Trailer Tipper Kit Selection Program

VictorianHydraulics

2022

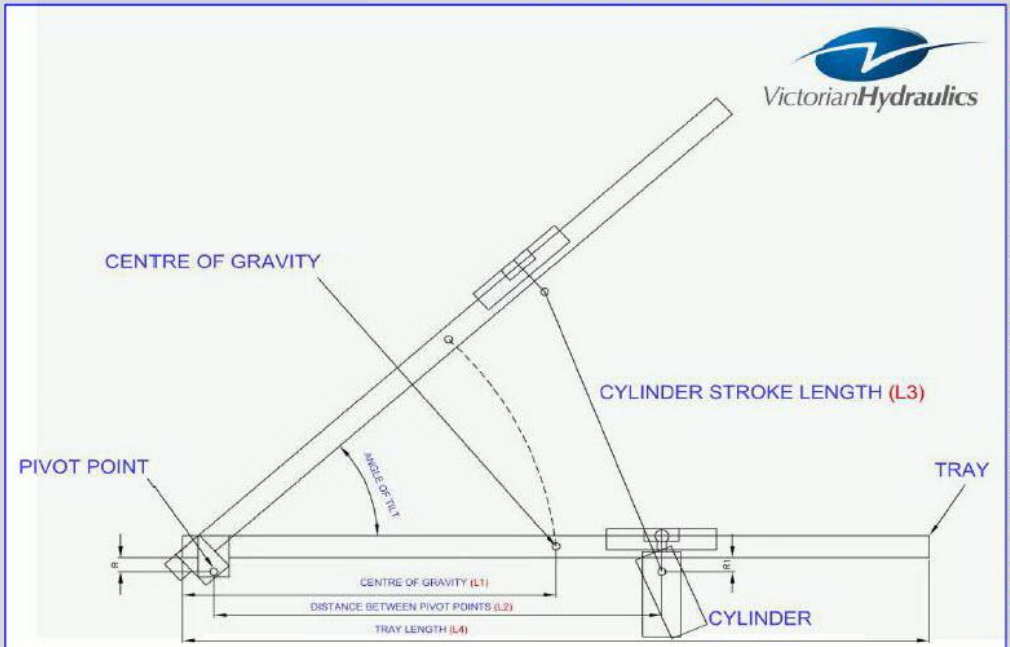
Tipper Trailer Kit Selection

- When assisting a manufacturer as to the design and product selection, several factors need to be taken into account:
  - Tray Length (mm)
  - Distance between Pivot points (mm)
    - Hinge pivot to Trunion pivot
  - Nett tray weight (kg)
  - Gross Load & Tray weight (kg)
  - Centre of gravity (mm)
    - Mid point of tray length
  - Cylinder stroke (mm)
    - To provide suitable tip angle

  - Refer to Calculation spreadsheet and examples

Tipper Trailer Kit Selection - 8ft

TIPPER CALCULATION SHEET



Tipper Kit Part No.	TK*SHORT

Requires Manual Input			
	Tray Weight (Empty) =	150	kg
	Gross Tray Weight (Loaded) =	3,500	kg
L1	Centre of Gravity =	1,200	mm
L2	Distance between Pivot Points =	1,000	mm
L3	Cylinder Stroke (Ref: Data Sheet) =	800	mm
L4	Tray Length =	2,400	mm
Tilt	Tipping Angle =	47.2	d

Fixed Value		
Max Working Pressure of Cylinder (Pmax) =	160.0	Bar
Flow Rate of Power Pack (Raise) =	5.5	l/min
Flow Rate of Power Pack (Lower) =	9.0	l/min

Referenced Value		
Stroke Volume of Cylinder =	3.2	l
Overall Cylinder Diameter =	90.0	mm
Smallest Rod Diameter =	45.0	mm

Automatically Calculated

KEY		
SET-UP Result =	Acceptable	NOT Acceptable

Using Cylinder Part No	4TG-E90*800QZ		to be able to produce a force of	5	Tonne	at a pressure of	144	Bar
Cylinder can produce a maximum force of	10	Tonne	which includes an underload of	20	%	with a max working press of	160	Bar

IS CYLINDER FORCE ACCEPTABLE FOR APPLICATION?		
SYSTEM OK = Fmax > Y2		
SYSTEM OK? =	SET-UP	ACCEPTABLE

IS CYLINDER SYSTEM LOCATION ACCEPTABLE?		
SYSTEM OK (tact < tmax) =		
SYSTEM OK? =	SET-UP	ACCEPTABLE

IS CYLINDER PRESSURE ACCEPTABLE FOR APPLICATION?		
SYSTEM OK = P < Pmax		
SYSTEM OK? =	SET-UP	ACCEPTABLE

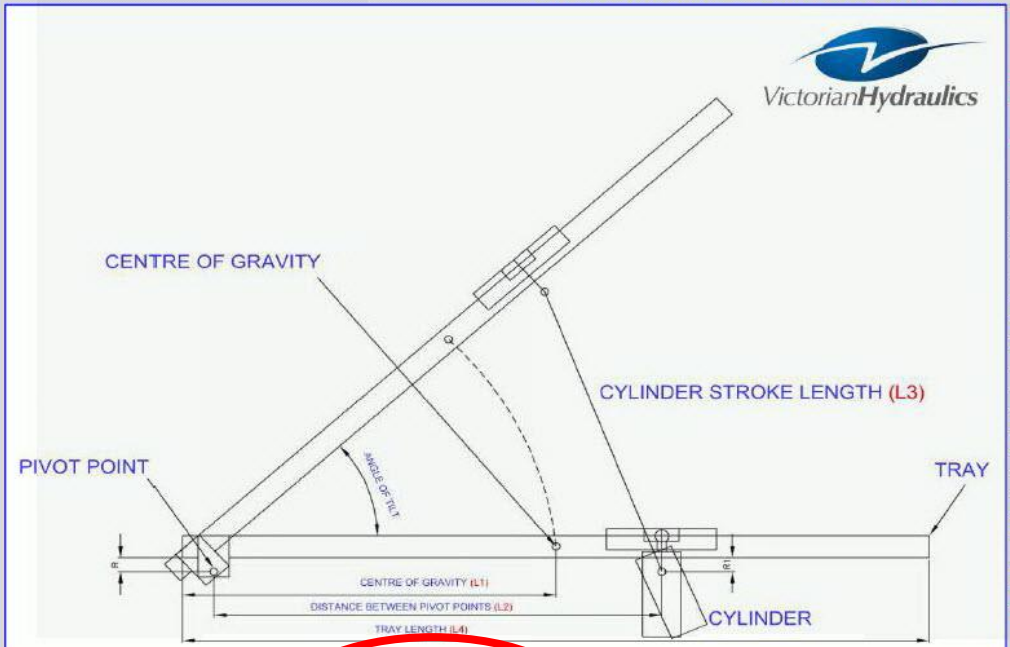
IS POWER PACK TANK ACCEPTABLE FOR APPLICATION?				
6L SRH (Option)	Tank Vol. (usable) =	5.2	l	ACCEPTABLE
10L SSH Standard)	Tank Vol. (usable) =	8.5	l	ACCEPTABLE
15L SSH (Option)	Tank Vol. (usable) =	13.5	l	ACCEPTABLE

IS TIPPING ANGLE ACCEPTABLE FOR APPLICATION?		
SYSTEM OK = d >39 ° & <58 °		
SYSTEM OK? =	SET-UP	ACCEPTABLE

OVERALL APPLICATION SET-UP IS	ACCEPTABLE

Tipper Trailer Kit Selection - 8ft

TIPPER CALCULATION SHEET



Tipper Kit Part No	TK*SHORT

Requires Manual Input			
	Tray Weight (Empty) =	150	kg
	Gross Tray Weight (Loaded) =	3,500	kg
L1	Centre of Gravity =	1,200	mm
L2	Distance between Pivot Points =	1,000	mm
L3	Cylinder Stroke (Ref: Data Sheet) =	800	mm
L4	Tray Length =	2,400	mm
Tilt	Tipping Angle =	47.2	d

Fixed Value		
Max Working Pressure of Cylinder (Pmax) =	160.0	Bar
Flow Rate of Power Pack (Raise) =	5.5	l/min
Flow Rate of Power Pack (Lower) =	9.0	l/min

Referenced Value		
Stroke Volume of Cylinder =	3.2	l
Overall Cylinder Diameter =	90.0	mm
Smallest Rod Diameter =	45.0	mm

Automatically Calculated

KEY		
SET-UP Result =	Acceptable	NOT Acceptable

Using Cylinder Part No	4TG-E90*800QZ							
Cylinder can produce a maximum force of	10	Tonne	which includes an underload of	20	%	with a max working press of	160	Bar

IS CYLINDER FORCE ACCEPTABLE FOR APPLICATION?		
SYSTEM OK = Fmax > Y2		
SYSTEM OK? =	SET-UP	ACCEPTABLE

IS CYLINDER SYSTEM LOCATION ACCEPTABLE?		
SYSTEM OK (tact < tmax) =		
SYSTEM OK? =	SET-UP	ACCEPTABLE

IS CYLINDER PRESSURE ACCEPTABLE FOR APPLICATION?		
SYSTEM OK = P < Pmax		
SYSTEM OK? =	SET-UP	ACCEPTABLE

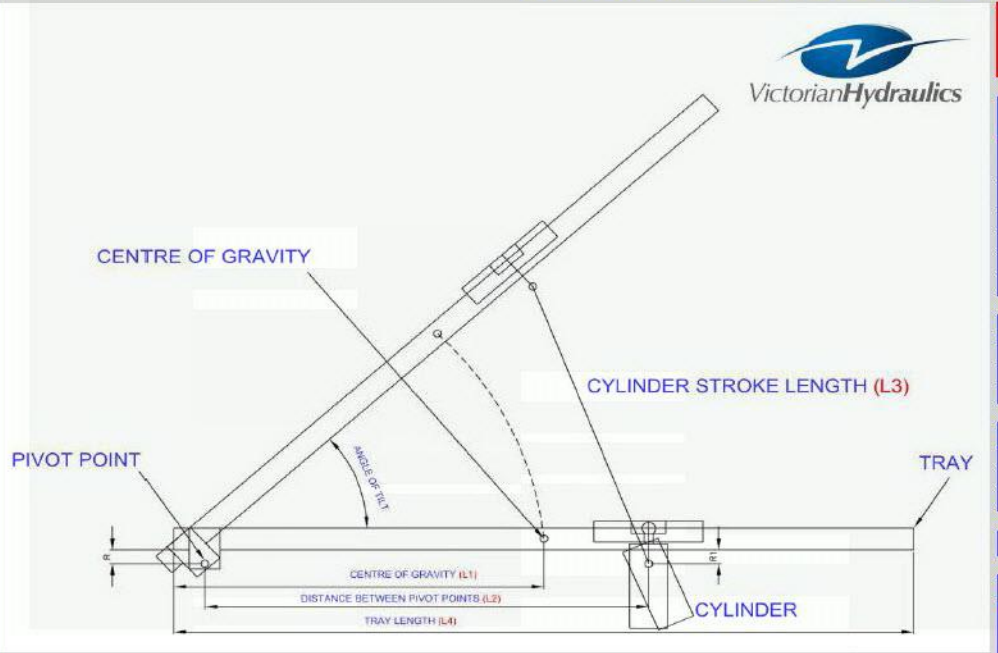
IS POWER PACK TANK ACCEPTABLE FOR APPLICATION?				
6L SRH (Option)	Tank Vol. (usable) =	5.2	l	ACCEPTABLE
10L SSH Standard)	Tank Vol. (usable) =	8.5	l	ACCEPTABLE
15L SSH (Option)	Tank Vol. (usable) =	13.5	l	ACCEPTABLE

IS TIPPING ANGLE ACCEPTABLE FOR APPLICATION?		
SYSTEM OK = d >39 ° & <58 °		
SYSTEM OK? =	SET-UP	ACCEPTABLE

OVERALL APPLICATION SET-UP IS	ACCEPTABLE

Tipper Trailer Kit Selection – 10ft

TIPPER CALCULATION SHEET



Tipper Kit Part No.	TK*LONG

Requires Manual Input

	Tray Weight (Empty) =	180	kg
	Gross Tray Weight (Loaded) =	3,500	kg
L1	Centre of Gravity =	1,500	mm
L2	Distance between Pivot Points =	1,300	mm
L3	Cylinder Stroke (Ref: Data Sheet) =	1,000	mm
L4	Tray Length =	3,000	mm
Tilt	Tipping Angle =	45.2	d

Fixed Value

Max Working Pressure of Cylinder (Pmax) =	160.0	Bar
Flow Rate of Power Pack (Raise) =	5.5	l/min
Flow Rate of Power Pack (Lower) =	9.0	l/min

Referenced Value

Stroke Volume of Cylinder =	4.2	l
Overall Cylinder Diameter =	105.0	mm
Smallest Rod Diameter =	30.0	mm

Automatically Calculated

KEY

SET-UP Result =	Acceptable	NOT Acceptable

Using Cylinder Part No	6TG-E105*1000QZ		to be able to produce a force of	5	Tonne	at a pressure of	140	Bar
Cylinder can produce a maximum force of	14	Tonne	which includes an underload of	20	%	with a max working press of	160	Bar

IS CYLINDER FORCE ACCEPTABLE FOR APPLICATION?		
SYSTEM OK = Fmax > Y2		
SYSTEM OK? =	SET-UP	ACCEPTABLE

IS CYLINDER SYSTEM LOCATION ACCEPTABLE?		
SYSTEM OK (tact < tmax) =		
SYSTEM OK? =	SET-UP	ACCEPTABLE

IS CYLINDER PRESSURE ACCEPTABLE FOR APPLICATION?		
SYSTEM OK = P < Pmax		
SYSTEM OK? =	SET-UP	ACCEPTABLE

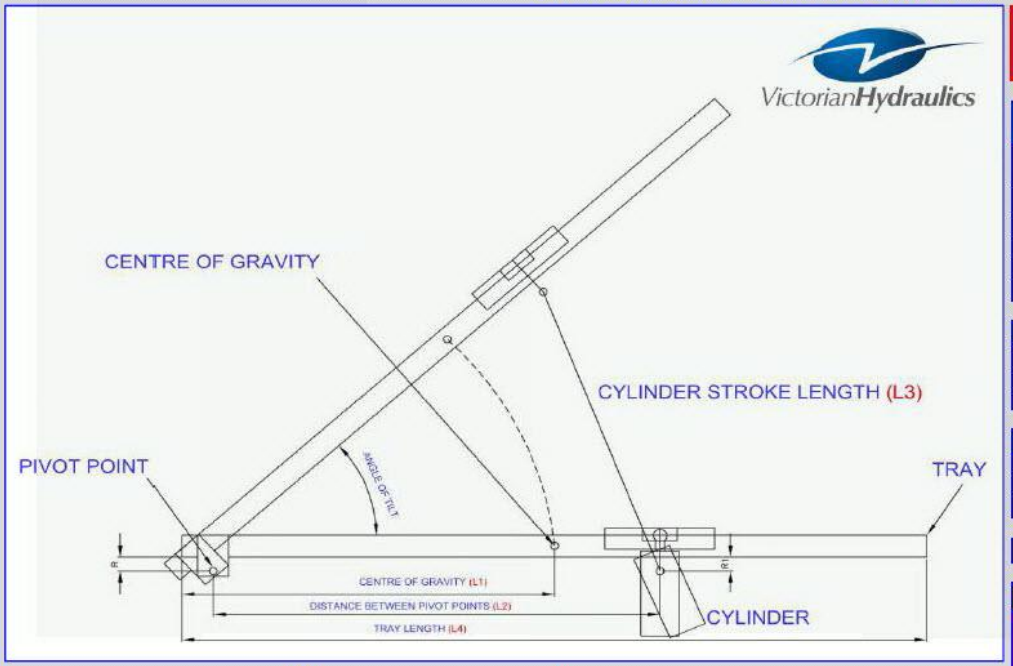
IS POWER PACK TANK ACCEPTABLE FOR APPLICATION?				
6L SRH (Option)	Tank Vol. (usable) =	5.2	l	ACCEPTABLE
10L SSH Standard)	Tank Vol. (usable) =	8.5	l	ACCEPTABLE
15L SSH (Option)	Tank Vol. (usable) =	13.5	l	ACCEPTABLE

IS TIPPING ANGLE ACCEPTABLE FOR APPLICATION?		
SYSTEM OK = d >39 ° & <58 °		
SYSTEM OK? =	SET-UP	ACCEPTABLE

OVERALL APPLICATION SET-UP IS	ACCEPTABLE

Tipper Trailer Kit Selection – 12ft

TIPPER CALCULATION SHEET



Tipper Kit Part No.	TK*XLONG

Requires Manual Input			
	Tray Weight (Empty) =	210	kg
	Gross Tray Weight (Loaded) =	4,000	kg
L1	Centre of Gravity =	1,800	mm
L2	Distance between Pivot Points =	1,600	mm
L3	Cylinder Stroke (Ref: Data Sheet) =	1,250	mm
L4	Tray Length =	3,600	mm
Tilt	Tipping Angle =	46.0	d

Fixed Value		
Max Working Pressure of Cylinder (Pmax) =	160.0	Bar
Flow Rate of Power Pack (Raise) =	5.5	l/min
Flow Rate of Power Pack (Lower) =	9.0	l/min

Referenced Value		
Stroke Volume of Cylinder =	7.7	l
Overall Cylinder Diameter =	120.0	mm
Smallest Rod Diameter =	45.0	mm

Automatically Calculated

KEY		
SET-UP Result =	Acceptable	NOT Acceptable

Using Cylinder Part No	6TG-E120*1250QZ		to be able to produce a force of	6	Tonne	at a pressure of	104	Bar
Cylinder can produce a maximum force of	18	Tonne	which includes an underload of	20	%	with a max working press of	160	Bar

IS CYLINDER FORCE ACCEPTABLE FOR APPLICATION?		
SYSTEM OK = Fmax > Y2		
SYSTEM OK? =	SET-UP	ACCEPTABLE

IS CYLINDER SYSTEM LOCATION ACCEPTABLE?		
SYSTEM OK (tact < tmax) =		
SYSTEM OK? =	SET-UP	ACCEPTABLE

IS CYLINDER PRESSURE ACCEPTABLE FOR APPLICATION?		
SYSTEM OK = P < Pmax		
SYSTEM OK? =	SET-UP	ACCEPTABLE

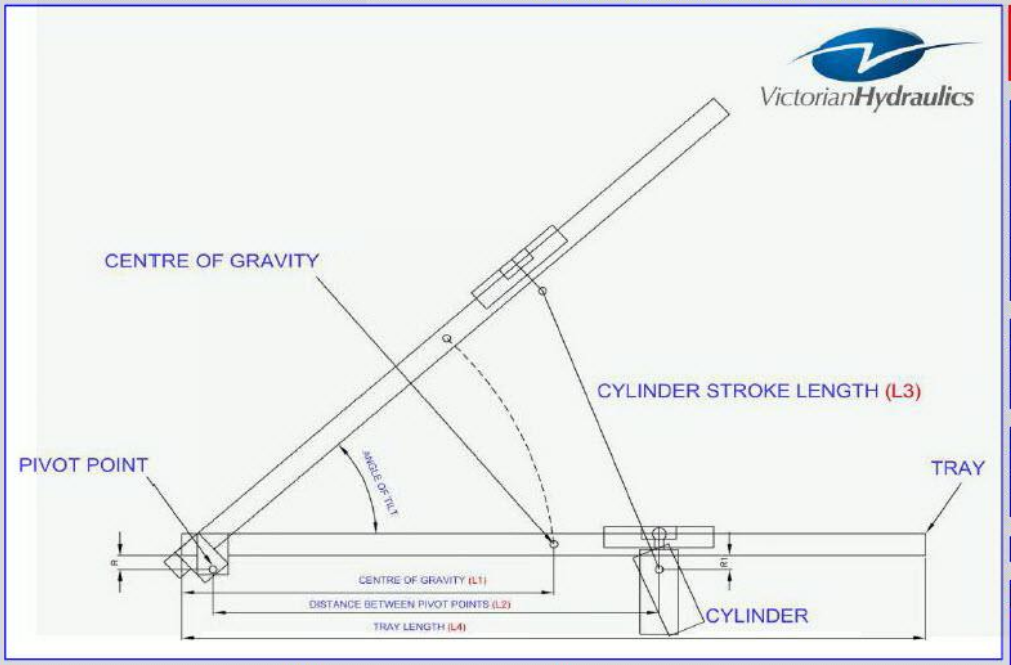
IS POWER PACK TANK ACCEPTABLE FOR APPLICATION?				
6L SRH (Option)	Tank Vol. (usable) =	5.2	l	NOT ACCEPTABLE
10L SSH Standard)	Tank Vol. (usable) =	8.5	l	ACCEPTABLE
15L SSH (Option)	Tank Vol. (usable) =	13.5	l	ACCEPTABLE

IS TIPPING ANGLE ACCEPTABLE FOR APPLICATION?		
SYSTEM OK = d >39 º & <58 º		
SYSTEM OK? =	SET-UP	ACCEPTABLE

OVERALL APPLICATION SET-UP IS	ACCEPTABLE

Tipper Trailer Kit Selection – 14ft

TIPPER CALCULATION SHEET



Tipper Kit Part No.	TK*XXLONG

Requires Manual Input			
	Tray Weight (Empty) =	240	kg
	Gross Tray Weight (Loaded) =	4,000	kg
L1	Centre of Gravity =	2,100	mm
L2	Distance between Pivot Points =	1,900	mm
L3	Cylinder Stroke (Ref: Data Sheet) =	1,500	mm
L4	Tray Length =	4,200	mm
Tilt	Tipping Angle =	46.5	d

Fixed Value		
Max Working Pressure of Cylinder (Pmax) =	160.0	Bar
Flow Rate of Power Pack (Raise) =	5.5	l/min
Flow Rate of Power Pack (Lower) =	9.0	l/min

Referenced Value		
Stroke Volume of Cylinder =	8.7	l
Overall Cylinder Diameter =	120.0	mm
Smallest Rod Diameter =	45.0	mm

Automatically Calculated

KEY		
SET-UP Result =	Acceptable	NOT Acceptable

Using Cylinder Part No	6TG-E120*1500QZ		to be able to produce a force of	6	Tonne	at a pressure of	103	Bar
Cylinder can produce a maximum force of	18	Tonne	which includes an underload of	20	%	with a max working press of	160	Bar

IS CYLINDER FORCE ACCEPTABLE FOR APPLICATION?		
SYSTEM OK = Fmax > Y2		
SYSTEM OK? =	SET-UP	ACCEPTABLE

IS CYLINDER SYSTEM LOCATION ACCEPTABLE?		
SYSTEM OK (tact < tmax) =		
SYSTEM OK? =	SET-UP	ACCEPTABLE

IS CYLINDER PRESSURE ACCEPTABLE FOR APPLICATION?		
SYSTEM OK = P < Pmax		
SYSTEM OK? =	SET-UP	ACCEPTABLE

IS POWER PACK TANK ACCEPTABLE FOR APPLICATION?				
6L SRH (Option)	Tank Vol. (usable) =	5.2	l	NOT ACCEPTABLE
10L SSH Standard)	Tank Vol. (usable) =	8.5	l	NOT ACCEPTABLE
15L SSH (Option)	Tank Vol. (usable) =	13.5	l	ACCEPTABLE

IS TIPPING ANGLE ACCEPTABLE FOR APPLICATION?		
SYSTEM OK = d >39 ° & <58 °		
SYSTEM OK? =	SET-UP	ACCEPTABLE

OVERALL APPLICATION SET-UP IS	ACCEPTABLE

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