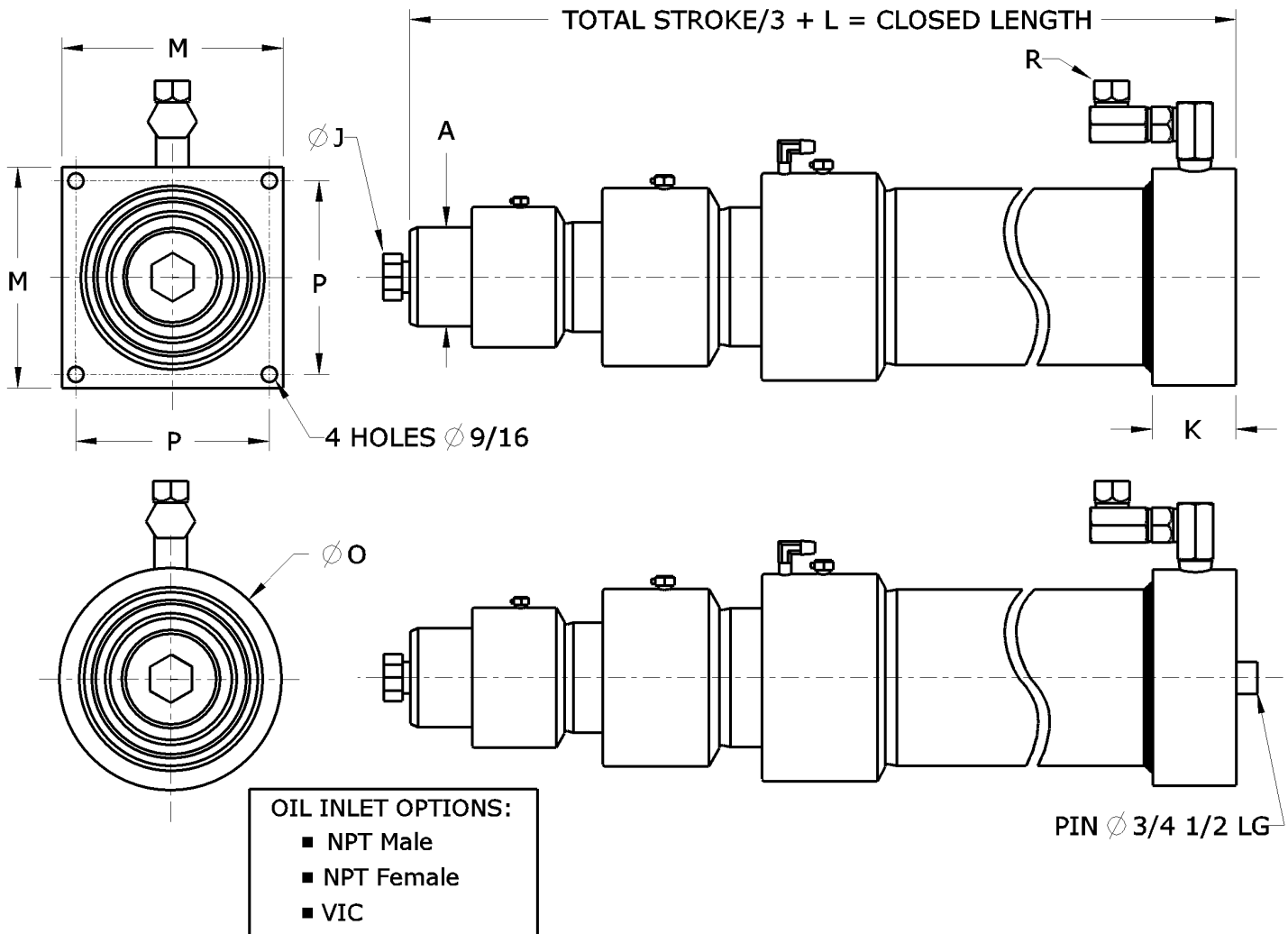
- UPPER PISTON WALL THICKNESSES AVAILABLE:**
- 1/4
 - 3/8
 - 1/2
 - SOLID (Only for \varnothing 2 and smaller)



SYNCHRONIZED TELESCOPIC JACK - 3 SECTIONS

A	J	K	L	M	O	P	R
∅ PISTON	∅ BOLT	BASE THICKNESS	DEAD LENGTH	BASE WIDTH	∅ ROUND BASE	HOLES DISTANCE	∅ OIL INLET
1 1/2 SP	1/2 NC	1 1/2	24	6 X 6	5 1/2	5	1/2 NPT
1 3/4	3/4 NC	2	25	7 X 7	6 1/2	6	3/4 NPT
2	3/4 NC	2	26	7 X 7	7	6	3/4 NPT
2 SP	3/4 NC	3	26	8 X 8	7	7	3/4 NPT
2 1/2	1 NC	3	30	9 X 9	8 1/2	8	2 VIC
3	1 NC	3	31	9 X 9	9	8	2 VIC
3 1/2	1 1/4 NC	3	33	11 X 11	11	10	2 VIC
3 1/2 SP	1 1/4 NC	3	35	12 X 12	12	11	2 VIC
4 1/2	1 1/4 NC	3	38	13 1/2 X 13 1/2	13	12 1/2	2 VIC
5	1 1/4 NC	3	38	16 X 16	16	15	2 VIC

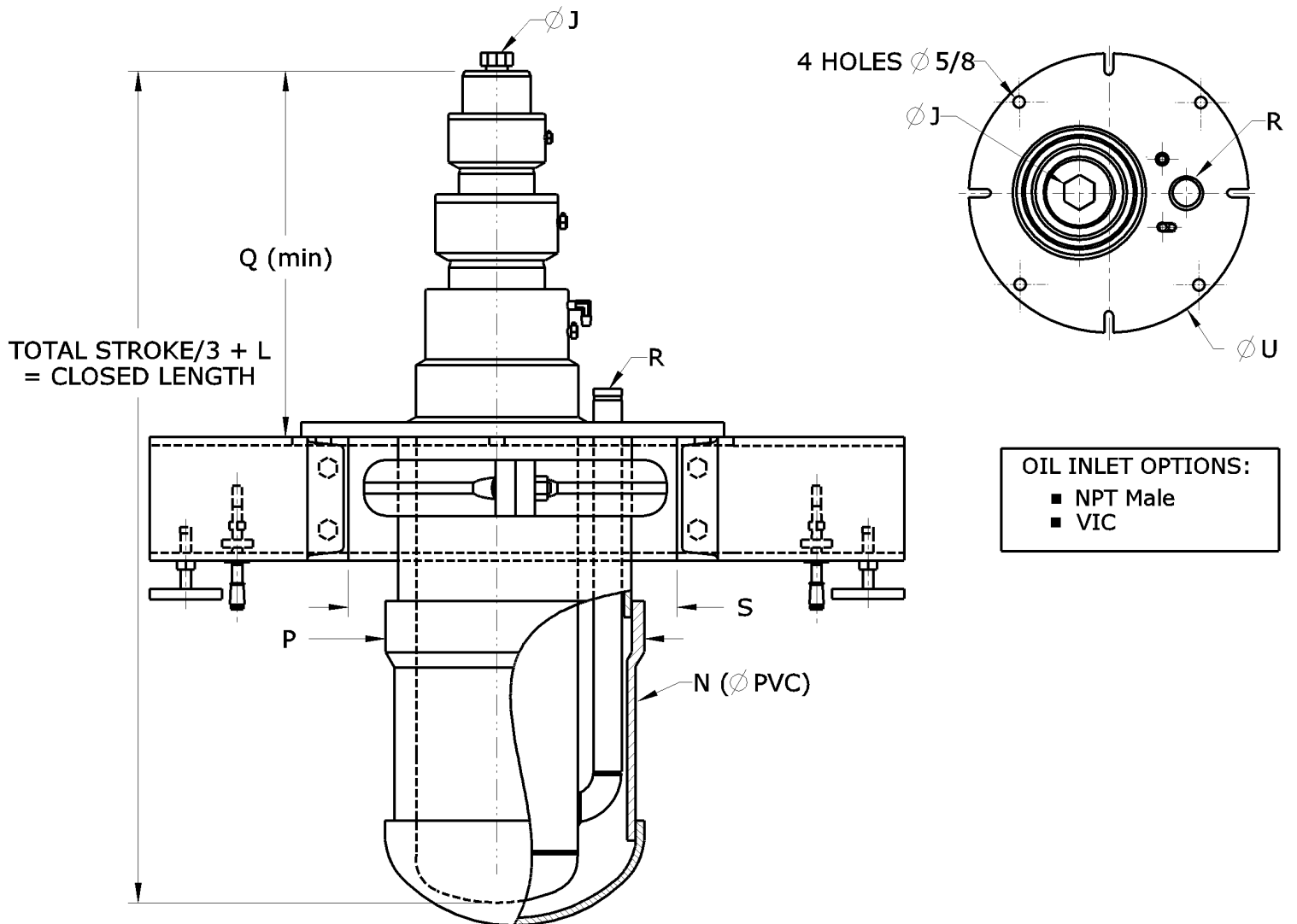
Other models available upon request



SYNCHRONIZED IN-GROUND TELESCOPIC JACK - 3 SECTIONS

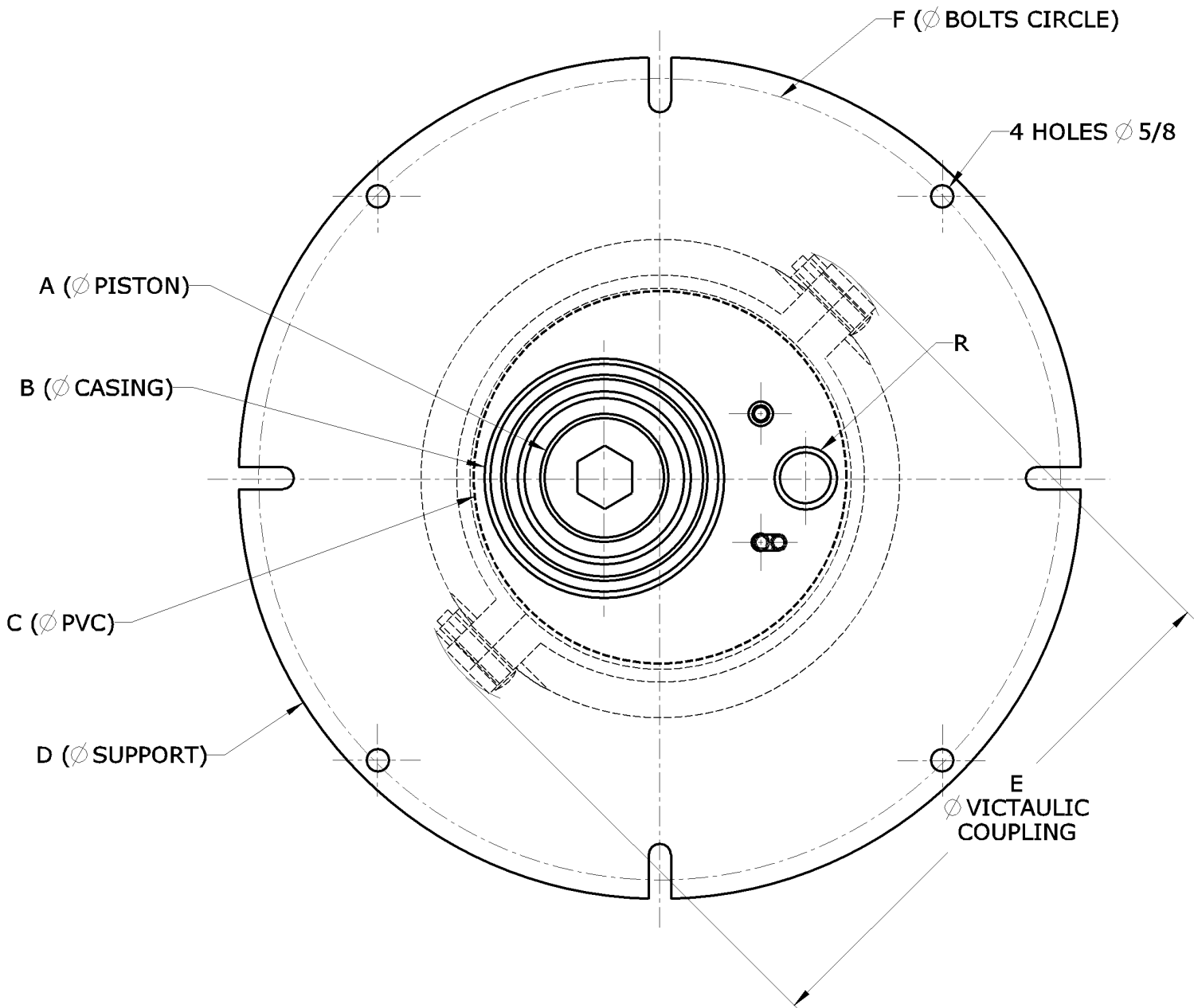
A	J	L	N	P	Q	R	S	U
∅ PISTON	∅ BOLT	DEAD LENGTH	∅ PVC	∅ PVC (BELL END)	SUPPORT POSITION	OIL INLET	PIT CHANNEL OPENING	∅ SUPPORT
1 1/2 SP	1/2 NC	26 1/2	8	7 1/4	18	1/2 NPT	15	18 3/4
1 3/4	3/4 NC	28	10	11 1/2	19	3/4 NPT	20	23 3/4
2	3/4 NC	29 1/2	12	13 5/8	19 3/4	3/4 NPT	20	23 3/4
2 SP	3/4 NC	29 1/2	12	13 5/8	19 3/4	3/4 NPT	20	23 3/4
2 1/2	1 NC	34	14	17	19 1/2	2 VIC	23	26 3/4
3	1 NC	35	14	17	19 1/2	2 VIC	23	26 3/4
3 1/2	1 1/4 NC	38	16	17	19 3/4	2 VIC	23	26 3/4
3 1/2 SP	1 1/4 NC	41	18	19 1/2	20 1/2	2 VIC	28	32
4 1/2	1 1/4 NC	44	20	20 1/4	21 1/2	2 VIC	28	32
5	1 1/4 NC	45	24	25 1/2	24	2 VIC	32	36

Other models available upon request



3 STAGE TELESCOPIC JACK - PVC AND SUPPORT

A	B	C	D	E	F	R
∅ PISTON	∅ CASING	∅ PVC	∅ SUPPORT	∅ VICTAULIC COUPLING	∅ BOLTS CIRCLE	∅ OIL INLET
2 1/2	7 1/2	14	26 3/4	20	25 1/2	2 VIC
3	8	14	26 3/4	20	25 1/2	2 VIC
3 1/2	10	16	26 3/4	22 3/8	25 1/2	2 VIC
4 1/2	12	18	32	24 3/8	30 1/2	2 VIC
5	15	24	36	31 3/8	34 1/2	2 VIC



CALCULATION SHEET for 3 STAGE TELESCOPIC JACK

Working pressure (psi) = **K1** X [GL(lbs)] + **K2** X [TotalStroke(ft.)]

Flow (gpm) = **K3** X [Speed(ft./min)]

Required power (HP) = [Working_Pressure(psi)] X [Flow(gpm)] X 0.0007

Required oil volume (gal) = **K3** X [TotalStroke(ft.)]

Pre-filled oil volume (gal) = **K4** X [TotalStroke(ft.)]

Table of the constants

Model	Type	1 st piston wall thickness	K1	K2	Oil required gal/Ft K3	Pre-filled oil gal/Ft K4
T3-1 1/2SP	D	Solid	0,263	1,097	0,218	0,131
T3-1 3/4	D	Solid	0,168	1,036	0,340	0,217
T3-2	D	Solid	0,139	1,093	0,411	0,242
T3-2SP	D	Solid	0,117	0,952	0,490	0,333
T3-3	A	1/4	0,075	0,623	0,765	0,521
	B	3/8		0,702		
	C	1/2		0,773		
T3-3 1/2	A	1/4	0,052	0,597	1,102	0,743
	B	3/8		0,663		
	C	1/2		0,724		
T3-3 1/2SP	A	1/4	0,042	0,588	1,360	0,933
	B	3/8		0,642		
	C	1/2		0,691		
T3-4 1/2	A	1/4	0,035	0,499	1,646	1,188
	B	3/8		0,559		
	C	1/2		0,615		
T3-5	A	1/4	0,023	0,496	2,479	1,783
	B	3/8		0,541		
	C	1/2		0,583		

GL = Gross load (lbs)

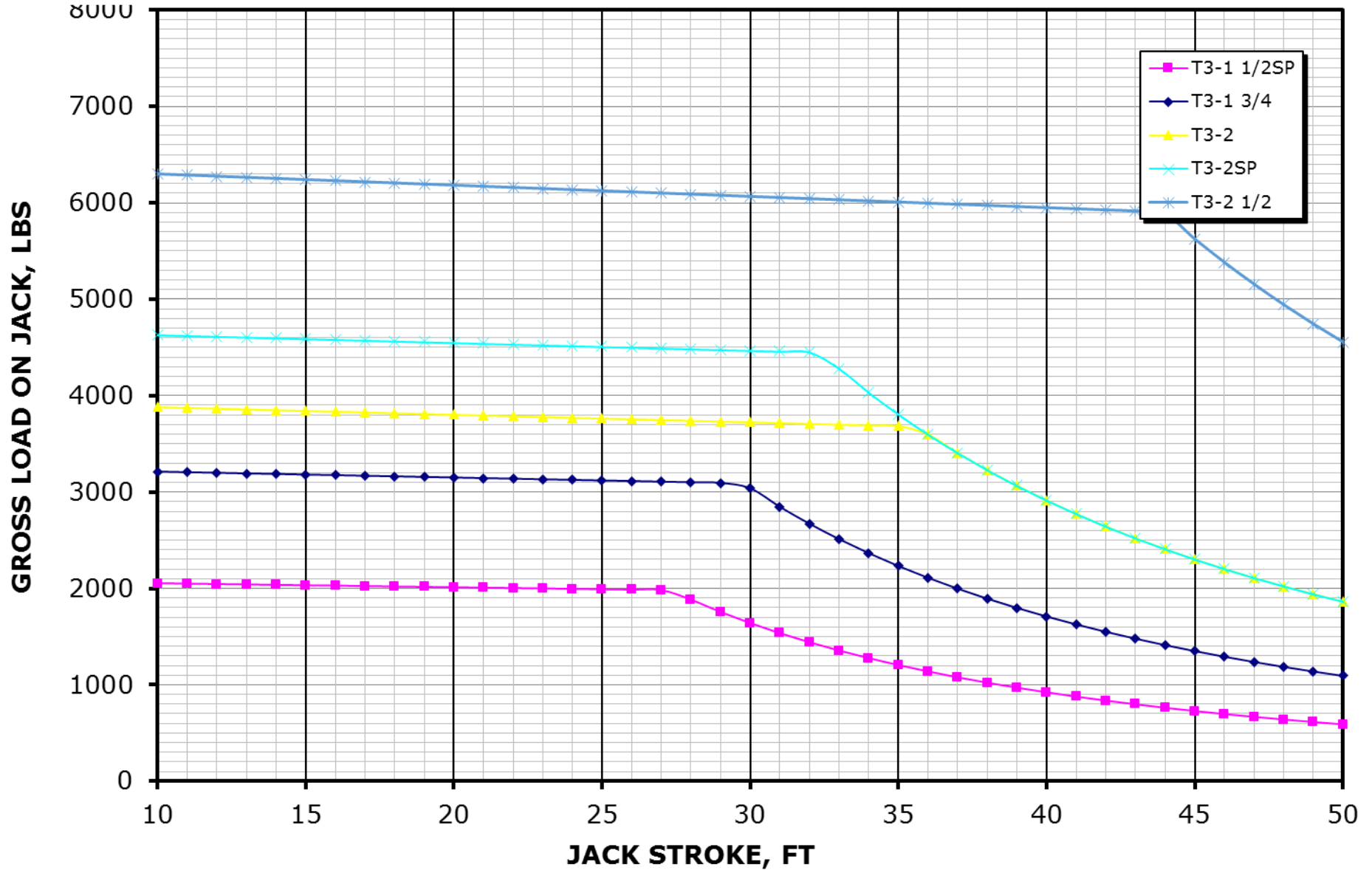
TotalStroke = Jack total stroke (ft.)

Speed = Speed deployment of the jack (ft./min)



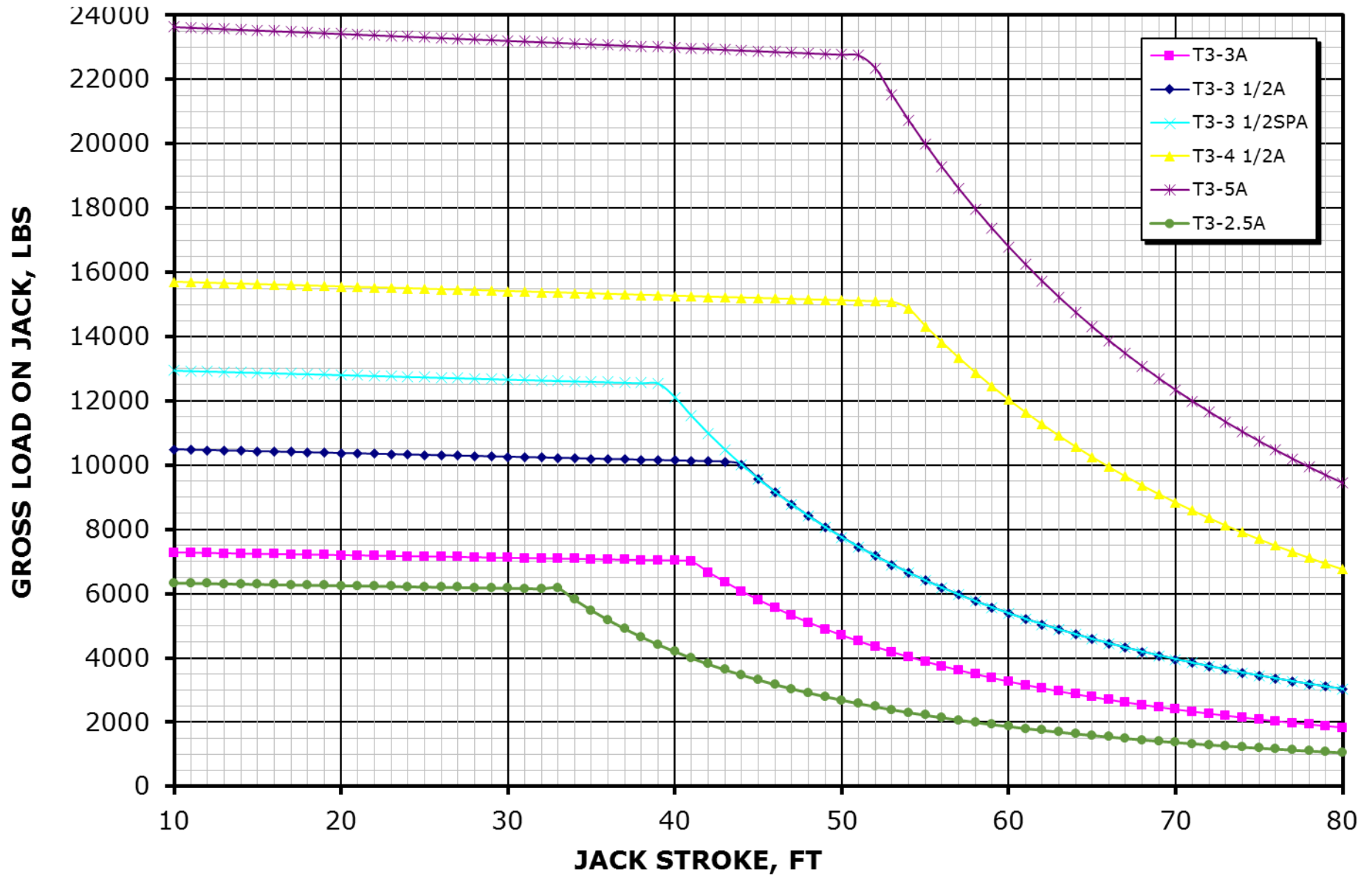


3 STAGE SYNCHRONIZED TELESCOPIC JACK SELECTION CHART ROD - FIRST SECTION SOLID (BASED ON WORKING PRESSURE OF 550 PSI)



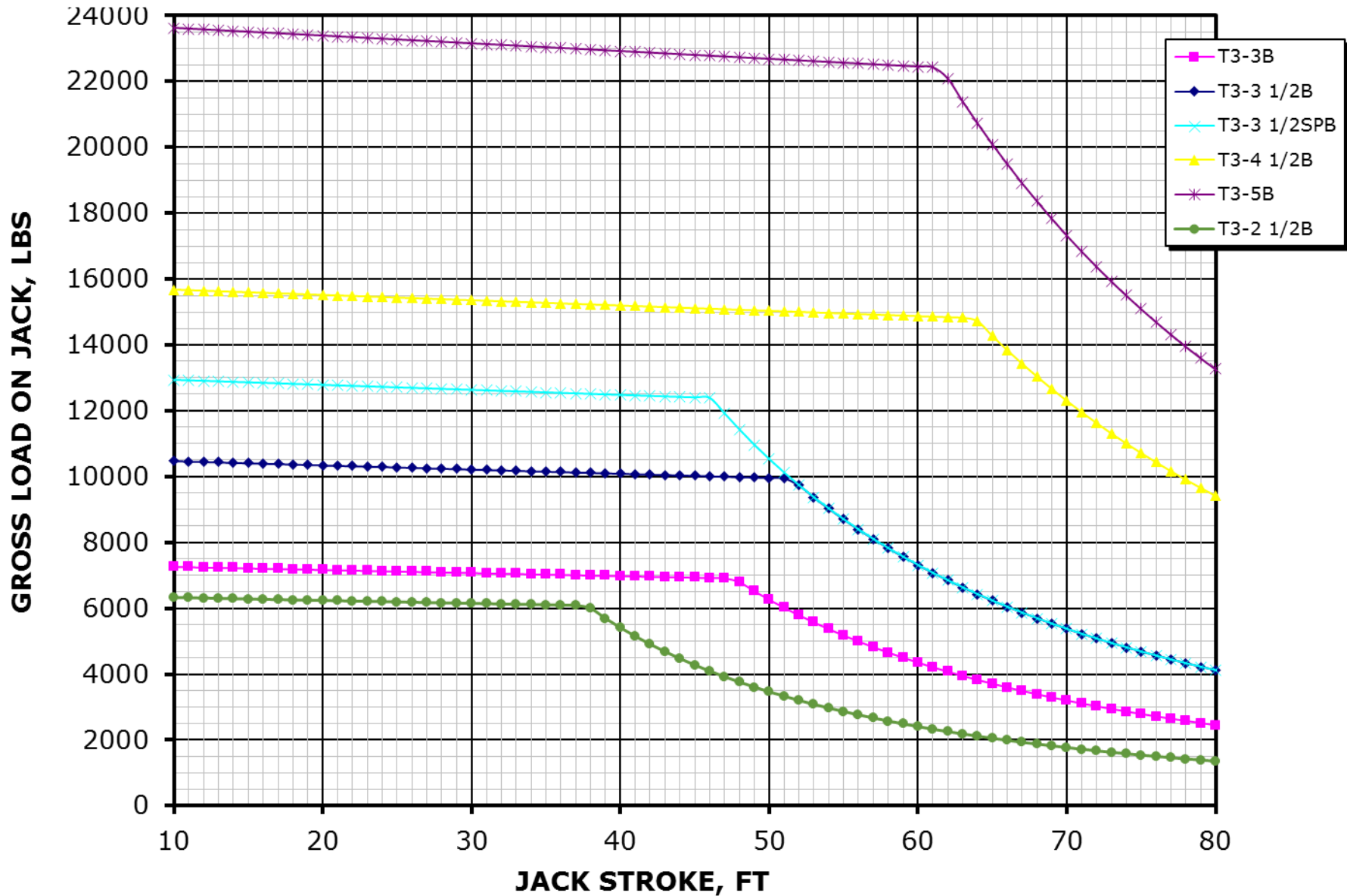


3 STAGE SYNCHRONIZED TELESCOPIC JACK SELECTION CHART TYPE A - FIRST SECTION 1/4" WALL THICKNESS (BASED ON WORKING PRESSURE OF 550 PSI)



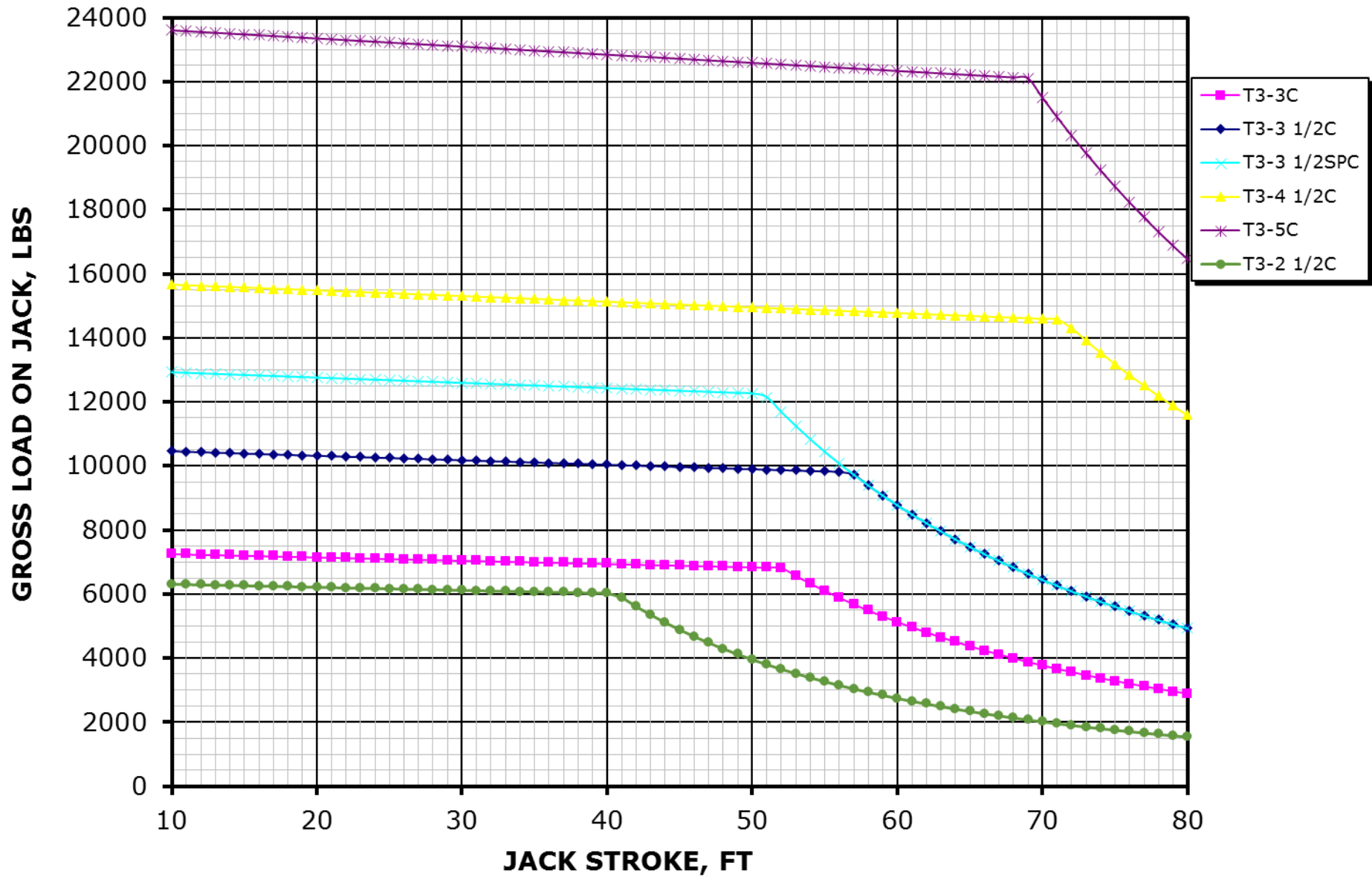


3 STAGE SYNCHRONIZED TELESCOPIC JACK SELECTION CHART TYPE B - FIRST SECTION 3/8" WALL THICKNESS (BASED ON WORKING PRESSURE OF 550 PSI)





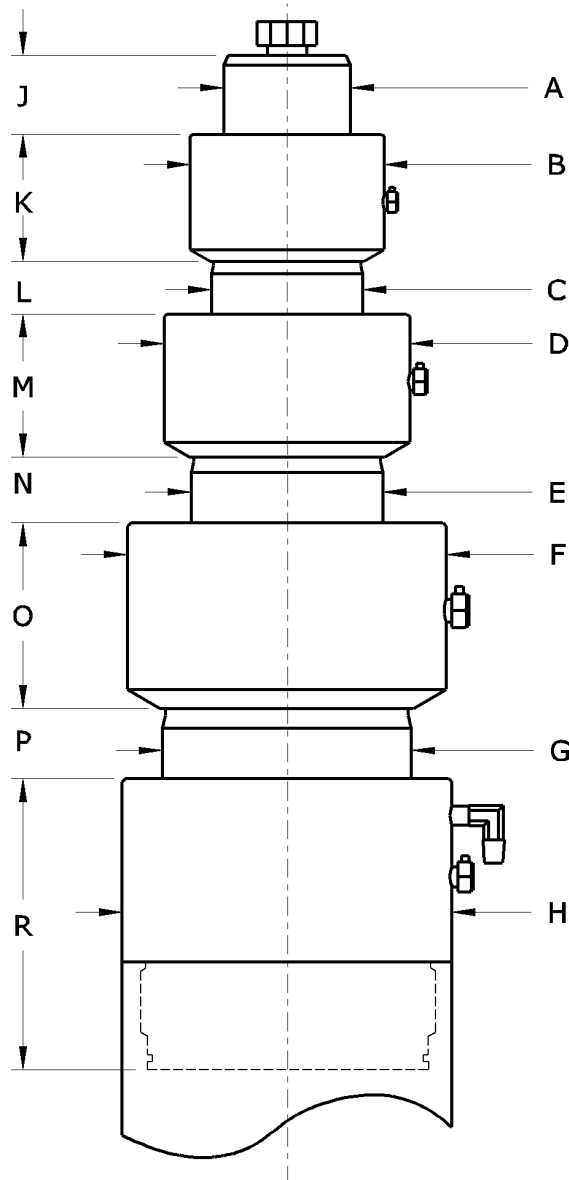
3 STAGE SYNCHRONIZED TELESCOPIC JACK SELECTION CHART
TYPE C - FIRST SECTION 1/2" WALL THICKNESS
 (BASED ON WORKING PRESSURE OF 550 PSI)



SYNCHRONIZED TELESCOPIC JACK - 4 SECTIONS

∅ A	∅ B	∅ C	∅ D	∅ E	∅ F	∅ G	∅ H	J	K	L	M	N	O	P	R
1 1/2	3	2	4	3	5 1/2	4 1/2	6 1/2	1 1/4	3 3/4	1 1/4	4	2	4 1/4	1 1/2	4 1/2
1 3/4	4	2 3/4	5	3 3/4	6 1/2	5 1/2	8	1 1/2	3 3/4	1 1/2	4	2	4 1/4	2	5 3/4
2	4	2 7/8	5	4 1/4	7 1/2	6 1/2	9 1/4	1 1/2	3 3/4	1 1/2	4	2	4 1/4	2	5 3/4
2 SP	4 1/2	2 1/2	5 1/2	4 1/2	7 1/2	6 1/2	10	1 1/2	3 3/4	2	4 1/4	2	4 1/4	2	5 3/4
2 1/2	5	3 3/4	6	5	7 3/8	7 1/2	11	2	4	2	4 1/4	2	4 1/4	2	5 3/4
3	5	4	6 1/2	5 1/2	8	8	12	2	4	2	4 1/4	2	4 1/4	2	5 3/4
3 1/2	6	4 7/8	6 3/4	6 3/4	10	10	14	2	4	2	5 1/2	2	5 3/4	2	5 3/4
4 1/2	7 1/2	6	9 1/2	8	12	11 3/4	17	2	4 1/2	2	5 1/2	2	5 3/4	2	5 3/4

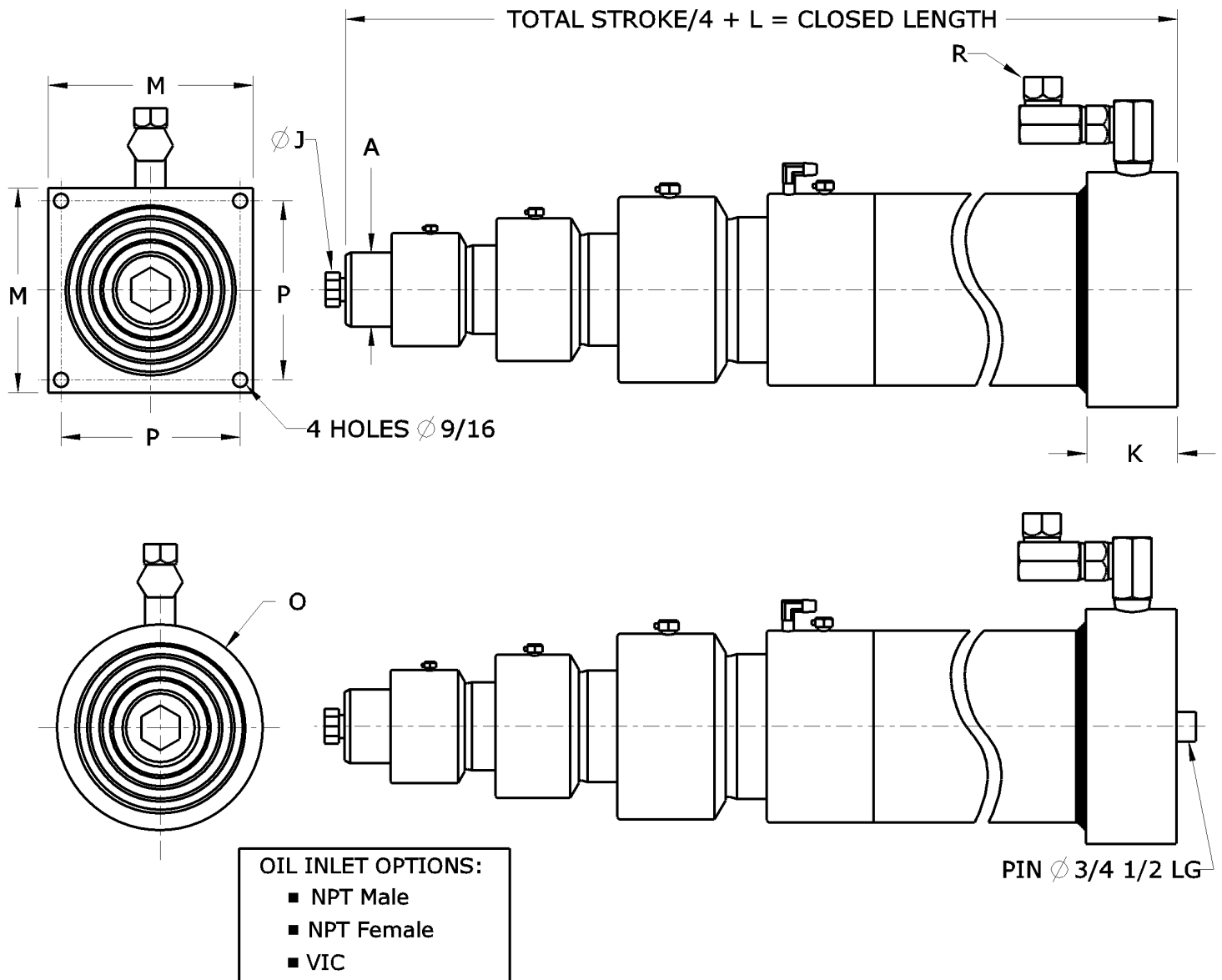
Other models available upon request



SYNCHRONIZED TELESCOPIC JACK - 4 SECTIONS

A	J	K	L	M	O	P	R
∅ PISTON	∅ BOLT	BASE THICKNESS	DEAD LENGTH	BASE WIDTH	∅ ROUND BASE	HOLES DISTANCE	∅ OIL INLET
1 1/2	1/2 NC	2	31	8 X 8	7 1/2	7	3/4 NPT
1 3/4	3/4 NC	2	33	9 X 9	9	8	3/4 NPT
2	3/4 NC	2	36	10 X 10	10	9	3/4 NPT
2 SP	3/4 NC	3	36	11 X 11	11	10	3/4 NPT
2 1/2	1 NC	3	39	13 X 13	12	12	2 VIC
3	1 NC	3	40	13 X 13	13	12	2 VIC
3 1/2	1 1/4 NC	4	41	16 X 16	16	15	2 1/2 VIC
4 1/2	1 1/4 NC	4	42	18 X 18	18	15	2 1/2 VIC

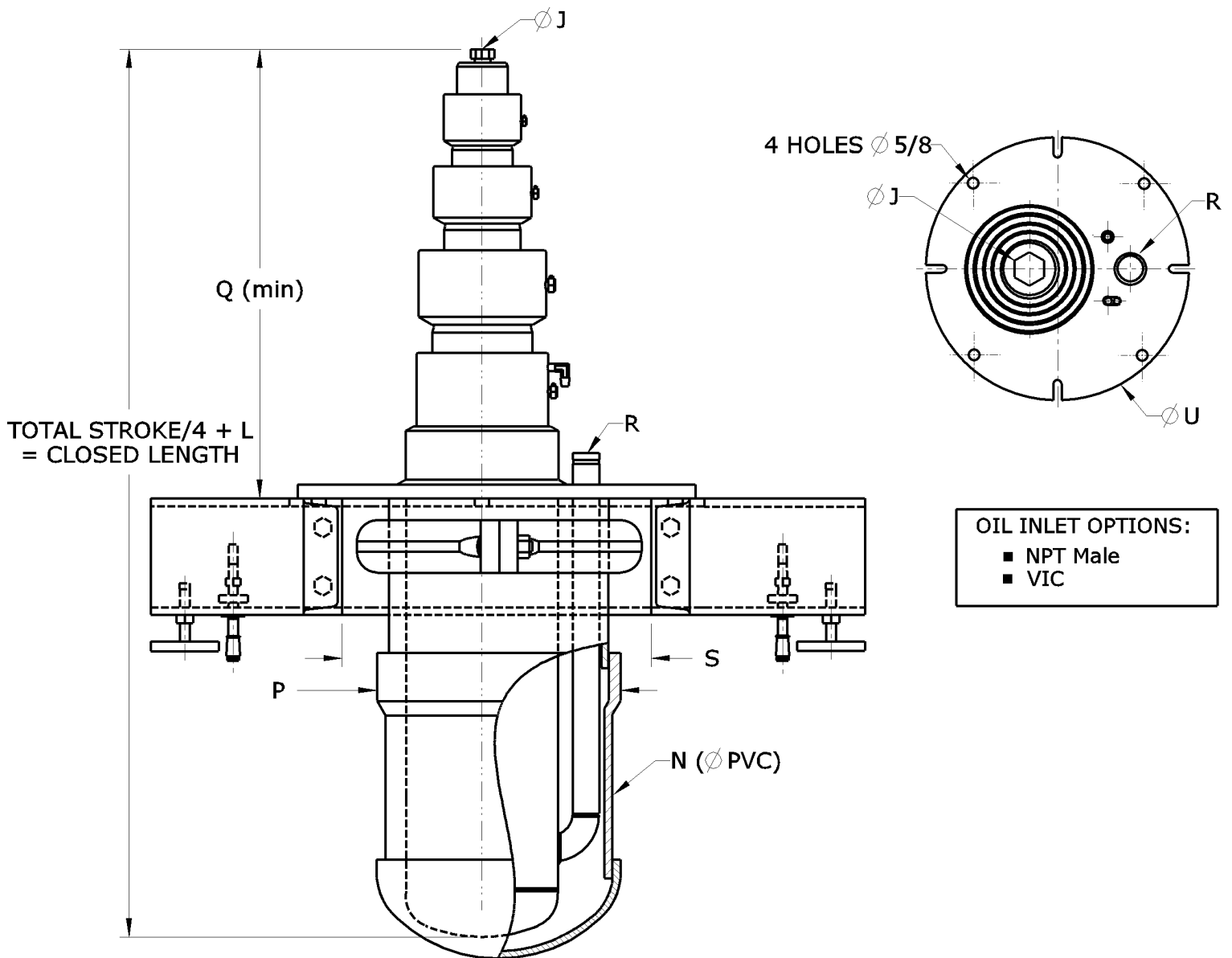
Other models available upon request



SYNCHRONIZED IN-GROUND TELESCOPIC JACK - 4 SECTIONS

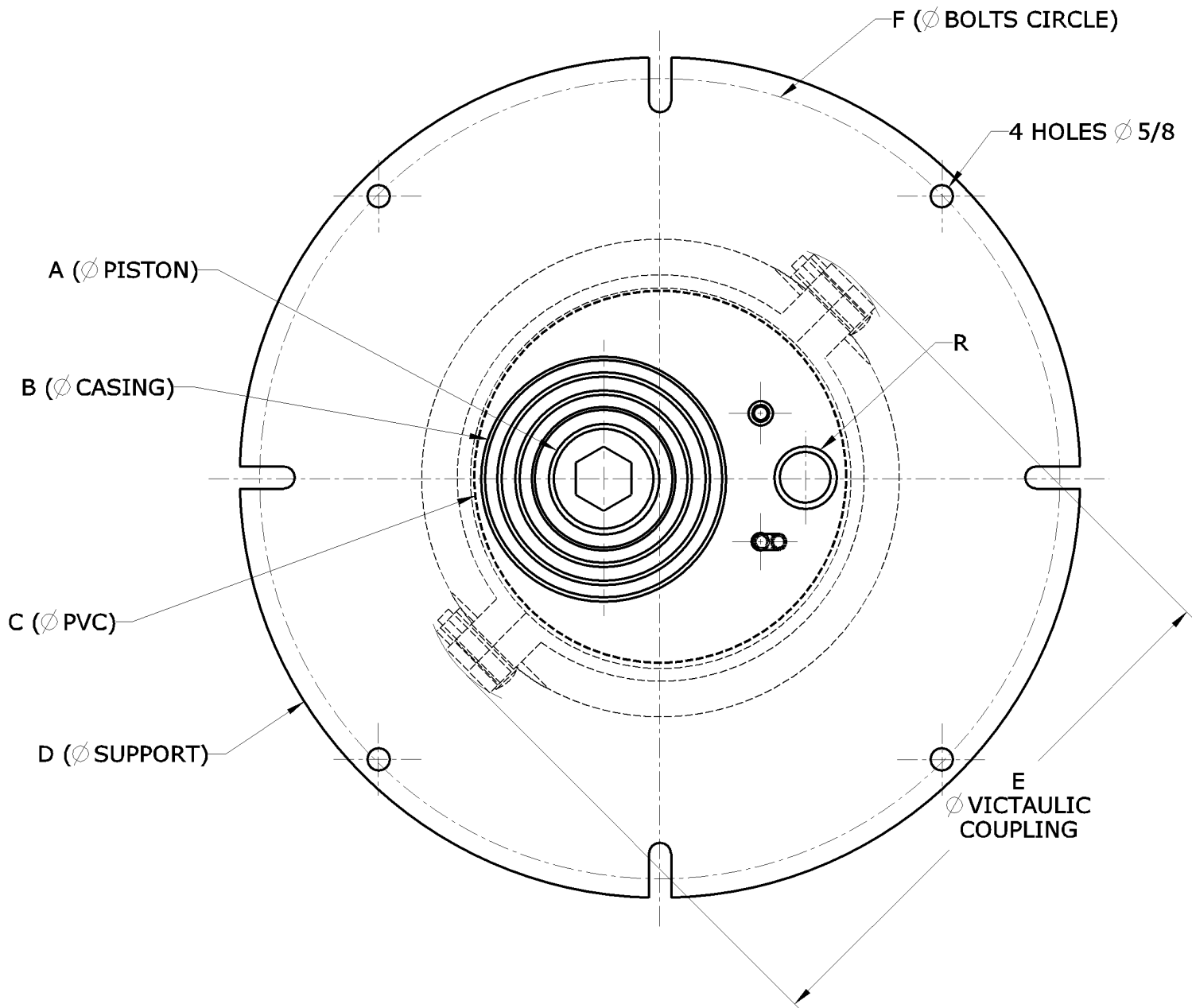
A	J	L	N	P	Q	R	S	U
Ø PISTON	Ø BOLT	DEAD LENGTH	Ø PVC	Ø PVC (BELL END)	SUPPORT POSITION	OIL INLET	PIT CHANNEL OPENNING	Ø SUPPORT
1 1/2	1/2 NC	34 1/2	12	13 5/8	22	3/4 NPT	20	23 3/4
1 3/4	3/4 NC	37	12	13 5/8	23 1/4	3/4 NPT	20	23 3/4
2	3/4 NC	41	16	17	24	3/4 NPT	23	26 3/4
2 SP	3/4 NC	41	16	17	24	3/4 NPT	23	26 3/4
2 1/2	1 NC	45	16	17	25 3/4	2 VIC	23	26 3/4
3	1 NC	46	18	19 1/4	26	2 VIC	28	32
3 1/2	1 1/4 NC	48	20	20 1/4	25 3/4	2 1/2 VIC	28	32
4 1/2	1 1/4 NC	50	24	25 1/2	26	2 1/2 VIC	32	36

Other models available upon request



4 STAGE TELESCOPIC JACK - PVC AND SUPPORT

A	B	C	D	E	F	R
∅ PISTON	∅ CASING	∅ PVC	∅ SUPPORT	∅ VICTAULIC COUPLING	∅ BOLTS CIRCLE	∅ OIL INLET
2 1/2	11	16	26 3/4	22 3/8	25 1/2	2 VIC
3	12	18	32	24 3/8	30 1/2	2 VIC
3 1/2	15	20	32	27 1/2	30 1/2	2 1/2 VIC
4 1/2	17	24	36	31 3/8	34 1/2	2 1/2 VIC



CALCULATION SHEET for 4 STAGE TELESCOPIC JACK

Working pressure (psi) = **K1** X [GL(lbs)] + **K2** X [TotalStroke(ft.)]

Flow (gpm) = **K3** X [Speed(ft./min)]

Required power (HP) = [Working_Pressure(psi)] X [Flow(gpm)] X 0.0007

Required oil volume (gal) = **K3** X [TotalStroke(ft.)]

Pre-filled oil volume (gal) = **K4** X [TotalStroke(ft.)]

Table of the constants

Model	Type	1st piston wall thickness	K1	K2	Oil required gal/Ft K3	Pre-filled oil gal/Ft K4
T4-1 1/2	D	Solid	0,156	0,670	0,367	0,259
T4-1 3/4	D	Solid	0,100	0,608	0,574	0,428
T4-2	D	Solid	0,078	0,697	0,737	0,488
T4-2SP	D	Solid	0,069	0,558	0,826	0,645
T4-2 1/2	D	Solid	0,056	0,625	1,020	0,763
T4-3	A	1/4	0,046	0,418	1,234	0,972
	B	3/8		0,455		
	C	1/2		0,488		
T4-3 1/2	A	1/4	0,031	0,447	1,859	1,396
	B	3/8		0,477		
	C	1/2		0,504		
T4-4 1/2	A	1/4	0,022	0,375	2,611	2,094
	B	3/8		0,403		
	C	1/2		0,430		

GL = Gross load (lbs)

TotalStroke = Jack total stroke (ft.)

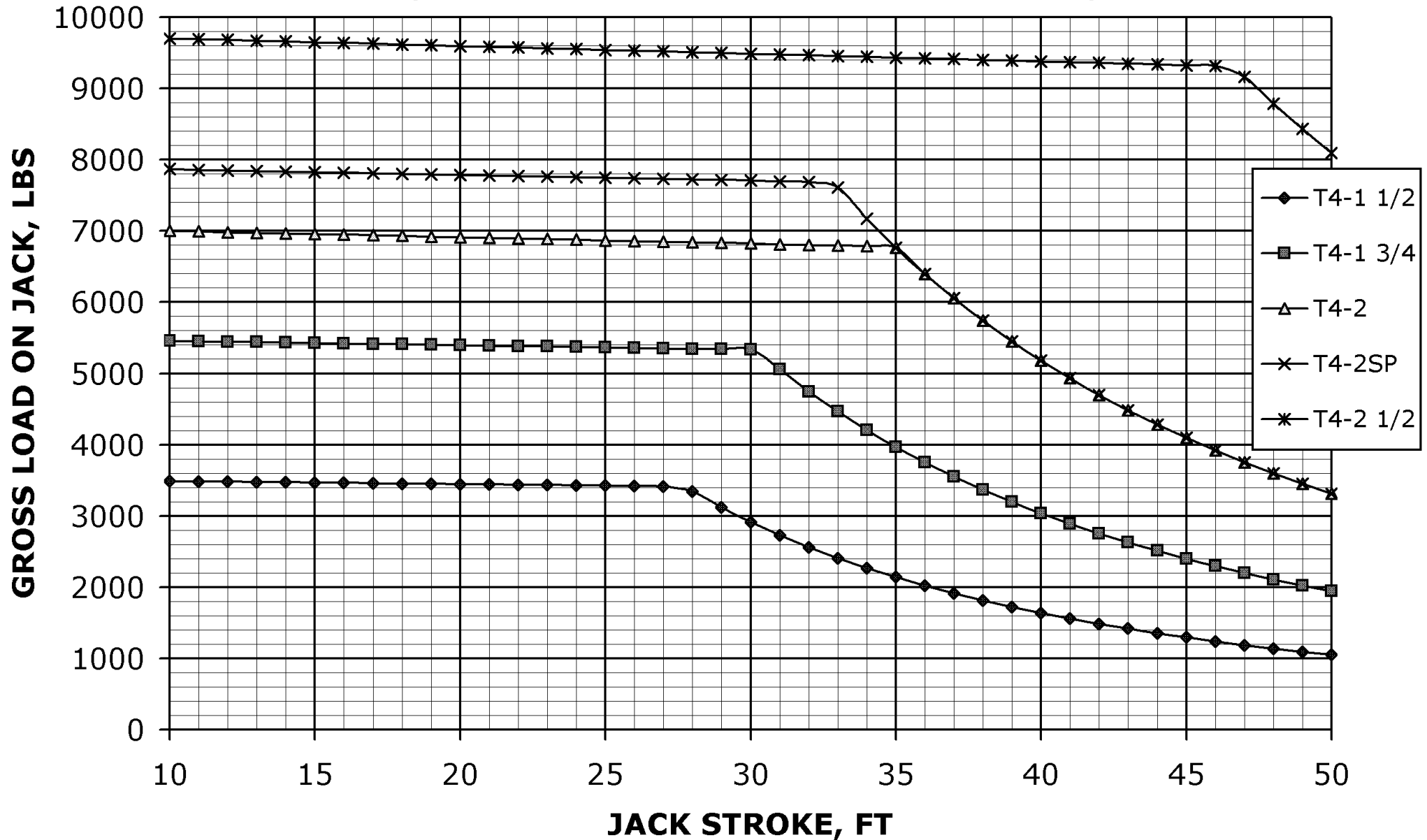
Speed = Speed deployment of the jack (ft./min)



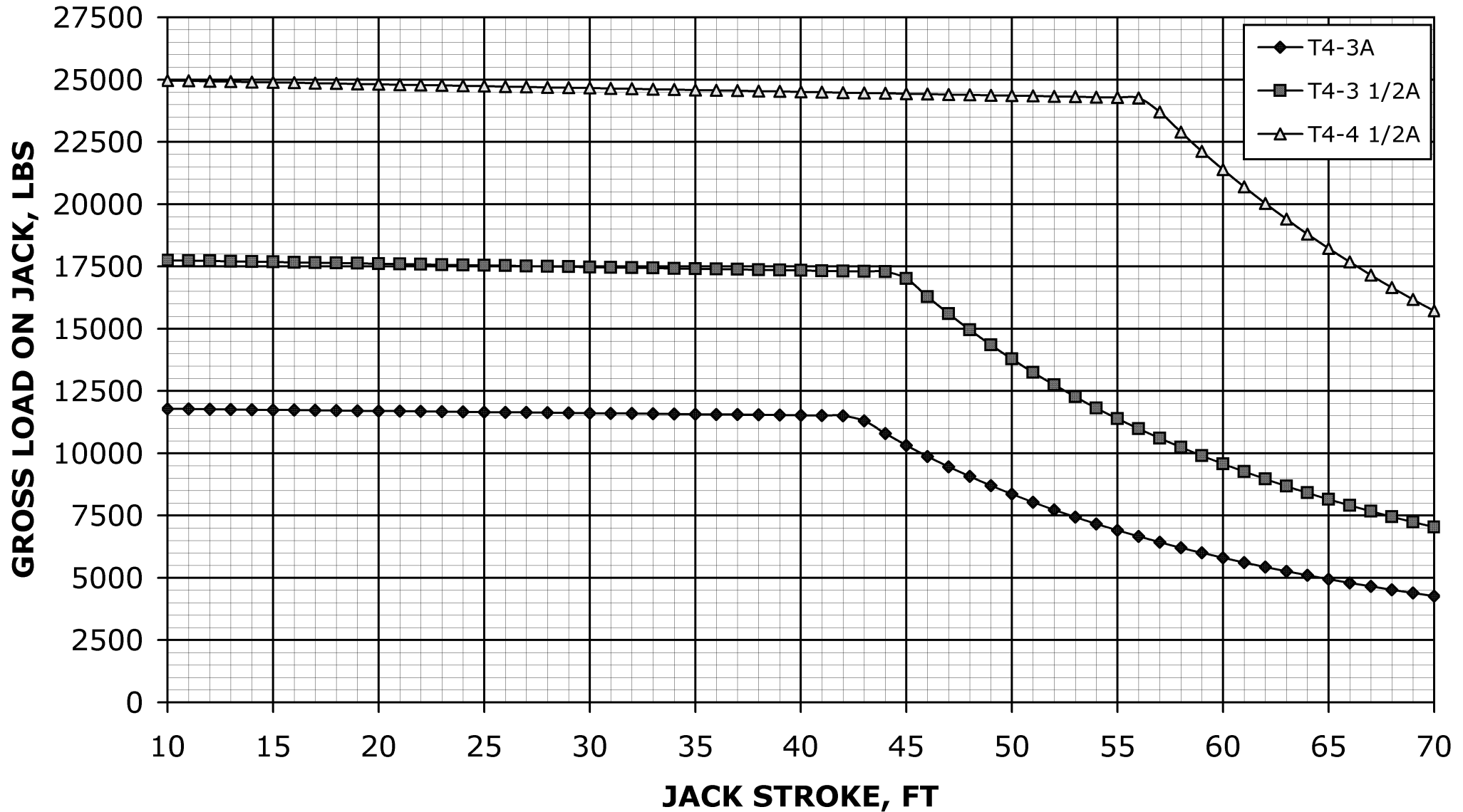
4 STAGE SYNCHRONIZED TELESCOPIC JACK SELECTION CHART

ROD - FIRST SECTION SOLID

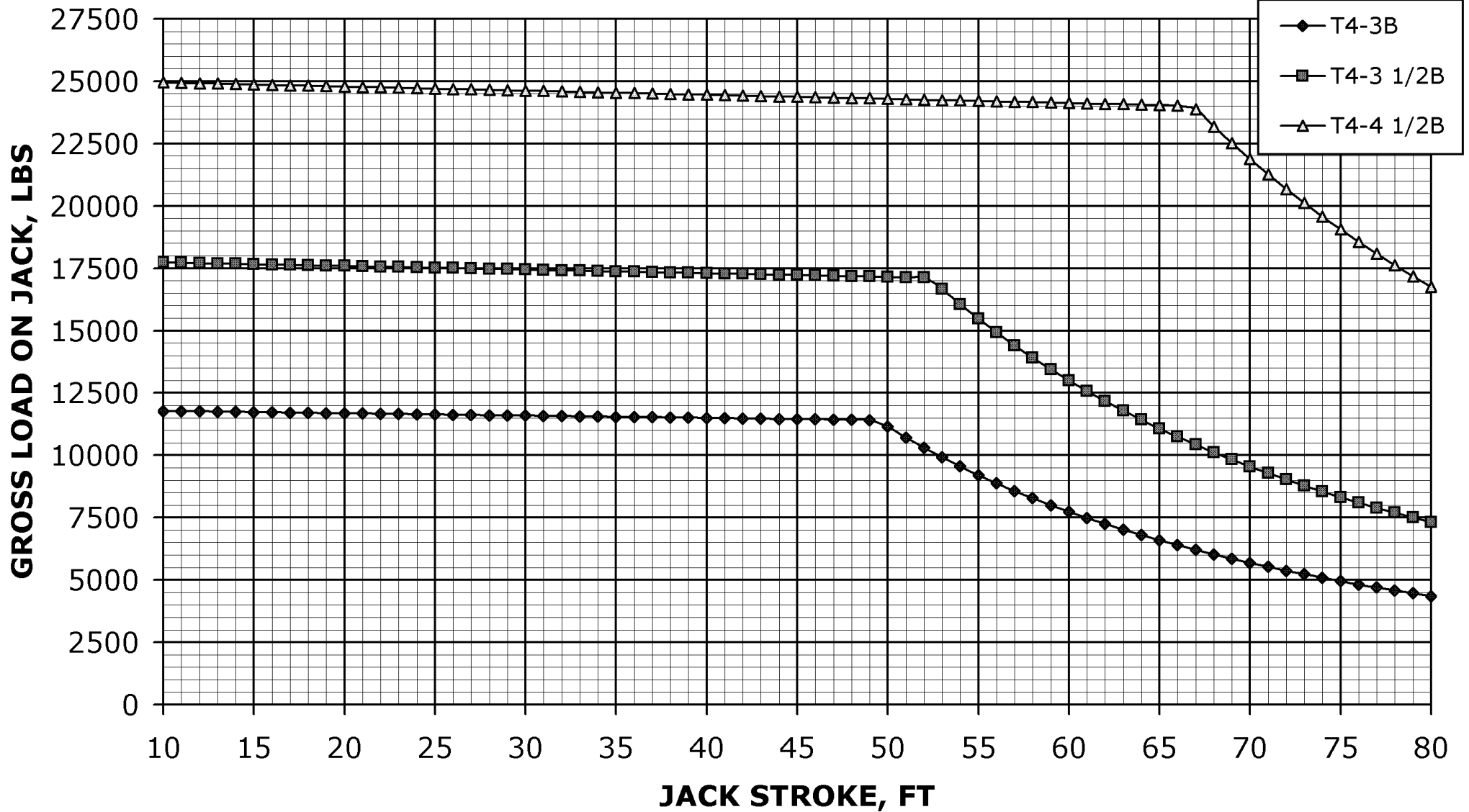
(BASED ON WORKING PRESSURE OF 550 PSI)



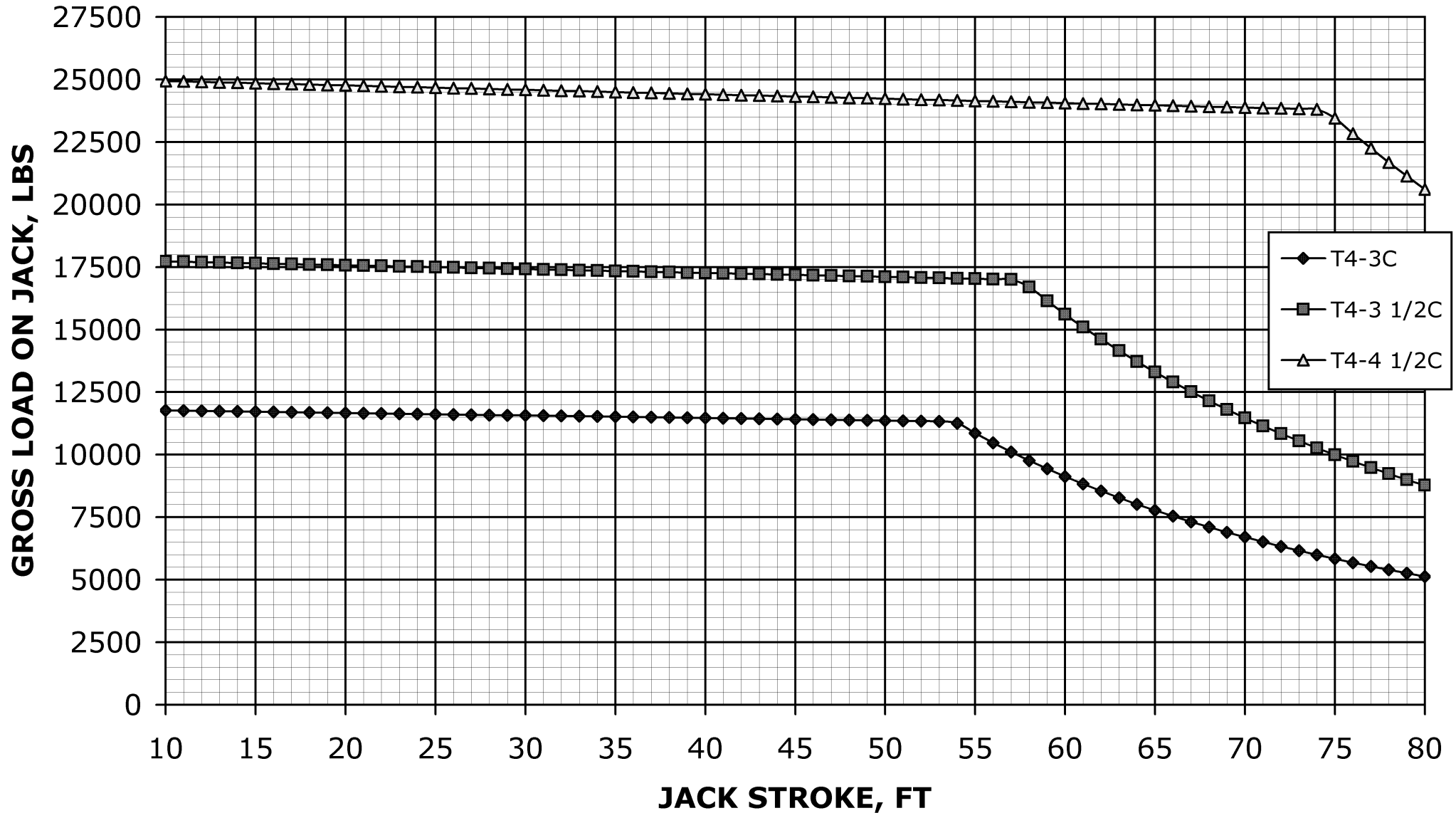
4 STAGE SYNCHRONIZED TELESCOPIC JACK SELECTION CHART
TYPE A - FIRST SECTION 1/4" WALL THICKNESS
 (BASED ON WORKING PRESSURE OF 550 PSI)



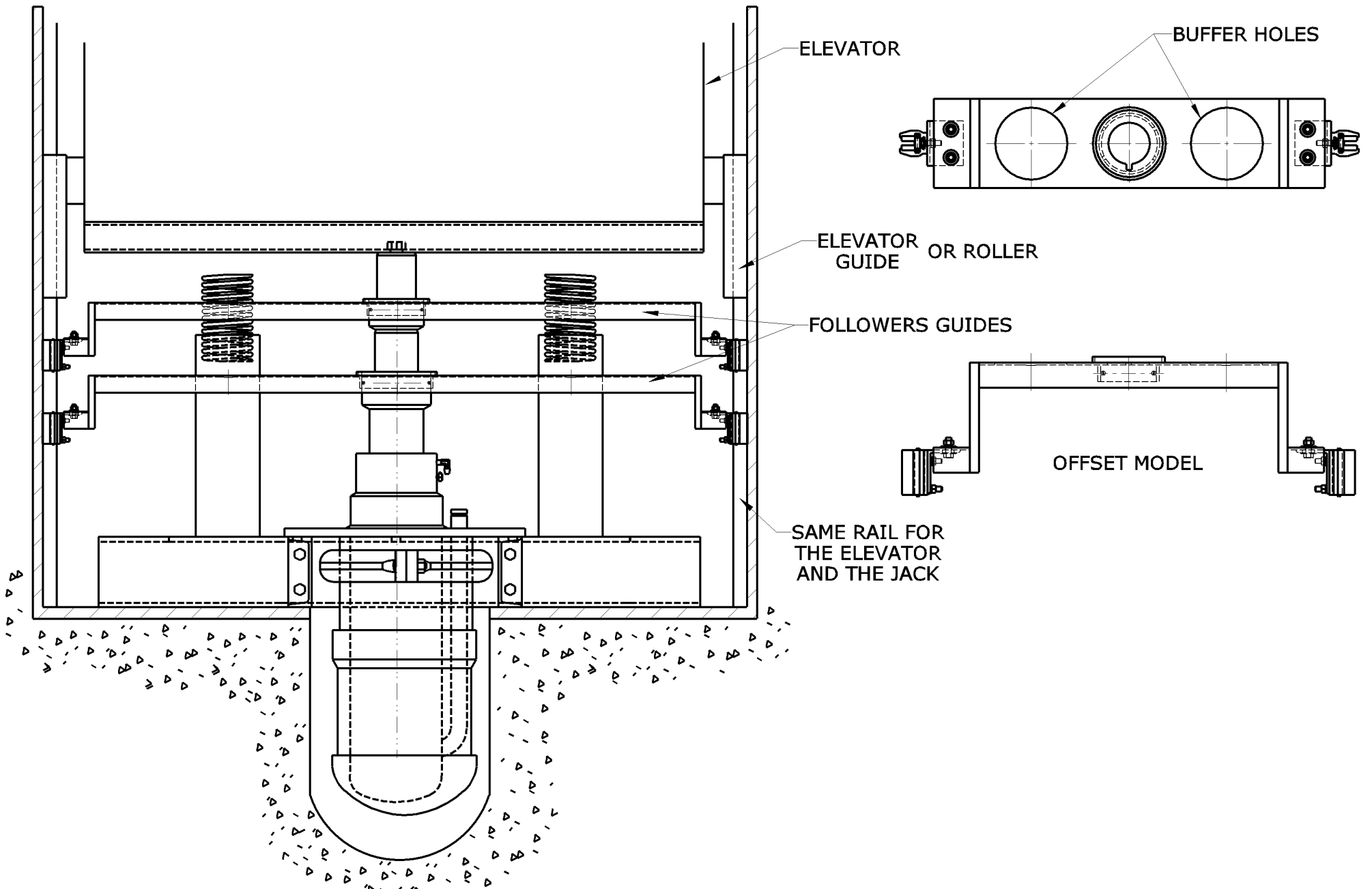
4 STAGE SYNCHRONIZED TELESCOPIC JACK SELECTION CHART
TYPE B - FIRST SECTION 3/8" WALL THICKNESS
 (BASED ON WORKING PRESSURE OF 550 PSI)



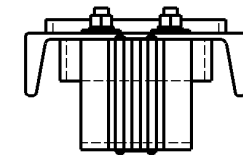
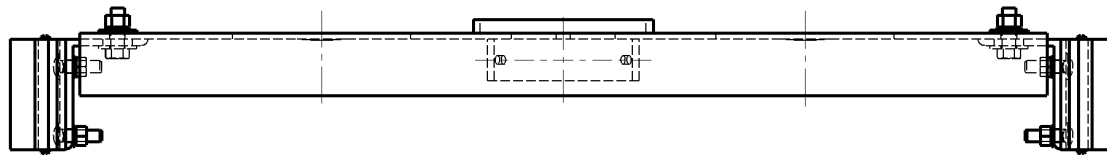
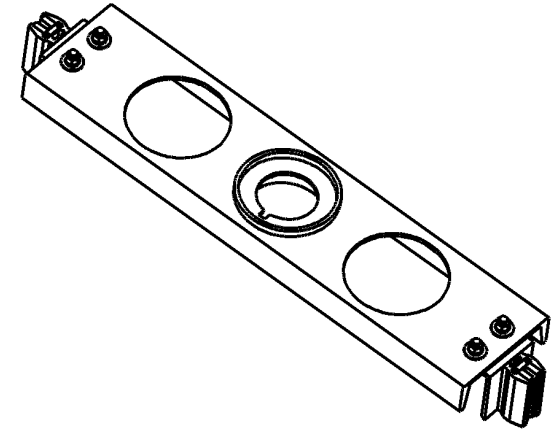
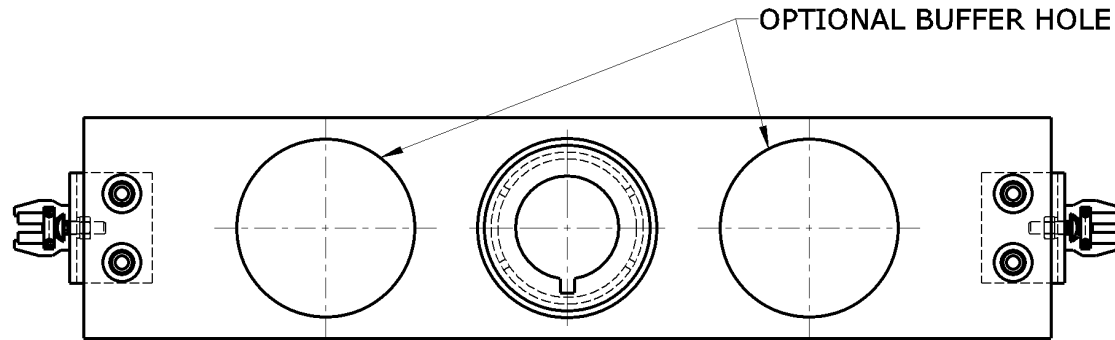
4 STAGE SYNCHRONIZED TELESCOPIC JACK SELECTION CHART
TYPE C - FIRST SECTION 1/2" WALL THICKNESS
(BASED ON WORKING PRESSURE OF 550 PSI)



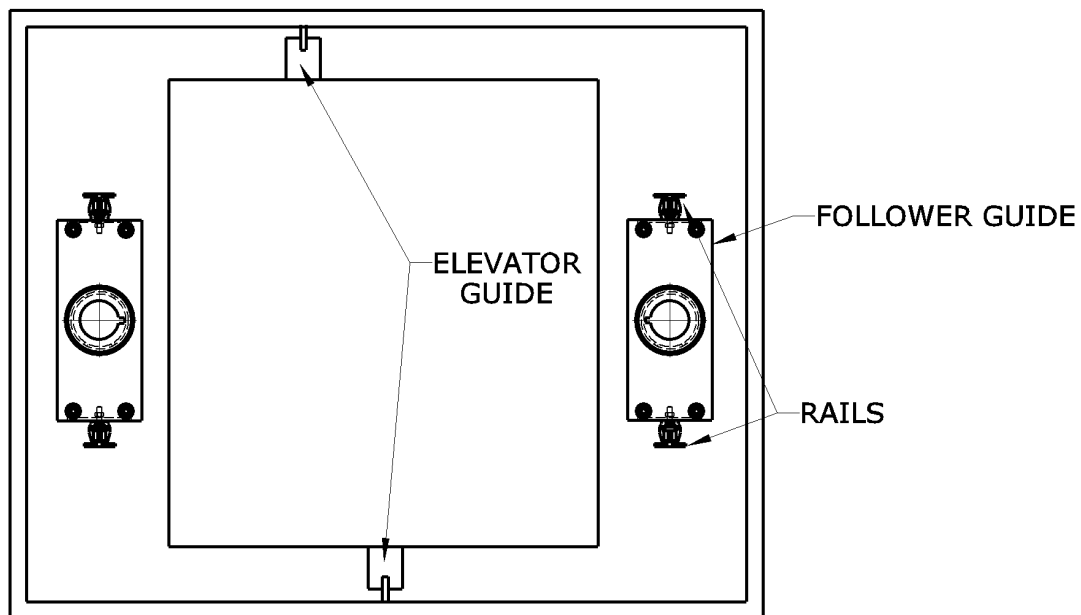
FOLLOWERS GUIDES FOR IN-GROUND TELESCOPIC JACK



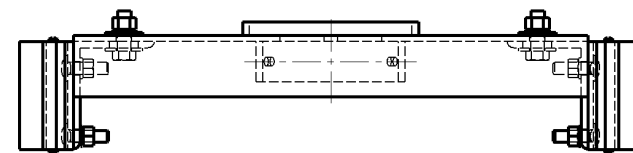
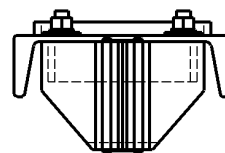
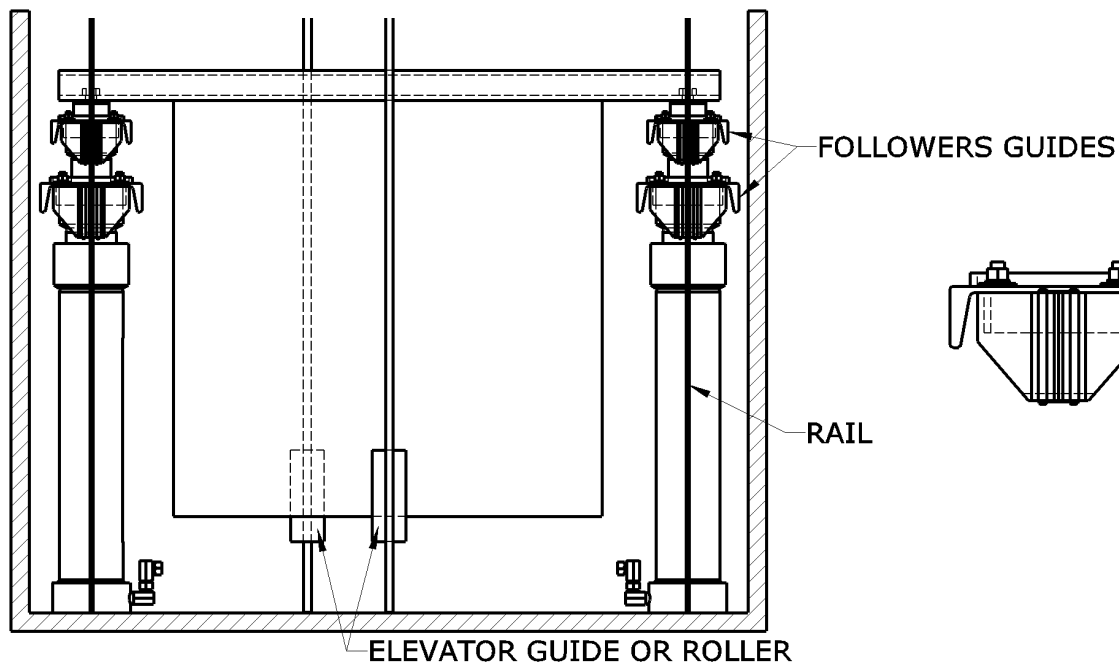
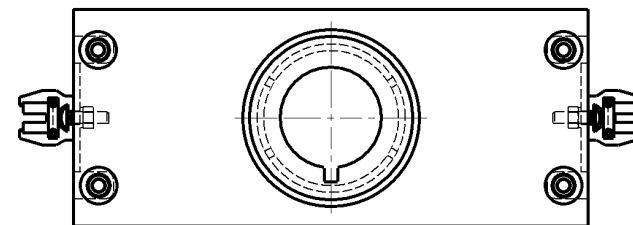
FOLLOWERS GUIDES FOR IN-GROUND TELESCOPIC JACK STRAIGHT DESIGN



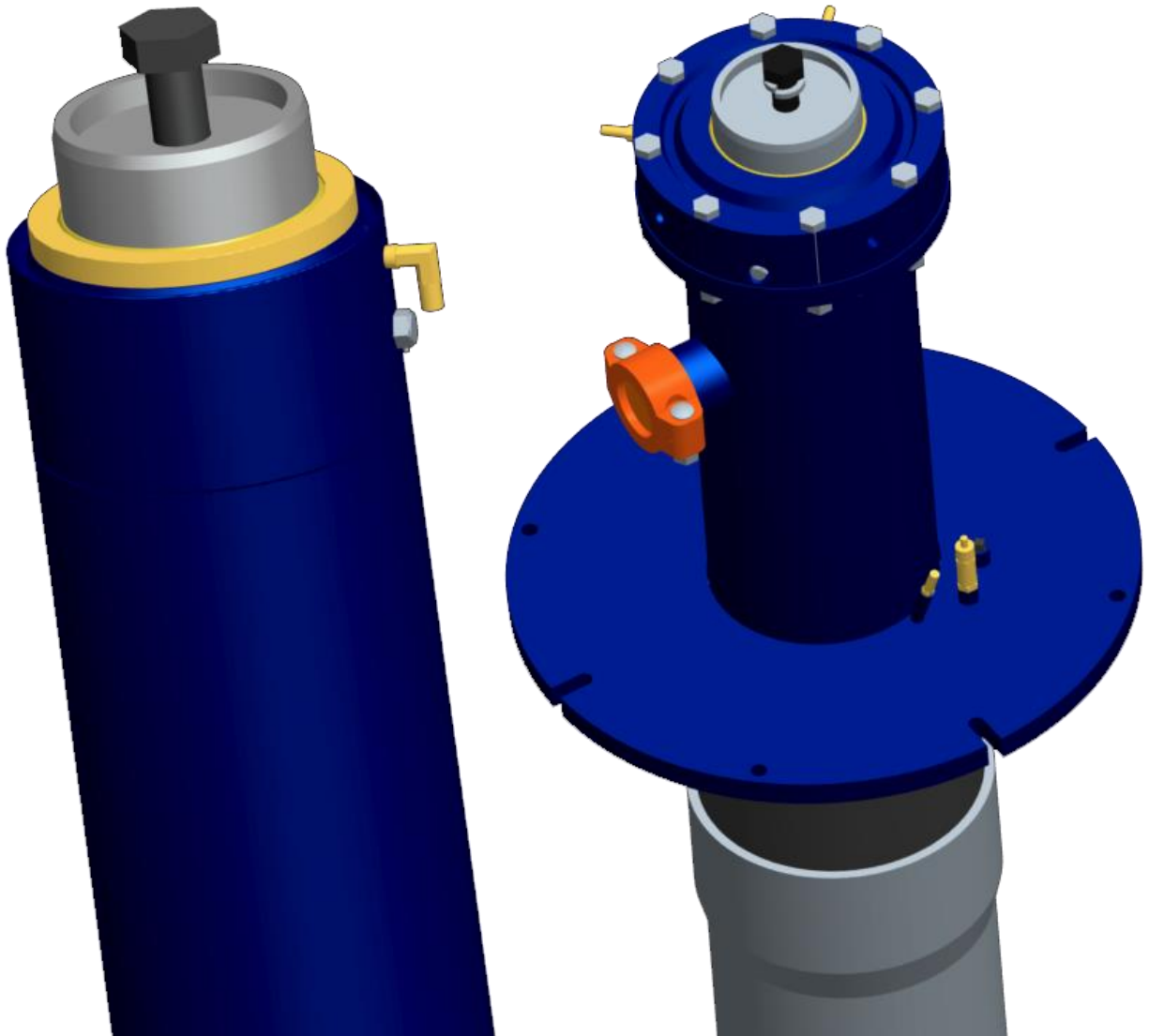
FOLLOWERS GUIDES FOR TWIN TELESCOPIC JACK



HOLELESS MOUNTING



SINGLE STAGE JACK (HOLELESS / IN-GROUND)



- Piston threaded joint precision and rigidity
- Finished and polished piston to reduce friction losses
- Protective nylon sling
- Threaded, weld or thread/weld assembly
- Assembled, tested, and adjusted at the factory
- Up to 110 000 lbs capacity

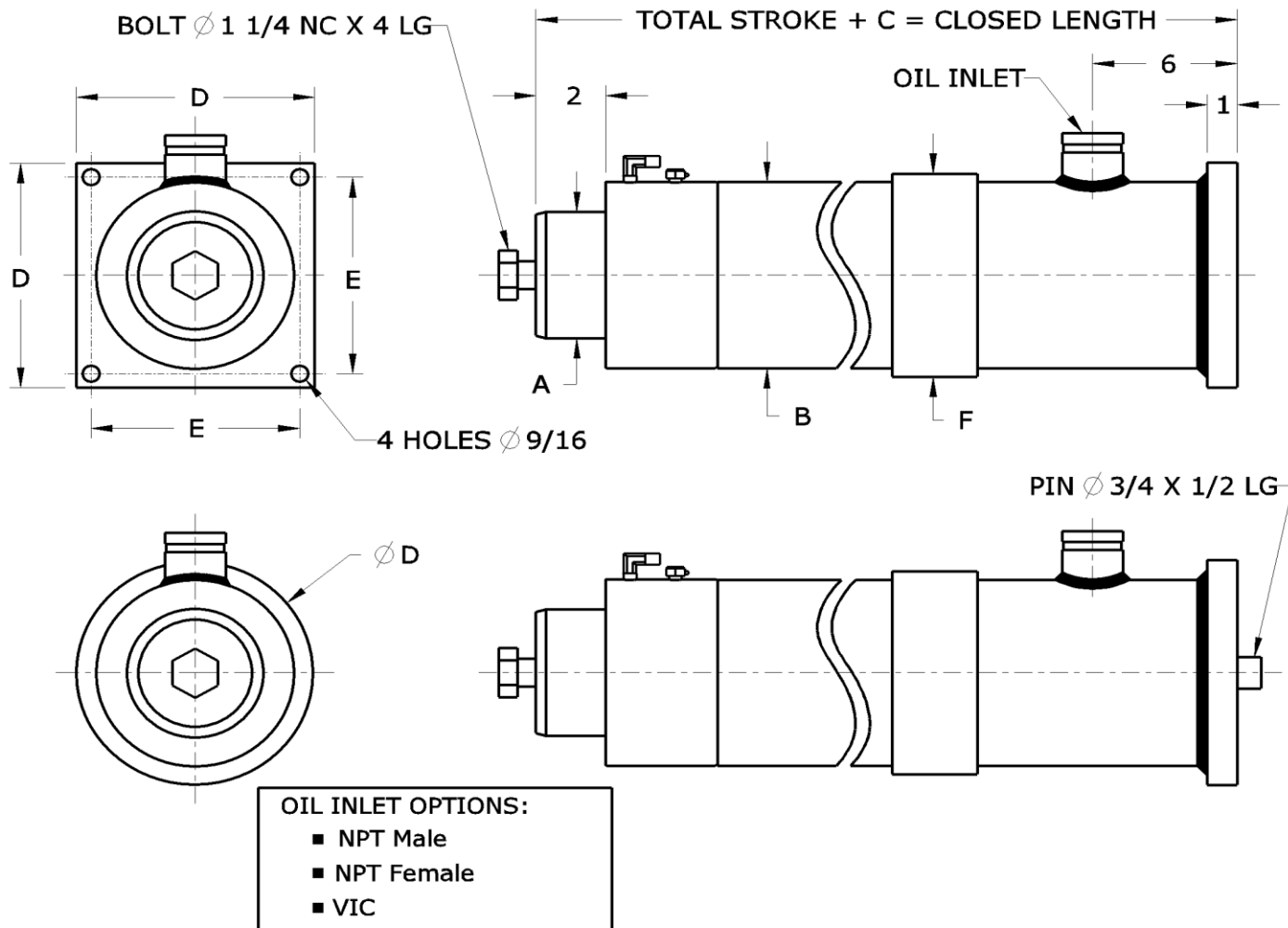


SINGLE STAGE HOLELESS

A	B	C	D	E	F
∅ PISTON	∅ CASING	STROKE + C = CLOSED LENGTH	PLATE DIM.	HOLES DIM.	∅ RING
4	6 1/2	11 1/4	8	7	7 1/2
4 1/2	6 1/2	11 1/4	8	7	7 1/2
5	8 1/2	11 3/4	10	9	9 1/2
5 1/2	8 1/2	11 3/4	10	9	9 1/2
6	8 1/2	11 3/4	10	9	9 1/2
6 1/2 **	8 1/2	11 3/4	10	9	9 1/2
6 1/2	10 3/4	12 1/4	12	11	11 1/2
7 1/2	10 3/4	12 1/4	12	11	11 1/2
8 9/16 **	10 3/4	12 1/4	12	11	11 1/2
8 9/16	12 3/4	12 1/4	14	13	14
9 1/2	12 3/4	12 1/4	14	13	14
10 5/8 **	12 3/4	12 1/4	14	13	14
10 5/8	14	12 1/4	16	15	14 3/4
12 5/8	16	13 1/4	18	17	17

** Max. travel 40'

Other models available upon request

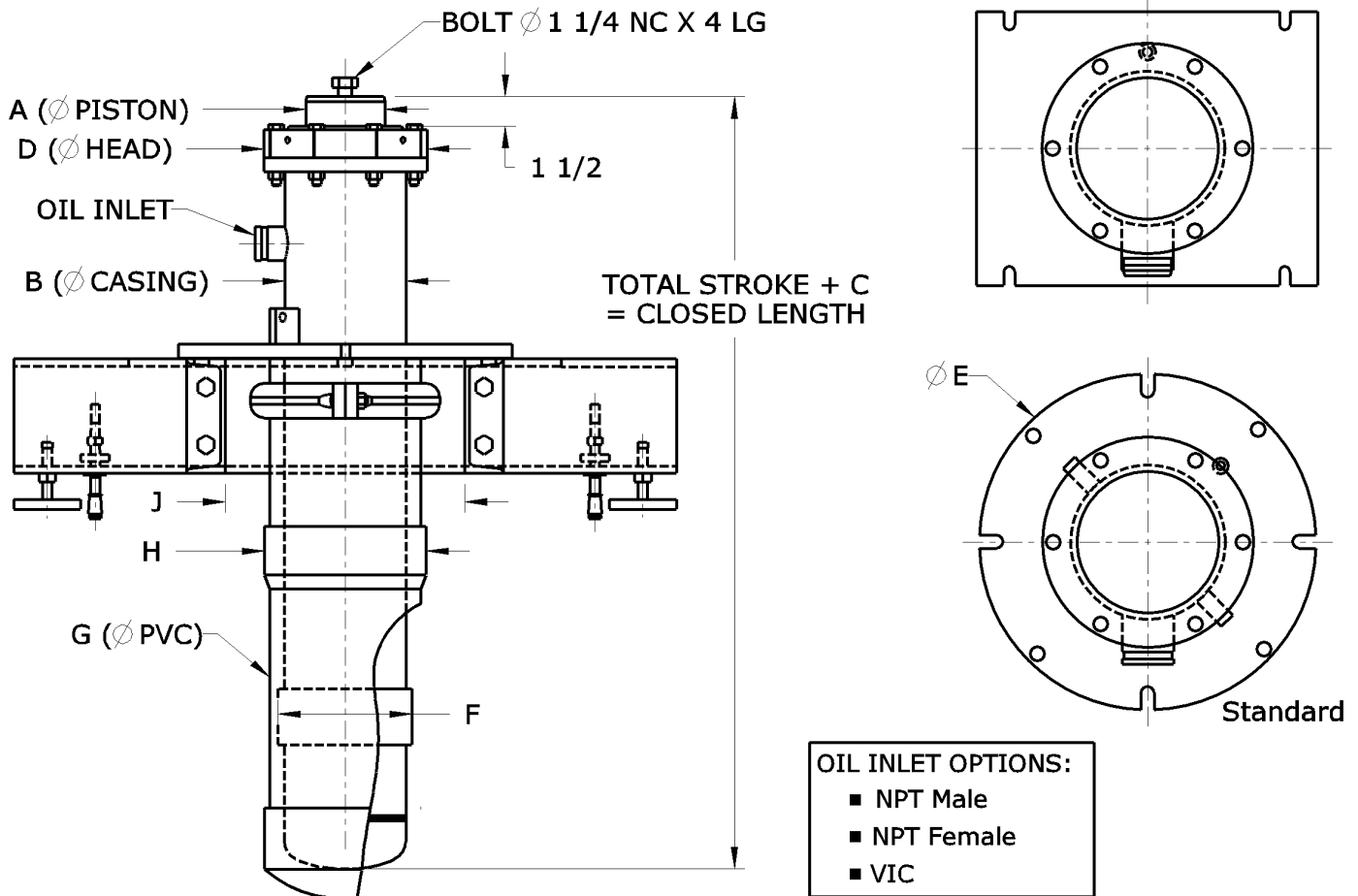


SINGLE STAGE IN-GROUND

A	B	C	D	E	F	G	H	J
Ø PISTON	Ø CASING	STROKE + C = CLOSED LENGTH	Ø HEAD	Ø SUPPORT	Ø RING	Ø PVC	Ø PVC (BELL END)	PIT CHANNEL OPENNING
3 1/2	6 5/8	12 1/2	9 3/4	18 3/4	7 1/2	8	9 3/8	15
4	6 5/8	12 1/2	9 3/4	18 3/4	7 1/2	8	9 3/8	15
4 1/2	6 5/8	12 1/2	9 3/4	18 3/4	7 1/2	8	9 3/8	15
5	8 5/8	13	11 3/4	23 3/4	9 1/2	10	11 1/2	20
5 1/2	8 5/8	13	11 3/4	23 3/4	9 1/2	10	11 1/2	20
6	8 5/8	13	11 3/4	23 3/4	9 1/2	10	11 1/2	20
6 1/2**	8 5/8	13	11 3/4	23 3/4	9 1/2	10	11 1/2	20
6 1/2	10 3/4	14	14 1/4	23 3/4	11 1/2	12	13 5/8	20
7 1/2	10 3/4	14	14 1/4	23 3/4	11 1/2	12	13 5/8	20
8 1/2**	10 3/4	14	14 1/4	23 3/4	11 1/2	12	13 5/8	20
8 1/2	12 3/4	15	16 1/4	26 3/4	14	16	17	23
9 1/2	12 3/4	15	16 1/4	26 3/4	14	16	17	23
10 5/8**	12 3/4	15	16 1/4	26 3/4	14	16	17	23
10 5/8	14	15 1/2	18 1/4	26 3/4	14 3/4	16	17	23
12 5/8	16	16	20 1/4	32	17	20	21 1/8	28
13 7/8	16	16	20 1/4	32	17	20	21 1/8	28
15 7/8	20	18	24 1/4	36	21	24	25 3/8	32

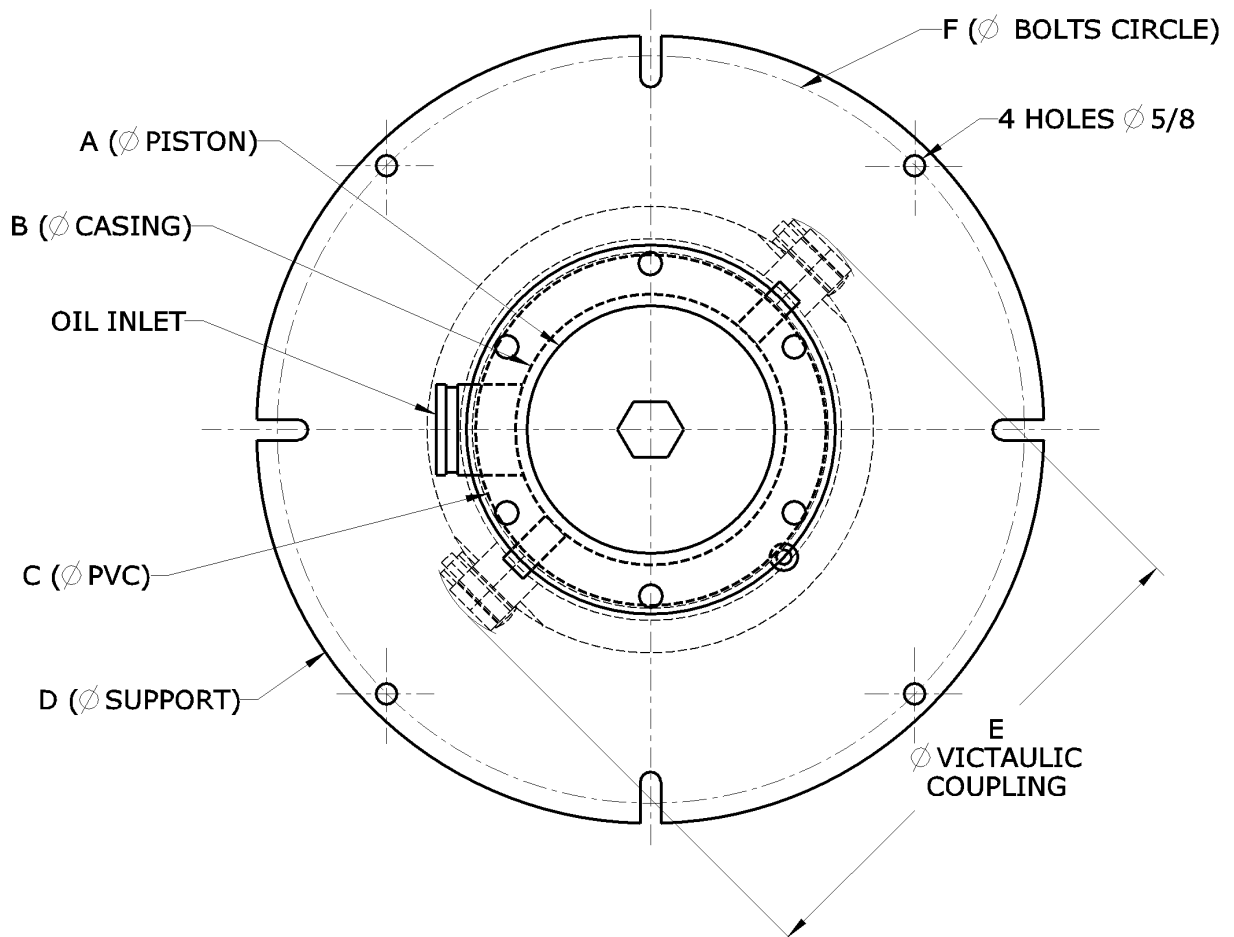
**Max. Travel 40'

Other models available upon request



SINGLE STAGE IN-GROUND JACK - PVC AND SUPPORT

A	B	C	D	E	F
∅ PISTON	∅ CASING	∅ PVC	∅ SUPPORT	∅ VICTAULIC COUPLING	∅ BOLTS CIRCLE
3 1/2	6 5/8	8	18 3/4	14 1/2	17 1/2
4	6 5/8	8	18 3/4	14 1/2	17 1/2
4 1/2	6 5/8	8	18 3/4	14 1/2	17 1/2
5	8 5/8	10	23 3/4	16 3/4	22 1/2
5 1/2	8 5/8	10	23 3/4	16 3/4	22 1/2
6	8 5/8	10	23 3/4	16 3/4	22 1/2
6 1/2	8 5/8	10	23 3/4	16 3/4	22 1/2
6 1/2	10 3/4	12	23 3/4	19	22 1/2
7 1/2	10 3/4	12	23 3/4	19	22 1/2
8 1/2	10 3/4	12	23 3/4	19	22 1/2
8 1/2	12 3/4	16	26 3/4	22 3/8	25 1/2
9 1/2	12 3/4	16	26 3/4	22 3/8	25 1/2
10 5/8	12 3/4	16	26 3/4	22 3/8	25 1/2
10 5/8	14	16	26 3/4	22 3/8	25 1/2
12 5/8	16	20	32	27 1/2	30 1/2
13 7/8	16	20	32	27 1/2	30 1/2
15 7/8	20	24	36	31 3/8	34 1/2



CALCULATION SHEET for SINGLE STAGE JACK

Working pressure (psi) = **K1** X [GL(lbs)] + **K2** X [TotalStroke(ft.)]

Flow (gpm) = **K3** X [Speed(ft./min)]

Required power (HP) = [Working_Pressure(psi)] X [Flow(gpm)] X 0.0007

Required oil volume (gal) = **K3** X [TotalStroke(ft.)]

Pre-filled oil volume (gal) = **K4** X [TotalStroke(ft.)]

Table of the constants

Model	Piston wall thickness	K1	K2	Oil required gal/Ft K3	Pre-filled oil gal/Ft K4
3 1/2	1/4	0,114	0,994	0,500	0,995
4	1/4	0,088	0,878	0,653	0,842
	3/8		1,273		
	1/2		1,638		
4 1/2	1/4	0,069	0,786	0,826	0,669
	3/8		1,144		
	1/2		1,479		
5	1/4	0,056	0,712	1,020	1,564
	3/8		1,039		
	1/2		1,348		
5 1/2	1/4	0,046	0,650	1,234	1,350
	3/8		0,952		
	1/2		1,238		
6	1/4	0,039	0,598	1,469	1,115
	3/8		0,878		
	1/2		1,144		
6 1/2 Casing: &8 5/8	1/4	0,033	0,554	1,724	0,860
	3/8		0,814		
	1/2		1,064		
6 1/2 Casing: &10 3/4	1/4	0,033	0,554	1,724	2,356
	3/8		0,814		
	1/2		1,064		
7 1/2	3/8	0,025	0,712	2,295	1,785
	1/2		0,932		
8 1/2 Casing: &10 3/4	3/8	0,019	0,627	2,991	1,088
	1/2		0,824		
8 1/2 Casing: &12 3/4	3/8	0,019	0,627	2,991	2,883
	1/2		0,824		
9 1/2	1/2	0,016	0,747	3,682	2,193
10 5/8 Casing: &12 3/4	1/2	0,012	0,672	4,606	1,269
10 5/8 Casing: &14	1/2	0,012	0,672	4,606	2,556
12 5/8	1/2	0,009	0,570	6,503	2,985
13 7/8	3/4	0,007	0,766	7,855	1,634
15 7/8	5/6	0,006	0,754	10,282	1,858

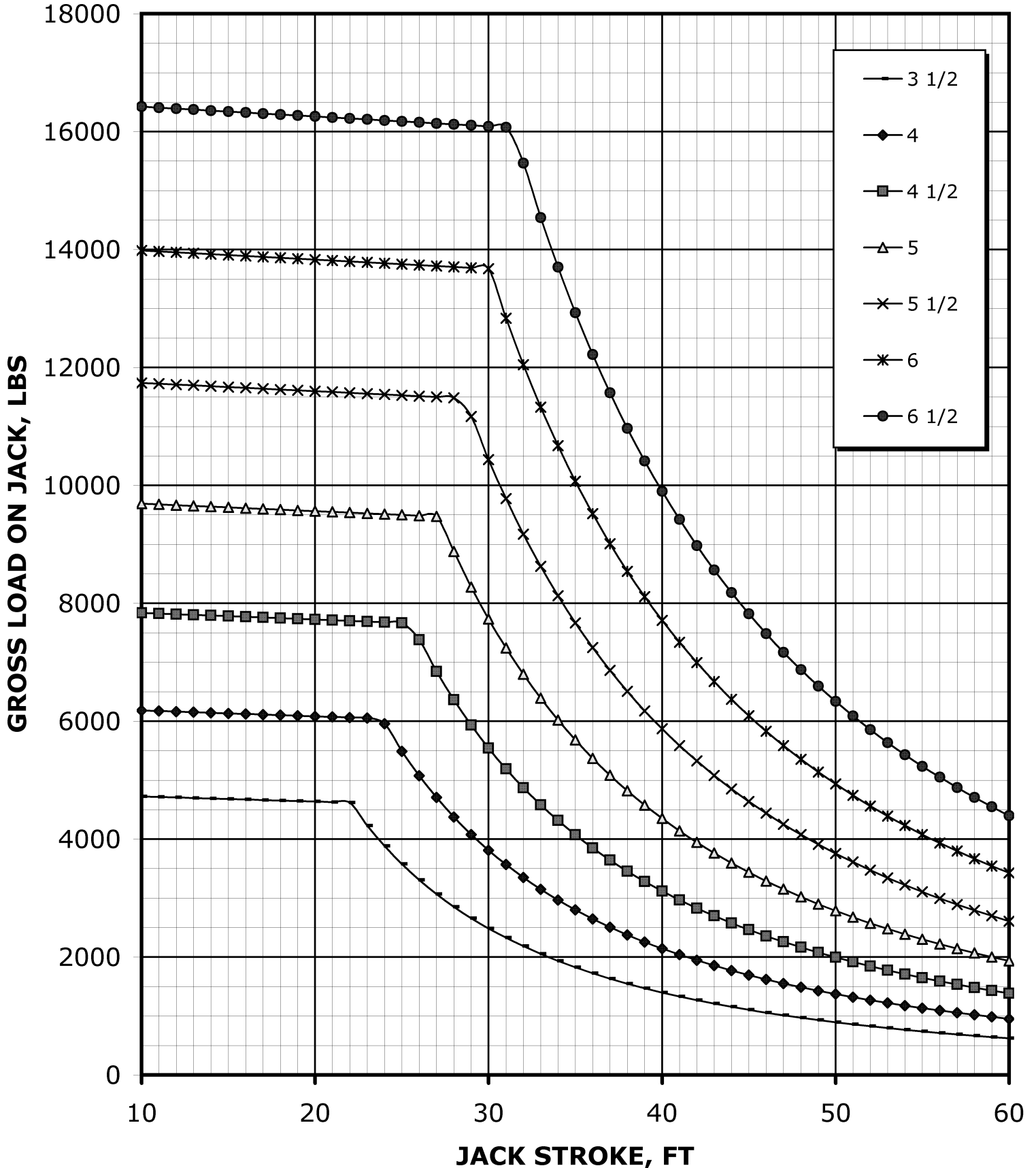
GL = Gross load (lbs)

TotalStroke = Jack total stroke (ft.)

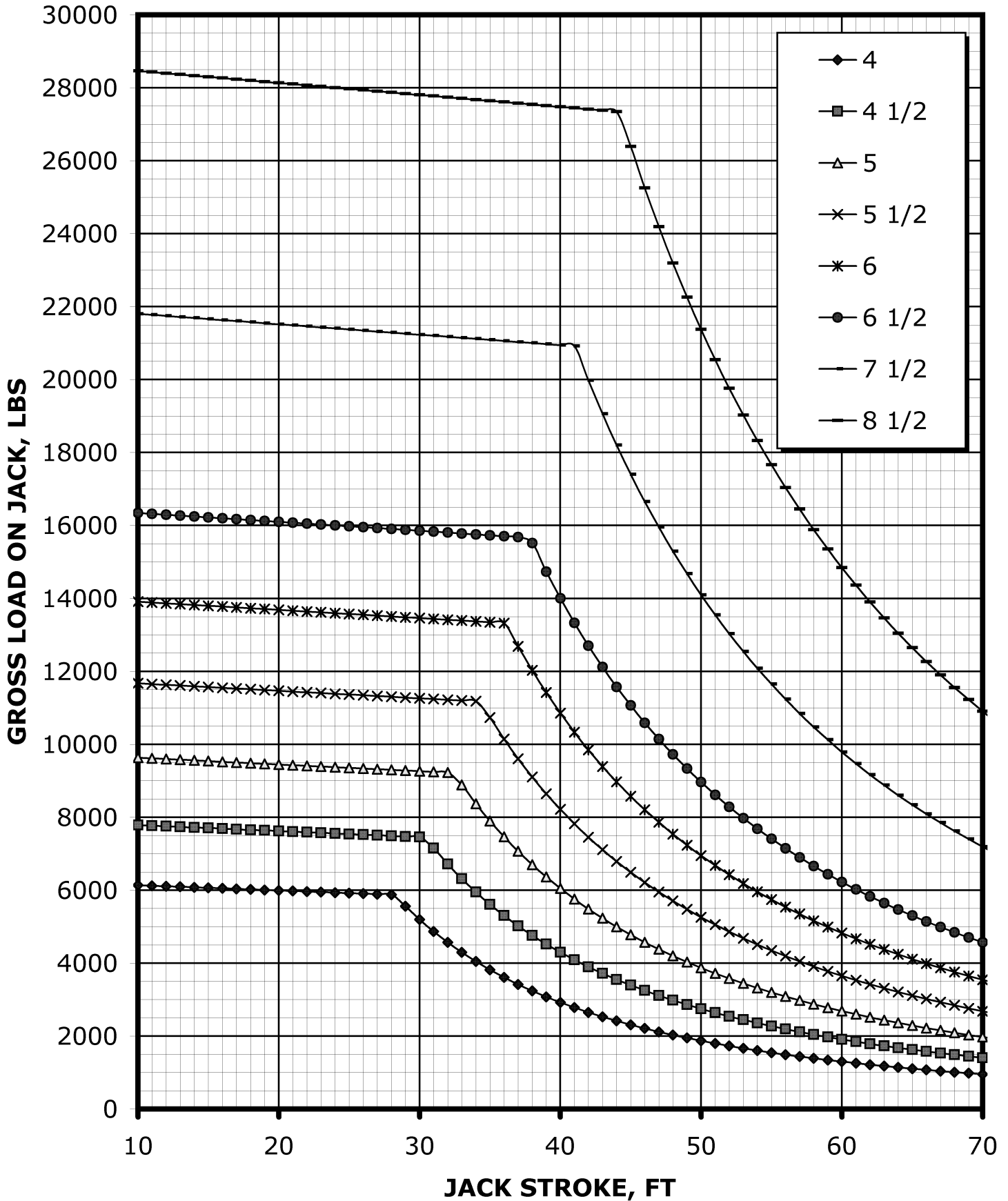
Speed = Speed deployment of the jack (ft./min)



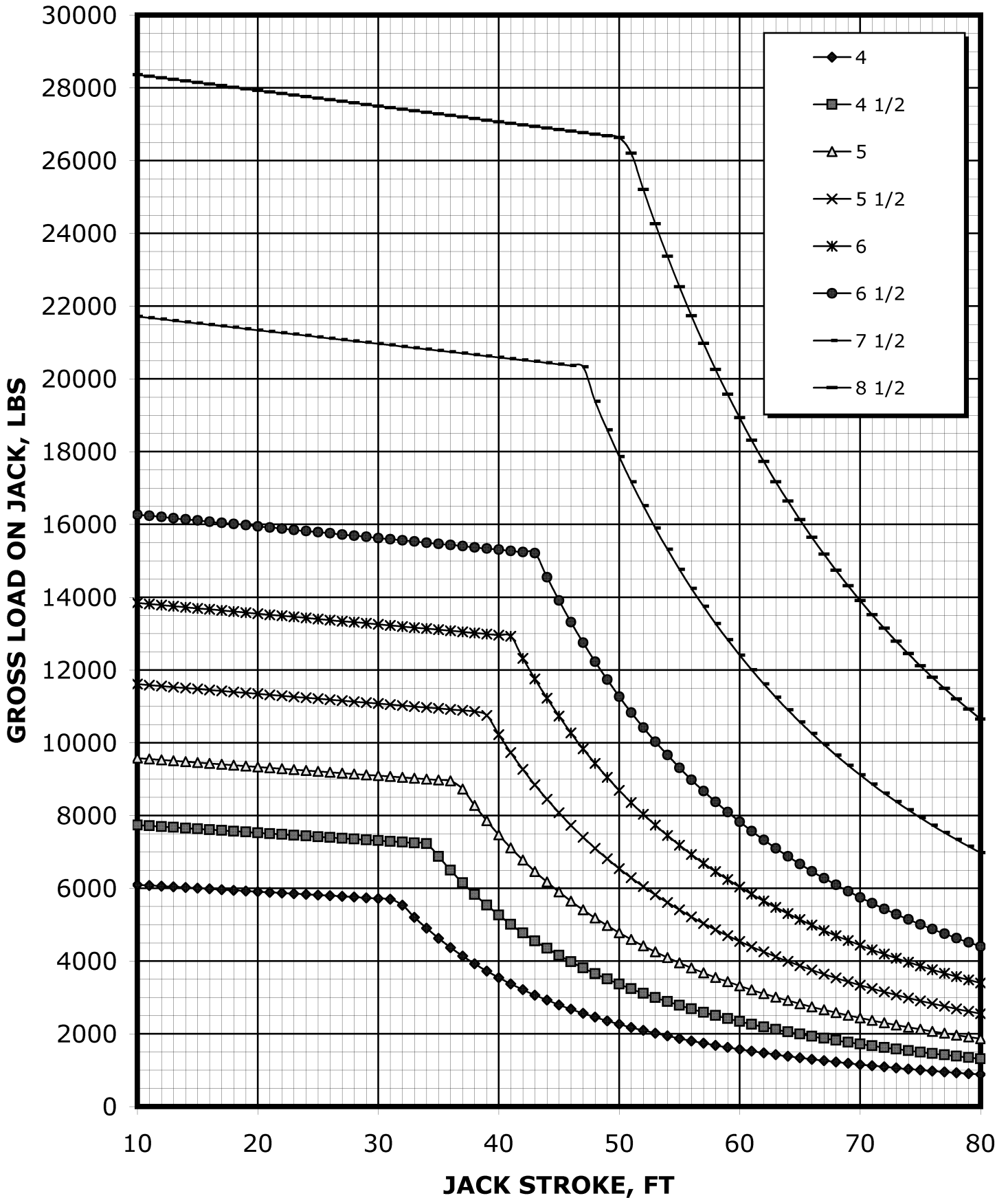
SINGLE STAGE JACK SELECTION CHART
PISTON 1/4" WALL THICKNESS
 (BASED ON WORKING PRESSURE OF 550 PSI)



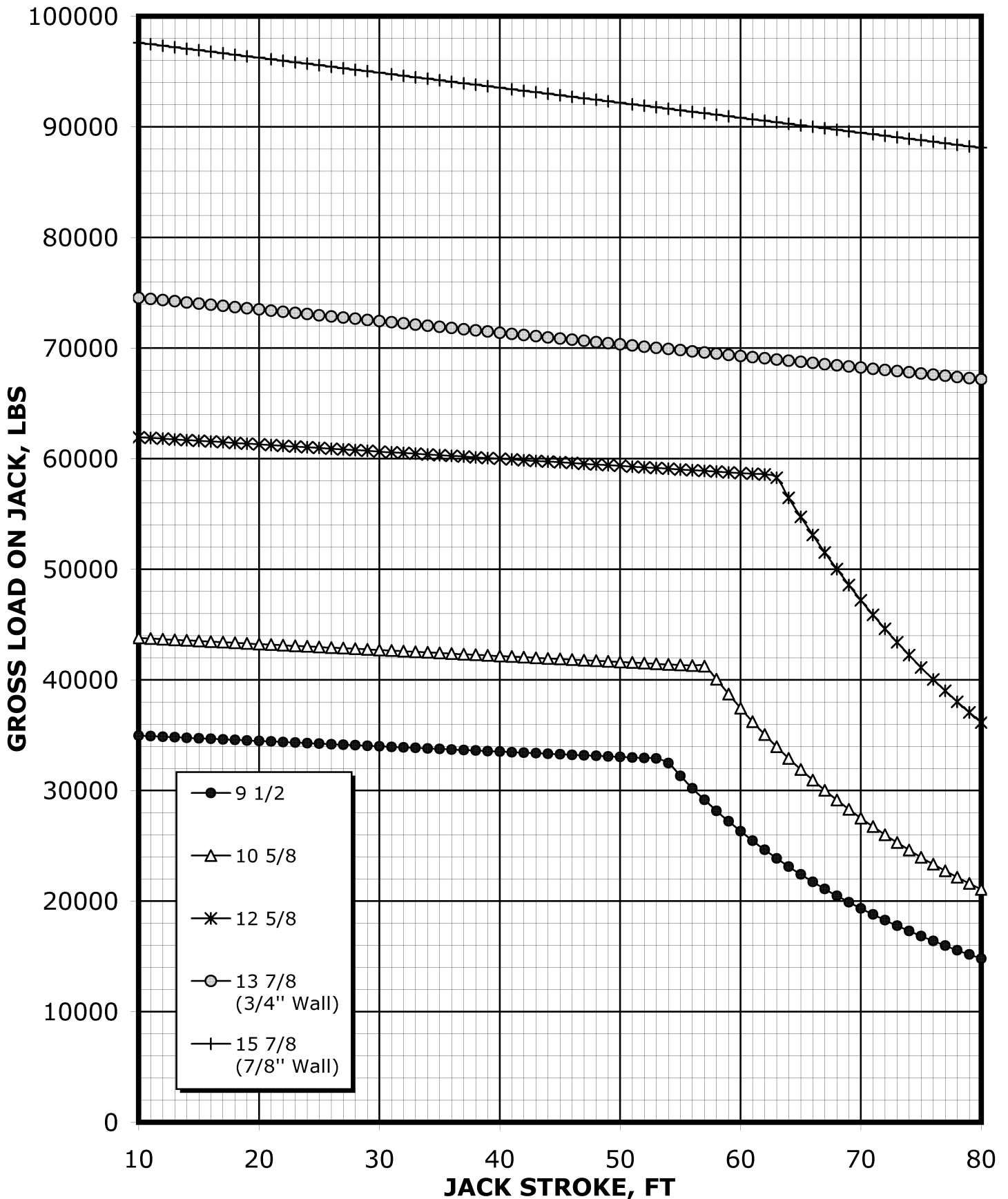
SINGLE STAGE JACK SELECTION CHART
PISTON 3/8" WALL THICKNESS
 (BASED ON WORKING PRESSURE OF 550 PSI)



SINGLE STAGE JACK SELECTION CHART
PISTON 1/2" WALL THICKNESS - SMALL SIZE JACK
(BASED ON WORKING PRESSURE OF 550 PSI)



SINGLE STAGE JACK SELECTION CHART
PISTON 1/2" WALL THICKNESS - BIG SIZE JACK
(BASED ON WORKING PRESSURE OF 550 PSI)



SMALL LIFT APPLICATION



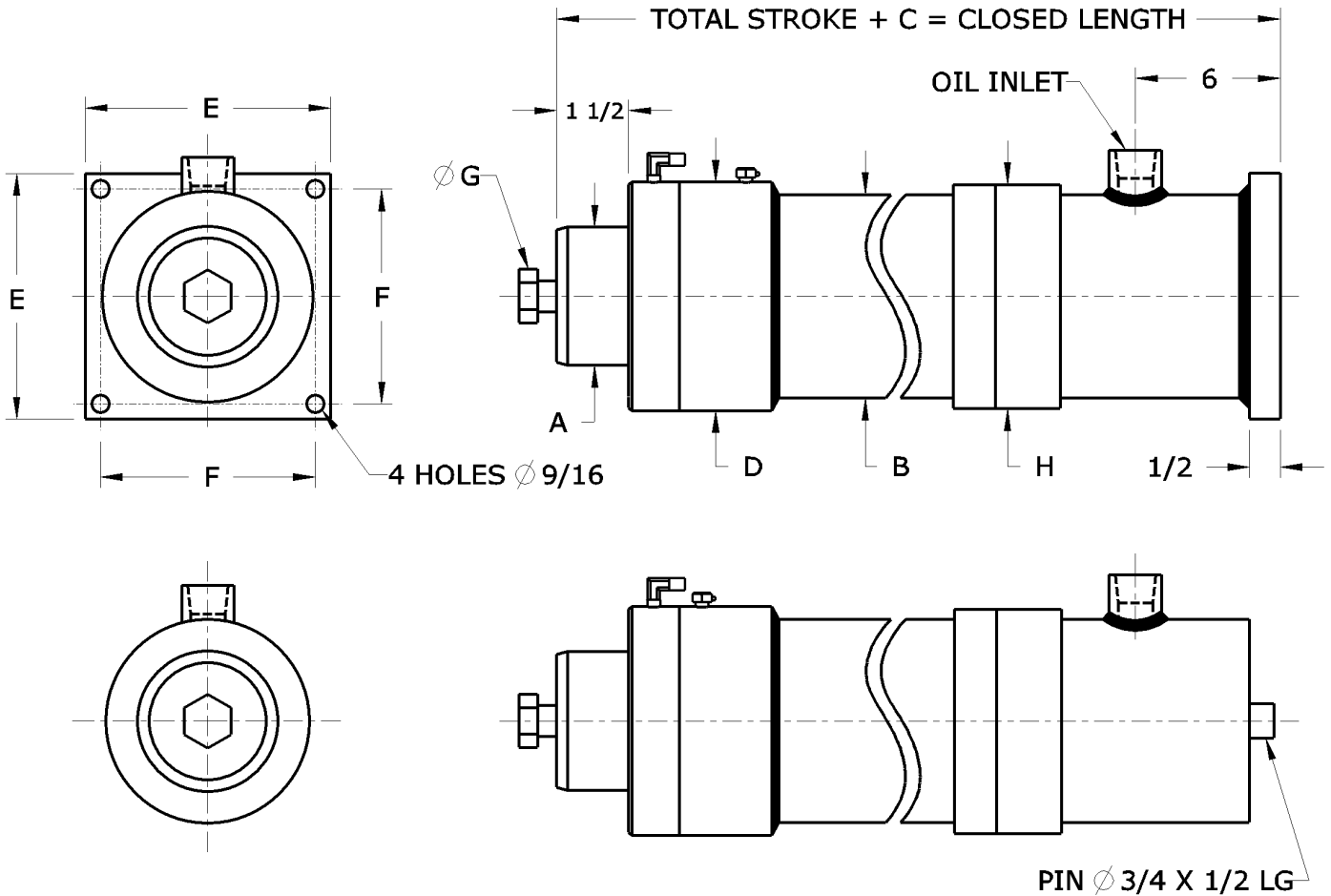
- Piston threaded joint precision and rigidity
- Finished and polished piston to reduce friction losses
- Protective nylon sling
- Threaded without weld
- Assembled, tested, and adjusted at the factory
- Up to 5 000 lbs capacity



SMALL LIFT APPLICATION

A	B	C	D	E	F	G	H
Ø PISTON	Ø CASING	STROKE + C = CLOSED LENGTH	Ø HEAD	PLATE DIM.	HOLES DIM.	Ø BOLT X LENGTH	Ø RING
1 1/2 SOLID	2 1/2	6 1/4	3	4	3	Ø 1/2 NC X 2 LG	3
1 3/4 SOLID	2 3/4	6 1/4	3 1/4	4	3	Ø 1/2 NC X 2 LG	3 1/4
2 1/2	3 1/2	6 1/4	4 1/4	6	5	Ø 3/4 NC X 2 1/2 LG	4
2 3/4	4	6 1/4	4 1/2	6	5	Ø 3/4 NC X 2 1/2 LG	4 1/2
3	4	6 1/4	4 3/4	6	5	Ø 3/4 NC X 2 1/2 LG	4 1/2
3 1/4	4 3/4	6 1/4	5 1/4	6	5	Ø 3/4 NC X 2 1/2 LG	5 1/4
3 1/2	4 3/4	6 1/4	5 1/4	6	5	Ø 3/4 NC X 2 1/2 LG	5 1/4

Other models available upon request



CALCULATION SHEET for SMALL LIFT APPLICATION

Working pressure (psi) = **K1** X [GL(lbs)] + **K2** X [TotalStroke(ft.)]

Flow (gpm) = **K3** X [Speed(ft./min)]

Required power (HP) = [Working_Pressure(psi)] X [Flow(gpm)] X 0.0007

Required oil volume (gal) = **K3** X [TotalStroke(ft.)]

Pre-filled oil volume (gal) = **K4** X [TotalStroke(ft.)]

Table of the constants

Model	Piston wall thickness	K1	K2	Oil required gal/Ft K3	Pre-filled oil gal/Ft K4
H-1 1/2	3/4	0,622	3,745	0,092	0,092
H-1 3/4	7/8	0,457	3,745	0,125	0,082
H-2 1/2	1/4	0,224	1,348	0,255	0,143
H-2 3/4	1/4	0,185	1,238	0,309	0,228
H-3	1/4	0,156	1,144	0,367	0,169
H-3 1/4	1/4	0,133	1,064	0,431	0,306
H-3 1/2	1/4	0,114	0,994	0,500	0,237

GL = Gross load (lbs)

TotalStroke = Jack total stroke (ft.)

Speed = Speed deployment of the jack (ft./min)

The parameters values depend on the mounting configuration of the jack(s).

Configurations:

Direct acting: ▪ Real gross load (lbs)
 ▪ Real speed (ft./min)

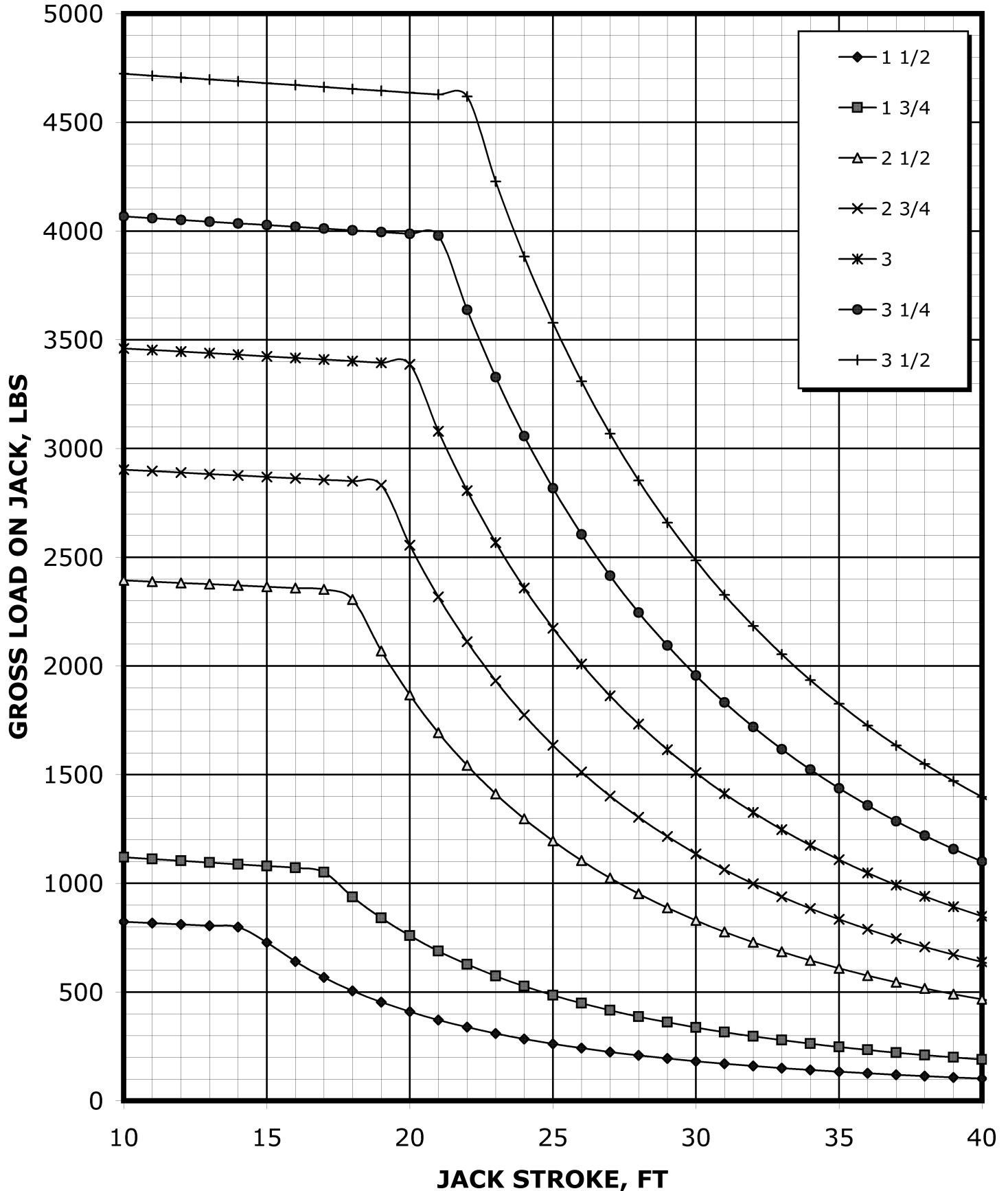
Roped: ▪ *Multiply gross load (lbs) by 2* → GL X 2
 ▪ *Divide speed(ft./min) by 2* → Speed ÷ 2

Twin: ▪ *Divide gross load (lbs) by 2* → GL ÷ 2
 ▪ *Multiply speed(ft./min) by 2* → Speed X 2

Twin roped: ▪ *Same as direct acting*

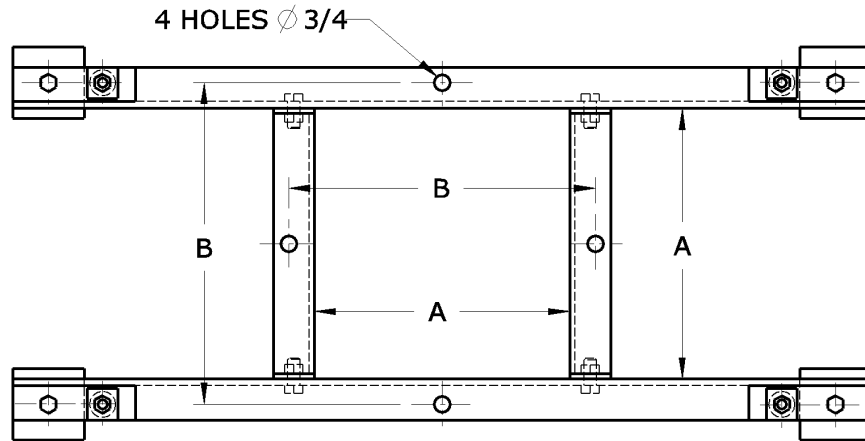


SMALL LIFT APPLICATION JACK SELECTION CHART (BASED ON WORKING PRESSURE OF 550 PSI)



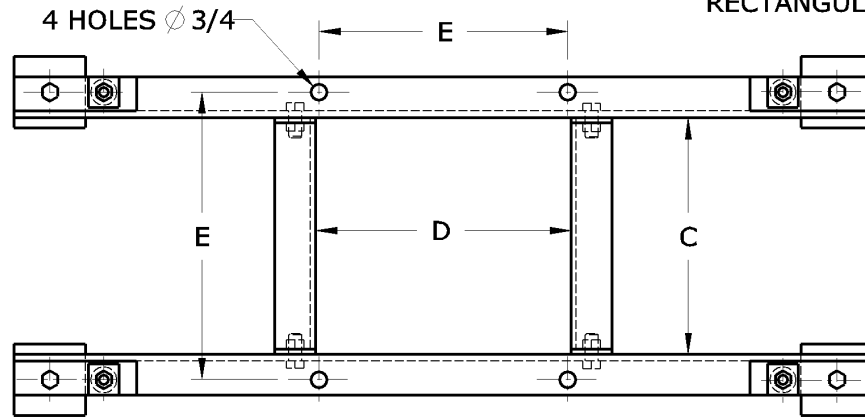
PIT CHANNEL

ROUND SUPPORT PLATE (STD ITI)

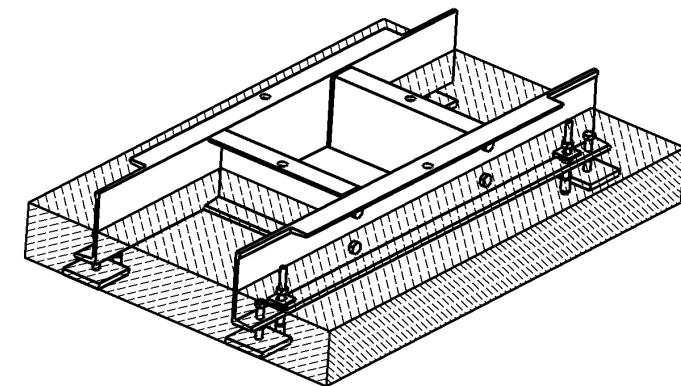
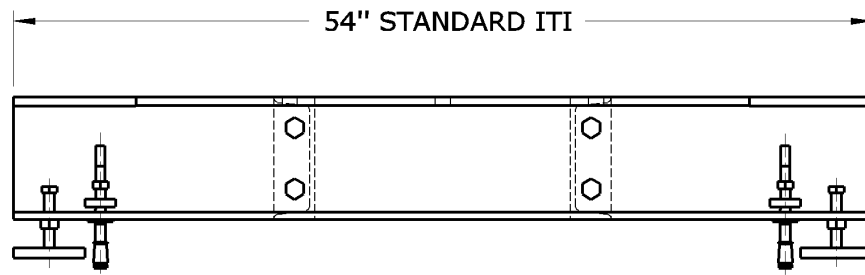


Ø CASING	A	B
6 5/8	15	17 1/2
8 5/8	20	22 1/2
10 3/4	20	22 1/2
12 3/4	23	25 1/2
14	23	25 1/2
16	28	30 1/2

RECTANGULAR SUPPORT PLATE



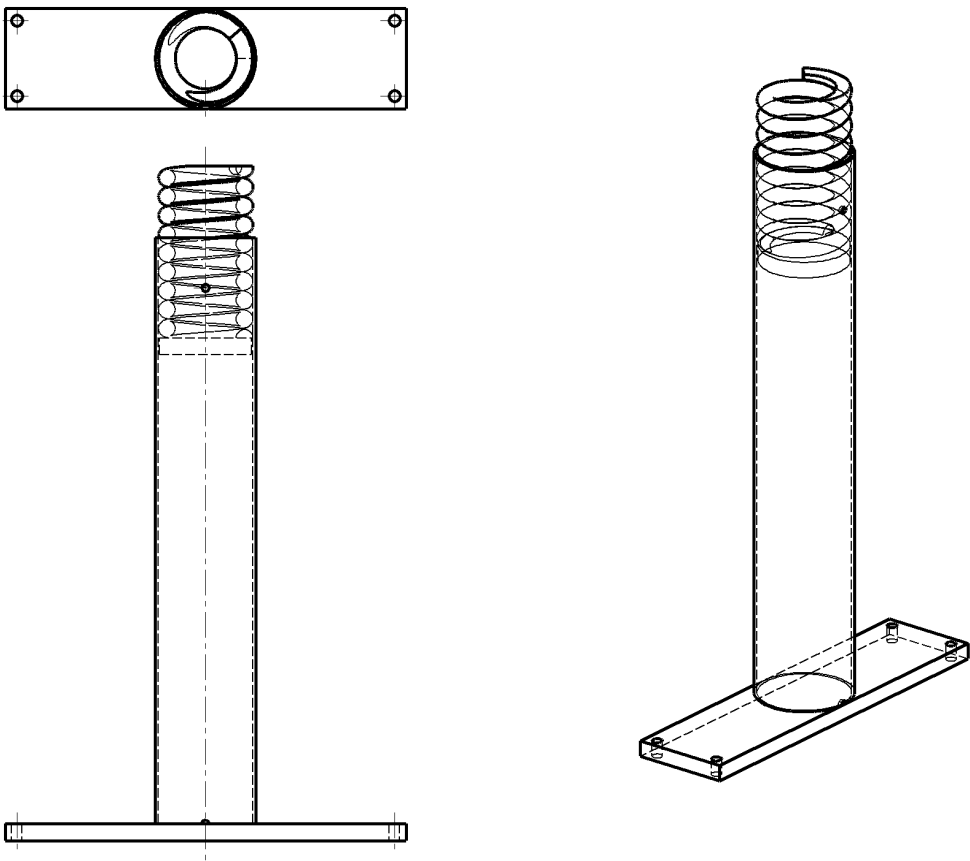
Ø CASING	C	D	E
6 5/8	15	18	17 1/2
8 5/8	15	18	17 1/2
10 3/4	20	24	22 1/2
12 3/4	20	24	22 1/2
16	25	30	27 1/2



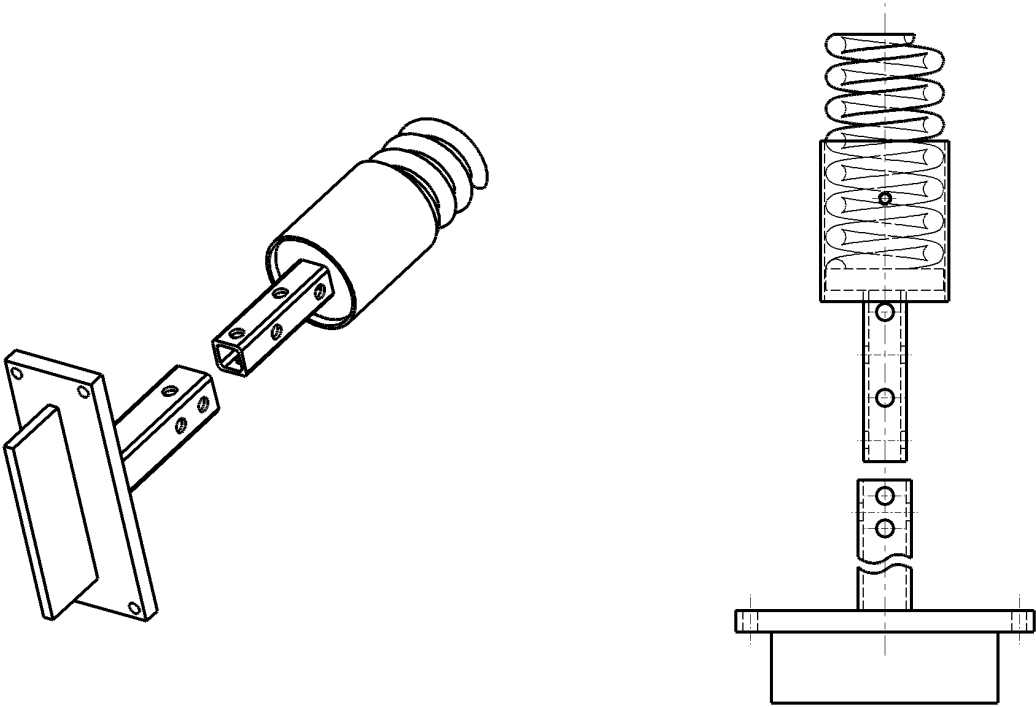
 AREA WHERE YOU NEED TO POUR CONCRETE



BUFFER AND SPRING



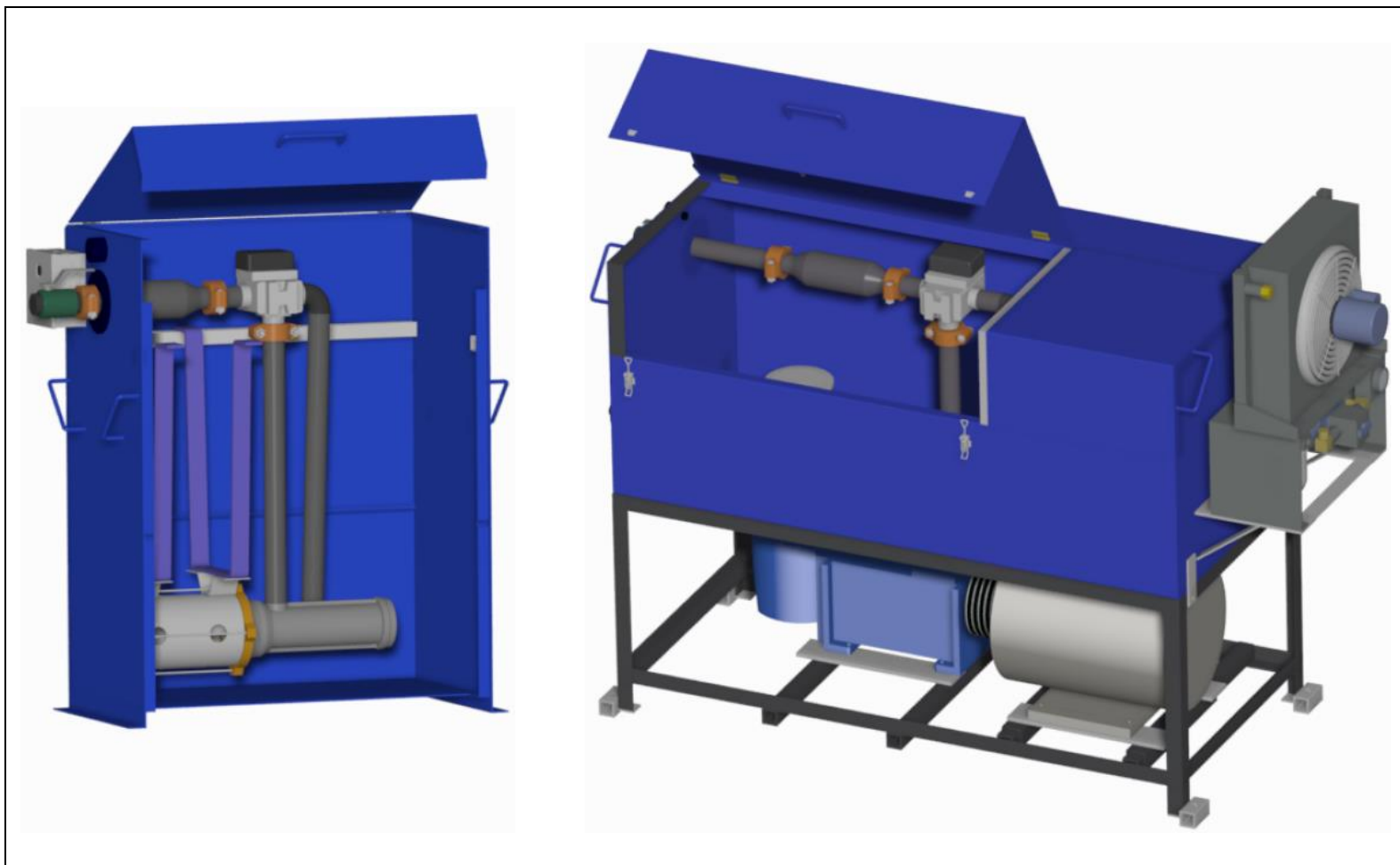
ADJUSTABLE BUFFERS TUBES





I.T.I HYDRAULIK (Les Industries Tournebo Inc.)
3611 Route 346, STE-JULIENNE (QUÉBEC)
CANADA J0K 2T0
TEL: (450) 831-3229, 1-800-953-3229
FAX: (450) 831-2219
www.itihydraulik.com

POWER UNIT



We manufacture our own submersible and VBelt power units to better ensure maximum compatibility with our hydraulic cylinders.

Submersible power unit

- Lower cost
- Less space required

VBelt power unit

- Less noise
- Ease of maintenance and adjustment
- Heavy duty

POWER UNIT EQUIPMENTS

Standard equipment

- Low level switch
- Muffler
- Valve (Maxton)
- Ball valve
- Connection box
- Oil level sight gauge + thermometer

Optional equipment

- Muffler extra
- Ball valve extra
- Pressure negative switch
- Insulating coupling
- Oil heater (120 Volts or 240 Volts)
- Temperature regulator
- Clear hose oil level
- Oil cooler
- Thermistor
- Drip pan
- Line strainer
- Seismic tie down
- Load weight switch
- Anti-vibration pad
- Prevision oil cooler
- Controller mount



Powerful unit

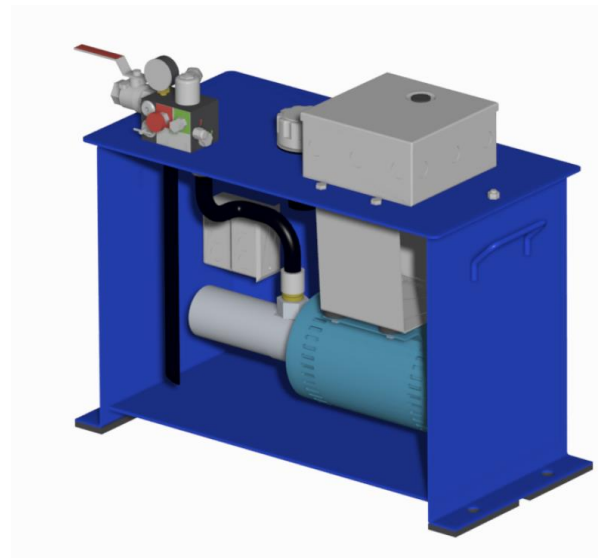
Submersible and Dry units can be built with twin motors in a single tank to increase oil flow.

Custom unit

To better fit your needs, the oil outlet can either be on the left, on the right or on the front side of the tank.

Wide range of tank size

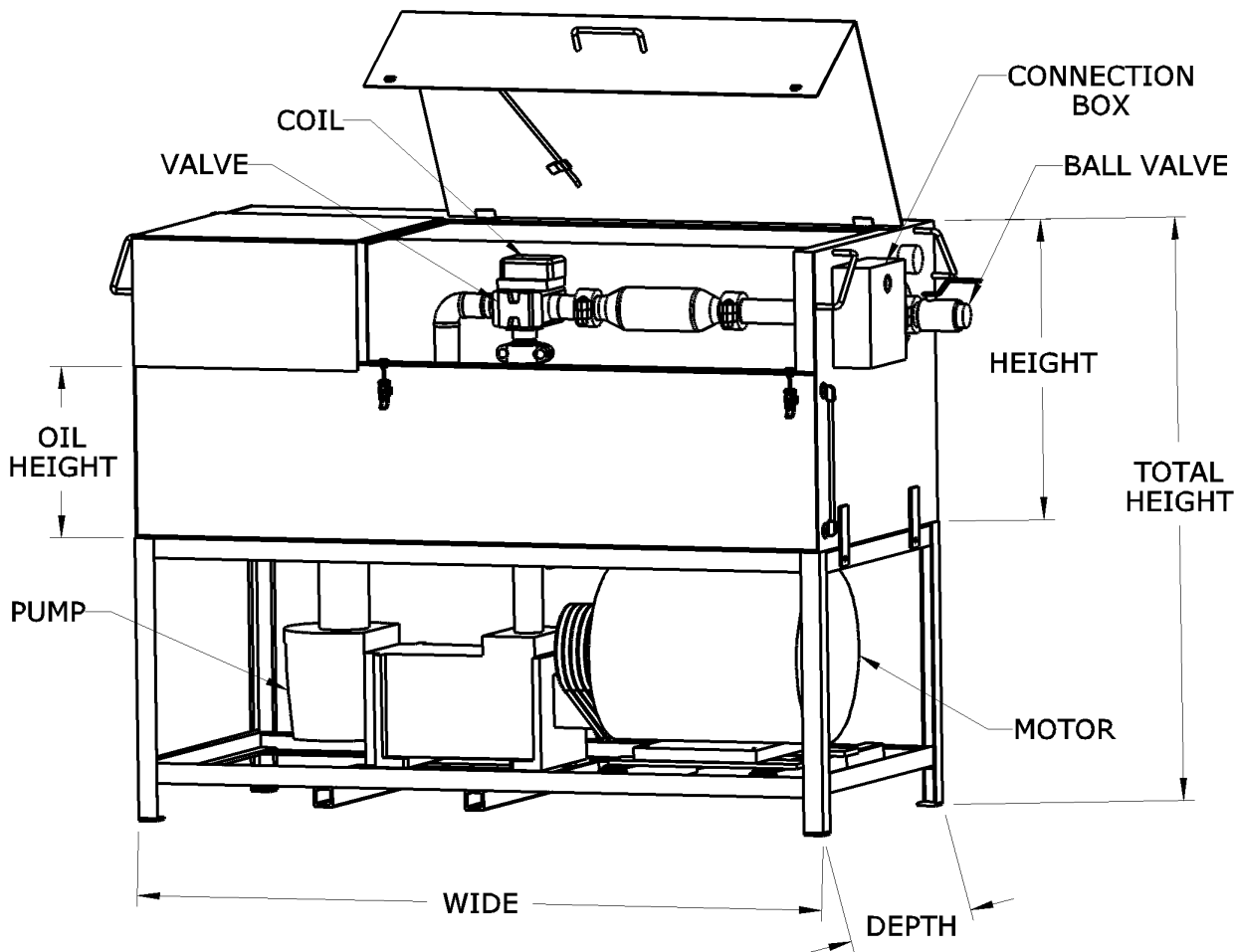
The tanks have a wide range of oil capacities, ranging from 80 US gallons to over 800 US gallons (for some custom designs). We also offer smaller units called "Residential units" which have a usable oil capacity from 10 to 45 US gallons. This compact and economic system is suitable for helping people with a disability.



DRY STANDARD UNIT

NAME	TANK DIMENSION (inches)				TOTAL VOLUME (US gal)	RESERVE (US gal)	CAPACITY USEABLE (US gal)	TOTAL HEIGHT (inches)	TOTAL WEIGHT (LBS)
	WIDE	DEPTH	HEIGHT	OIL HEIGHT					
115 gal	60	29	30	18	136	56	79	58	1190 - 1410
145 gal	60	29	32	20	151	56	94	60	1200 - 1420
205 gal	60	29	40	28	211	56	154	68	1250 - 1470
265 gal	60	29	48	36	271	56	215	76	1300 - 1520
325 gal	60	29	56	44	331	56	275	84	1370 - 1590
180 gal	72	34	30	18	191	79	111	58	1330 - 2140
250 gal	72	34	36	24	254	79	175	64	1370 - 2190
300 gal	72	34	42	30	318	79	238	70	1440 - 2250
350 gal	72	34	48	36	382	79	302	76	1490 - 2300
440 gal	72	34	54	42	445	79	366	82	1510 - 2320
500 gal	72	34	60	48	509	79	429	88	1550 - 2370

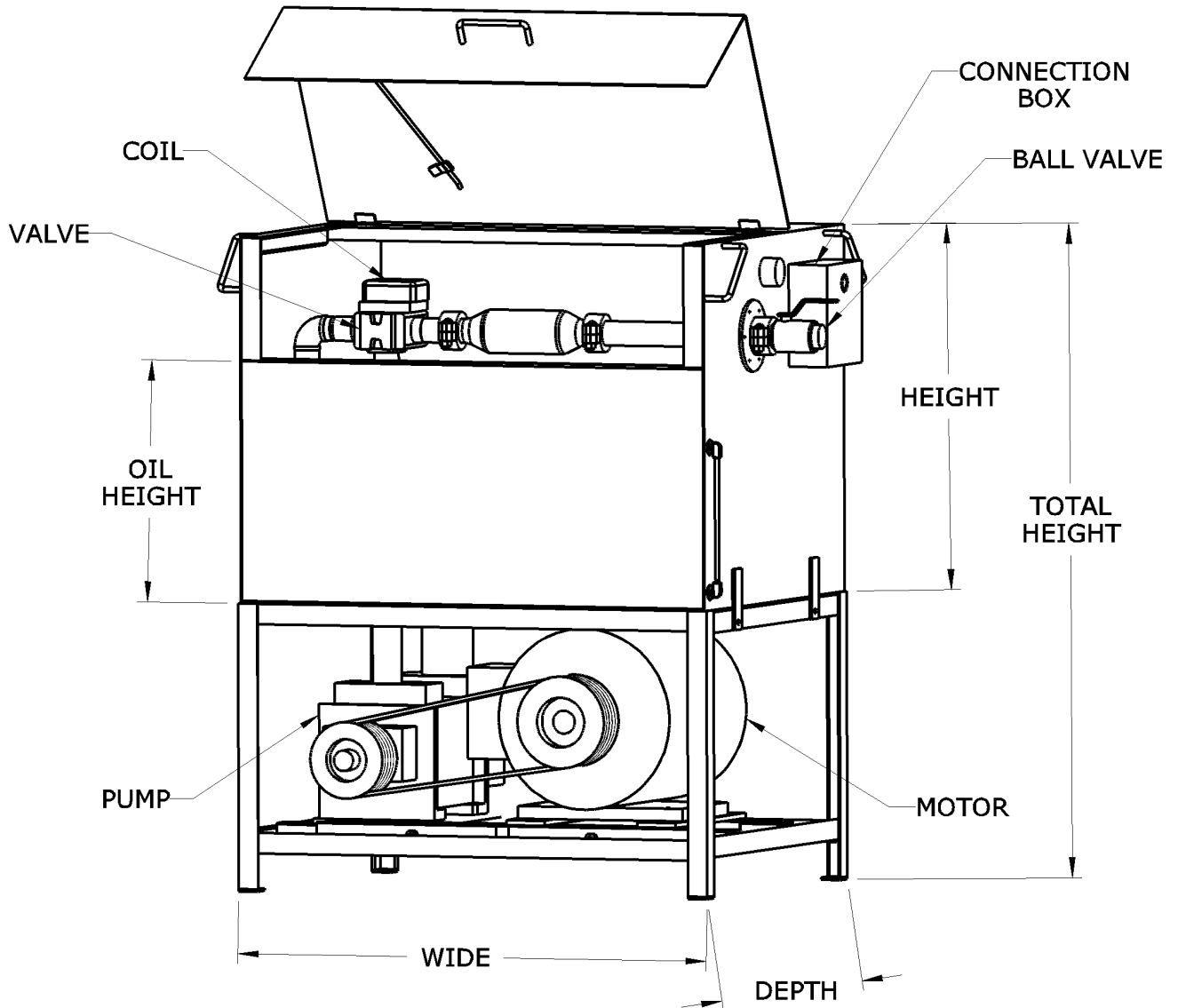
The total weight does not include oil and optional equipment.



DRY CUSTOM UNIT

NAME	TANK DIMENSION (inches)				TOTAL VOLUME (US gal)	RESERVE (US gal)	CAPACITY USEABLE (US gal)	TOTAL HEIGHT (inches)	TOTAL WEIGHT (LBS)
	WIDE	DEPTH	HEIGHT	OIL HEIGHT					
1 MOTOR									
100 gal	48	34	36	24	170	67	102	68	1150 - 1980
600 gal	72	48	53	41	613	112	501	85	1630 - 2450
710 gal	72	48	60	48	718	112	606	92	1690 - 2500
2 MOTORS									
310 gal	96	38	32	20	316	118	197	64	2310 - 3950
550 gal	96	48	40	28	559	190	369	72	2500 - 4100
1000 gal	96	50	62	50	1039	156	883	94	2740 - 4350

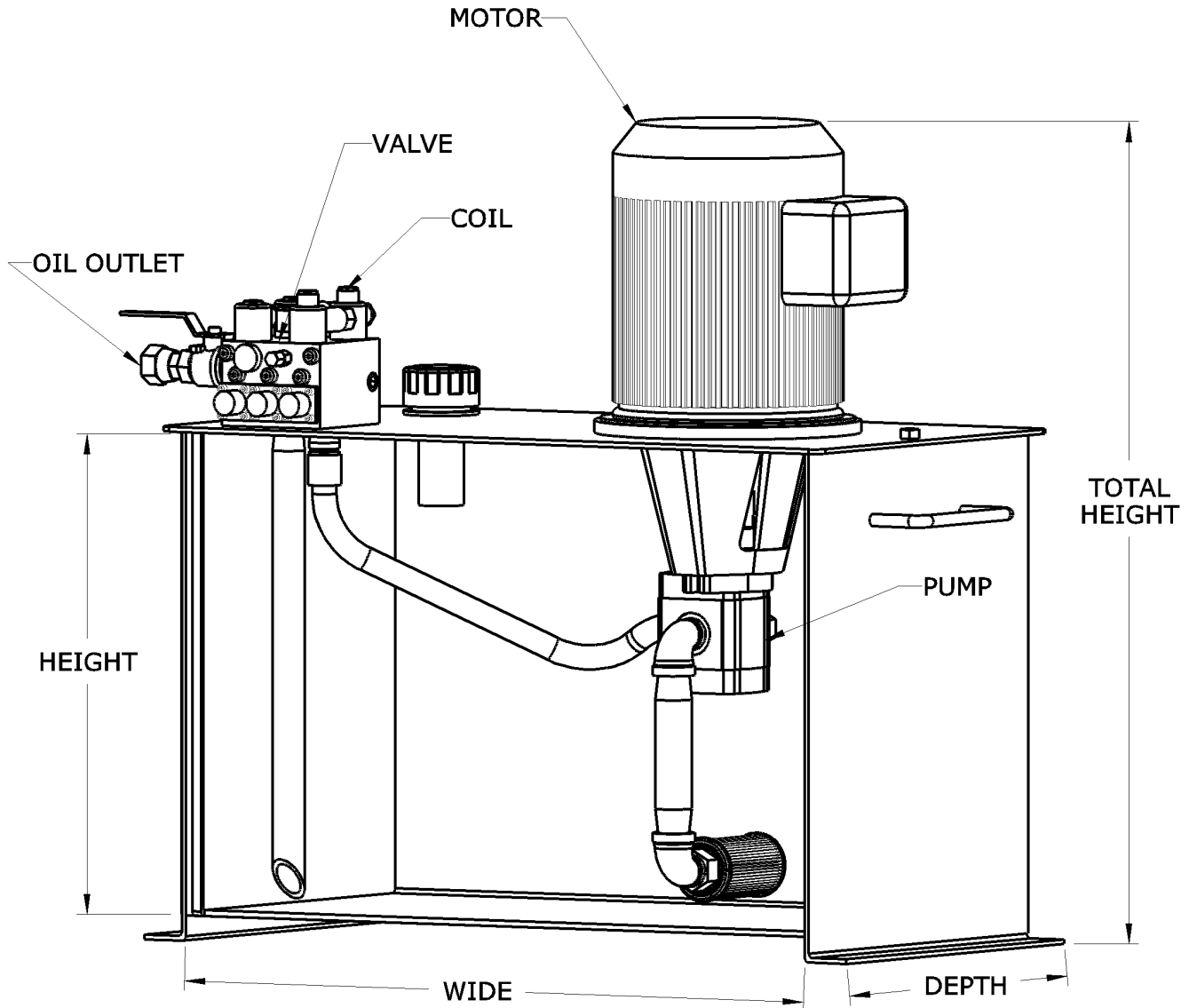
The total weight does not include oil and optional equipment.



RESIDENTIAL DRY UNIT

NAME	TANK DIMENSION (inches)			TOTAL VOLUME (US gal)	RESERVE (US gal)	CAPACITY USEABLE (US gal)	TOTAL HEIGHT (inches)	TOTAL WEIGHT (LBS)
	WIDE	HEIGHT	DEPTH					
10 GAL	16	16	16	17	6	11	36	255 - 355
25 GAL	30	20	16	42	14	28	40	300 - 400
40 GAL	30	25	20	65	19	45	45	340 - 435

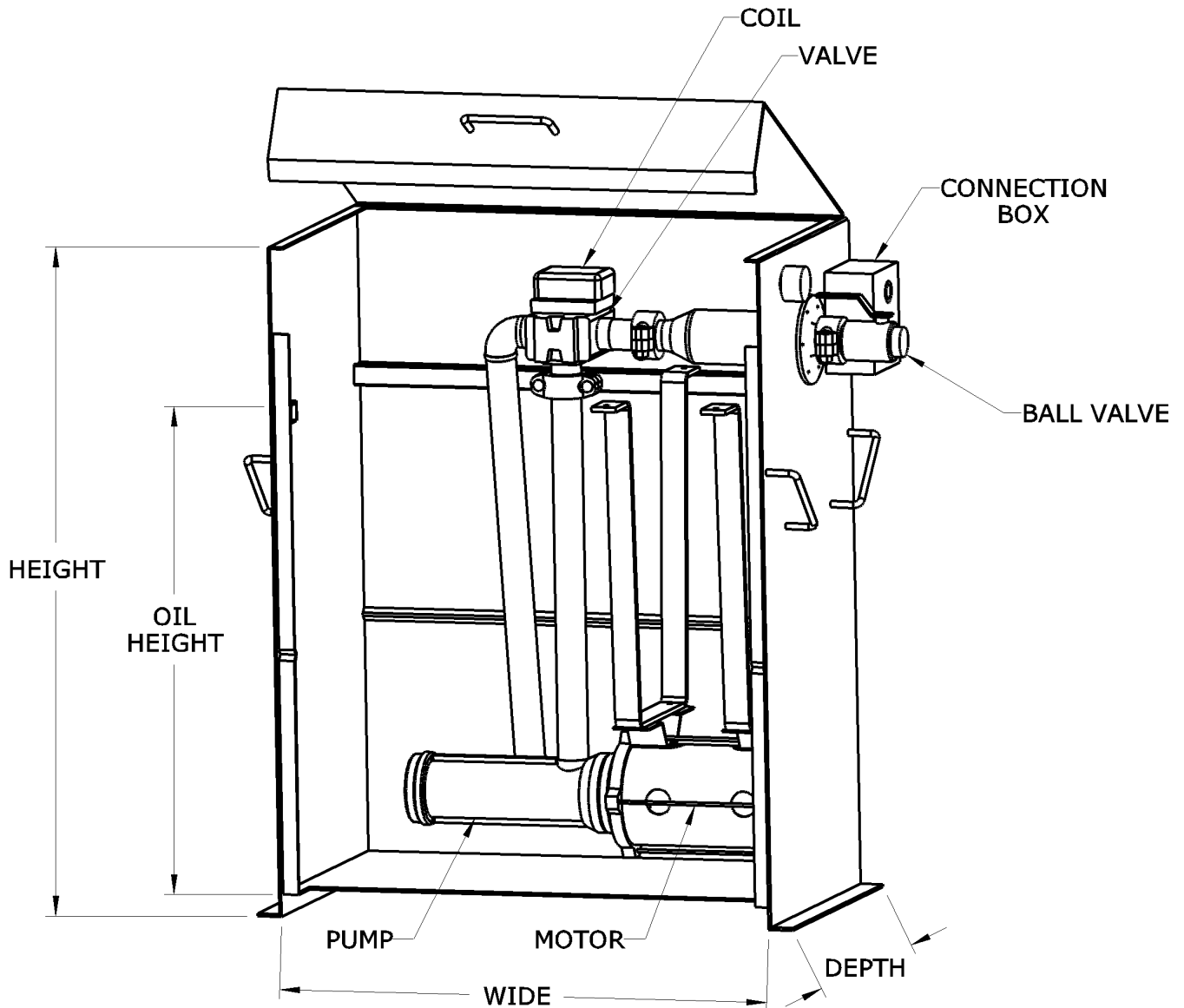
The total weight does not include oil and optional equipment.



SUBMERSIBLE UNIT

NAME	TANK DIMENSION (inches)				TOTAL VOLUME (US gal)	RESERVE (US gal)	CAPACITY USEABLE (US gal)	TOTAL WEIGHT (LBS)
	WIDE	DEPTH	HEIGHT	OIL HEIGHT				
75 gal	36	24	40 1/2	27 1/2	106	50	56	490 - 570
125 gal	40	24	53	40	165	56	110	580 - 670
200 gal	48	30	49 1/2	36 1/2	229	84	145	650 - 730
300 gal	48	34	59	46	329	96	233	750 - 830
450 gal	72	34	59	46	494	144	350	920 - 1000
600 gal	96	36	60	47	673	209	464	1100 - 1180

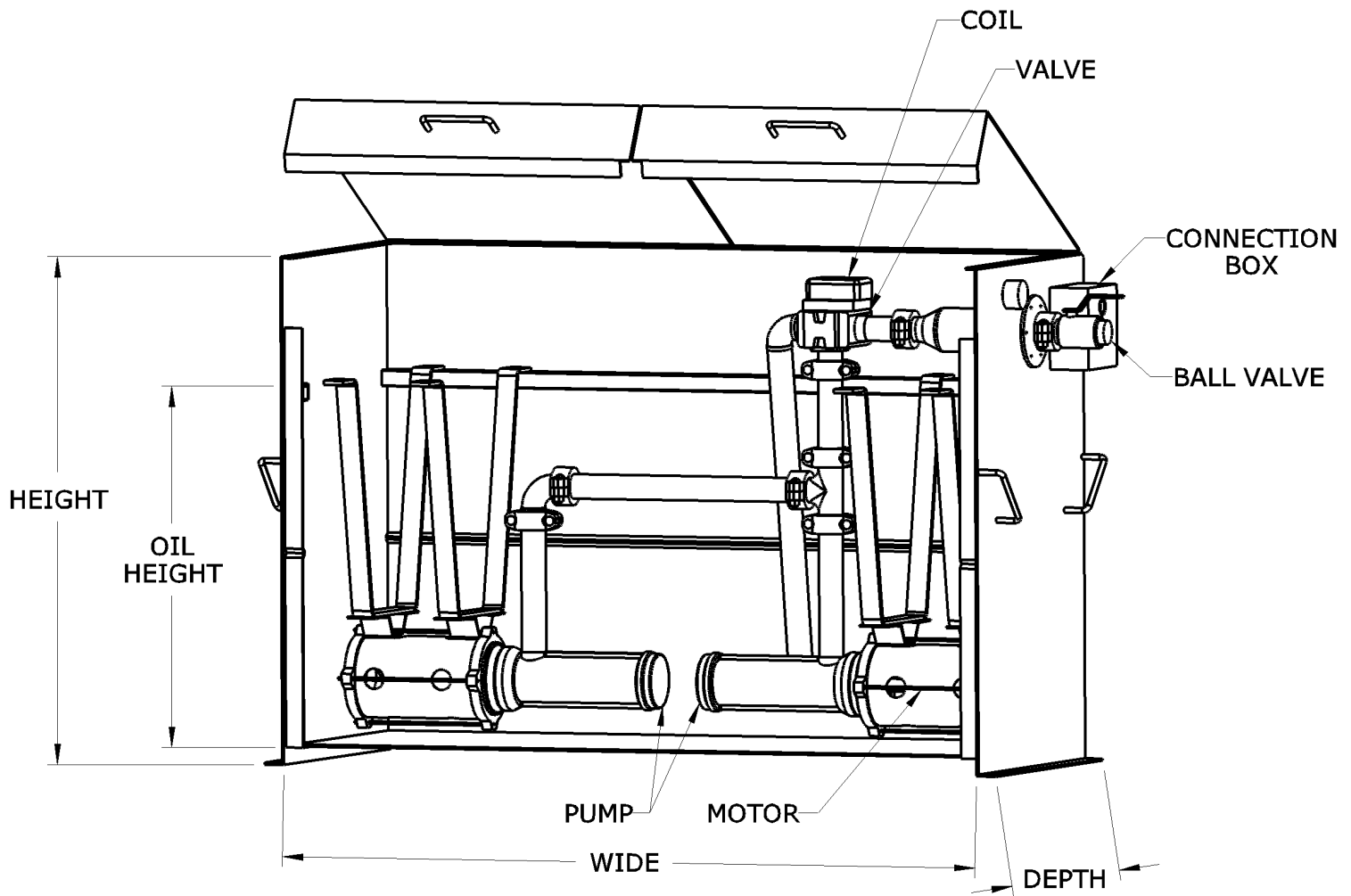
The total weight does not include oil and optional equipment.



SUBMERSIBLE UNIT (TWIN MOTOR)

NAME	TANK DIMENSION (inches)				TOTAL VOLUME (US gal)	RESERVE (US gal)	CAPACITY USEABLE (US gal)	TOTAL WEIGHT (LBS)
	WIDE	DEPTH	HEIGHT	OIL HEIGHT				
275 gal	72	30	49 1/2	36 1/2	320	113	207	1000 - 1140
450 gal	72	34	59	46	494	144	350	1130 - 1270
600 gal	96	36	60	47	673	209	464	1300 - 1440

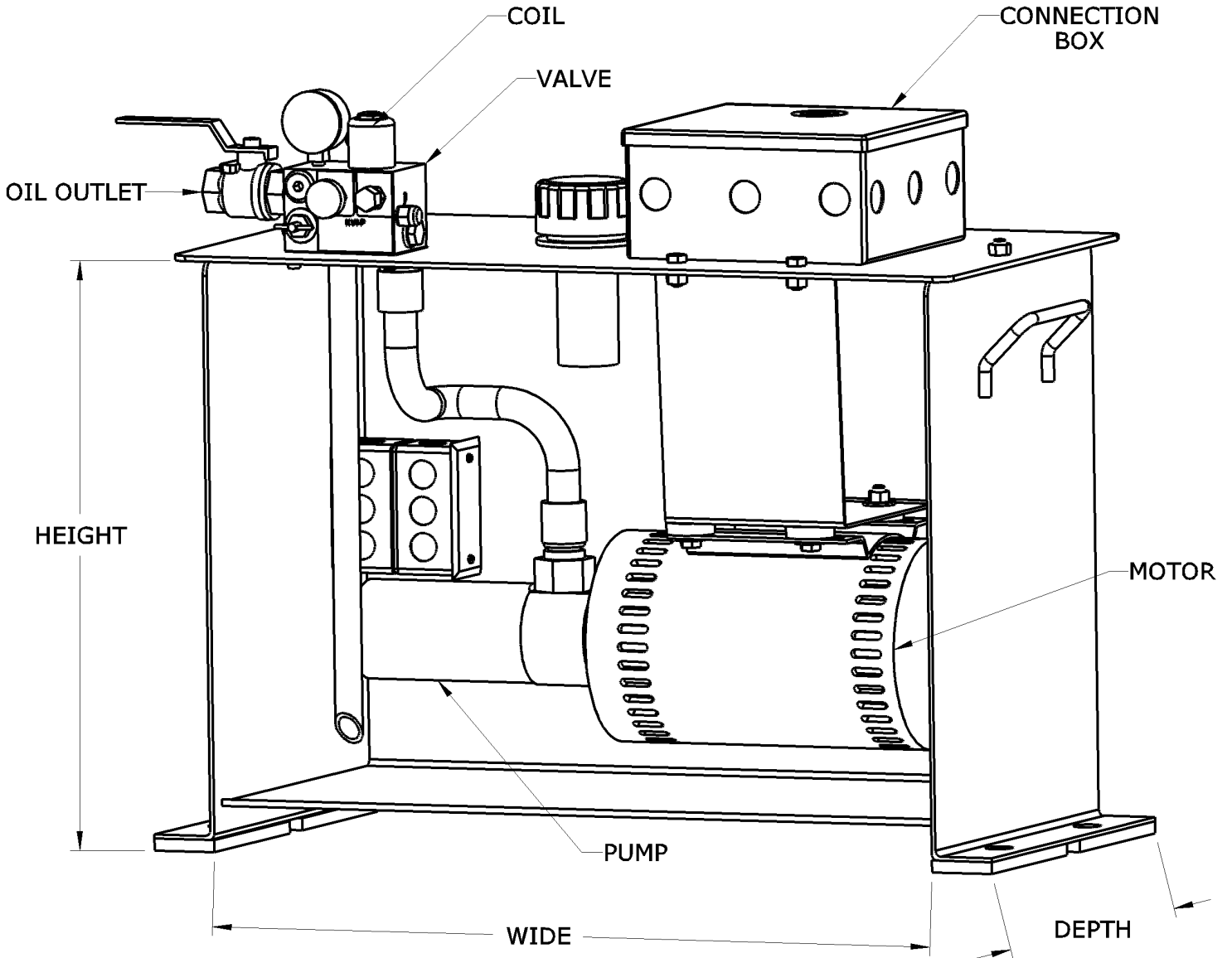
The total weight does not include oil and optional equipment.



RESIDENTIAL SUBMERSIBLE UNIT

NAME	TANK DIMENSION (inches)			TOTAL VOLUME (US gal)	RESERVE (US gal)	CAPACITY USEABLE (US gal)	TOTAL WEIGHT (LBS)
	WIDE	DEPTH	HEIGHT				
10 gal	24	13	18	18	8	10	240 - 350
20 gal	24	13	26	28	8	20	260 - 370

The total weight does not include oil and optional equipment.



TOTAL OIL CALCULATION

The volume of oil needed depends directly of the jack's size and the tank model. The total quantity of oil required is the sums of the jack's pre-filled capacity, the quantity for full extension of the jack, the pipe line volume and the minimum reserve volume in the power unit. All formulas for each jack are available on their calculate sheet from this document. If the pipe line volume is unknown, it can be estimated at 10 percent of the jack's total oil volume. For the minimum reserve oil volume of the tank, the information can be found on the data sheet of each model. It is strongly suggested to choose a bigger tank than the minimum needed to benefit from several advantages. A larger tank volume increases the heat dispersion capacity, allows slowing down the wear of oil and also providing better performance.

Here is an example of how to select the correct size power unit and calculate the total oil volume for a twin 2 sections telescopic jack of 2 ½ piston diameter and ¼ of wall thickness with 25 feet of total stroke.

Tank capacity needed:

Required oil volume for fully extended jack: $0.413 \times 25 = 10.33$ gal
(See page 8)

Useable oil volume needed (sum of 2 jacks): $10.33 \times 2 = \mathbf{20.66}$ gal

The previous volume must be less than the capacity useable by the power unit because a minimum volume of oil must be respected to ensure their proper functioning. For this example, the 25 gal Residential Dry Unit or the 75 gal Submersible Unit should be good options for the system with respectively 28 and 56 gallons useable.

(See page 60 & 61)

Total oil volume needed:

Jack's pre-filled oil volume: All telescopic models are already pre-filled by ITI HYDRAULIK.

(All other model than telescopic **must** be calculated from data sheet)

Oil volume in pipe line: $20.66 \times 0.1 = 2.07$ gal

(Estimated to 10% of fully extended jacks oil volume)

Oil reserve volume of the 75 gal submersible unit: 50 gal

(see page 61)

Total oil volume needed: $20.66 + 2.07 + 50 = \mathbf{72.73}$ gal

(Include pre-filled volume for non-telescopic models)

