



HS16 HYDRAULIC RAIL SAW

OPERATOR'S MANUAL

COVERS DRILL PART NUMBER 0016601



Serial #: _____ Date: _____

Trak-Star® HS16 HYDRAULIC RAIL SAW

Welcome to Trak-Star

Congratulations on your purchase of the Trak-Star Hydraulic Rail Saw. Your model is designed to produce superior cuts quickly and efficiently. Through constant innovation and development, Trak-Star is committed to provide you with hole-producing and rail cutting tools and products that lead the industrial world.

Before attempting to operate your new Rail Saw, please read all instructions first. These include the Operators Manual and Warning Label on unit itself. With proper use, care, and maintenance, your model will provide you with years of effective rail cutting performance. Once again, thank you for selecting our product and welcome to Trak-Star.

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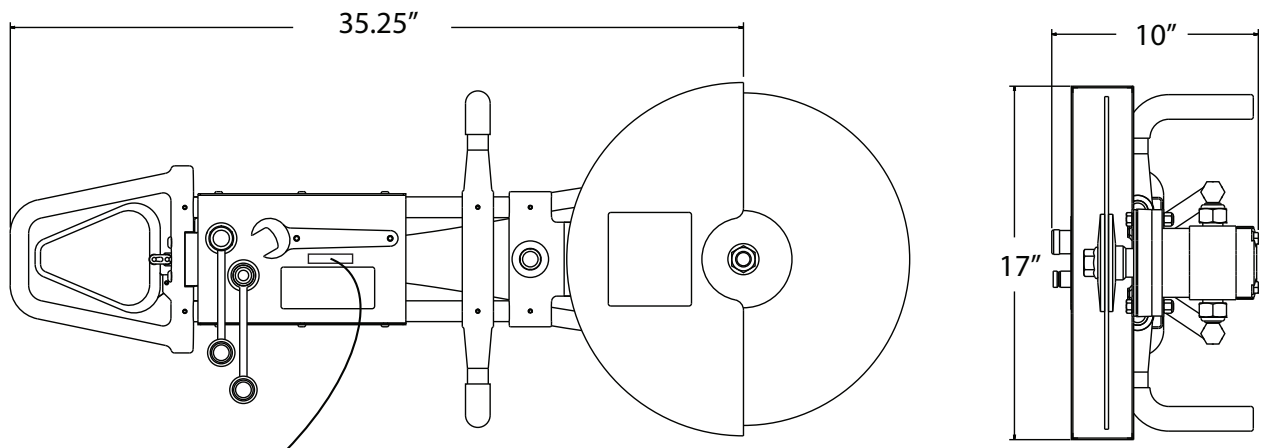
UNPACKING YOUR NEW RAIL SAW

1. Open shipping carton and remove the literature and hardware packages.
2. Read and follow all Instructions before attempting to operate your new rail saw.
3. Complete and mail the Product Registration Card. **NOW**. It is important that Hougén Manufacturing Inc. have a record of product ownership.
4. Lift Rail Saw out of shipping carton using center carrying handle and rear trigger guard.
5. Your new Rail Saw was factory adjusted prior to shipping. Check that there has been no shipping damage. If any damage is found notify Trak-Star as soon as possible.
6. Follow the Operating Instructions that also include Installing the Abrasive Wheel.
7. Re-read Safety Warnings listed in this Operator's Manual and on the drill unit to avoid injury. Follow operating procedures.

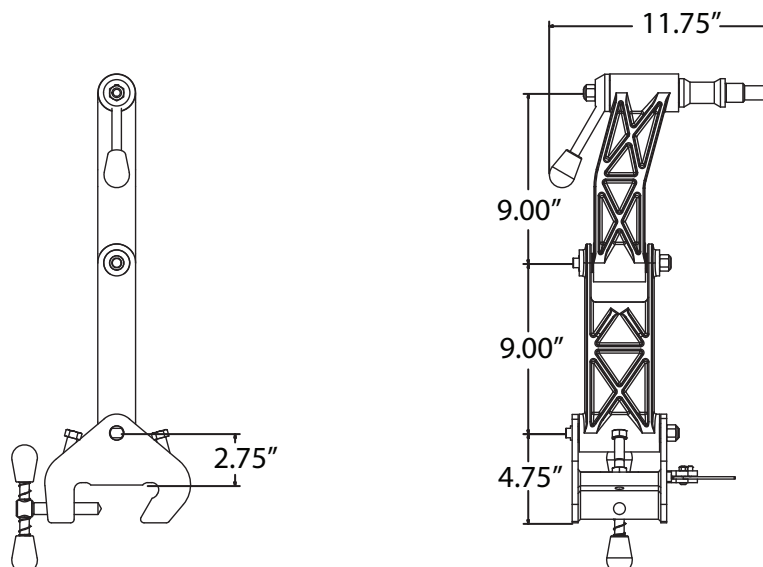
HS16 SPECIFICATIONS

HS16 Hydraulic Rail Saw - Part Number 0016601

Hydraulic Flow	10 GPM / 38 LPM
Hydraulic Pressure	2000 PSI / 138 BAR
Speed (no load)	3400 RPM
Wheel Size	16" / 406mm
Arbor	1" / 25mm Diameter
Weight	61 pounds with Clamp 41 pounds without Clamp



Serial Number and Part Number Label
is located below the Wrench Assembly on
the Side Guard.



Important Safety Instructions



WARNING: Read and understand all instructions. Failure to follow all instructions listed below, may result in serious personal injury or equipment damage.

Tool operators and maintenance personnel must always comply with the safety precautions given in this manual, and with all stickers and tags attached to the tool and hose. All safety precautions are given for your safety. Read to understand and follow all safety, maintenance and operation instructions before you use or maintain the tool. Review the manual daily before using the tool. In addition, follow all safety guidelines given you by your supervisor. Do not use the tool if you have any questions about the operation, safety or maintenance of this tool. Failure to follow these instructions can result in personal injury or equipment damage.

- Do not operate the tool until you have been thoroughly and properly trained or under the supervision of an instructor.
- Check power source daily to determine if correct flow and pressure are available. Never exceed flows or pressures for the tool being used. Personal injury or damage to the tool can result.
- Operators must clear the work area of nonessential personnel. Flying debris can cause serious injury.
- The operator must be familiar with all prohibited work areas such as unsafe grades, poor footing areas and overhead hazards.
- Maintain balance and proper footing at all times. Never overreach to the extent that a broken part or sudden movement of the tool can cause you to lose your balance and fall, or cause injury to yourself or someone else.
- Always hold the saw with a firm grip with both hands.
- When working near electrical conductors, always assume that the conductors are energized and that hoses and clothing can conduct harmful electricity. Use hoses labeled and certified as nonconductive.
- Do not operate the tool at excessive fluid temperatures, operator discomfort and potential burns can result at high oil temperatures.
- Never wear loose clothing that can get entangled in the working parts of the tools or be careless with hands, feet or other body parts around the working parts of the tools. Hydraulic tools exert high torque & force and can cause serious injury or death if improperly used.
- To avoid personal injury or equipment damage, all tool repair, maintenance or service must only be performed by authorized and properly trained personnel.
- Always wear appropriate safety equipment and other safety apparel as dictated by your supervisor and applicable for the job you are doing and the tool you are using.

Important Safety Instructions



WARNING: Read and understand all instructions. Failure to follow all instructions listed below, may result in serious personal injury or equipment damage.

- Do not clean, inspect or repair the tool while connected to the power source. Accidental engagement of the tool can cause serious personal injury.
- Oil injection hazard exists with this tool. Oil injection is a condition where hydraulic oil is injected under the skin from pressure in the line. Always wear gloves and repair any leaks immediately. Never carry a tool by the hoses.
- Do not use damaged equipment. Immediately replace any damaged hoses, fittings or other components showing wire braid, nicks, cuts, damage or abrasions. Failure to do so may result in equipment damage and / or personal injury or death.
- Clean up any oil or fluid spills immediately.
- Do not operate the saw with the blade guard removed.
- Keep the wheel off all surfaces when starting the saw.
- Inspect the wheel guard and collars for damage in the event that a wheel is damaged.
- Do not operate the saw in the vicinity of flammable material.

CUTTING WHEEL SAFETY

- Never exceed the maximum operating speed marked on the wheel. Verify that the cutting wheel rating is greater than the motor shaft RPM.
- Do not store or transport the saw with the wheel installed.
- Ensure that the cutting wheel is correctly installed and tightened before used.
- Operate the rail saw without applying pressure to the wheel for at least 30 seconds, during that time verify that there are no vibrations or defects with the wheel or hub assembly. If vibration or a defect is detected, stop the operation and do not use the tool until corrected.
- Only use the cutting wheels that comply with ANSI B7.5.

CAUTION

10 GPM / 38 LPM • 2000PSI / 138 BAR
3400 RPM • Wheel Size: 16" / 406mm • Arbor 1" / 25mm

• Do Not exceed specified flow or pressure. • Use only Trak-Star® Trak-Blades. • Read operator's manual and be sure hoses are properly connected before operating saw. • Improper use, handling, or maintenance could result in leak, burst, or equipment failure. • Contact at a leak or burst can cause oil injection into the body. • **Failure to observe these precautions can result in serious personal injury.**

Trak-Star®

CAUTION

• Do not use damaged blades. • Use only Trak-Star Trak-Blades. • Read operator's manual and be sure hoses are properly connected before operating saw. • Always wear safety glasses • **Failure to observe these precautions can result in serious personal injury.**

Wheel Size: 16" / 406mm • Arbor Bore: 1" / 25mm
Wheel Speed: 3400 RPM

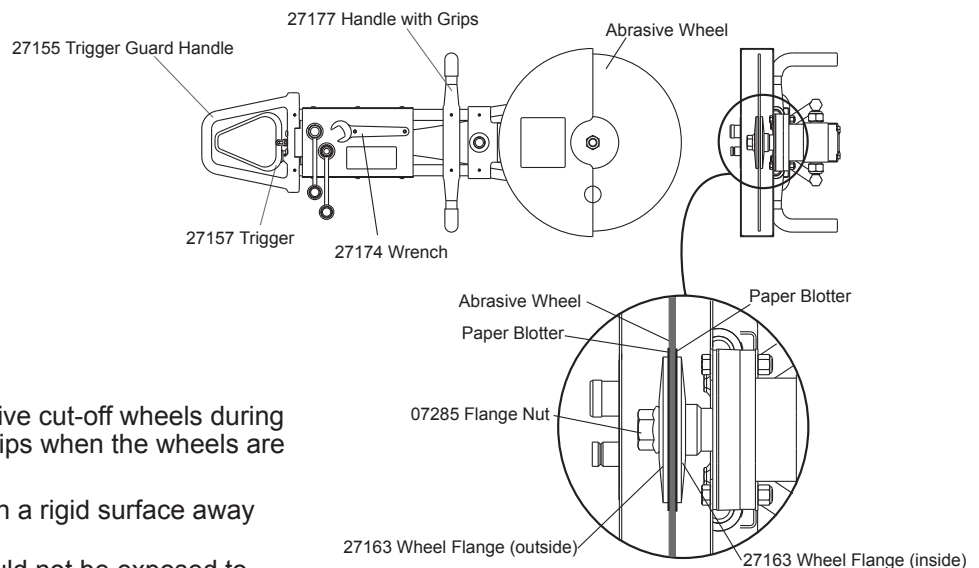
OPERATING INSTRUCTIONS

PREPARATION FOR USE

1. Check the Hydraulic Power Source
 - Use a calibrated Flow Meter such as the Trak-Star 27542, to verify that the hydraulic power source delivers a flow of 9-10 GPM/34-40 LPM at 2000 PSI/140 BAR.
 - Verify that the hydraulic power source is equipped with a relief valve set to open at 2200-2300 PSI/152-159 BAR minimum.
2. Check the Hydraulic Saw
 - Make sure all of the saw accessories are installed correctly and securely, failure to do so may cause personal injury.
 - Verify that there are no signs of fluid leaks,
 - Verify that all fittings and fasteners are tight.
3. Check the Trigger Mechanism
 - Verify that the trigger moves smoothly in both directions.
4. Check the Guard Assembly
 - Inspect the wheel guard for cracks or structural damage.

INSTALLING AND REMOVING THE ABRASIVE CUTTING WHEEL

1. Before installing the wheel, "sound" the wheel for possible damage. Hang the wheel by the arbor hole and by lightly tapping the wheel with a screwdriver handle the abrasive wheel should produce a low tone if it is in good condition. If the sound is flat, the wheel maybe cracked or damaged.
2. Remove the flange nut and outside Wheel flange, using part no. 27174 wrench.
3. Remove the abrasive wheel if one is installed on the saw. Check that the surface of the new abrasive wheel and both wheel flanges verifying they are free of debris.
4. Slide the abrasive wheel, with a paper blotter on each side, onto the motor shaft, followed by the outside flange onto the motor shaft.
5. Thread the flange nut onto the motor shaft until tight, verifying the flats in the flanges are on the flats of the motor shaft.
6. Holding the abrasive wheel, tighten the flange nut with part no. 27174 wrench. Now the abrasive wheel is installed continue with all Operating and Safety Instructions.



ABRASIVE WHEEL CARE

Damage may occur to the abrasive cut-off wheels during storage. Consider the following tips when the wheels are not in use:

- Wheels should be laid flat on a rigid surface away from heat or moisture.
- During storage, wheels should not be exposed to high heat, liquids or freezing temperatures.
- If blotters are not mounted to the wheels than a suitable separator should be used to preserve flatness.
- DO NOT store the saw with the abrasive wheel mounted, remove the abrasive wheel and store as noted above.

OPERATING INSTRUCTIONS

OPERATION

1. Position the clamp base on top of the rail so both clamp base flats are on the head of the rail and square to the rail. (See Fig. 1) Align the locator plate with the cut location and, tighten the clamp to the rail with the clamp screw (See Fig. 2).

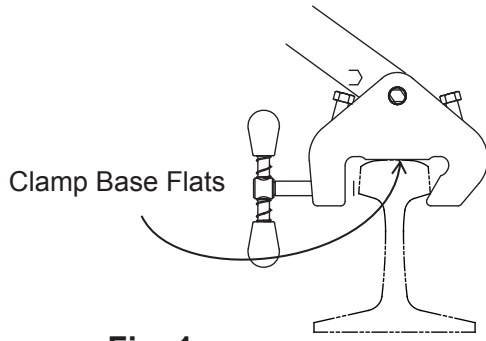


Fig. 1

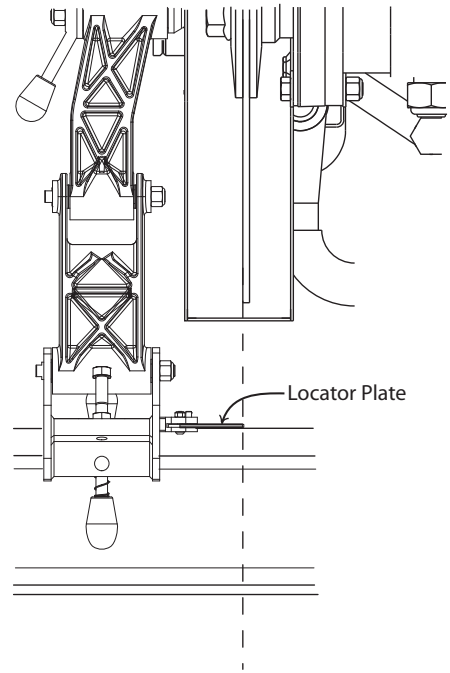


Fig. 2

2. Attach the HS16 Hydraulic Rail Saw to the clamp at the clamp mounting screw and tighten the saw to the clamp assembly with the clamp handle (See Fig. 3)

3. With the power source in the OFF position, connect the hydraulic hoses to the saw (See Fig. 4)

NOTE: Avoid pulling the hoses through the work area with the saw. It is better to take the hoses to the saw; this will relieve any additional stress to the fittings.

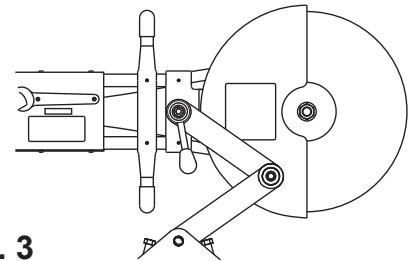


Fig. 3

4. Turn the power source ON following the Operations Instructions for that equipment. Verify that the power source is supplying 10 GPM and 2000 PSI .

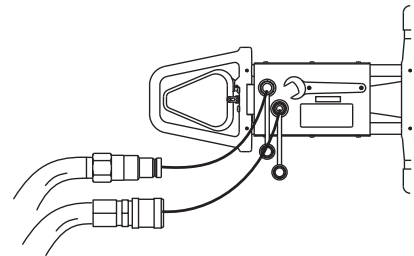
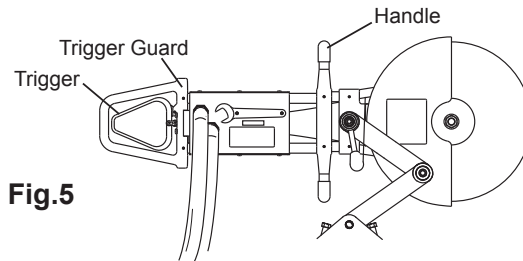


Fig. 4

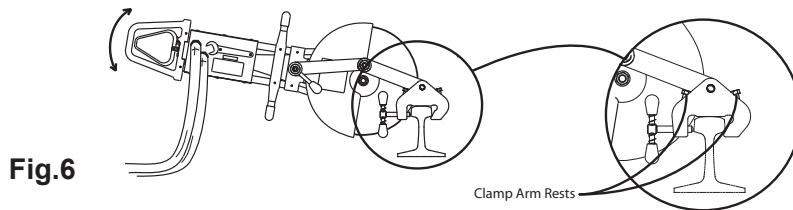
OPERATING INSTRUCTIONS

5. With a tight grip, hold the handle with one hand and the other hand on top of the trigger guard, squeeze the trigger to start the abrasive wheel rotating. (See Fig. 5). Allow the abrasive wheel to rotate at speed for 30 seconds with no contact to the rail. During this time, check for any vibration from the Rail Saw.

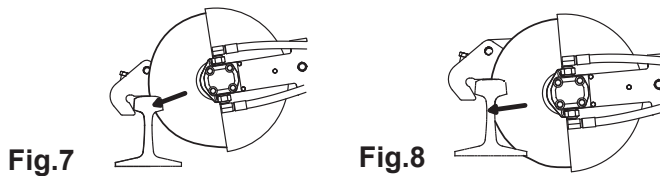
NOTE: If any vibration is detected while operating the Rail Saw, release the trigger allowing the abrasive wheel to STOP, shut the power supply OFF and service the Rail Saw to the correct vibration.



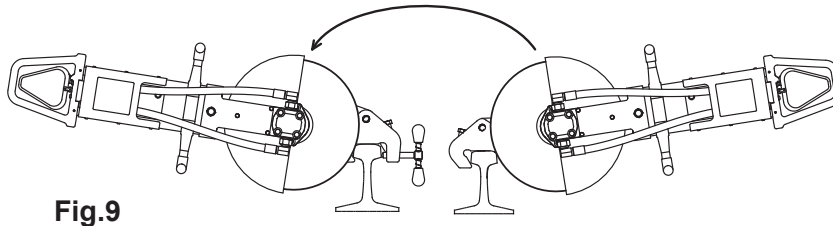
6. With the abrasive wheel rotating, rest the lower clamp arm on the rest, bring the abrasive wheel to the rail and pivot the saw by moving the trigger guard UP and DOWN while squeezing the trigger. (See Fig. 6).



7. With the same motion, continue your cut through the head of the rail until the web is reached (See Fig. 7). Once to the web of the rail, pull back and continue through the rail from the side. (See Fig. 8).



If you are unable to complete the cut from one side of the rail, the HS16 Hydraulic Rail Saw gives you the ability to rotate to the other side without un-clamping from the rail. Release the trigger, allow the abrasive wheel to come to a complete STOP and then pivot the Rail Saw to the opposite side. (See Fig. 9). With the Rail Saw in the new position, the HS16 is designed to operate the same, squeeze the trigger to start the abrasive wheel rotating and start into the cut with the same technique.



8. Once you have completed the cut, release the trigger and allow the abrasive wheel to come to a complete STOP. Set the Rail Saw down so the abrasive wheel is not making contact, turn the power source OFF and disconnect the hydraulic hoses from the Rail Saw. You are now able to un-clamp the Rail Saw from the clamp and then remove the clamp from the rail.

MAINTENANCE INSTRUCTIONS

1. Check the tool at every operation for proper operation, leaks or damage.
2. Check the hoses at every use for leaks, cracks or any other damage.
3. Keep the Quick Disconnect Fittings clean and lubricated. When the hydraulic hoses are not attached to the Rail Saw, the covers should be installed on the Quick Disconnect Fittings.
4. Use hydraulic fluids that comply with HTMA Spec. 5.7, the hydraulic fluid should have a viscosity between 100 and 400 SSU (20-82 Centistokes) at the maximum and minimum expected operating temperatures. Petroleum base hydraulic fluids with anti-wear properties and a viscosity index of over 140 work for a wide range of operating conditions. The following oils meet HTMA Spec. 5.7:

AMOCO RYKON MV
SUNVIS 706
CHEVRON EP-MV

CITGO A/WALL TEMP
MOBIL D.T.E. 13
TEXACO "RANDO" HDAZ

5. The Gates Lifeguard Hose Covers are designed to contain any leaks or failures. Any fluid seepage at the clamps will indicate a leak in the hose and will require service.
6. Contact a Trak-Star Representative for any Technical Service Bulletins or questions about the HS16 Hydraulic Rail Saw at: (866) 245-3745.

REPAIR TROUBLESHOOTING

1. Saw does not cut the rail fast enough:

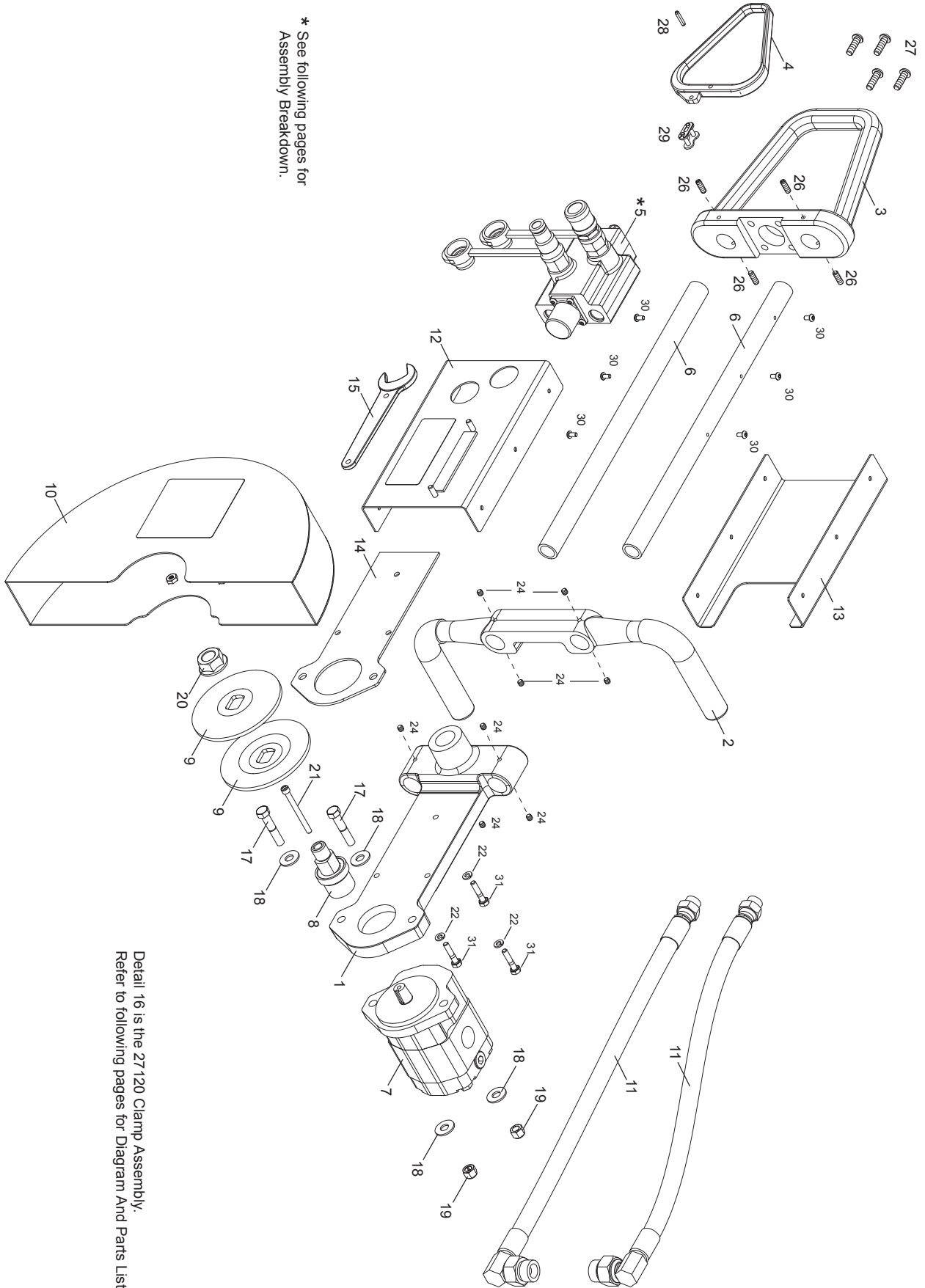
- Check the hydraulic flow under load. Use the Trak-Star Hydraulic Flow Meter, part number 27542, to verify that the hydraulic power source should supply 10 GPM / 38 LPM at 2000 PSI.
- Verify that the operator is using a correct technique while operating the rail saw.
- The proper RPM of the HS16 Hydraulic Rail Saw is 3400 RPM with NO LOAD.
- When using a hose reel, verify the U-bolt holding the hose to the reel assembly is not too tight, restricting the fluid flow.
- Make sure the hoses do not show any signs of damage. A hose that been pinched or crushed can restrict the fluid flow.

The RPM of the HS16 Hydraulic Rail Saw is proportional to the flow that is provided. If the flow drops below recommended 10 GPM than RPM will also reduce. Proper flow / RPM is critical for proper Rail Saw operation and critical for the safety of the operator.

2. The Saw cuts crooked.

- Check for any loose or damaged items on the clamp assembly or the mounting point of the Rail Saw.
- Check the abrasive wheel for defects, glazing or loose mounting.
- Check the hydraulic power source system for low flow.
- Check the Rail Saw frame for damaged or worn parts.
- Verify the saw operators cutting technique.

HS16 PARTS BREAKDOWN



* See following pages for Assembly Breakdown.

Detail 16 is the 27120 Clamp Assembly. Refer to following pages for Diagram And Parts List.

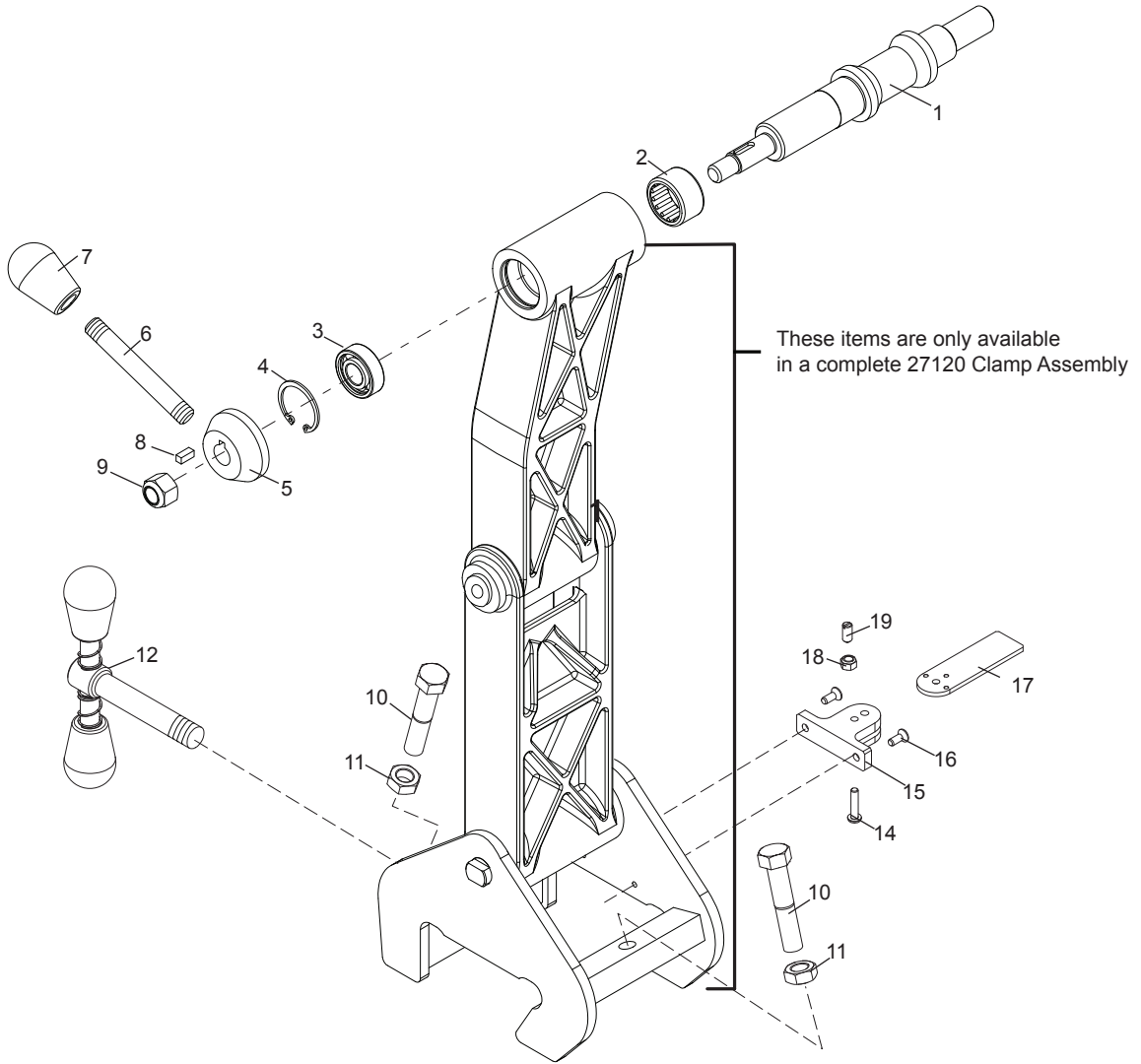
PARTS LIST

Item	Part #	Description	Qty
1	27176	Motor Arm & Thread Assembly	1
2	27177	Handle & Grip Assembly	1
3	27155	Machined Handle	1
4	27157	Trigger Handle	1
5	27170	Hyd. Manifold Assy. (includes a-c)	1
5a	02698	Quick Connect Coupler - Female	1
5b	02699	Quick Connect Coupler - Male	1
5c	05909	Dust Cover	2
6	27160	Frame Tubing	2
7	27161	Hydraulic Motor Assembly	1
8	27162	Drive Hub	1
9	27163	Wheel Flange	2
10	27178	Wheel Guard w/ Label	1
11	27168	Hydraulic Hose Assy. w/sleeve	2
12	27180	Right-Guard Assembly w/label	1
12a	07376	Label - Caution	1
13	27179	Left-Guard Assembly w/label	1

Item	Part #	Description	Qty
13a	07386	Label - Trak-Star	1
14	27172	Support Plate	1
15	27174	Wrench - 1-1/8 Open End	1
16	*27120	Clamp Assembly	1
17	05736	Hex Bolt - 3/8-24 x 2"	2
18	07356	Washer -.406 ID x .734 OD	4
19	07277	Lock Nut 3/8-24	2
20	07285	Flange Nut 3/4-16	1
21	07284	Screw SHC 1/4-28 x 2-3/4	1
22	90028	Lock Washer 1/4"	3
24	07275	SCR Set 1/4-20 x 1/4	8
26	07287	SCR Set 1/4-20 x 3/4	4
27	07395	SCR BHC 1/4-20 x 1	4
28	07289	Roll Pin 3/16 Dia. x 7/8	1
29	07283	Chain Link	1
30	41044	Screw BHC #10-32 x 3/8	6
31	10789	Hex Bolt 1/4-20 x 1-1/4	3

*** Refer to Following Breakdown for Available Parts.**

27120 CLAMP ASSEMBLY



Item	Qty.	Part No.	Description
1	1	27127	Clamp Mount Screw
2	1	07261	Needle Bearing
3	1	24099	Ball Bearing
4	1	17627	Retaining Ring
5	1	27132	Hub
6	1	07265	Feed Handle (1/2-20 Thread)
7	1	04532	Oval Knob
8	1	07264	Key 5mm x 5mm x 12mm
9	1	07272	Locking Nut 1/2-20

Item	Qty.	Part No.	Description
10	2	03690	Bolt-Hex 1/2-20 x 2-1/2
11	2	07270	Nut-Hex 1/2-20
12	1	27133	Clamp Screw Assembly
14	1	10984	Screw - BHC 10-32 x 7/8
15	1	27129	Locator Bracket
16	2	05988	Screw FHSC 10-32 x 1/2
17	1	27128	Locator Plate
18	1	07269	Nut-Locking Nylon #10-32
19	1	07267	Spring Plunger

HS16 HYDRAULIC RAIL SAW ACCESSORIES

TRAK-BLADE - 04415

The Trak-Blade is a quality, American made, 16" abrasive cut-off wheel designed specifically for the demanding process of cutting rail. By being a double sided fiber re-enforced wheel, it will ensure a straight cut every time.



NOTES

OTHER PRODUCTS OFFERED BY **Trak-Star®**

Modern, high speed railways and welded rails call for modern, high precision rail equipment. Through our continual commitment, we now offer additional products that will be beneficial to your specific applications.

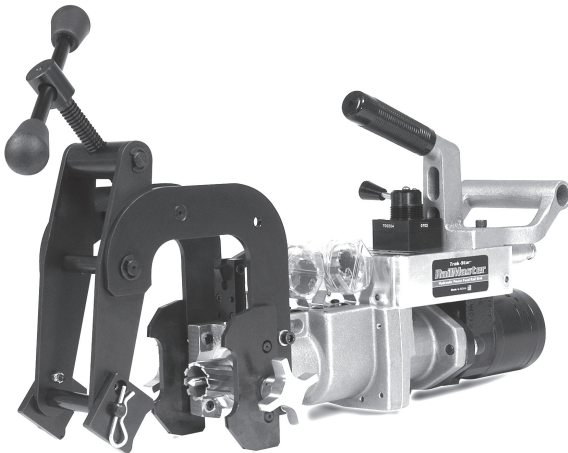
**Model RB28
Portable Gas Rail Drill**



**Model RB30
Portable Gas Bonding Drill**



**Model RM42
Power Feed Hydraulic Drill**



**Model BD17
Electric Bonding Drill**



**Model GW12
Gas Impact Wrench**



**Model K1260
Portable Gas Rail Saw**



Commercial / Industrial Limited Warranty

Hougen Manufacturing, Incorporated warrants its Trak-Star Rail Drills, Portable Magnetic Drills, Electro-hydraulic Hole Punchers for one (1) year and other products for ninety (90) days from date of purchase against defects due to faulty material or workmanship and will repair or replace (at its option) without charge on any items returned. This warranty is void if the item has been damaged by accident or unreasonable use, neglect, improper service, or other causes not arising out of defects in material or workmanship. No other expressed warranty is given or authorized. Hougen Manufacturing, Inc., disclaims any implied warranty of MERCHANTABILITY or FITNESS for any period beyond the expressed warranty and shall not be liable for incidental or consequential damages. Some states do not allow exclusions of incidental or consequential damages or limitation on how long an implied warranty lasts and, if the law of such a state governs your purchase, the above exclusion and limitation may not apply to you. This warranty gives you specific legal rights and you may also have other rights which vary from state to state.

To obtain warranty service, return the item(s), transportation prepaid, to your nearest Factory Authorized Repair Center or to Hougen Manufacturing, Inc. 3001 Hougen Drive, Swartz Creek, Michigan 48473.

THIS WARRANTY IS IN LIEU OF ANY OTHER WARRANTY, EXPRESSED OR IMPLIED, INCLUDING ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.

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FACTORY AUTHORIZED WARRANTY REPAIR CENTERS

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Swartz Creek, MI 48473
(866) 245-3745

Kenbil Service Co.
2900 Adams Street B-14
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(951) 689-6633

Hougen Canada
309 Nash Rd. North
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L8H 7P4 (905) 573-9088

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