

L1284 Rev. O 02/03

Repair Parts Sheets for this product are available from the Enerpac web site at [www.enerpac.com](http://www.enerpac.com), or from your nearest Authorized Enerpac Service Center or Enerpac Sales office.

### 1.0 IMPORTANT RECEIVING INSTRUCTIONS

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

### SAFETY FIRST

### 2.0 SAFETY ISSUES



Read all instructions, warnings and cautions carefully. Follow all safety precautions to avoid personal injury or property damage during system operation. Enerpac cannot be responsible for damage or injury resulting from unsafe product use, lack of maintenance or incorrect product and/or system operation. Contact Enerpac when in doubt as to the safety precautions and operations. If you have never been trained on high-pressure hydraulic safety, consult your distribution or service center for a free Enerpac Hydraulic safety course.

Failure to comply with the following cautions and warnings could cause equipment damage and personal injury.

A **CAUTION** is used to indicate correct operating or maintenance procedures and practices to prevent damage to, or destruction of equipment or other property.

A **WARNING** indicates a potential danger that requires correct procedures or practices to avoid personal injury.

A **DANGER** is only used when your action or lack of action may cause serious injury or even death.



**WARNING:** Wear proper personal protective gear when operating hydraulic equipment.



**WARNING: Stay clear of loads supported by hydraulics.** A cylinder, when used as a load lifting device, should never be used as a load holding device. After the load has been raised or lowered, it must always be blocked mechanically.



**DANGER:** To avoid personal injury keep hands and feet away from cylinder and workpiece during operation.



**WARNING:** Do not exceed equipment ratings. Never attempt to lift a load weighing more than the capacity of the cylinder. Overloading causes equipment failure and possible personal injury. The cylinders are designed for a max. pressure of 350 bar [5,000 psi]. Do not connect a jack or cylinder to a pump with a higher pressure rating.



**Never** set the relief valve to a higher pressure than the maximum rated pressure of the pump. Higher settings may result in equipment damage and/or personal injury.



**WARNING:** The system operating pressure must not exceed the pressure rating of the lowest rated component in the system. Install pressure gauges in the system to monitor operating pressure. It is your window to what is happening in the system.



**CAUTION:** Avoid damaging hydraulic hose. Avoid sharp bends and kinks when routing hydraulic hoses. Using a bent or kinked hose will cause severe back-pressure. Sharp bends and kinks will internally damage the hose leading to premature hose failure.



**Do not** drop heavy objects on hose. A sharp impact may cause internal damage to hose wire strands. Applying pressure to a damaged hose may cause it to rupture.



**IMPORTANT:** Do not lift hydraulic equipment by the hoses or swivel couplers. Use the carrying handle or other means of safe transport.



**CAUTION: Keep hydraulic equipment away from flames and heat.** Excessive heat will soften packings and seals, resulting in fluid leaks. Heat also weakens hose materials and packings. For optimum performance do not expose equipment to temperatures of 65 °C [150 °F] or higher. Protect hoses and cylinders from weld spatter.



**DANGER: Do not handle pressurized hoses.** Escaping oil under pressure can penetrate the skin, causing serious injury. If oil is injected under the skin, see a doctor immediately.



**WARNING:** Only use hydraulic cylinders in a coupled system. Never use a cylinder with unconnected couplers. If the cylinder becomes extremely overloaded, components can fail catastrophically causing severe personal injury.



**IMPORTANT:** Hydraulic equipment must only be serviced by a qualified hydraulic technician. For repair service, contact the Authorized ENERPAC Service Center in your area. To protect your warranty, use only ENERPAC oil.



**WARNING:** Immediately replace worn or damaged parts by genuine ENERPAC parts. Standard grade parts will break causing personal injury and property damage. ENERPAC parts are designed to fit properly and withstand high loads.



Seal all NPT pipe connections with a high-grade pipe thread sealer. **WARNING:** Teflon tape is an excellent thread sealer; however, if not properly applied, pieces may enter the hydraulic system and cause malfunctioning or damage.



**WARNING: Do not** over-tighten connections. Connections need only be snug and leak free. Over-tightening can cause premature thread failure and may cause high-pressure fittings or castings to split at lower than rated capacity.



**CAUTION:** Tighten all hydraulic couplers fully. Loose coupler connections will cause complete or partial blockage of oil flow from the pump to the cylinder.



**CAUTION:** Be sure all hydraulic hoses and fittings are connected to the proper inlet and outlet ports of the pump and cylinders.



**WARNING: Keep oil lines clean.** When coupler halves are disconnected, always screw on dust caps. Use every precaution to guard unit against entrance of dirt. Dirt and foreign matter may cause pump failure.

### 3.0 DESCRIPTION

Clamping cylinder models WRT-21, WRT-22, WRT-41 and WRT-42 can be used for holding, positioning and ejecting operations.

Hydraulic pressure advances the piston and an internal spring retracts it. The maximum pressure is 5000 psi.

The threaded steel body has 1.375-18UNEF threads (WRT-21 & -22) or 1.875-16UN threads (WRT-41 & -42) and two .312-24 UNF straight SAE ports.

The chrome plated plunger has a 1/4-28 UNF internal thread for mounting clamping devices or saddles.

Mounting flanges are available: AW-5 for WRT-21 and WRT-22; AW-89 or AW-88 for WRT-41 and WRT-42 models.

### 4.0 OPERATION

Available clamping force varies. See chart in Figure 1 for the force vs. pressure.

### 5.0 INSTALLATION

Use mounting flanges or suitable fixtures to provide a stable, secure mounting.

Cylinder hydraulic ports can use hydraulic hose or pipe. Be sure fittings and lines are suitable for 5,000 psi hydraulic pressure. Hydraulic sealant should not be used on SAE connections.



**CAUTION:** to avoid cylinder damage, do not subject the plunger to side-loading. The cylinder is designed to receive equal loading to maintain effective clamping.

These clamping models are single-acting cylinders using hydraulic pressure to apply working forces and a spring to release them.

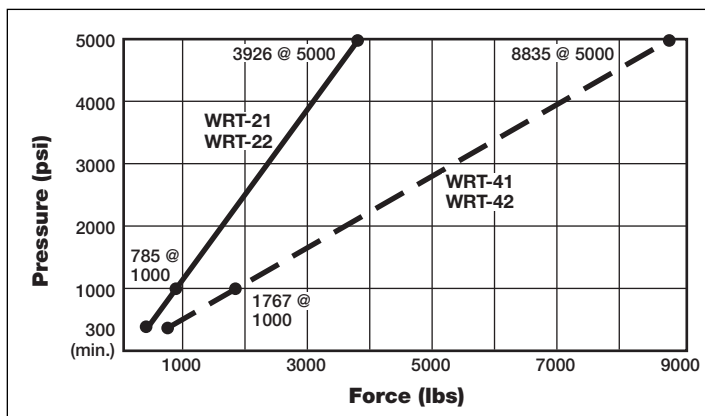


Figure 1

#### Enerpac Worldwide Locations

##### Australia

ENERPAC, Applied Power  
Australia Ltd.  
Block V Unit 3  
Regents Park Estate  
391 Park Road  
Regents Park NSW 2143  
(P.O. Box 261) Australia  
Tel: +61 297 438 988  
Fax: +61 297 438 648

##### Brazil

Power Packer do Brasil Ltda.  
Rua dos Inocentes, 587  
04764-050 - Sao Paulo (SP)  
Tel: +55 11 5687 2211  
Fax: +55 11 5686 5583  
**Toll Free in Brazil:**  
Tel: 000 817 200 6718  
vendabrasil@enerpac.com

##### Canada

Actuant Canada Corporation  
6615 Ordan Drive, Unit 14-15  
Mississauga, Ontario L5T 1X2  
Tel: +1 905 564 5749  
Fax: +1 905 564 0305

##### Toll Free:

Tel: +1 800 268 4987  
Fax: +1 800 461 2456

##### Technical Inquiries:

techservices@enerpac.com

##### China

Actuant China Ltd.  
1F, 269 Fute N. Road  
Waigaoqiao Free Trade Zone  
Pudong New District  
Shanghai, 200 131 China  
Tel: +86 21 5866 9099  
Fax: +86 21 5866 7156

Actuant China Ltd. (Beijing)  
709A Xin No. 2  
Diyang Building  
Dong San Huan North Rd.  
Beijing City, 100028 China  
Tel: +86 10 845 36166  
Fax: +86 10 845 36220

##### Eastern Europe

Applied Power International S.A.  
Case postale 130  
CH-1213 Onex-Genève  
Switzerland  
Tel: +49 (211) 47149 44  
Fax: +49 (211) 47149 40

##### France, Greece, Africa

ENERPAC S.A.  
B.P. 200  
Parc d'Activités  
du Moulin de Massy  
F-91882 Massy CEDEX  
(Paris) France  
Tel: +33 1 601 368 68  
Fax: +33 1 692 037 50

##### Germany, Austria

ENERPAC  
Applied Power GmbH  
P.O. Box 300113  
D-40401 Düsseldorf  
Germany  
Tel: +49 211 471 490  
Fax: +49 211 471 49 28

◆ e-mail: info@enerpac.com

##### India

ENERPAC Hydraulics  
(India) Pvt. Ltd.  
Plot No. A/571  
MIDC, TTC Industrial Area  
Mahape-400 701  
Navi Mumbai, India  
Tel: +91 22 778 1779  
Fax: +91 22 778 1473

##### Italy

ENERPAC  
Applied Power Italiana S.p.A.  
Via Canova 4  
20094 Corsico (Milano)  
Tel: +39 02 4861 111  
Fax: +39 02 4860 1288

##### Japan

Applied Power Japan Ltd.  
1-1-11, Shimomae  
Toda-shi  
Saitama Pref.  
Japan 335-0016  
Tel: +81 48 430 2311  
Fax: +81 48 430 1117

##### Mexico

ENERPAC Applied Power  
Mexico S. de R.L. de C.V.  
Avenida Principal  
La Paz #100  
Frac. Industrial La Paz  
42092 Pachuca, Hidalgo  
Tel: +52 771 71851 60  
+52 771 1870 22  
Fax: +52 771 71352 32  
**Toll Free in Mexico:**  
Tel: 001 800 590 0130

##### The Netherlands, Belgium, Luxembourg, Sweden, Denmark, Norway, Finland

ENERPAC B.V.  
Storkstraat 25  
P.O. Box 269, 3900 AG Veenendaal  
The Netherlands  
Tel: +31 318 535 911  
Fax: +31 318 525 613  
+31 318 535 848

##### Russia and CIS (excl. Caspian Sea Countries)

ENERPAC  
Leninsky Prospect 95A  
117313, Moscow, Russia.  
Tel/Fax: +7(095) 936-2005  
Tel/Fax: +7(095) 198-3094  
Tel/Fax: +7(095) 938-4655  
Mobil: +7(903) 731-9558

##### Singapore

Actuant Asia Pte. Ltd.  
25 Serangoon North Ave. 5  
#03-01 Keppel Dighub  
Singapore 554914  
Thomson Road  
P.O. Box 114  
Singapore 915704  
Tel: +65 64 84 5108  
+65 64 84 3737  
Fax: +65 64 84 5669

##### South Korea

ENERPAC  
Applied Power Korea Ltd.  
163-12 Dodang-Dong  
Wonmi-Ku, Buchun-shi  
Kyunggi-Do  
Republic of Korea  
Tel: +82 32 675 08 36  
Fax: +82 32 675 30 02/73

◆ internet: www.enerpac.com

##### Spain, Portugal

ENERPAC  
C/San José Artesano 8  
Pol. Ind.  
28108 Alcobendas  
(Madrid) Spain  
Tel: +34 91 661 11 25  
Fax: +34 91 661 47 89

##### Middle East, Turkey and Caspian Sea

ENERPAC Middle East FZE  
P.O. Box 18004  
Jebel Ali, Dubai  
United Arab Emirates  
Tel: +971 (0)4 8872686  
Fax: +971 (0)4 8872687

##### United Kingdom, Ireland

ENERPAC Ltd., P.O. Box 33  
New Romney, TN28 8QF  
United Kingdom  
Tel: +44 01527 598 900  
Fax: +44 01527 585 900

##### USA, Latin America and Caribbean

ENERPAC  
P.O. Box 3241  
6100 N. Baker Road  
Milwaukee, WI 53209 USA  
Tel: +1 262 781 6600  
Fax: +1 262 783 9562

##### User inquiries:

+1 800 433 2766

##### Distributor inquiries/orders:

+1 800 558 0530

##### Technical Inquiries:

techservices@enerpac.com

All Enerpac products are guaranteed against defects in workmanship and materials for as long as you own them.

For your nearest authorized Enerpac Service Center, visit us at [www.enerpac.com](http://www.enerpac.com)