POWER TEAM
HYDRAULIC TECHNOLOGIES

Hydraulic Technologies
5885 11th Street
Rockford, IL 61109-3699 USA
powerteam.com

Tech Services: (800) 477-8326
Fax: (800) 765-8326
Order Entry: (800) 541-1418
Fax: (800) 288-7031

Original Instructions:

CE UK CA

100-TON AND 200-TON HYDRAULIC PULLER SYSTEMS

Operating Instructions For:

* PTPH-100T	* PTPH-102DATV	PTPH-102TDA-E220	PTPH-123TDA-E110
* PTPH-100T-50-220	PTPH-102DATV-E110	PTPH-102T-E110	PTPH-123TDA-E220
* PTPH-100TDA	PTPH-102DATV-E220	PTPH-102T-E220	PTPH-123T-E110
* PTPH-100TDA-50-220	* PTPH-102T	* PTPH-102TV	PTPH-123T-E220
PTPH-100TDA-E110	* PTPH-102T-50-220	PTPH-102TV-E110	* PTPH-200T
PTPH-100TDA-E220	* PTPH-102TDA	PTPH-102TV-E220	PTPH-200T-E220
PTPH-100T-E110	* PTPH-102TDA-50-220	* PTPH-123T	PTPH-200T-E110
PTPH-100T-E220	PTPH-102TDA-E110	* PTPH-123TDA	

*** NON-CE and NON-UKCA certified.**

Model shown for PTPH-100TDA

Form No. 1001292
Rev. 0 Dec. 21, 2022

TABLE OF CONTENTS

SAFETY SYMBOLS AND DEFINITIONS

Safety symbols are used to identify any action or lack of action that can cause personal injury. Your reading and understanding of these safety symbols is very important.

⚠ DANGER : Danger is used only when your action or lack of action will cause serious human injury or death

⚠ WARNING : Warning is used to describe any action or lack of action where a serious injury can occur.

⚠ CAUTION : Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury.

CAUTION : Used without the safety alert symbol indicates a potentially hazardous situation which, if not avoided, may result in property damage.

IMPORTANT : Important is used when action or lack of action can cause equipment failure, either immediate or over a long period of time.

SAFETY PRECAUTIONS

IMPORTANT : Visually inspect all components for shipping damage. Shipping damage is not covered by warranty. If shipping damage is found, notify the carrier at once. The carrier is responsible for all repair and replacement costs resulting from damage in shipment.

It is impossible to predict the exact force needed for every pulling situation. The amount of press-fit and force of removal can vary greatly between jobs. The set-up requirements along with the size, shape and condition of the parts being pulled are all variables which must be considered. Remember that a significant amount of force can be exerted with a puller. Respect this force and always observe safety precautions. Failure to comply with the following cautions and warnings could cause equipment damage or personal injury.

General:

⚠ WARNING :To prevent personal injury,

- **The following procedures must be performed by qualified, trained personnel who are familiar with this equipment. Operators must read and understand all safety precautions and operating instructions included with the device. If the operator cannot read these instructions, operating instructions and safety precautions must be read and discussed in the operator's native language.**

- **Make sure all system components are protected from external sources of damage, such as excessive heat, flame, moving machine parts, sharp edges and corrosive chemicals.**

- **Safety glasses must be worn at all time by the operator and anyone within sight of the unit. Additional personal protection equipment may include: face shield, goggles, gloves, apron, hard hat, safety shoes, and hearing protection.**

- **The owner of this tool must verify that safety-related decals are installed, maintained, and replaced if they become hard to read.**

- **Keep hands away from possible pinching points.**
- **Use only genuine POWER TEAM replacement parts and endorsed hydraulic components.**

Hydraulic Puller Systems:

⚠WARNING :To prevent personal injury,

- **DO NOT touch or handle hydraulic hoses or fittings with pressure in the system. Escaping oil under pressure may cause serious injury. If oil is injected under the skin see a doctor immediately.**

- **DO NOT make any electrical adjustments with electrical power active in the system.**
- **DO NOT make or break any hydraulic connections with pressure in the system.**
- **DO NOT overload the equipment. Use the right size puller.**
- **DO NOT stand on, under or near the puller while in use. Keep hands, feet and clothing away from moving parts.**

- **To avoid personal injury and equipment damage, make sure all hydraulic components withstand the maximum hydraulic pressure of 700 bar (10,000 psi).**
- **Always check to ensure that all cylinders and components are securely fastened.**
- **Inspect puller for dents, cracks, or excessive wear before each use. Immediately replace worn or damaged parts.**
- **It is recommended to use 3-jaw puller whenever possible for a more secure grip, a more even pulling force and better stability.**
- **Cover application with a protective blanket before applying force. Since high force is applied on the part being pulled, breakage may occur and user may be exposed to flying debris.**
- **Use hydraulic gauges in each hydraulic system to indicate safe operating loads.**
- **Apply force gradually. Be sure the puller is square with the component to be pulled.**
- **Always make sure the puller is aligned with the shaft.**
- **Select the appropriate ram extender for each application.**
- **Always place the puller in the lowest position and remove ram extenders while transporting.**
- **Keep slide rollers and mast clean and lubricated.**
- **Always keep puller hoist vertical and the control valve closed when not adjusting vertical position.**
- **A small amount of oil seepage is normal from breather vent on hoist cylinder.**

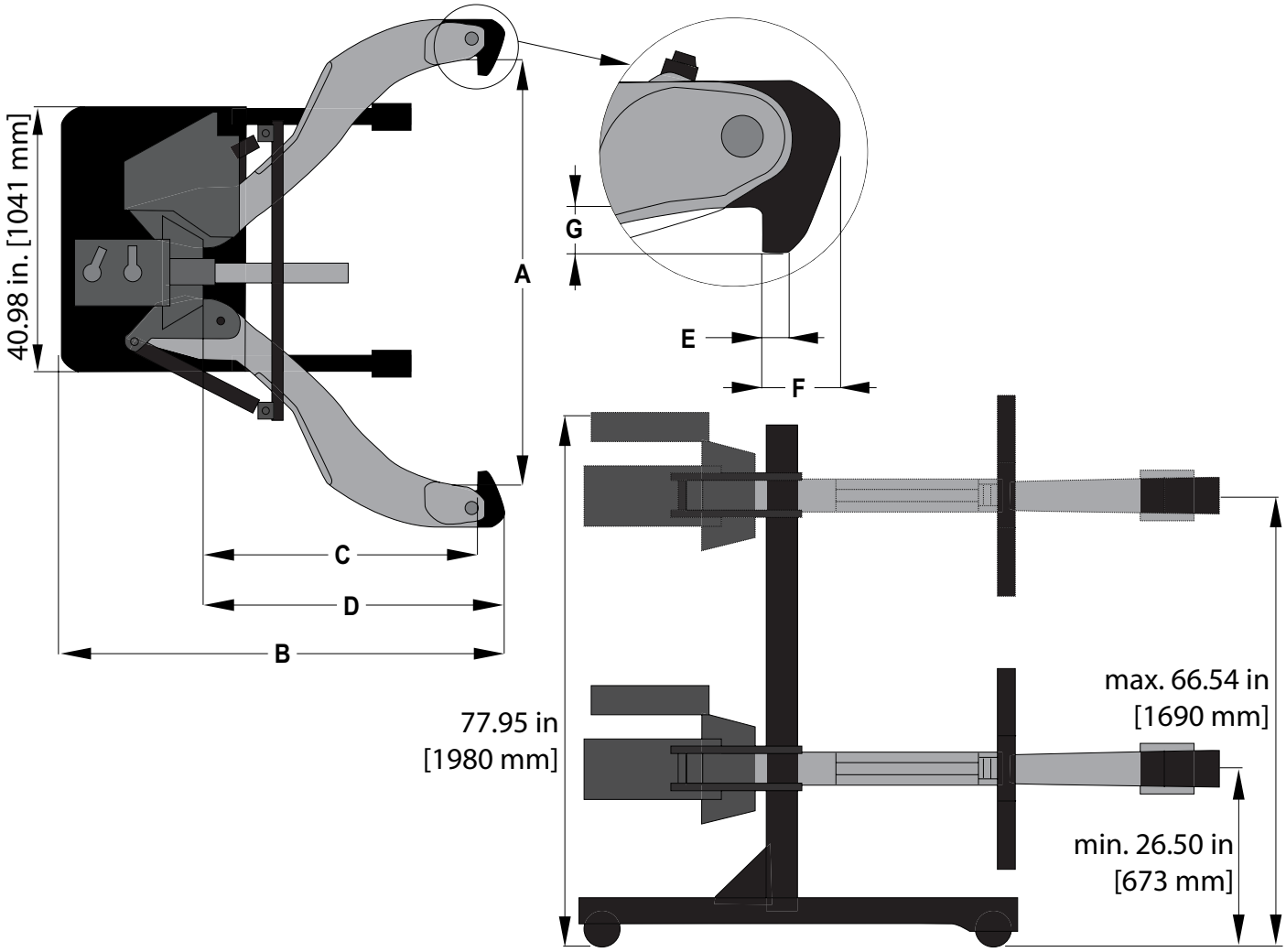
⚠CAUTION

- **Make sure that all items being pulled are supported by a means other than the puller. When using a puller in excess of 50 pounds, support puller by other means than a single person. Do not use the puller for lifting or supporting objects.**
- **Avoid sharp bends and kinks in hoses as they may lead to premature hose failure. Inspect hoses and fittings for leaks or damaged areas. Immediately discard and replace damaged components.**

PRODUCT DATA

Portable 100-TON Hydraulic Puller Systems										
Model Number	Capacity Tons (kN)	Number of Jaws	Dimensions							
			Spread	Overall Length	Reach	Jaw Length	Jaw Tip Width	Tip Clear-ance	Tip Depth	Weight
			A	B	C	D	E	F	G	
Single Acting										
PTPH-102T-XXX	100 tons (890 kN)	2	7.5 to 70 in. (191 to 1778 mm)	77 in. (1956 mm)	50 in. (1270 mm)	53 in. (1346 mm)	1.25 in. (32 mm)	3.5 in. (89 mm)	3.5 in. (89 mm)	1700 lbs. (771 kg)
PTPH-100T-XXX	100 tons (890 kN)	3	7.5 to 70 in. (191 to 1778 mm)	77 in. (1956 mm)	50 in. (1270 mm)	53 in. (1346 mm)	1.25 in. (32 mm)	3.5 in. (89 mm)	3.5 in (89 mm)	1950 lbs. (885 kg)
PTPH-123T-XXX	100 tons (890 kN)	2/3	7.5 to 70 in. (191 to 1778 mm)	77 in. (1956 mm)	50 in. (1270 mm)	53 in. (1346 mm)	1.25 in. (32 mm)	3.5 in (89 mm)	3.5 in. (89 mm)	2000 lbs. (907 kg)
Single Acting Vertical										
PTPH-102TV-XXX	100 tons (890 kN)	2	7.5 to 70 in. (191 to 1778 mm)	77 in. (1956 mm)	50 in. (1270 mm)	53 in. (1346 mm)	1.25 in. (32 mm)	3.5 in. (89 mm)	3.5 in. (89 mm)	1800 lbs. (816 kg)
Double Acting										
PTPH-102TDA-XXX	100 tons (890 kN)	2	7.5 to 70 in. (191 to 1778 mm)	77 in. (1956 mm)	50 in. (1270 mm)	53 in. (1346 mm)	1.25 in. (32 mm)	3.5 in. (89 mm)	3.5 in. (89 mm)	1800 lbs. (816 kg)
PTPH-100TDA-XXX	100 tons (890 kN)	3	7.5 to 70 in. (191 to 1778 mm)	77 in. (1956 mm)	50 in. (1270 mm)	53 in. (1346 mm)	1.25 in. (32 mm)	3.5 in. (89 mm)	3.5 in. (89 mm)	2050 lbs. (930 kg)
PTPH-123TDA-XXX	100 tons (890 kN)	2/3	7.5 to 70 in. (191 to 1778 mm)	77 in. (1956 mm)	50 in. (1270 mm)	53 in. (1346 mm)	1.25 in. (32 mm)	3.5 in. (89 mm)	3.5 in. (89 mm)	2100 lbs. (953 kg)
Double Acting Vertical										
PTPH-102DATV-XXX	100 tons (890 kN)	2	7.5 to 70 in. 191 to 1778 mm)	77 in. (1956 mm)	50 in. (1270 mm)	53 in. (1346 mm)	1.25 in. (32 mm)	3.5 in. (89 mm)	3.5 in. (89 mm)	1800 lbs. (816 kg)
200-TON Hydraulic Puller System										
PTPH-200T-XXX	200 tons (1779 kN)	4	6.5 to 70 in. (203 to 1778 mm)	78.5 in. (1994 mm)	48 in. (1219 mm)	53 in. (1346 mm)	1.25 in. (32 mm)	3.5 in. (89 mm)	3.5 in. (89 mm)	4150 lbs. (1882 kg)

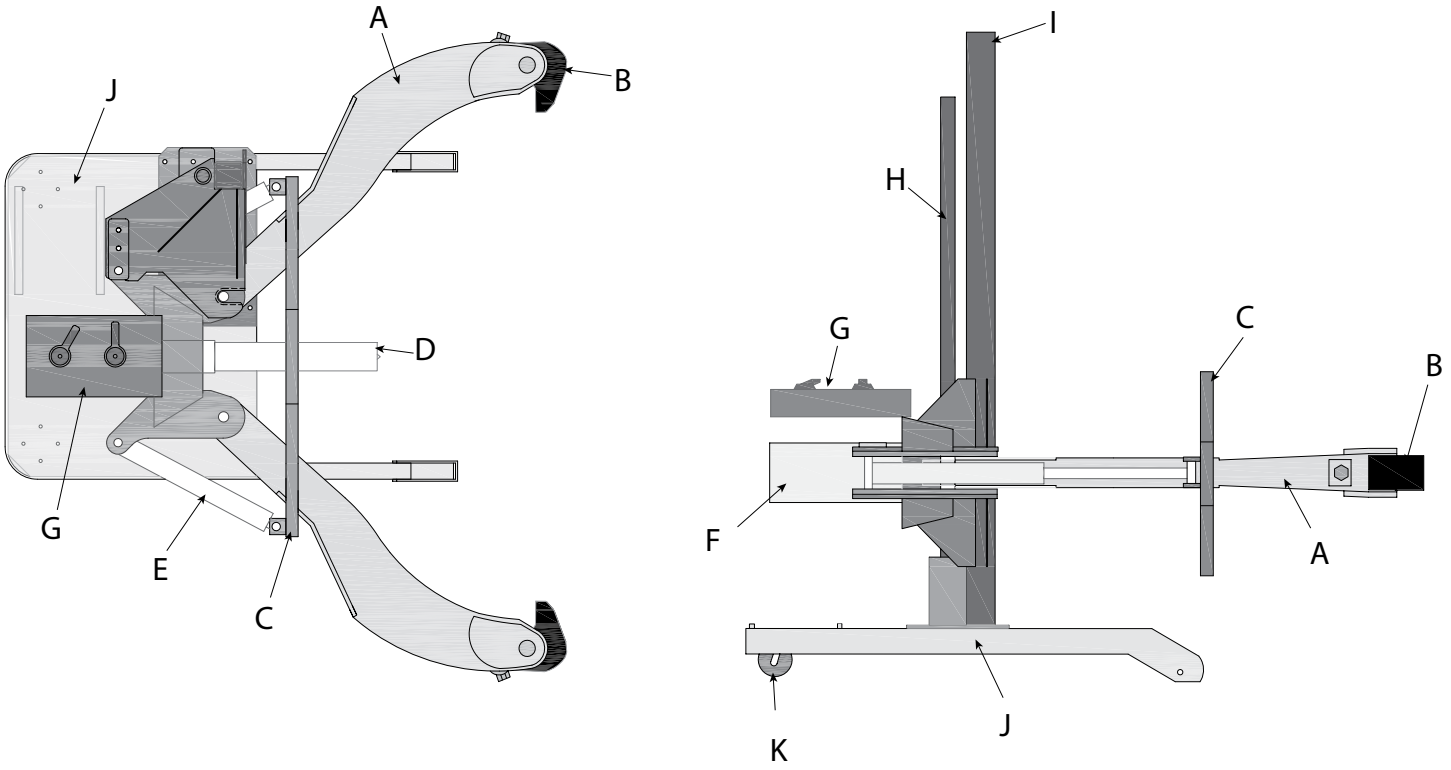
Top View



(Figure shown for model PTPH-102T)

1. Major Components

Top view **Side view**



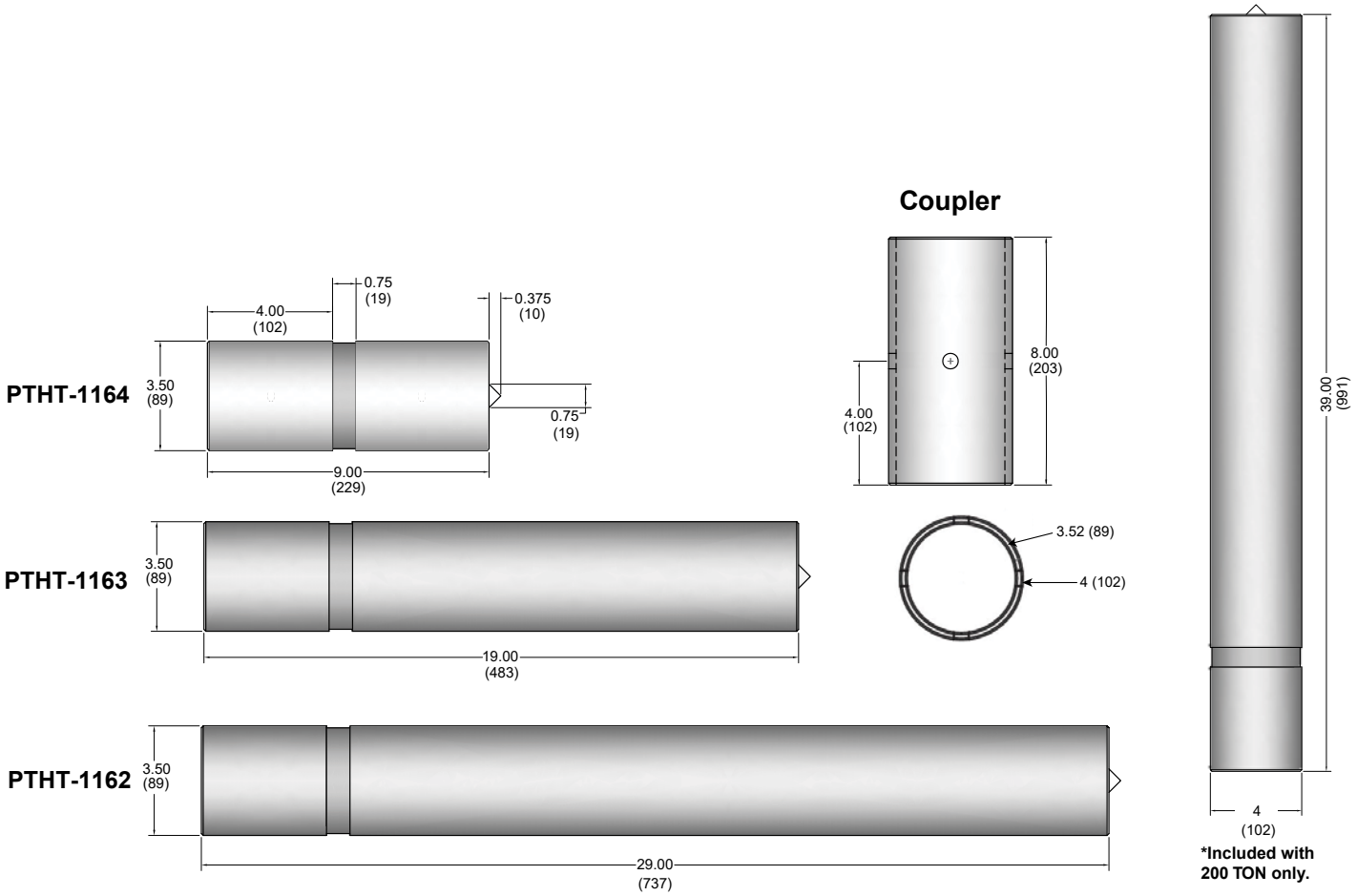
(Diagram shown for PTPH-102T, Some models have 3 Jaws)

ITEM	DESCRIPTION
A	JAW
B	JAW TIP
C	CAGE
D	PUSHING ADAPTOR
E	CAGE CYLINDER
F	PUSHING CYLINDER
G	CONTROL VALVES
H	HOIST CYLINDER
I	MAST
J	BASE
K	CASTERS

2. Pushers

Included with the 100-TON pullers are THREE pushers and a coupler. String 2 pushers together to increase the reach of the ram. Using a variety of combinations may be necessary to complete the pull of a deeply set gear or bearing.

Included with the 200-TON puller are FOUR pushers. The diameters are 4 inches. The 200-TON does not include coupler.

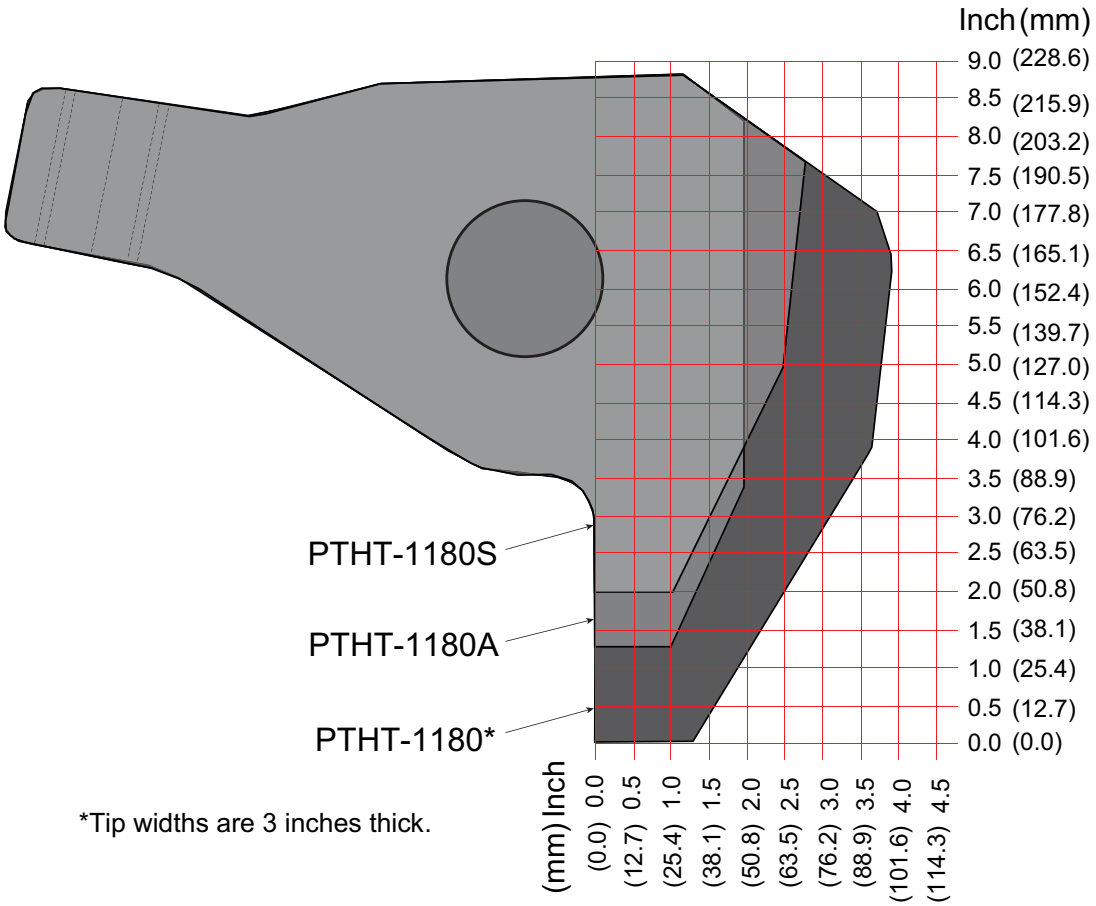


Note: Dimensions in Inches (mm)

3. Jaw Tips

3 jaw tip sizes are available for 100 and 200 Ton puller models.

- PTHT-1180: standard with all models.
- PTHT-1180A: optional, for operations with limited space constraints.
- PTHT-1180S: optional, for operations with limited space constraints



*Tip widths are 3 inches thick.

ASSEMBLY

A. Ensure that shipping crate firmly rests on level ground in upright position.

B. Open small side panel and confirm that puller is resting firmly in upright position in the crate.

C. Remove remainder of plywood.

D. Inspect puller for any damage that may have been caused by shipping.

E. Save bolts that were used to brace the cart. These will be used for securing the included cart wheels to the cart.

F. Inspect hoses for proper ratings. Connect the 10,000 psi hose to the port marked “10,000 psi only” on the puller and the pressurized port on the pump. Connect hose with the lower pressure rating to the return port on puller and pump.

G. Fill reservoir of pump with pump manufacturer specified oil. See pump or cylinder manual for details.

1. Raising the Puller

A. Place cylinder control valve lever in “Hoist Oil Supply” position.

B. Raise puller by placing remote jog switch in “On” position and opening the puller hoist vertical control valve.

C. Release remote jog switch. Close vertical control valve after reaching desired height.

2. Lowering the Puller

A. Place cylinder control valve lever in “Hoist Lower” position.

B. Lower puller by turning puller hoist vertical control valve counterclockwise.

C. Close vertical control valve after reaching desired height.

3. Hoist Travel Speed

NOTE: The restrictor valve, located at the top of the hoist cylinder, is used to control the rate of puller descent. This valve should be set at the desired rate and locked in place using the nut on the valve shaft.

An appropriate starting point is one full turn from the closed position. This valve is a one-way restrictor only and does not affect the rate at which the puller is raised.

4. Changing the Jaw Spread

If opening/closing the jaws using the standard cage setting does not provide enough spread or does not provide enough closure, use the following adjustments to achieve the maximum and minimum spreads.

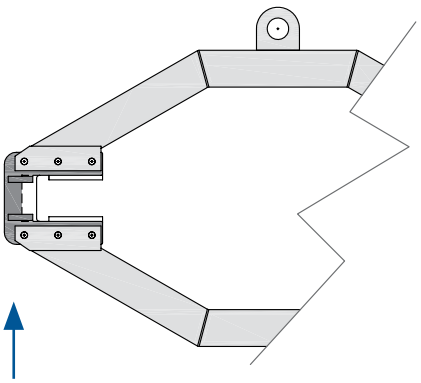
A. Support the jaws.

B. Remove 6 cap screws, lock washers and nuts on 1 jaw guide at a time.

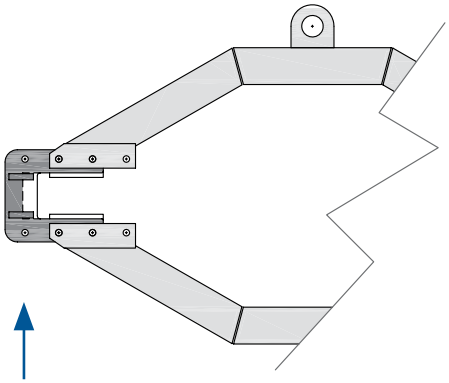
C. Slide jaw guide inward/outward on cage 1 bolt hole.

D. Replace 4 cap screws, lock washer, and nuts and tighten appropriately.

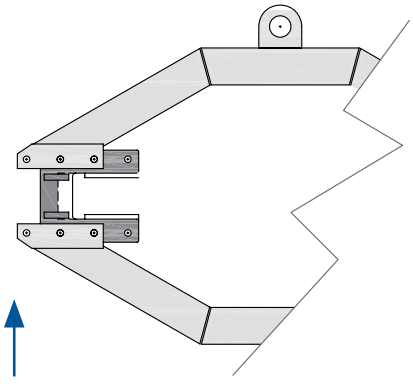
E. Reverse this process to return to standard jaw spread.



Default jaw guide position when puller is shipped.



Jaw guide moved 1 bolt hole OUT to increase spread.

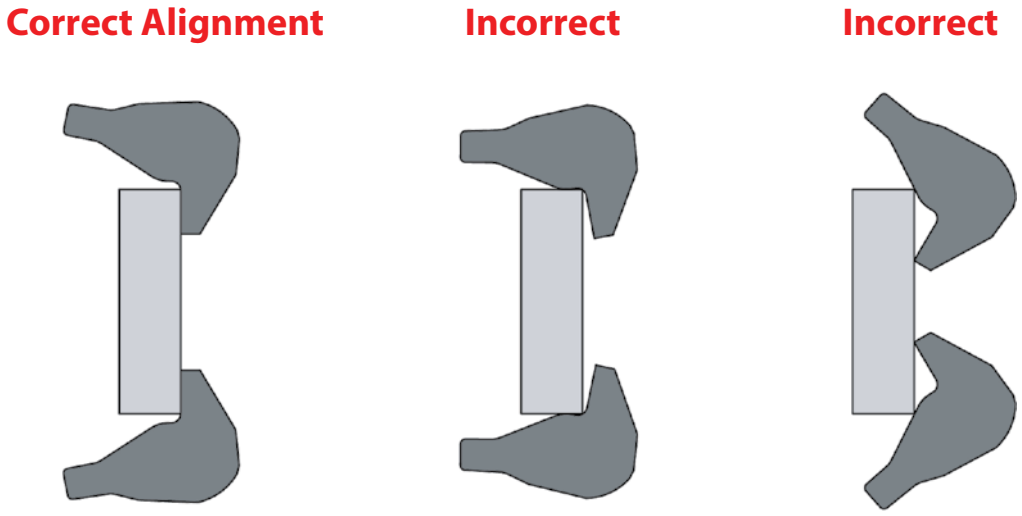


Jaw guide moved 1 bolt hole IN to decrease spread.

5. Adjusting Jaw Tips

A. Adjust jaw tips by turning 1-1/4” cap screw.

NOTE: Always use maximum pulling surface of jaw. To angle tip inward, turn cap screw clockwise. To angle tip outward, turn cap screw counterclockwise. Before pulling, always make certain machined caps are properly fitted to curved surface.



6. Adjusting Slide Rollers

A. Lower slide and puller assembly until it rests solidly on base.

B. Loosen 5/8” hex bolt.

C. Move roller using eye bolts on each side of roller.

D. Adjust roller until equal spacing is obtained between mast and slide tube on both roller side and opposite side.

E. Tighten locking nut on eye bolt.

F. Tighten 5/8” hex bolt.

7. Removing Puller From The Cart

100-TON:

A. Support puller weight using lifting brackets provided.
B. Close puller hoist vertical control valve.
C. Disconnect puller hoist hose coupler at control panel.
D. Remove 2 of the 1/2” bolts which fasten locking plate to the puller lift bracket.
E. Remove puller from cart by rotating cart while keeping puller stationary.

200-TON:

A. Support puller weight using lifting brackets provided.
B. Close puller hoist vertical control valve.
C. Disconnect puller hoist hose coupler at control panel.
D. On each slide, remove the top and bottom 1/2” bolts. Do this on both the left and right slide, removing a total of 4 bolts.
E. While keeping the puller supported and balanced, remove from the cart by moving the puller forward.

OPERATION

⚠ WARNING

OPERATION IMPORTANT: Hydraulic power is one of the safest methods for applying force when used correctly. Be sure to read all instructions, warnings and cautions carefully.

Follow all safety precautions to avoid personal injury or property damage during system operation. Power Team cannot be responsible for damage or injury resulting from unsafe use of product, lack of maintenance or incorrect product and/or system operation.

It is important that the operator has a full understanding of all the instructions, warnings, cautions and safety regulations before starting to operate equipment. When in doubt contact Power Team.

MAINTENANCE: Always clean the puller after use and store in a clean, dry place.

1. Setup

A. Transport the puller by use of the puller cart of forklift.

B. Line the puller up to the workpiece.

C. Open the jaws.

Opening The Jaws:

i. Place cylinder control valve lever in “Oil Supply” position.

ii. Place cage control lever in “Jaw Open” position and activate pump by pushing remote switch to the “On” position to open jaws to the desired spread.

C. Position the workpiece to be removed in between the jaws.

D. Continue to adjust the height until the workpiece and extending cylinder are aligned. See RAISING THE PULLER on page 9.

E. Close the jaws.

Closing The Jaws:

i. Place cylinder control valve lever in “Oil Supply” position.

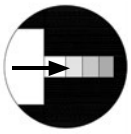
ii. Place cage control lever in “Jaw Closed” position and activate pump by pushing remote switch to the “On” position to close jaws to the desired spread or for clamping.

C. Adjust the jaw tips appropriately. See ADJUSTING JAW TIPS on page 10.

2. Pulling An Object:

A. Extend the cylinder ram towards the workpiece until there is contact.

Extending Cylinder:



i. Place cylinder control valve in “Extend” position.

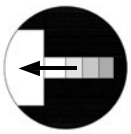
ii. Activate pump with jog switch.

C. Continue to extend the ram. The workpiece will begin to move gradually off the shaft.

D. Retract the cylinder.

E. Completely remove the workpiece.

Retracting Cylinder:



i. Place cylinder control valve in the “Retract” position.

ii. Activate pump with jog switch.

NOTE: On a single acting cylinder the cylinder ram will retract without activating the pump.

PTPH-123T TRANSFORMATION

A. Starting in a 2-jaw configuration, move the cage cylinder from the 2-jaw position to the 3-jaw position.

B. Remove the jaw on the left from the 2-jaw position.

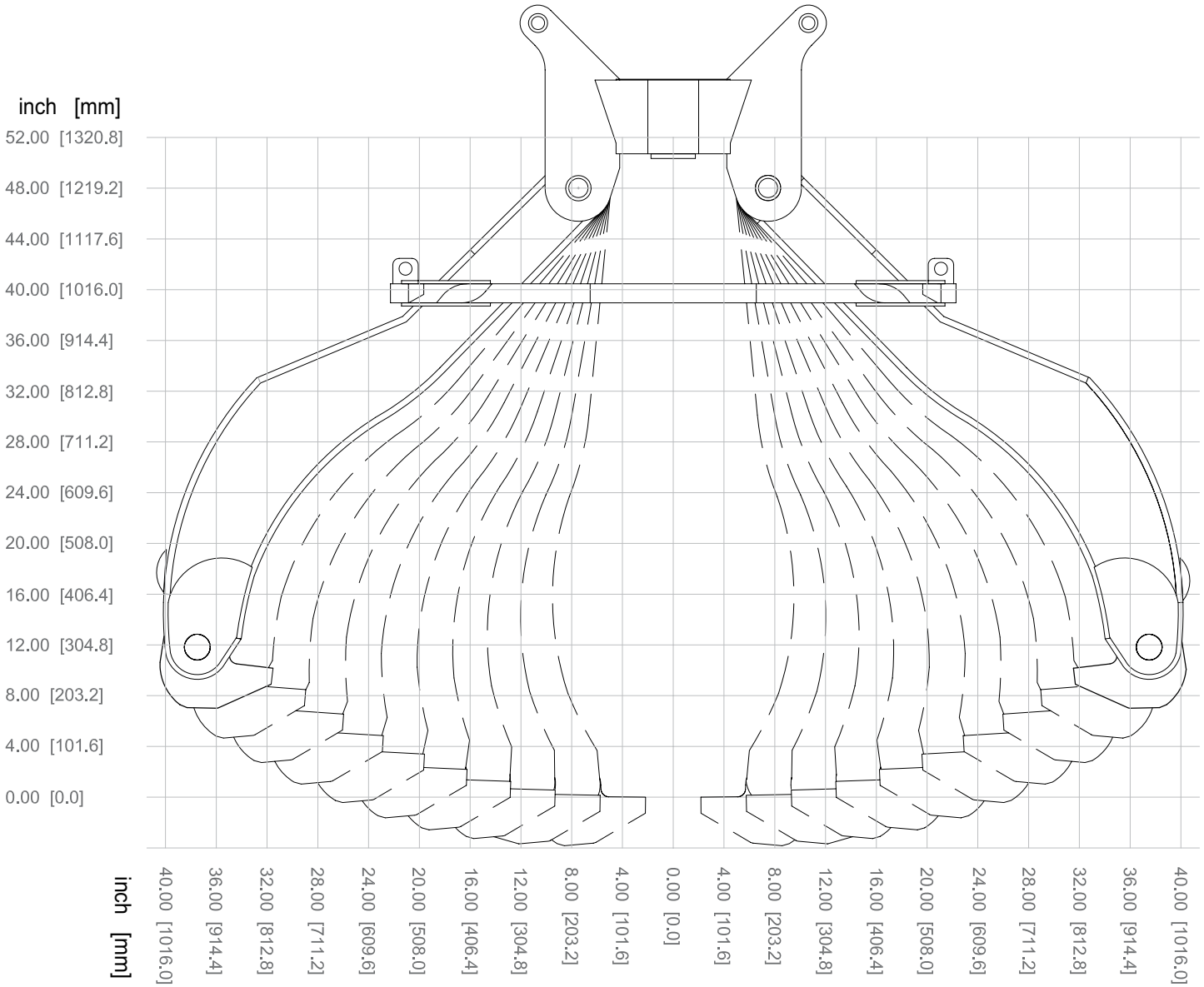
PTPH-123T Transformation Continued

C. Place the jaw into the lower 3-jaw position.

D. Place jaw from the left 2-jaw position into upper 3-jaw position to complete the transformation.

Spread Range Diagram

Use the diagram to determine the limitations of the jaw-opening. Spread ranges apply to all POWER TEAM 100-TON and 200-TON hydraulic puller systems. Gears, pulleys, wheels, sleeves, and other press fit parts must fit within these limitations.



Form No. 1001292
Rev. 0 Dec. 21, 2022

POWER TEAM FACILITIES AND CONTACT

Rockford, Illinois USA
Customer Service/Order Entry
Tel: +1 800 541 1418
Fax: +1 800 288 7031

European Headquarters
Tel: +31 45 567 8877
Fax: +31 45 567 8878
infoeurope@powerteam.com

Asia Pacific Headquarters
Tel: +65 6265 3343
Fax: +65 6265 6646
infoasia@powerteam.com

Technical Services
Tel: + 1 800 477 8326
Fax: + 1 800 765 8326
info@powerteam.com

Shanghai, China
Tel: +86 21 2208 5888
Fax: +86 21 2208 5682
infochina@powerteam.com

English Original

EC DECLARATION OF CONFORMITY

We declare under our sole responsibility that our Hydraulic Puller Models:

*

PTPH-100T-E110, PTPH-100T-E220
PTPH-100TDA-E110, PTPH-100TDA-E220
PTPH-102T-E110, PTPH-102T-E220
PTPH-102TDA-E110, PTPH-102TDA-E220
PTPH-102TV-E110, PTPH-102TV-E220
PTPH-102DATV-E110, PTPH-102DATV-E220
PTPH-123T-E110, PTPH-123T-E220
PTPH-123TDA-E110, PTPH-123TDA-E220

PTPH-200T-E110, PTPH-200T-E220

to which this declaration relates are in conformity with the following:

EN, EN-ISO, ISO standards	**Title**
Per the provisions of the Machinery Safety Directive	**2006/42 EC**
EN_ISO 12100	Safety of machinery, basic concepts, general principles for design, risk assessment & risk reduction
EN 4413	Hydraulic Fluid Power – general rules and safety requirements for systems & their components
Per the provisions of the EMC Directive	**2014/30 EU**
EN_61000-4-2	Electromagnetic Discharge Immunity test
EN_61000-4-3	Radiated, Radio Frequency, Electromagnetic Field Immunity test
EN_61000-4-4	Electrical Fast Transient / Burst Immunity test
EN_61000-4-5	Surge immunity test
EN_61000-4-6	Immunity to Conducted Disturbances, Induced by Radio-Frequency Fields
EN_61000-4-11	Voltage Dip and Interrupt test
EN 55011	Industrial, Scientific and Medical (ISM) Radio Frequency Equipment-Electromagnetic Disturbance Characteristics-Limits and Methods of Measurement
Per the provisions of the Low Voltage Directive	**2014/35 EU**
EN_60204-1	Safety of Machinery –Electrical equipment of machines – Part 1 General requirements
Per the provisions of the RoHS Directive	**2015/863 EU**
	Restriction of the use of certain hazardous substances in electrical and electronic equipment

We hereby declare that the equipment specified under * conforms to the above quoted European Community Directive(s) and Standard(s) as per the currently valid revision. Hydraulic Technologies is certified and registered to ISO 9001: 2015.

The Netherlands December 08th, 2022

Andreas J. Klemm, PhD

Hydraulic Technologies
5885 11th Street
Rockford, IL 61109-3699
United States of America

Hydraulic Technologies Europe Ltd. - Netherlands
Hydraulic Technologies
Albert Thijsstraat 12
NL-6471 WX Eygelshoven
The Netherlands

English original

UKCA DECLARATION OF CONFORMITY

We declare under our sole responsibility that our Hydraulic Puller Model:

*

PTPH-100T-E110, PTPH-100T-E220, PTPH-100TDA-E110,
PTPH-100TDA-E220, PTPH-102T-E110, PTPH-102T-E220
PTPH-102TDA-E110, PTPH-102TDA-E220, PTPH-102TV-E110,
PTPH-102TV-E220, PTPH-102DATV-E110, PTPH-102DATV-E220
PTPH-123T-E110, PTPH-123T-E220, PTPH-123TDA-E110,
PTPH-123TDA-E220
PTPH-200T-E110, PTPH-200T-E220

to which this declaration relates are in conformity with the following:

Legislation & standards	Title
The Supply of Machinery (Safety) Regulations 2008 No. 1597 and amendments	
EN_ISO 12100	Safety of machinery, basic concepts, general principles for design, risk assessment & risk reduction
EN 4413	Hydraulic Fluid Power – general rules and safety requirements for systems & their components
The Electromagnetic Compatibility Regulations 2016 No. 1091	
EN_61000-4-2	Electromagnetic Discharge Immunity test
EN_61000-4-3	Radiated, Radio Frequency, Electromagnetic Field Immunity test
EN_61000-4-4	Electrical Fast Transient / Burst Immunity test
EN_61000-4-5	Surge immunity test
EN_61000-4-6	Immunity to Conducted Disturbances, Induced by Radio-Frequency Fields
EN_61000-4-11	Voltage Dip and Interrupt test
EN 55011	Industrial, Scientific and Medical (ISM) Radio Frequency Equipment-Electromagnetic Disturbance Characteristics-Limits and Methods of Measurement
The Electrical Equipment (Safety) Regulations 2016 No. 1101	
EN_60204-1	Safety of Machinery –Electrical equipment of machines – Part 1 General requirements
The Noise Emissions in the Environment by Equipment for use Outdoors Regulation 2001 No. 1701	
EN_3200L0014	Noise emission in the environment for use outdoors
ISO 3744	Sound Power Level Measurements
The Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment Regulations 2012 No. 3032	
	Restriction of the use of certain hazardous substances in electrical and electronic equipment

We hereby declare that the equipment specified under * conforms to the above quoted UK Legislation and international Standard(s) as per the currently valid revision. Hydraulic Technologies Europe Ltd. - Netherlands is certified and registered to ISO 9001: 2015.

The Netherlands December 15th, 2022

Andreas J. Klemm, PhD

Hydraulic Technologies US, LLC
5885 11th Street
Rockford, IL 61109-3699 United States of America

Hydraulic Technologies Europe Ltd. Ocean House, Wilmslow Road Manchester, M20 2LY, UK
Andreas J. Klemm
Hydraulic Technologies Europe Ltd. – Netherl.
Albert Thijsstraat 12
NL-6471 WX Eygelshoven