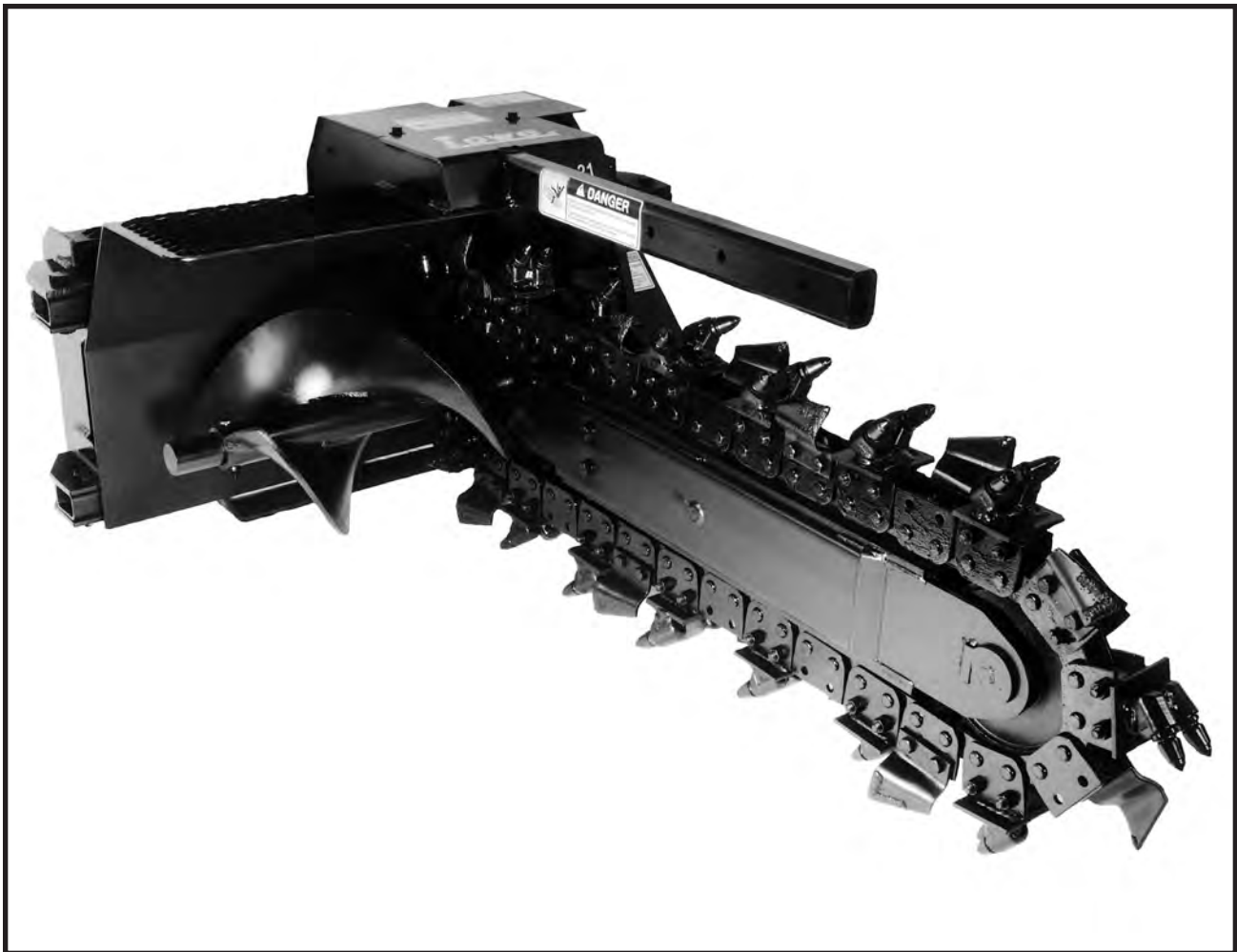




HYDRAULIC TRENCHING ATTACHMENTS FOR SKID LOADERS

XR-SERIES OPERATOR'S MANUAL



**Do Not Use or Operate This Equipment Until the Manual
and Assembly Instructions Have Been Read and Understood!!**



18903 High Point Road
Viola, WI 54664
USA

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<http://www.loweman.com>

For more information, call:
North America, Toll Free 1-800-356-9180 • FAX 608-538-3995

1-888-DIG-LOWE (344-5693)
1-608-538-4000

WARRANTY

Lowe Attachments, LLC (LOWE®) is proud of its reputation for producing products with high standards of quality and workmanship. When LOWE® products are used and maintained in the prescribed manner, you can be assured they will provide reliable service.

Period of Warranty: Any new LOWE® product purchased and registered with LOWE® will be warranted against defects in materials and workmanship for a period of one year from the date of purchase, subject to the exclusions noted herein. Replacement parts used in warranty repairs will be warranted for the balance of the applicable warranty period.

Warranty Registration: To be eligible for warranty coverage, LOWE® product(s) must first be registered with LOWE®. A warranty registration form is provided in the Operator's Manual. This form must be completed, signed, and mailed to LOWE® by either the authorized selling dealer or the purchaser.

Customer's Responsibility: Under the terms of this warranty, the customer will be responsible for ensuring the product is properly operated and maintained as specified in the Operator's Manual. The owner of the product shall give notice to an authorized dealer of any and all apparent defects within ten (10) days of discovery and make the product available for inspection and repairs at the dealer's place of business.

The customer's responsibilities include all costs of normal maintenance, replacement wear parts, non-warranty repairs, accidents, collision damage, and other repairs resulting from abnormal strain, neglect, or abuse. Specific examples include, but are not limited to, bending or prying with the product, failure to monitor wear, use of contaminated hydraulic fluid, excessive oil flow or pressure, and operation with a broken or damaged part which causes another part to fail. The customer is also responsible for incidental costs such as transportation due to a failure. If you have any specific questions on operation or maintenance, please contact your dealer for advice.

General Exclusions From Warranty: This warranty is not transferable and applies only to the original owner of the equipment. It does not apply to products sold or used previously, rental fleets, products subject to misuse, service other than normal, damage in transit or handling, normal wear, or products which in the opinion of LOWE® have had unauthorized alterations or repair.

LOWE® will replace any warrantable parts with original LOWE® parts. LOWE® will not pay for unauthorized parts, nor will it pay for the freight, labor, travel time, or mileage connected with the replacement of warranty parts. LOWE® will also not pay third party repair or replacement charges.

All defective parts against which warranty claims are made must be returned to LOWE®, freight prepaid, in accordance with the LOWE® Official Return Policy current at the time of the warranty claim. The hydraulic motor(s) used in LOWE® products are warranted by the motor manufacturer and, in case of possible warranty failure, must be returned to LOWE® or the nearest authorized hydraulic motor distributor for service. Any attempt by you, your dealer, or another company to repair the motor will result in denial of warranty credit.

This warranty is in lieu of all other warranties, expressed or implied. Any claims for incidental or consequential damages are hereby disclaimed by LOWE® and excluded from this warranty. LOWE® neither assumes nor authorizes any person or company to assume for it any other obligations or liabilities in connection with its products.

This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

Model Number _____ Serial Number _____ Date Purchased _____

Owner's Name _____

Owner's Address _____

Dealer's Name _____

Dealer's Address _____

City _____ State _____ Zip _____

Dealer's Phone Number _____

II

SAFETY INFORMATION

The Safety Alert Symbol is used on messages wherever your safety is involved. When you see it, pay attention!



Safety Alert Symbol

To emphasize special information, the words listed below carry specific meanings and should be carefully reviewed.

Danger Denotes the most serious specific potential hazard(s).

Warning..... The personal safety of the operating personnel or other persons may be involved. Disregarding this information could result in injury or death.

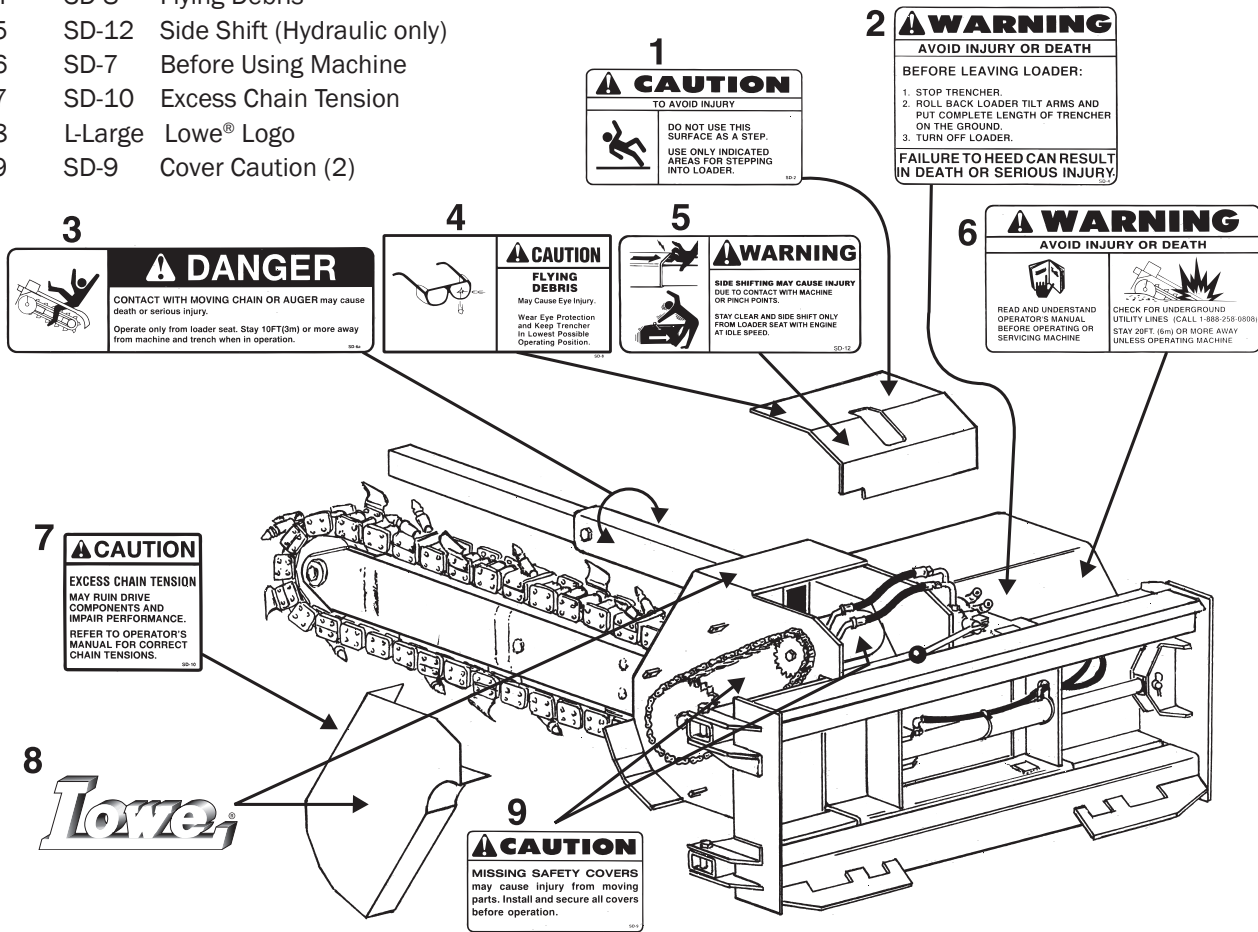
Caution..... General reminders of good safety practices or to direct attention to unsafe practices.

Note This is special information which may make operation or maintenance easier, or make instructions more clear.

Location of Safety Notices: MODELS XR-7, XR-14, XR-21, XR-25, & XRH-35

RefPart

No.	No.	Description
1	SD-2	No Step Decal
2	SD-4	Before Leaving Loader
3	SD-6a	Danger Decal (2)
4	SD-8	Flying Debris
5	SD-12	Side Shift (Hydraulic only)
6	SD-7	Before Using Machine
7	SD-10	Excess Chain Tension
8	L-Large	Lowe® Logo
9	SD-9	Cover Caution (2)



Replacement Safety Decals

Worn, damaged, or illegible labels should be replaced. New labels may be obtained from the manufacturer. Labels are listed under specific part numbers and are included in the safety decal illustration.

Replacement Safety Shields

All worn, damaged, unusable, or missing safety shields should be replaced. New shields may be obtained from the manufacturer. They are listed with a specific part number and are included in the exploded parts diagram.

Obligations and Usage:

This product is intended to be used only under the guidelines of this manual and relevant literature published by Lowe Manufacturing Company, Incorporated. It is the owner and/or operator's obligation to ensure this product is operated only for its intended uses. Operation contrary to guidelines set forth may cause premature breakage of the equipment and create serious safety problems.

III MACHINE SETUP

Your new trencher comes completely assembled from the factory. However, some items may have loosened or become lost during shipping or use. Also because of the elements in which a trencher operates, the following **checklist** should be thoroughly completed each time before the machine is used. Fill shaft hub with grease before operating trencher. (Exploded parts ref. # 29)



Make certain that all power sources are disconnected before performing the checklist.

- 1) _____ All nuts, bolts, and other hardware are tightened securely.
- 2) _____ The locking pin that secures the bracket from sliding is fully inserted.
- 3) _____ All safety covers are secured in their proper positions.
- 4) _____ The two hoses that run from the loader to the trencher (not supplied with trencher) are secure and are long enough to perform at the full range of the trencher's tilt and side shift capability.
- 5) _____ The trencher mounting bracket is properly secured to the loader's boom and all levers and/or pins are properly locked in place.
- 6) _____ All controls operate freely and in the correct manner.
- 7) _____ The operator has been briefed on proper operation of the trencher.



Do Not let Anyone Operate this Equipment who has not been Properly Trained in its Safe Operation!

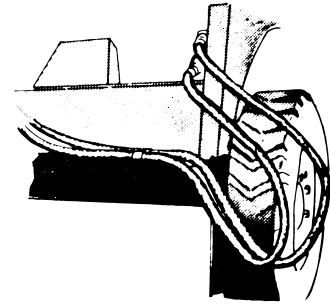
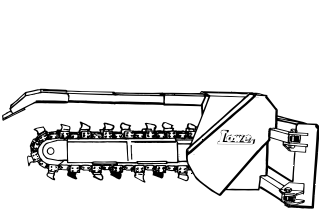


WARNING

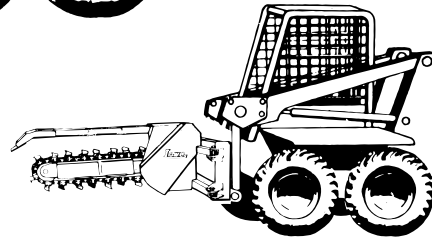
1. Avoid tipping, do **NOT** operate on side hills or sloping ground where the machine does not have a firm, stable base.
2. Do **NOT** connect hoses until the attachment is properly mounted and secured.
3. Make certain all connecting levers and/or pins are properly **LOCKED** in place.
4. Carry the assembly in a lowered position at all times.
5. Do **NOT** modify equipment as damage or injury could occur.

FAILURE TO FOLLOW DIRECTIONS MAY RESULT IN UNSTABLE OPERATION AND/OR SERIOUS INJURY.

IV MOUNTING INSTRUCTIONS FOR SKID LOADERS



*Single point hose attachment
for most loaders.*



NOTE: All *LOWE*® skid-steer trenching attachments are equipped with 37 degree JIC adapters. Attachment hoses should have $\frac{5}{8}$ inch (-10) female fittings on the attachment end.

- 1) Insert loader boom plate into Trencher Mounting Bracket.
- 2) Secure all locking levers or pins in their proper location.
- 3) Connect two hydraulic hoses to the Trencher and the Loader's Auxiliary Hydraulic system. Make sure that hoses are routed through the hose guide provided. Before they are secured, check to ensure adequate length and clearance through the trencher's tilt and lift range.
- 4) You are now ready for operation.

WARNING:

Carry trencher low to the ground at all times. Failure to do so may result in unstable operation or injury.

Removing the Trenching Attachment

- 1) Roll the loader's tilt arms back and lower lift arms to lay attachment level.
- 2) Stop the engine, release hydraulic pressure in hoses and disconnect auxiliary hoses.
- 3) Release locking levers or pins.
- 4) Start the engine and disengage loader mounting plate from trencher mounting bracket.

V OPERATION

TRENCH WIDTHS & DEPTHS

	Max. Depth In./Cm.	Max. Width In./Cm.		Max. Depth In./Cm.	Max. Width In./Cm.
MODEL XR-7	36/91 30/76	6/15 8/20	MODEL XR-25	60/152 48/122 36/91 30/76	6/15 8/20 10/25 12/30
MODEL XR-14	48/122 36/91 30/76 24/61	6/15 8/20 10/25 12/30	MODEL XRH-35	60/152 48/122 36/91	6/15 8/20 12/30
MODEL XR-21	60/152 48/122 36/91 30/76	6/15 8/20 10/25 12/30			

NOTE: Based on use in moderate soil conditions and on typical skid loaders that match the specific trenching attachments, your performance may vary depending upon digging conditions and loader used.

Digging with the Trencher:

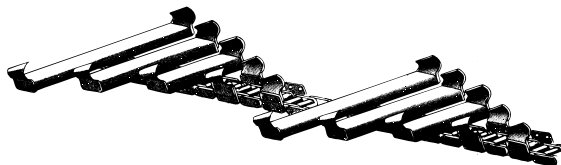
Operating a skid steer trencher attachment can be fairly complicated, but it can be made much easier if you follow a few specific guidelines:

- 1) *Making your initial cut* should be done with the trencher boom lying flat against the ground. As the chain is rotating, begin inserting the nose of the boom into the ground while slowly raising the trencher a few inches off the ground. Point the nose down gradually.
Once the trencher boom is in the ground and your angle or trench is established, lower the trencher until the skid shoe is just above ground level. Be certain the optional trench cleaner is operating freely.
You are now ready to trench.
- 2) *During the trenching operation:*
 - A) Use the center trench position whenever possible. You will find it much easier to control the machinery and dig a straighter trench.
 - B) Trench at a 45 to 60 degree angle for best performance.
 - C) Gently creep the loader controls backward. Too much back movement will cause the trencher to stall.
 - D) Do not use the "float" control on the loader as this increases drag on the system. You will trench faster by controlling the depth with periodic adjustments of the boom arms of the loader.

Digging Chain Setup:

In setting up your digging chain for use with width spacers, we recommend using a "V" configuration as a start. One tooth in the center of the chain acts as the point of the "V" with appropriate spacers and teeth taking a progressively wider cut in the trench.

After one "V" has cut, another begins the process all over. (See illustration below.)



VI TROUBLESHOOTING

Shut off power and disconnect power source before performing service checks.



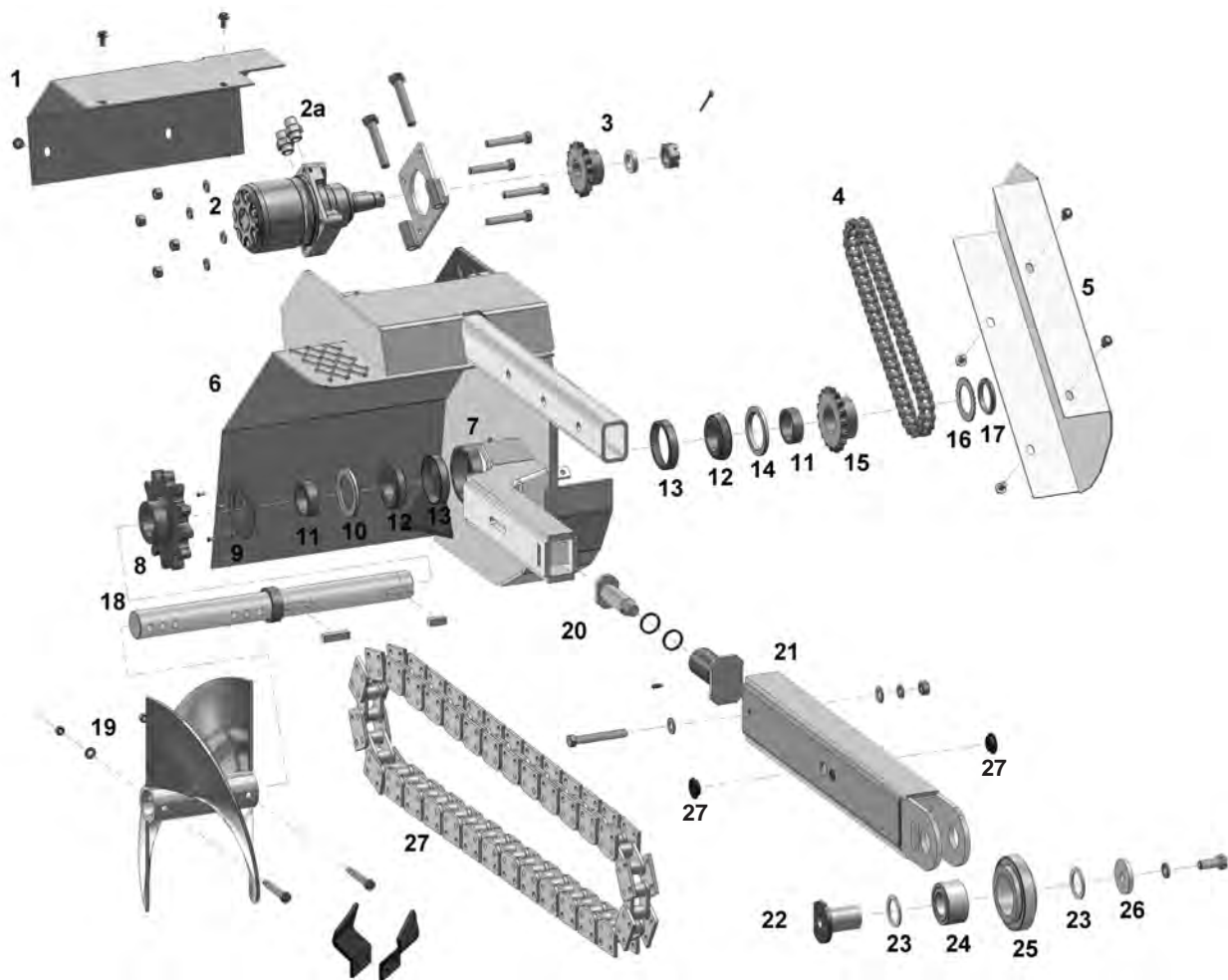
WARNING: Diesel fuel or hydraulic fluid under pressure can penetrate the skin or damage eyes. Fluid leaks under pressure may not be visible. Never use a bare hand to find leaks and always wear safety goggles for eye protection. Such fluid, if injected into the skin, must be removed within a few hours by a doctor familiar with this type of injury. Make certain pressure is relieved and power source is disconnected before servicing.

Symptom	Possible Cause	Action
Jerky	Cold oil or air in lines Loader hydraulic pump or system	Give time to warm up. See loader's manual.
Slow	Restriction in lines, couplers, or in loader's hydraulic system Worn, damaged, or insufficient loader hydraulic pump Loader oil filter	Check with pressure and flow gauge. See loader dealer. Request flow and pressure check. Check for dirt and grime. See if filter is installed correctly.
Insufficient digging capacity	Hydraulic pump in loader or motor in trencher ExcessiveLoad Relief valve	See your dealer. Request pressure check. Reduce digging load because load exceeds capacity of system. Check for proper pressure operation
Wrong Direction	Hoses not properly connected	Reinstall properly.
Oil leaks	Hydraulic motor seals are worn or damaged Loose fittings on hoses or motor Hoses are loose or damaged	See dealer for replacement of seals. Tighten or replace as required. Tighten or replace as required.

Notes

VII TRENCHER REPLACEMENT PARTS

Exploded Parts Diagram: MODEL XR-7



- | | | | | | |
|-----|------------|-------------------------------------|------|-----------|--------------------------|
| 1) | TR7-501AXR | Motor Cover | 15) | TR60-18XR | Driven Sprocket |
| 2) | MEL-12K | Hydraulic Motor | 16) | W-10 | Lockwasher |
| 2a) | TR-504X | Motor Fitting (2 required) | 17) | N-10 | Locknut (1) |
| 3) | TR60-15XR | Motor Sprocket (includes key) Drive | 18) | CR7-200X | Drive Shaft |
| 4) | TR7-506XR | Chain (includes master link) Drive | 19) | TR7-508X | Spoil Auger |
| 5) | TR7-501X | Chain Cover | 20) | TR7-518X | Grease Cylinder Assembly |
| 6) | TR7-500X | Trencher Housing | 21) | TR7-510AX | Boom for 24" Depth |
| 7) | TR-517 | Grease Fitting | 21a) | TR7-510BX | Boom for 30" Depth |
| 8) | TR7-14512X | Drive Sprocket (digging chain) | 21b) | TR7-510CX | Boom for 36" Depth |

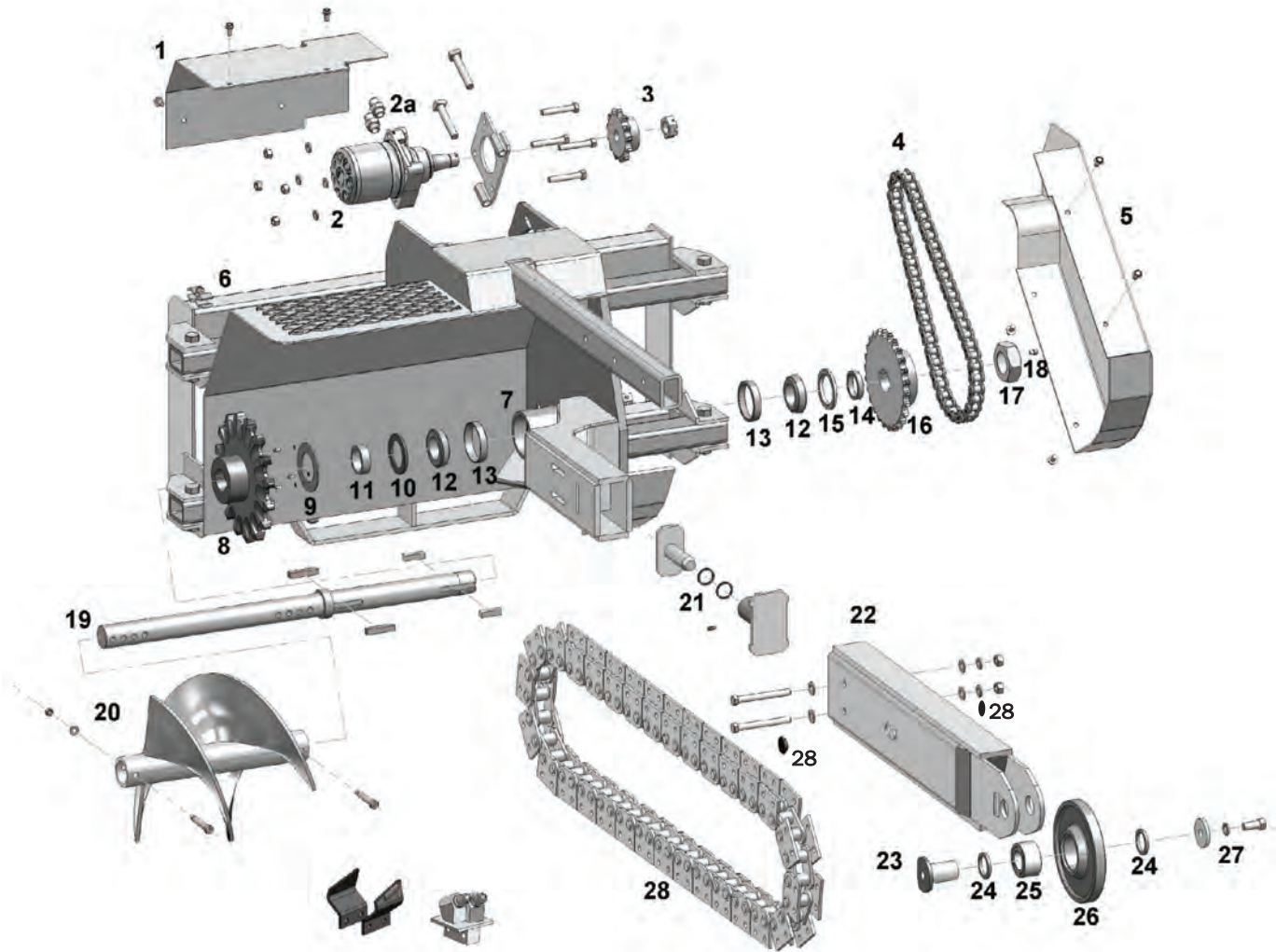
#HBK-7 - Hub Bearing Kit (# 9-14)

- | | | |
|-----|----------|--|
| 9) | TR-518 | Seal Protection Plate (Incl cap screw) |
| 10) | TR-507 | 3/4" Shaft Spacer (2 required) |
| 11) | 10-368A | Bearing Cone (2 required) |
| 12) | 10-362A | Bearing Cup (2 required) |
| 13) | 10-25028 | Shaft Seal (2 Required) |

IK7 - Idler Kit (# 22-26)

- | | | |
|-----|------------|-----------------------------|
| 22) | TR7-514X | Shaft/Lockwasher/Bolt |
| 23) | TR7-515X | Spacers (2 required) Sealed |
| 24) | TR-516X | Bearing |
| 25) | TR7-16000X | Idler Roller |
| 26) | TR-514FW | Flat Washer |
| 27) | NLP | Nylon Locking Plug |

Exploded Parts Diagram: MODEL XR-14, XR-21, & XR-25

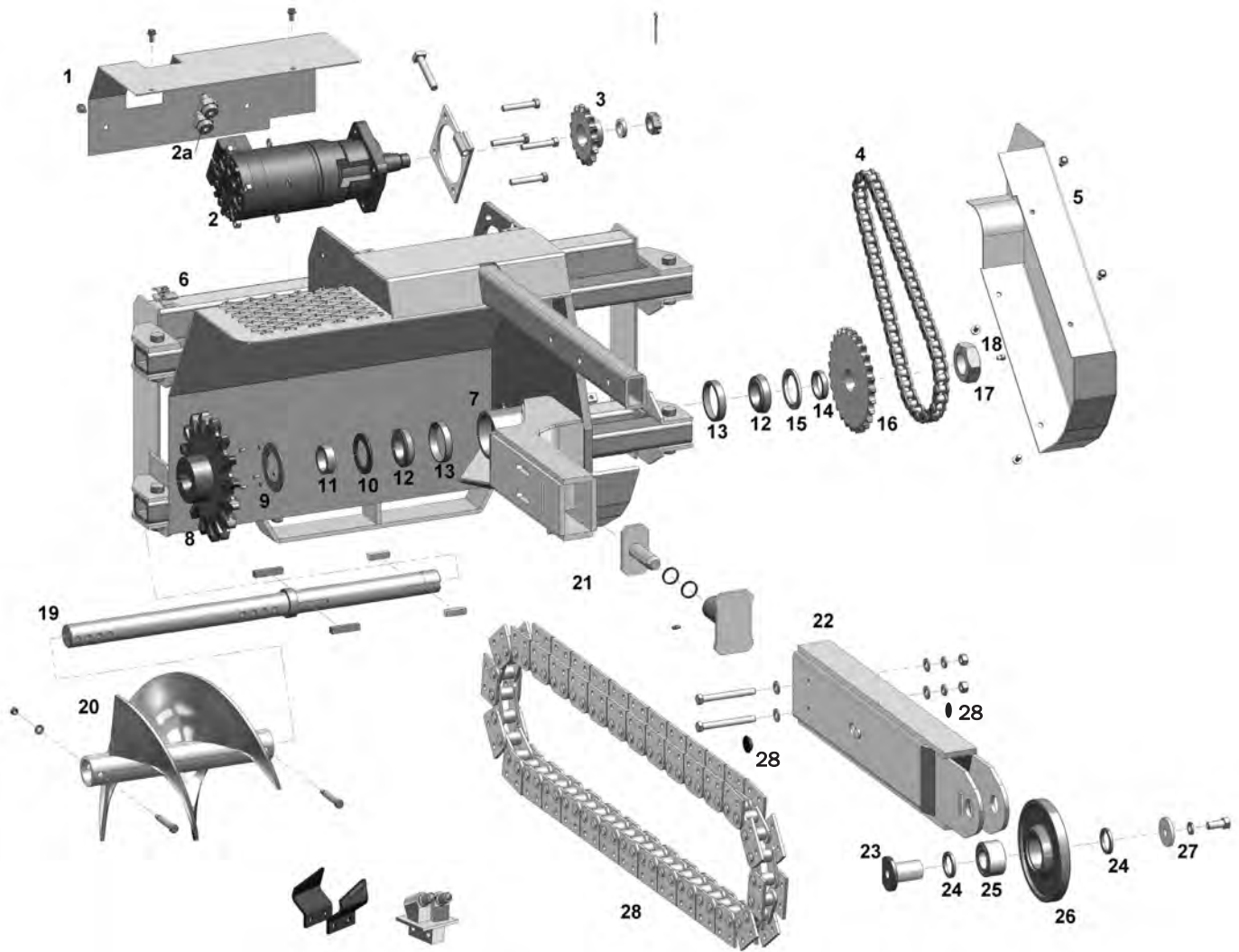


- | | | | | | |
|-----|------------|------------------------------------|------|----------|--------------------------|
| 1) | TR-501AXR | Motor Cover | 16) | TR80-26X | Driven Sprocket |
| 2) | MEL-12K | Hydraulic Motor for XR-14 Trencher | 17) | P2-12 | Hex Jam Nut |
| | MEL-18K | Hydraulic Motor for XR-21 Trencher | 18) | TR-520C | Holding Bolt |
| | MEL-21K | Hydraulic Motor for XR-25 Trencher | 19) | CR200-X | Drive Shaft |
| 2a) | TR-504X | Motor to hose fitting (2 required) | 20) | TR-508X | Spoil Auger |
| 3) | TR80-13XR | Motor Sprocket (includes keys) | 21) | TR-518X | Grease Cylinder Assembly |
| 4) | TR21-506SH | Drive Chain (includes master link) | 22) | TR-510AX | Boom for 24" Depth |
| 5) | TR-501X | Drive Chain Cover | 22a) | TR-510BX | Boom for 36" Depth |
| 6) | TR-500XR | Trencher Housing | 22b) | TR-510CX | Boom for 42" Depth |
| 7) | TR-517 | Grease Fitting | 22c) | TR-510DX | Boom for 48" Depth |
| 8) | TR-16016X | Drive Sprocket (digging chain) | 22d) | TR-510EX | Boom for 60" Depth |

HBK - Hub Bearing Kit (# 9-15)

- | | | | | | |
|-----|----------|--|-----|-----------|-------------------------------------|
| 9) | TR-518 | Seal Protection Plate(includes cap screws) | 23) | TR-514X | Shaft/Lockwasher/Bolt |
| 11) | TR-507 | 3/4" Shaft Spacer | 24) | TR-515X | Spacers (2 required) Sealed Bearing |
| 12) | 10-368A | Bearing Cone (2 required) | 25) | TR-516X | Bearing |
| 13) | 10-362A | Bearing Cup (2 required) | 26) | TR-16000X | Idler Roller |
| 14) | TR-507B | 1/2" Shaft Spacer | 27) | TR-514FW | Flat Washer |
| 15) | 10-25028 | Shaft Seal | 28) | NLP | Nylon Locking Plug |

Exploded Parts Diagram: MODEL XRH-35



- 1) TR35-501AX Motor Cover
- 2) TKL-30T Hydraulic Motor
- 2a) TR35-504X Motor to hose fitting (2 required)
- 3) TR80-15XR Motor Sprocket (includes keys)
- 4) TR35-506SH Drive Chain (includes master link)
- 5) TR-501X Drive Chain Cover
- 6) TR35-500XR Trencher Housing
- 7) TR-517 Grease Fitting
- 8) TR-16016X Drive Sprocket (digging chain)

- 17) P2-12
- 18) TR-520C
- 19) CR200-X
- 20) TR-508X
- 21) TR-518X
- 22) TR-510AX
- 22a) TR-510BX
- 22b) TR-510CX
- 22c) TR-510DX
- 22d) TR-510EX

- Hex Jam Nut
- Holding Bolt
- Drive Shaft
- Spoil Auger
- Grease Cylinder Assembly
- Boom for 24" Depth
- Boom for 36" Depth
- Boom for 42" Depth
- Boom for 48" Depth
- Boom for 60" Depth

HBK - Hub Bearing Kit (# 9-15)

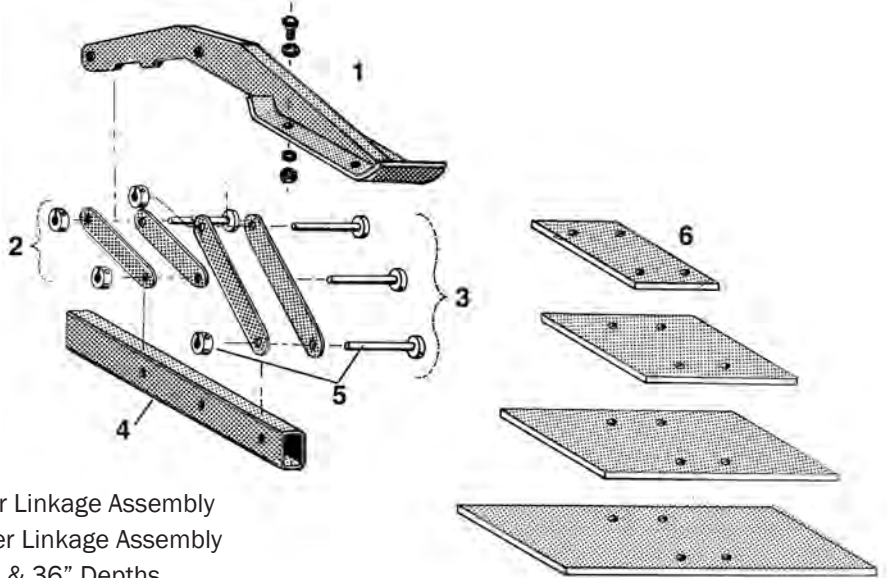
- 9) TR-518 Seal Protection Plate (includes cap screws)
- 10) 10-24982 Shaft Seal
- 11) TR-507 3/4" Shaft Spacer
- 12) 10-368A Bearing Cone (2 required)
- 13) 10-362A Bearing Cup (2 required)
- 14) TR-507B 1/2" Shaft Spacer
- 15) 10-25028 Shaft Seal (2 Required)
- 16) TR80-27X Driven Sprocket

IK - Idler Kit (# 23-27)

- 23) TR-514X
- 24) TR-515X
- 25) TR-516X
- 26) TR-16000X
- 27) TR-514FW
- 28) NLP

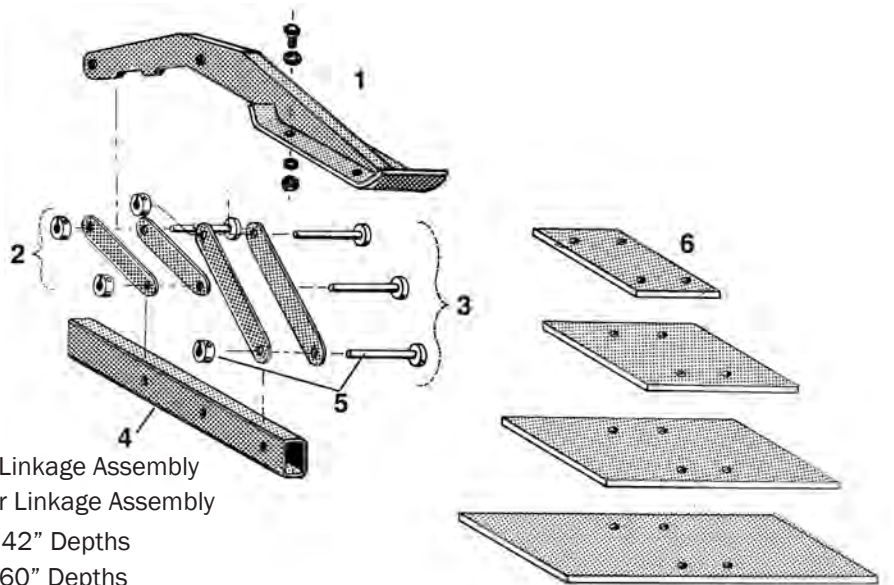
- Shaft/Lockwasher/Bolt
- Spacers (2 required) Sealed Bearing
- Idler Roller
- Flat Washer
- Nylon Locking Plug

CRX-7 Trench Cleaner Assembly for Model XR-7



Ref. #	Part #	Description
1)	51-ARM-X7	Trench Cleaner Arm
2)	TCLA-9	9 Inch (229 mm) Trench Cleaner Linkage Assembly
3)	TCLA-11	11 Inch (279 mm) Trench Cleaner Linkage Assembly
4)	51-BAR-X7	Trench Cleaner Bar for 24", 30", & 36" Depths
5)	L-3015	Pin & Collar
6)	TR7-701X	4 Inch (102 mm) Dirt Shoe
7)	TR7-702X	6 Inch (152 mm) Dirt Shoe
8)	TR7-703X	8 Inch (203 mm) Dirt Shoe

CRX-51 Trench Cleaner Assembly for Models XR-14, XR-21, XR-25, & XRH-35



Ref. #	Part #	Description
1)	51-ARM-X	Trench Cleaner Arm
2)	TCLA-9	9" (229 mm) Trench Cleaner Linkage Assembly
3)	TCLA-1 1	11" (279 mm) Trench Cleaner Linkage Assembly
4)	51-BAR-36	Trench Cleaner Bar for 36" & 42" Depths
	51-BAR-48	Trench Cleaner Bar for 48" & 60" Depths

5)	L-3015	Pin & Collar
6)	TR-702	8 Inch (152 mm) Dirt Shoe
7)	TR-703X	8 Inch (203 mm) Dirt Shoe
8)	TR-704X	10 Inch (254 mm) Dirt Shoe
9)	TR-705X	12 Inch (304mm) Dirt Shoe

VIII MAINTENANCE

Shut off power and disconnect power source before performing maintenance.

WARNING: Diesel fuel or hydraulic fluid under pressure can penetrate the skin or damage eyes. Fluid leaks under pressure may not be visible. Never use a bare hand to find leaks and always wear safety goggles for eye protection. Such fluid, if injected into the skin, must be removed within a few hours by a doctor familiar with this type of injury. Make certain pressure is relieved and power source is disconnected before servicing.

Maintenance Required	Length of Operation	Type of Maintenance
Grease Shaft Bearings	Daily	With normal grease gun, apply grease to grease fitting until full. (Ref. #7 on exploded parts diagram.)
Tension Boom Idler Nut	Check As Needed for Looseness	Tighten nut to 150 lbs/ft. (203 N.m)
Motor Drive Chain	50 Hours * *	Adjust and lubricate. Chain should have 1/2 inch (1.25 cm) of free play.
Trencher Chain	20 Hours * *	Adjust and lubricate. Digging chain should have at least 1 1/2 inches (4 cm) of free play. Do not use diesel oil. Excess chain tension may ruin drive components and impair performance.
Trencher Teeth	As Needed	Replace if worn excessively.
Spoil Auger	Before Each Use	Check for wear and the tightness of the two attaching bolts.
Trench Cleaner Assembly Option	Before Each Use	Check mounting bolts for tightness and check free play in the mechanism at the end of the arm.

* * More often under extreme conditions.

Chain lubricant can be any premium grade grease or commercial chain lube. The lubricant will do its best job when applied to a warm chain. Give lubricant time to soak into the working parts of the chain before resuming operation.

XR Boom/Chain Tightening

1. Find and expose grease zerk under one of two nylon locking plugs (NLP); usually found under the plug on the drive chain side of the boom.
2. Loosen the two bolts holding the boom.
3. Use small pumps of grease to extend the boom until there is about 3 cm of free play between middle of boom and chain.
4. Tighten bolts holding boom 82 lb/ft.
5. Replace Nylon Locking Plugs (NLP)

IX SPECIFICATIONS

Operational Range

Model XR-7
 Model XR-14
 Model XR-21
 Model XR-25
 Model XRH-35

GPM (lpm)

8 to 14 (30.3 to 53)
 10 to 20 (37.9 to 75.7)
 13 to 25 (49.2 to 94.7)
 16 to 25 (60.6 to 94.7)
 20 to 45 (75.7 to 170.3)

Relief PSI (kPa)

1,700 to 3,300 (11,721 to 22,753)
 1,900 to 3,300 (13,100 to 22,753)
 2,000 to 3,300 (13,790 to 22,753)
 2,000 to 3,300 (13,790 to 22,753)
 2,000 to 4,200 (13,790 to 28,958)

SPEED					POWER				
MODEL XR-7									
Gal/min	Feet/min	Litres/min	Meters/min	Shaft RPM	PSI	Near Actual Torque (lbs/ft)	kPa	N.m	Theoretical Torque (lbs/ft)
8	192	30.30	58.65	116	1,700	266	11,721	361	322
9	216	34.09	65.98	131	1,800	282	12,411	382	341
10	241	37.87	73.31	145	1,900	298	13,100	403	360
11	265	41.66	80.64	160	2,000	313	13,790	425	379
12	289	45.45	87.97	175	2,100	329	14,479	446	398
13	313	49.24	95.30	189	2,200	345	15,168	467	417
14	337	53.02	102.63	204	2,300	360	15,858	488	436
					2,400	376	16,547	510	455
					2,500	392	17,237	531	474
					2,600	407	17,926	552	493
					2,700	423	18,616	573	512
					2,800	439	19,305	595	531
					2,900	454	19,995	616	550
					3,000	470	20,684	637	569
SPEED					POWER				
MODEL XR-14									
Gal/min	Feet/min	Litres/min	Meters/min	Shaft RPM	PSI	Near Actual Torque (lbs/ft)	kPa	N.m	Theoretical Torque (lbs/ft)
10	233	37.87	70.92	107	2,000	522	13,790	708	632
11	256	41.66	78.01	118	2,100	548	14,479	743	664
12	279	45.45	85.10	129	2,200	574	15,168	779	695
13	302	49.24	92.19	139	2,300	600	15,858	814	727
14	326	53.02	99.28	150	2,400	627	16,547	849	758
15	349	56.81	106.38	161	2,500	653	17,237	885	790
16	372	60.60	113.47	172	2,600	679	17,926	920	822
17	396	64.39	120.56	182	2,700	705	18,616	956	853
18	419	68.17	127.65	193	2,800	731	19,305	991	885
19	442	71.96	134.74	204	2,900	757	19,995	1,026	916
20	465	75.75	141.83	215	3,000	783	20,684	1,062	948

SPEED**POWER****MODEL XR-21**

Gal/min	Feet/min	Litres/min	Meters/min	Shaft RPM	PSI	Near Actual Torque (lbs/ft)	kPa	N.m	Theoretical Torque (lbs/ft)
13	212	49.24	64.72	80	2,000	785	13,790	1,064	908
14	229	53.02	69.70	86	2,100	824	14,479	1,117	953
15	245	56.81	74.68	92	2,200	863	15,168	1,170	999
16	261	60.60	79.65	98	2,300	902	15,858	1,223	1,044
17	278	64.39	84.63	104	2,400	941	16,547	1,276	1,090
18	294	68.17	89.61	110	2,500	981	17,237	1,330	1,135
19	310	71.96	94.59	116	2,600	1,020	17,926	1,383	1,180
20	327	75.75	99.57	123	2,700	1,059	18,616	1,436	1,226
21	343	79.54	104.55	129	2,800	1,098	19,305	1,489	1,271
22	359	83.32	109.52	135	2,900	1,138	19,995	1,542	1,317
23	376	87.11	114.50	141	3,000	1,177	20,684	1,596	1,362
24	392	90.90	119.48	147					
25	408	94.69	124.46	153					

SPEED**POWER****MODEL XR-25**

Gal/min	Feet/min	Litres/min	Meters/min	Shaft RPM	PSI	Near Actual Torque (lbs/ft)	kPa	N.m	Theoretical Torque (lbs/ft)
16	210	60.60	64.05	79	2,000	927	13,790	1,256	1,093
17	223	64.39	68.05	84	2,100	973	14,479	1,319	1,148
18	236	68.17	72.05	89	2,200	1,019	15,168	1,382	1,202
19	250	71.96	76.06	94	2,300	1,066	15,858	1,445	1,257
20	263	75.745	80.06	99	2,400	1,112	16,547	1,507	1,312
23	302	87.11	92.07	113	2,500	1,158	17,237	1,570	1,366
25	328	94.69	100.08	123	2,600	1,205	17,926	1,633	1,421
					2,700	1,251	18,616	1,696	1,476
					2,800	1,297	19,305	1,759	1,530
					2,900	1,344	19,995	1,822	1,585
					3,000	1,390	20,684	1,884	1,640

SPEED**POWER****MODEL XRH-35**

Gal/min	Feet/min	Litres/min	Meters/min	Shaft RPM	PSI	Near Actual Torque (lbs/ft)	kPa	N.m	Theoretical Torque (lbs/ft)
20	222	75.71	67.67	83	2,000	1,144	13,790	1,551	1,475
22	244	83.28	74.43	91	2,500	1,429	17,237	1,938	1,844
24	266	90.85	81.20	100	3,000	1,715	20,684	2,326	2,212
26	289	98.42	87.97	108	3,500	2,001	24,132	2,715	2,581
28	311	105.99	94.73	116	4,000	2,287	27,580	3,101	2,950
30	333	113.56	101.50	125					
32	355	121.13	108.26	133					
34	377	128.70	115.03	141					
36	400	136.27	121.80	149					
38	422	143.85	128.56	158					
40	444	151.42	135.33	166					

