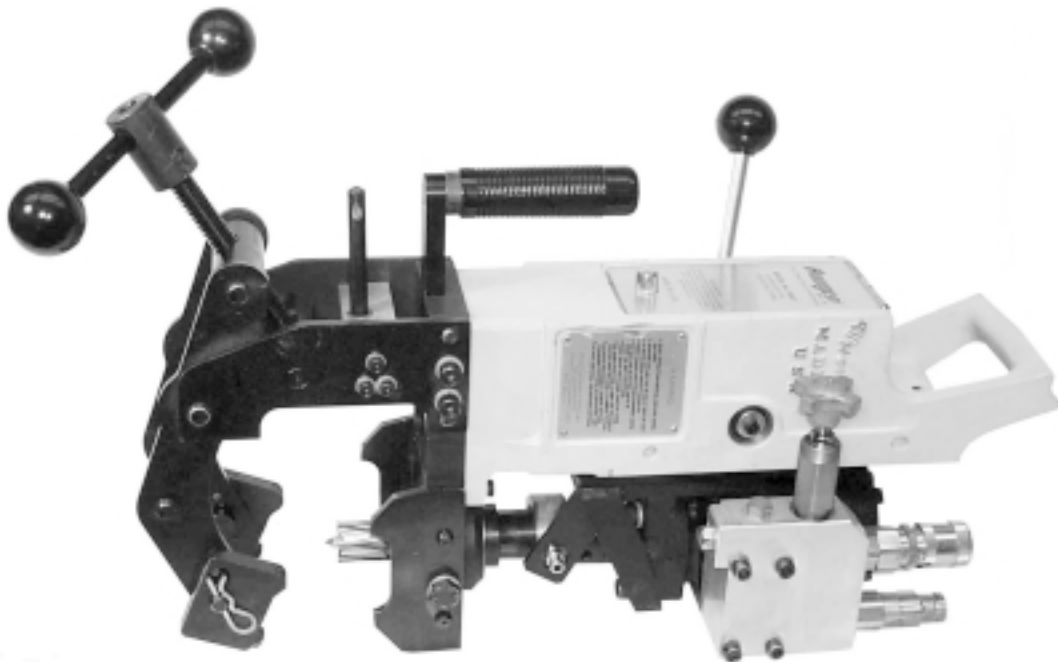




OPERATOR'S MANUAL MODEL 10942



**PORTABLE HYDRAULIC RAIL DRILL --- MANUAL FEED
70 LB. A.S.C.E. TO 155 LB. P.S.**

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Welcome to Trak-Star

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

Before attempting to operate your new Rail Drill, 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 hole drilling performance. Once again, thank you for selecting our product and welcome to Trak-Star.

Unpacking Your New Rail Drill

1. Open shipping carton and remove the literature and hardware packages.
2. Read and Follow All Instructions before attempting to operate your new Rail Drill. A CD has been also supplied for your convenience.
3. Complete and mail the Product Registration Card NOW. It is important that Hougen Manufacturing, Inc., have a record of product ownership.
4. Open hardware package and check contents.
 - 03161 Feed handles (3)
 - 10570 Feed handle knobs (3)
 - 10565 Hex-Key 1/8"
 - 10727 Wrench-Allen 3/16"
 - 04149 Wrench-Allen 7/32" T
 - 01293 Wrench-Allen 3/32
 - 03635 Pilot
5. Lift Rail Drill out of shipping carton using drill housing handle and clamp handle
6. Screw the three knobs (10570) into the three feed handles (10569) and then screw the handle into the Hub Assembly (40254)
7. Your new Rail Drill was factory adjusted prior to shipping. Check to make sure that all gib adjustment screws, motor hold-down screws, front support bracket screws, drill housing and shoe mounting screws are snug and have not vibrated loose in transit.
8. Remove Coolant Bottle / Hose Assembly (01592) from the separate shipping container. Connect the quick-disconnect hose fitting to the Rail Drill. See Procedure on page 5.
9. Reread Safety Warnings listed in this Operator's Manual and on the drill unit to avoid injury. Follow operating procedures.

Your new Rail Drill is equipped with a 3/4" diameter arbor bore to accept "15,000-Series" style TRAK-STAR cutters. Order cutters separately. Install pilot inside cutter before attaching cutter to arbor (see Procedure page 9)

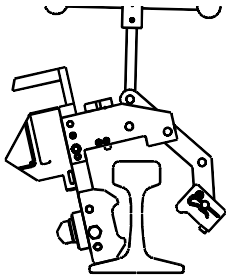
Important Safety Instructions

1. **Read all Instructions**
2. **Keep Work area clean**
Cluttered area and benches invite injuries. Keep dirt and chips from under TRAK-STAR cutter area and drill shoe.
3. **Consider Work Area Environment.**
Keep work area well lit.
4. **Keep Children Away**
Do not let visitors contact tool.
5. **Store Idle Tools**
When not in use, tools should be stored in a dry, and a high or locked-up place -- out of reach of children.
6. **Do Not Force Tool**
It will do the job better and faster at the rate for which it was intended.
7. **Use Right Tool**
Do not force small tool or attachment to do the job of a heavy duty tool.
Do not use tool for purpose not intended -- for example do not use a circular saw for cutting tree limbs or logs.
8. **Dress Properly**
Do not wear loose clothing or jewelry. They might entangle with spinning chips or get caught in moving parts. Rubber gloves and non-skid footwear are recommended when working outdoors. Wear sturdy leather gloves when working indoors.
9. **Always Wear Safety Glasses or Goggles.**
10. **Do Not Overreach**
Keep proper footing and balance at all time.
11. **Secure Work**
Clamp work securely using appropriate shoe size and shape.
Tighten Clamp by using two hands with handle placed in central position and tighten securely.
12. **Maintain Tools With Care**
Keep tools sharp and clean for better and safer performance.
Do not use dull or broken TRAK-STAR cutters. Follow instructions for lubricating and changing accessories.
Inspect gas line periodically and, if damaged, have repaired by authorized service facility.
Keep handles dry, clean, and free from oil and grease.
13. **Disconnect Tools**
Disconnect hydraulic hoses when not in use, before servicing, and when changing TRAK-STAR Cutters or accessories.
14. **Remove Adjusting Keys and Wrenches**
Form a habit of checking to see that keys and wrenches are removed from tool before turning drill unit on.
15. **Stay Alert**
Watch what you are doing. Use common sense. Do Not operate tool when you are tired.
16. **Check Damaged Parts**
Before further use of drill, a part that is damaged should be carefully checked to determine that it will operate properly and perform its intended function.
Check for alignment of moving parts, binding of moving parts, breakage of parts, mounting, and any other conditions that may affect its operation.
A part that is damaged should be properly repaired or replaced by an authorized service center unless otherwise indicated elsewhere in this instruction manual.

Do not use Rail Drill if starting the motor does not turn arbor.
17. **Additional Safety Precautions**
 - Arbor and cutter should never be used as a handhold.
 - Keep hands and clothing away from all moving parts.
 - Do not use TRAK-STAR cutters where ejected slug might cause injury (slug ejected at end of cut).
 - Be sure that all safety devices are properly adjusted and in use. Also, adhere to all operating instructions.
 - Do not attach Rail Drill to live 3rd rail track.
18. **Non-Conforming Cutting Tools**
The TRAK-STAR Model 10927A is designed to use TRAK-STAR "15,000-Series" Cutters only. The use of drilling tools having different shank styles is not recommended as they may not tighten securely in the TRAK-STAR arbor with risk of accident or injury.
19. **Save These Instructions**

CLAMPING PROCEDURES

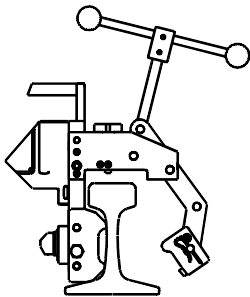
WARNING: IMPROPER CLAMPING WILL CAUSE PREMATURE CUTTER FAILURE



STEP #1:

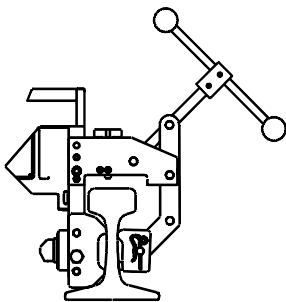
WITH CLAMP IN OPEN POSITION, REST UNIT ON RAIL BASE. BOTTOM OF SHOES SHOULD CONTACT TAPER ON RAIL BASE. **(SEE FIG. A)**

**** PERFORMANCE TIP: CLOSE CLAMP UNTIL CLAMP PAD CONTACTS WEB OF RAIL PRIOR TO STEP #2.**



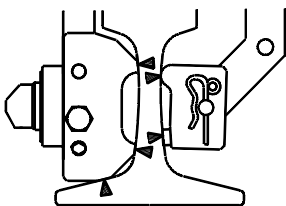
STEP #2:

RAISE REAR OF RAIL DRILL TO LOCATE SHOES IN PROPER POSITION. **(SEE FIGURE B)**



STEP #3:

WHILE MAINTAINING CONTACT BETWEEN SHOES AND RAIL, TIGHTEN CLAMP. **(SEE FIG. C)**



▲ INDICATES CONTACT POINTS

STEP #4:

WHEN UNIT IS FIRMLY CLAMPED, CHECK FOR PROPER SHOE AND PAD CONTACT ON BOTH SIDES **(SEE FIG. D)**

Adjustment of Gibs

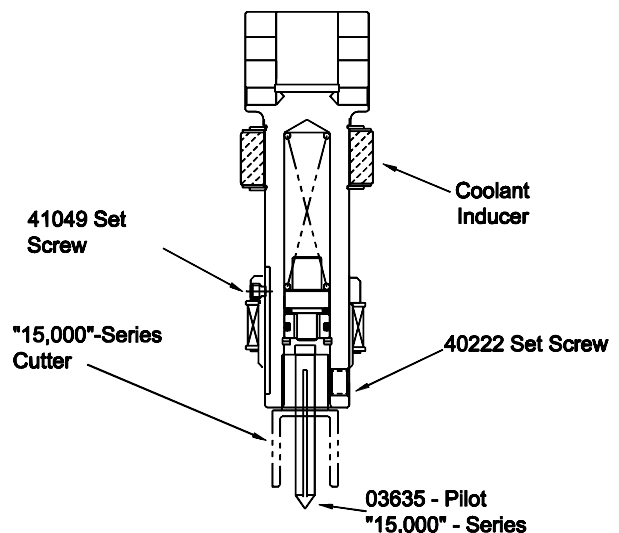
Loosen all front support locking screws and bolts prior to adjusting gibs.

1. Loosen Set screws (40237).
2. Feed the drill in and out a few times and then, with top of motor slide flush with top of housing, tighten the Gib Screws until you feel them touch the Steel Gib (40225).
3. Feed the drill in and out again.
4. Adjust Gib Screws so that there is uniform pressure from top to bottom. (Top of motor slide flush with top of housing)
5. Turn each Gib Screw in equally about 1/8 to 1/4 turn, depending upon your preference.
6. Gib Screws should be tight enough so that slide moves in and out smoothly with no wobble or shaking. (Looseness will cause cutter breakage)

Note: Gibs should be lubricated regularly.

Installing / Replacing TRAK-STAR Cutter In Arbor

1. Disconnect hydraulic hoses from manifold. Turn off coolant at shut-off in the case of replacing a cutter. The spring seat system located within arbor was not designed to be 100% leak proof.
2. Lay drill on its side with feed handles up.
3. Position slide so the side locking screws (40222) on arbor are accessible. Loosen and remove screws. Remove cutter in case of replacement. Do not depress pilot pin during procedure to release seal. Doing so will result in releasing pressurized contents of arbor cavity and coolant loss. Some loss, however, is normal due to cavity between cutter shank and spring seat.
4. Insert pilot in shank end of TRAK-STAR cutter.
5. Insert TRAK-STAR cutter until flats on cutter shank are aligned with set screw holes and are exactly perpendicular to axis of set screw holes of removed screws. (do not depress pilot in case of cutter replacement for reason noted in #3).
6. Insert set screws and tighten. Make sure cutter is secure.



Hints for Smoother Operation

1. Keep inside of TRAK-STAR cutter clear of any chips. Chips will interfere with cutting to maximum depth as well as impede free coolant flow from arbor to work and can cause cutter breakage.
2. Keep slide dovetails, brass gibs, and feed rack lubricated and free of chips and dirt.
3. Tighten all bolts regularly.
4. Keep workpiece, machine, arbor and TRAK-STAR cutter free of chips and dirt.
5. For best operation and longest tool life, use TRAK-STAR cutting fluid mixed at proper ratios.
6. With engine off and spark plug wire disconnected, depress pilot occasionally to check metering of coolant flow. Lack of coolant may cause cutter to freeze in cut, slug to stick, and poor cutter life.

Super Concentrate Cutting Fluid

A good flow of cutting fluid to the tool is important. It cools and lubricates the cutting edge, helps evacuate the chips, keeps the slug from expanding, and helps eject the slug. Various mineral and sulphur base oils are quite popular, however, water base solutions have better cooling qualities.

Listed is our own recommended Concentrated Cutting Fluid For TRAK-STAR Cutters and similar cutting tools. It is a water soluble, biodegradable product. This cutting fluid contains no ingredients that are on the U.S. Government Hazardous Materials List. It is a super concentrated form that will require a 10:1 mixture of water.

Order Number	Size Description
11741-12	12 Pints*
11742-4	4 Gallons**
11743	5 Gallons+
* MEASURED AMOUNT OF CONCENTRATE. COMES IN 12-1 PINT CONTAINERS	
** MEASURED AMOUNT OF CONCENTRATE. COMES IN 4-1 GALLON CONTAINERS AND WILL MAKE 44 GALLONS OF USABLE CUTTING FLUID	
+ COMES IN 5-GALLON CONTAINER, FULL, WILL MAKE 55 GALLONS OF USABLE CUTTING FLUID	

“15,000-Series” TRAK-STAR Disposable Rail Cutters

Premium H.S.S. with Titanium Nitride Coating

Hougen TRAK-STAR Rail Drills are designed to use Hougen TRAK-STAR Rail Cutters, and to achieve maximum efficiency from your unit, we recommend that no substitutes be used.

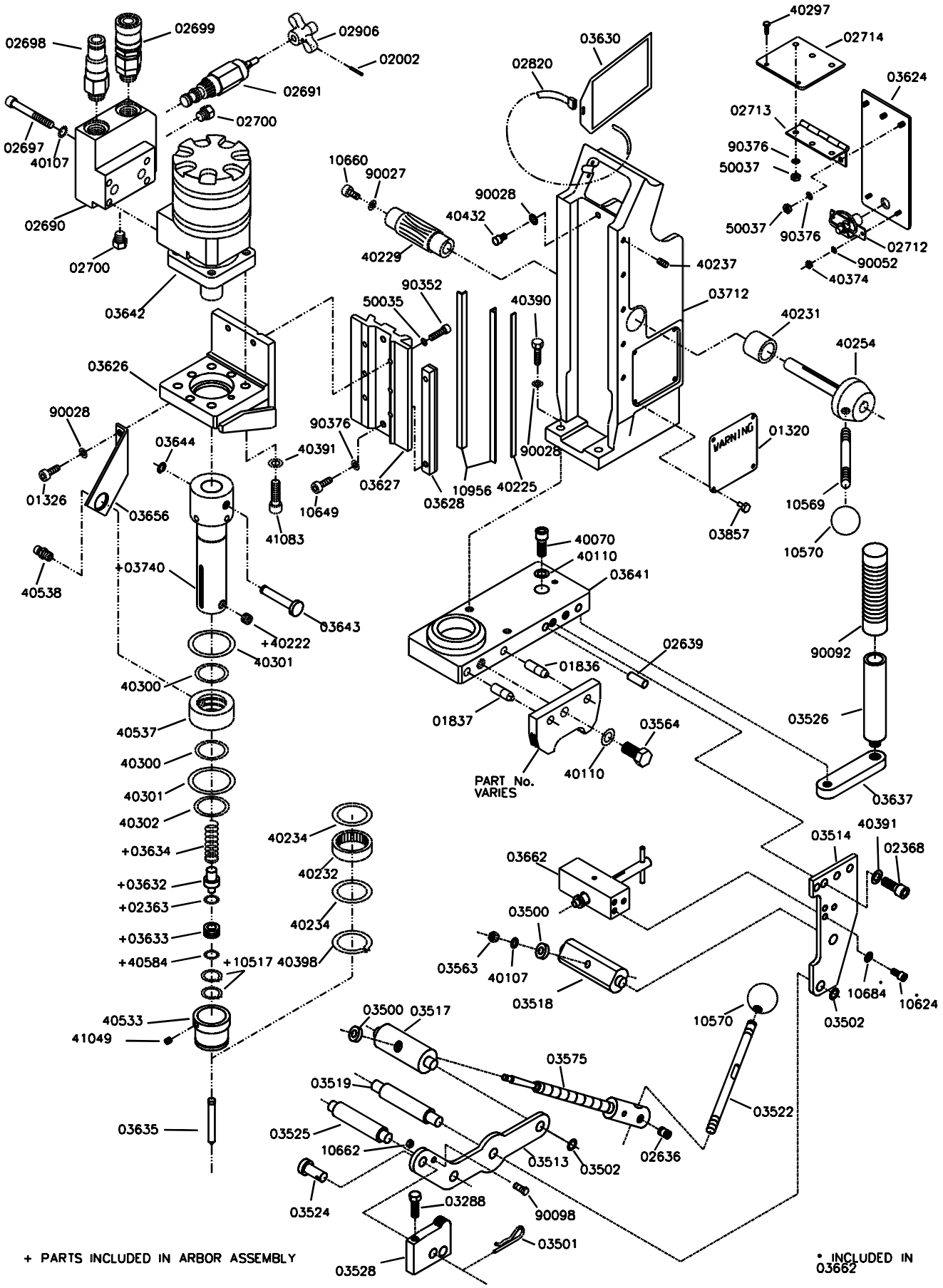
- ** “15,000-Series TRAK-STAR Cutters are economical and disposable --- there is no need to sharpen --- however it is possible. Tools can be sharpened 2 to 3 times. Send cutters to HMI to the attention of the Resharpener Department.
- ** TRAK-STAR cutters have been shown to drill holes in rails up to 4X faster than twist drills or spade drills, and they produce clean, round, burr-free holes without the need to chamfer.
- ** Multiple cutting edge design, along with proper coolant flow, produces a cool cut raising the rail temperature in the hole no more than 25°F above ambient temperature. This prevents work hardening, stress cracking, service failures, and repeated repairs.

Cutter size, inches	Dec. Equivalent	Part Number
7/8	0.8750	15128
15/16	0.9375	15130
1	1.0000	15132
1 1/16	1.0625	15134
1 1/8	1.1250	15136
1 3/16	1.1875	15138
1 1/4	1.2500	15140
1 5/16	1.3125	15142
1 3/8	1.3750	15144
1 7/16	1.4375	15146
1 1/2	1.5000	15148
Pilot for "15,000-Series" Cutters		03635

Rail & Shoe Data

Railway Association or System	Tee Rail Section, lb.	Section Designation	Shoe Part Number
A S C E American Society of Civil Engineers	70	7040 70 AS 701	01906
	75	7540 75 AS 753	01907
	80	8040 80 AS 800	01908
	85	8540 85 AS 851	01909
	90	9040 90 AS ---	01910
	100	10040 100 AS ---	01911
A R A American Railway Engineer Association	Type "A" - High Rail for High Speeds		
	90	9020 90 RA 902	01927
	100	10020 100 RA 1003	01928
	Type "B" - Low Rail for Heavy Loads at Slower Speeds		
	90	9030 90 RB 905	01908
	100	10030 100 RB 1002	01910
A R E A American Railway Engineer Association	100	10025 100 RE 10025	01894
	110	11025 110 RE 1100	01895
	112	11228 112 RE 1100	01896
	115	11525 115 RE 1150	01897
	119	11937 119 RE 1190	01897
	130	13025 130 RE 1300	01898
	131	13128 131 RE 1311	01899
	132/136	13228 132 RE 1321	01902
	133	13331 133 RE 1330	01901
	136/132	13622 136 RE 13637	01902
	140	--- 140 RE ---	01903
CSX	122	--- 122 CG ---	01918
C & NW Chicago & Northwestern	100	10035 100 DM 10035	01926
P S Pennsylvania System	85	8531 85 PS ---	01912
	100	10031 100 PS ---	01913
	130	13031 130 PS ---	01914
	155	15531 155 PH ---	01919
NYC (Dudley)-New York Central & Hudson River Railroad	105	10524 105 DY ---	01915
	127	12723 127 DY ---	01916
PRP Pennsylvania Railroad	85	8533 85 PR ---	01917
Consult Hougen Technical Sales	141	141 AB	04205

10942 Exploded View



Parts List

Part No.	Description	Qty. Required	Part No.	Description	Qty. Required
01320	Tag, Warning	2	03644	Ring Retaining 3/8"	1
01326	Screw-SHC 1/4-28	2	03656	Coolant Inducer Bracket	1
01836	Pin-Round Locating	2	03662	Locator Template Assy.	1
01837	Pin-Diamond Location	2	03712	Housing Assembly	1
02363	"O" Ring	1	03740	Arbor Assembly	1
02368	Screw-SHC 3/8-16	4	03857	Screw-Hex head #4-40	8
02636	Screw-SS 3/8-16	1	10517	Ring Retaining	2
02639	Dowel Pin 3/8 x 1"	1	10569	Feed Handle	3
02690	Manifold	1	10570	Feed Handle Knob	3
02691	Valve-Cartridge	1	10624	Screw SHC 1/4-20	6
02697	Screw-SHC 5/16-18	4	10649	Screw-SHC #10-32	2
02698	Coupling-Male	1	10660	Screw-SHC 1/4-20	1
02699	Coupling-Female	1	10662	Lock Nut #10-24	2
02700	Hex Plug	2	10956	Brass Gibs (Pair)	1
02712	Spring Latch	1	40070	Screw 1/2-13 x 1"	1
02713	Hinge	1	40107	Washer 5/16" Heli	5
02714	Panel Plate	1	40110	Washer Lock 1/2"	2
02820	Calbe-Tie	1	40222	Screw SS 7/16-14	2
02906	Knob	1	40225	Steel Gib	1
03288	Gripper	2	40229	Feed Gear	1
03500	Flat Washer 7/8"	2	40231	Bronze Bushing	2
03501	Hitch Pin	2	40232	Roller Bearing	1
03502	Ret. Ring 1/2"	6	40234	Thrust Washer	2
03513	Clamp Arm	2	40237	Screw-SS 1/4-28	5
03514	Clamp Bracket	2	40254	Hub-Reversible	1
03517	Clamp Round	1	40297	Screw #6-32	2
03518	Clamp Flat Bushing	1	40300	"O" Ring	2
03519	Clamp Middle Pin	1	40301	Washer 1-3/8"	2
03522	Clamp Turn Handle	1	40302	Ring Retaining	2
03524	Clamp Short Pad Pin	2	40374	Hex-Nut #6-32	2
03525	Clamp Lower Pin	1	40390	Bolt Hex Head	3
03526	Clamp Carrying Handle	1	40391	Lock washer 3/8 Heli	5
03627	Motor Slide	1	40398	Ring Retaining	1
03528	Clamp Pad	2	40432	Screw SHC 1/4-28	1
03563	Nut Hex 5/16-18	1	40533	Ejector Collar	1
03564	Bolt Hex Head	2	40537	Coolant Inducer	1
03624	Faceplate w/art work	1	40538	Quick Connect Nipple	1
03626	Motor Bracket	1	40584	"O" Ring	1
03628	Rack	1	41049	Screw-SS 1/4"	1
03630	Clamping Tag	1	41083	Screw SHC 3/8-16	4
03632	Spring Seat	1	50035	Lock Washer	6
03633	"O" Ring washer	1	50037	Nut-Hex #10-32	6
03634	Spring Ejector	1	90027	Flat washer	1
03635	"15,000-Series" Pilot	1	90028	Washer-Heli 1/4"	6
03637	Clamp-Carry	1	90052	Lock Washer #6	2
03641	Base Plate	1	90352	Screw-SHC 1/4-28	6
03642	Hydraulic Motor	1	90376	Washer Lock	8
03643	Pin Clevis	1	90098	Screw-SHC #10-24 x 3/4	2

Positioning of Optional Hole Location Template

Template is positioned on head of rail with tapered tip flush with end of rail and side locking screws fastened to rail head. Notches in template give precise location of hole centerlines to be drilled.

The rail clamp assembly has a locating pin which rests in the template notches. The locating pin is adjustable to accommodate the full range of rail sizes.

To use the locating pin, first make sure the pin is in its highest position and locked. The pinhandle should be perpendicular to the rail. Raise the drill unit over the rail with the template attached and gently rest drill down until shoes make contact with the rail. Release the pin by turning handle a quarter turn, making the handle parallel with the rail. Slowly slide rail drill across the template until the pin falls into notch.

The pin must contact the sides of the matching notch and can touch the bottom of the notch. Following the Clamping Instructions, clamp unit onto rail. When the hole is completed, raise the pin by the handle and turn a quarter turn to lock pin into position. To drill the next hole, move the drill sideways, ensuring the pin is clear of the notch, and release pin. Slide the drill sideways until pin falls in the next notch, and repeat the procedure as necessary.

Note: The locating pin must be in its uppermost and locked position before putting the drill unit on the rail. Failure to do so can result in damage to the hole locating pin system.

Hole location templates are offered as optional equipment. Four of these templates are provided with established hole spacings. The 40570 template is produced to customer specified hole spacing. See chart for the template to match your application.

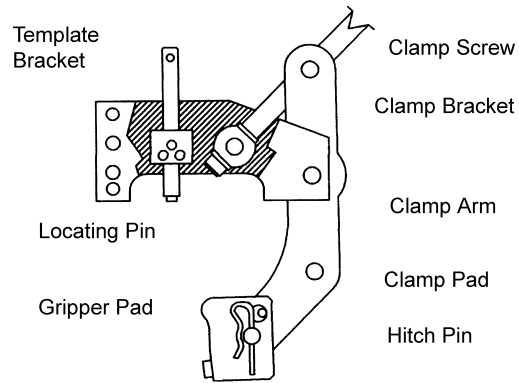
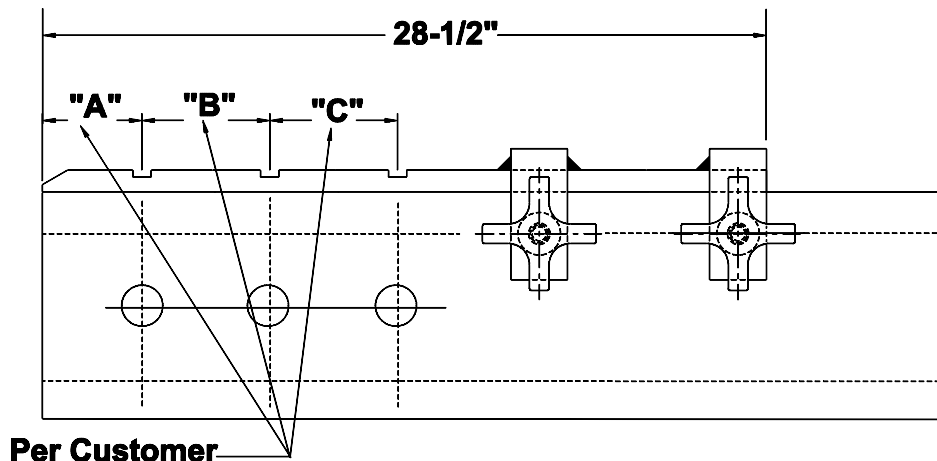


Figure 10

Template Part No.	Hole Spacing
40570	Customer Specified
40701	3-1/2" x 6" x 6"
40702	2-11/16" x 5-1/2" x 5-1/2"
40703	2-1/2" x 5"
40704	2-1/2" x 6-1/2" x 6-1/2"

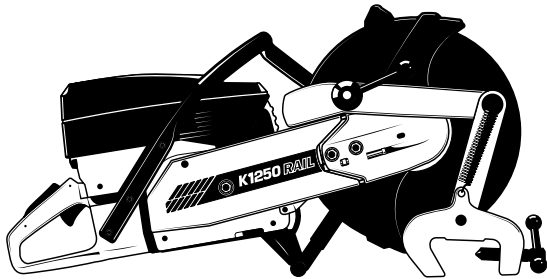
Fig 9 Template 40570



Other Products offered by Trak-Star®

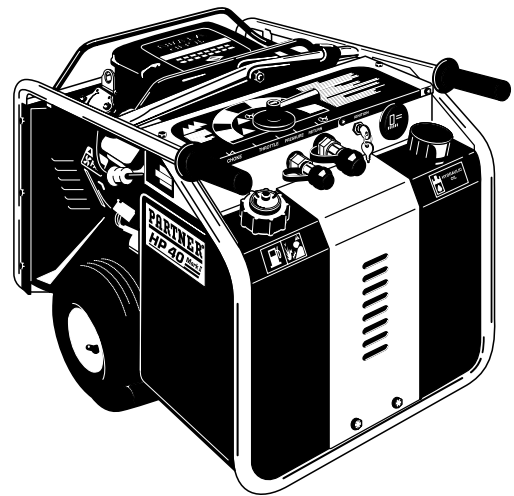
Modern, high speed railways and welded rails call for modern, high precision rail equipment. Today track maintenance involves cutting out sections of worn rail, welding in re-placements and grinding the welds smooth afterwards. Because welded rails are subject to considerable tension as the temperature fluctuates, every cut has to be at a perfect right-angle if the rail is to withstand the stress involved and avoid displacement or failure. The same applies to the isolating joints which separate whole sections of rail for automatic signaling purposes, letting the system know exactly where the train is. Rail cutting and welding operations need to be fast, efficient, and frequently with personnel having to swing into action between trains to avoid unnecessary delays. Through our continual commitment, we now offer additional products that will be beneficial to your specific applications.

PARTNER® MODEL K-1250 RAIL GAS-POWERED RAIL SAW



- 7.8 H.P., 2 Cycle Gas Powered
- Smart Carb™ Technology which, insures maximum performance at all times.
- Triple Air Filtration reducing wear and tear, helping minimize maintenance costs
- Precision Clamp, insuring every cut is at a right angle, every time
- Well balanced - ergonomic handles and improved anti-vibration system enables operator to produce quick and easy cuts with less fatigue.
- Trak-Star part number: **K1250RAIL**

PARTNER® MODEL HP 40 HYDRAULIC POWER PACK



- 16 H.P Gas Powered
- Maximum 2000 PSI with three different flow rates of 10, 8, and 5 GPM
- Compact Design
- Well balanced
- Easily transported by one person
- Automatic Power-up on demand
- Trak-Star part number: **HP40**

Commercial / Industrial Limited Warranty

Hougen Manufacturing, Incorporated warrants its Trak-Star Rail Drills and Portable Magnetic Drills for one (1) year and its Electro-hydraulic Hole Punchers 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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3001 Hougen Drive
Swartz Creek, MI 48473
(866) 245-3745

Kenbil Service Co.
2900 Adams Street B-15
Riverside, CA 92504
(909) 689-6633

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Hougen Manufacturing has received the
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