

# INSTRUCTIONS AND REPAIR PART LIST

## FOR

### SIZES 578, 582, 5780 and 5820 IMPACTOOLS

Form 6200  
Fourth Edition  
November, 1976

*SAME AS ILA578 AND ILA582*  
Always operate and maintain this tool in accordance with American National Standards Institute Safety Code for Portable Air Tools (ANSI B186.1-1975) and any other applicable safety codes and regulations.

#### LUBRICATION

After each four hours of operation, unless an air line lubricator is used, unscrew the Oil Chamber Plug (7) and fill the chamber with Ingersoll-Rand Pneum-Lube® Medium Oil No. 50 or SAE 20 or 20W motor oil

After each four hours of operation, or as experience indicates, insert about 1½ ounces (44.4 ml) of Ingersoll-Rand Impactool Grease No. 100 through the Grease Fitting (13). A substitute for No. 100 Grease is not recommended, but in an emergency, a good sticky, semi-fluid gear grease may be used.

Use grease sparingly. Excessive lubrication will retard the action of the tool.

#### MAINTENANCE INSTRUCTIONS

When disassembling the motor, grasp the Cylinder (18) in one hand, **never clamp it in a vise**. Insert a 5/16" (7 mm) diameter rod about 6" (150 mm) long into the rotor bore and drive on the rod until the rear rotor hub is driven out of the Rear Rotor Bearing (22), freeing the Rear End Plate (23), Cylinder (18) and Vanes (24). Support the Front End Plate (26) as close to the Rotor as possible and press on the pinion face to remove the Front Rotor Bearing (25) from the rotor hub. **Only if replacement of the Rotor Pinion (20) is necessary**, press the old pinion from the Rotor with a 5/16" (7 mm) rod inserted through the rotor bore.

When installing a new Rotor Pinion (20) in the Rotor (19), align the serrations on the new pinion

shank with the grooves cut in the rotor bore by the old Pinion, and start the new Pinion squarely into the rotor bore. Support the Rotor and press in the new Pinion until the shoulder on the shank contacts the rotor hub.

When assembling the motor, slip the Front End Plate (26), crescent-grooved side first, over the Pinion and onto the front rotor hub. Slide the Front Rotor Bearing (25), shielded side first, over the Pinion and press the Bearing onto the rotor hub until only running clearance remains between the faces of the End Plate and Rotor. Grasp the Pinion in copper-covered vise jaws, positioning the Rotor upright. Insert a Vane (24) into each vane slot in the Rotor, then place the Cylinder (18) over the Rotor and onto the Front End Plate.

**Before proceeding**, make sure the Cylinder is properly installed. Check as follows: Note that there are two 3/8" (19 mm) holes, one in each of the two flats running lengthwise on the Cylinder. One of the holes is located about midway between the cylinder ends, while the other is located relatively close to one end. The hole nearer the end must be at the top or farthest from the Pinion. With the Cylinder properly installed, continue the assembly by sliding the Rotor Bearing Spacer (21), internally-chamfered end first, onto the rear rotor hub. Press the Rear Rotor Bearing (22), shielded side first, into the recess in the Rear End Plate (23). Press the End Plate and Bearing assembly onto the rotor hub.

*(Continued on page 7.)*

#### HOW TO ORDER

Order all repair parts for your Ingersoll-Rand Tool by the **NAME** and **NUMBER** shown in the Repair Part List section. **Never** use the illustration numbers which appear in the first column.

For prompt service and genuine Ingersoll-Rand parts, place orders with the nearest Ingersoll-Rand Branch Office or Authorized Distributor.

**Notice:** The use of other than genuine Ingersoll-Rand replacement parts may result in decreased tool performance and increased maintenance, and may, at the Company's option, invalidate all warranties.

Refer All Communications to the Nearest Ingersoll-Rand Branch Office or Distributor.

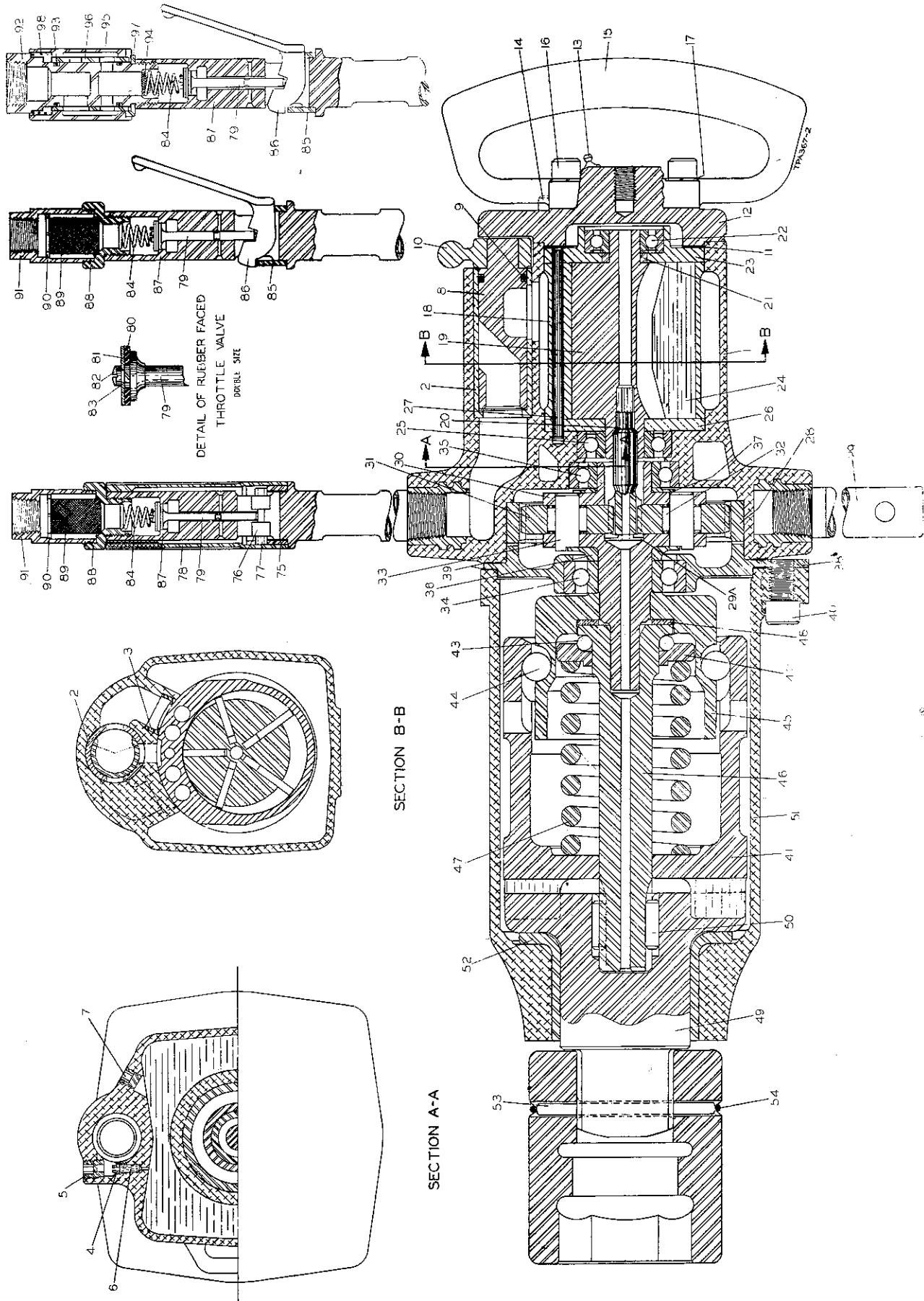
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# Ingersoll-Rand

Ingersoll-Rand



Size 5820 Impactool  
 (Construction Typical of Sizes 578, 582 and 5780)

## REPAIR PART LIST

ILLUS. NUMBER (Do not use for ordering)	PART NAME FOR ORDERING (Parts indented after an item are included with that item)	PART NUMBER FOR ORDERING	ILLUS. NUMBER (Do not use for ordering)	PART NAME FOR ORDERING (Parts indented after an item are included with that item)	PART NUMBER FOR ORDERING
★ 1	Motor Housing Assembly	ILA582A1-A40	● 23	Rear End Plate	577-12A
† 2	Reverse Valve Bushing	ILA582A1-330	● 24	Vane Packet (set of 5)	R5H-42-5
● 3	Air Port Gasket (2)	R44H-210A	● 25	Front Rotor Bearing (AFBMA No. 25BC03JP)	R5H-24
4	Oilier Adjusting Screw	R2-71	● 26	Front End Plate	R55H-11
5	Adjusting Hole Plug	WF-109A	27	Cylinder Dowel	205-1098
6	Oilier Felt (2)	R2-75	28	Internal Gear	ILA582A1-406
7	Oil Chamber Plug	R0H-377	29	Dead Handle	
8	Reverse Valve Assembly	ILA582A1-A329		for Size 5780 or 578	ILA578A1-48
9	Reverse Valve Seal	HU-730		for Size 5820 or 582	588-48
10	Reverse Lever	ILA582A1-658	29A	Grease Guide	5780-72
● 11	End Plate Gasket	577-283	30	Planet Gear Frame	ILA582A1-8
12	Backhead Assembly	ILA582A1-A102	31	Planet Gear (2)	ILA582A1-10
13	Grease Fitting	23-188	32	Planet Gear Bearing (2) (Hyvatt Jr. 93212 or its equivalent)	
14	Backhead Cap Screw (4)	ILA582A1-68		Planet Gear Shaft (2)	R4SM-501
15	Grip Handle	ILA582A1-1	33	Gear Frame Front Bearing (AFBMA No. 35BC03)	577-191
16	Grip Handle Cap Screw (4) (Socket Head, 1/2"-13 thd. 1-1/4" long)		● 34	Gear Frame Rear Bearing (AFBMA No. 35BC02)	215-63
17	Handle Cap Screw Lock Washer (4)	ILA582A1-68	● 35	Gear Frame Front Spacer	D10-518
18	Cylinder	HRA20A-322	36	Gear Frame Rear Spacer	ILA582A1-331
19	Rotor Assembly	588-3	37	Housing Cover	577-332
20	Rotor Pinion	577-53	38	for Size 5780 or 578	
21	Rotor Bearing Spacer	577-17		for Size 5820 or 582	ILA578A1-720
● 22	Rear Rotor Bearing (Special, purchase from Ingersoll-Rand)	R5H-65	● 39	Housing Cover Gasket (2)	ILA582A1-720
		R5H-22	40	Hammer Case Cap Screw (4) (Socket Head, 5/8"-11 thd. 2" long)	ILA582A1-239

★ **IMPORTANT:** Always specify the complete size symbol of the tool when ordering a repair Motor Housing so that the new Housing will be correctly stamped.  
 † Should the Reverse Valve Bushing (2) ever require replacement, return the Motor Housing Assembly (1) to the factory for its installation.

### REPAIR PARTS

To keep costly downtime to a minimum, it is desirable to have on hand certain repair parts. To guide you in the stocking of repair parts, certain Illustration Numbers of the Repair Part list are marked with a bullet (●). We recommend that with parts so indicated, you stock one (pair or set) repair part for every four tools in service.

If the tools are being used in remote geographical areas, or are subject to unusually severe service, the items and quantities should be increased. Contact the nearest Ingersoll-Rand Company Branch for recommendations.

REPAIR PART LIST (Cont'd)

ILLUS. NO. (Do not use for ordering)	PART NAME FOR ORDERING  (Parts indented after an item are included with that item)	PART NUMBER FOR ORDERING	
		1 1/2 5780 or 578	2 1/2 5820 or 582
41	Hammer Assembly for Size 5780 or 5820	5780-A724	5820-A724
	for Size 578 or 582	ILA578A1-A724	ILA582A1-A724
42	Hammer for Size 5780 or 5820	5780-724	5820-724
	for Size 578 or 582	ILA578A1-724	ILA582A1-724
43	Hammer Spring Thrust Bearing Race	ILA578A1-695	ILA582A1-695
44	Hammer Spring Thrust Bearing Ball (17)(3/8 dia steel ball)	D04-280	D04-280
45	Cam Ball (2)(3/4 dia steel ball)	577-714	577-714
46	Ball Cam	5780-721	5820-721
47	Arbor	ILA578A1-725	ILA582A1-725
48	Hammer Spring	ILA578A1-728	ILA582A1-728
49	Friction Drive Washer	ILA582A1-729 ✓	ILA582A1-729
50	Anvil	ILA578A1-726	ILA582A1-726
51	Anvil Drive Pin (2)	HU-527	HU-527
52	Hammer Case Assembly Aluminum	ILA578A1-A727	ILA582A1-A727
	Steel	ILA578A2-A727	ILA582A2-A727
52	Hammer Case Bushing	ILA578A1-641	ILA582A1-641
53	Oversize Hammer Case Bushing .005 oversize	ILA578A1-641-5	ILA582A1-641-5
	.010 oversize	ILA578A1-641-10	ILA582A1-641-10
	.015 oversize	ILA578A1-641-15	ILA582A1-641-15
54	Socket Pin	555-215A	588-215
*	Socket Pin Retainer	577-216	588-216
*	Eye Bolt	KU-888	KU-888
*	Hose Nipple (1 hose to 3/4 male pipe)	R5H-46	R5H-46
*	Hose Nipple (3/4 hose to 3/4 male pipe)	J3-581	J3-581
*	Horizontal Hanger	<del>ILA582A1-386</del>	<del>ILA582A1-386</del>
*	Hanger Bolt (2)(5/16 -18 thd x 7/8 long socket head)	-----	R44H-490A
*	Hanger Bolt Lock Washer (2)	-----	34U-58
*	Hanger Bolt Nut (2)	-----	D02-428
*	Socket Adapter (2-1/2 sq. drive to 1-1/2 sq. drive)	-----	588-212
*	Universal Joint	555-670	-----

\* Not illustrated

0305849  
 ILA578A1-728 Length 3.770  
 7/16 (437) DIA SPRING STEEL  
 5 3/4" Coils  
 Rockwell 43-47

0305845  
 ILA582A1-728 Length 5.125  
 .560 DIA SPRING STEEL  
 6.3 Coils

## THROTTLES

ILLUS. NO. (Do not use for ordering)	PART NAME FOR ORDERING  (Parts indented after an item are included with that item)	PART NUMBER FOR ORDERING			
		LEVER THROTTLE		ROLL THROTTLE	
		Without Power Regulator	With Power Regulator	Without Power Regulator	With Power Regulator
	Throttle Assembly	577-AL401	ILA582A3-AL501	577-A417	IRA582A3-A517
75	Throttle Cam	-----	-----	R4H-317	R4H-317
76	Throttle Valve Lift Pin	-----	-----	R4H-306	R4H-306
77	Throttle Valve Lift Pin Roller (2)	-----	-----	TAA-426	TAA-426
78	Throttle Sleeve	-----	-----	R4H-305	R4H-305
79	Throttle Valve Assembly	R4H-402	R4H-402	R4H-402	R4H-402
●80	Throttle Valve Face	R4H-159	R4H-159	R4H-159	R4H-159
81	Throttle Valve Face Cap	R4H-157	R4H-157	R4H-157	R4H-157
82	Throttle Valve Face Retaining Screw	R4-158	R4-158	R4-158	R4-158
83	Retaining Screw Lock Washer	H54U-352	H54U-352	H54U-352	H54U-352
84	Throttle Valve Spring	T01-308	T01-308	TAA-418	TAA-418
85	Throttle Lever Spacer	R4H-270	R4H-270	-----	-----
86	Throttle Lever	R4H-273	R4H-273	-----	-----
87	Throttle Body	R4H-401	R4H-401	R4H-401	R4H-401
	Air Strainer Assembly	R5H-A565	-----	R4H-565	-----
88	Air Strainer Cap	R4H-566	-----	R4H-566	-----
89	Air Strainer Screen	R5H-61	-----	R5H-61	-----
90	Air Strainer Screen Support	R3H-567	-----	R3H-567	-----
91	Air Strainer Body	R5H-565	-----	R5H-565	-----
92	Regulator Body Assembly	-----	ILA582A3-A340	-----	ILA582A3-A340
93	Regulator Seal (2)	-----	100A19-14	-----	100A19-14
●94	Air Strainer Screen	-----	804-61	-----	804-61
95	Regulator Sleeve Assembly	-----	ILA582A3-A342	-----	ILA582A3-A342
96	Regulator Sleeve Bushing	-----	ILA582A3-343	-----	ILA582A3-343
97	Regulator Adjusting Ring	-----	ILA582A3-341	-----	ILA582A3-341
98	Regulator Sleeve Spring	-----	ILA582A3-344	-----	ILA582A3-344

## MAINTENANCE TOOLS

TOOL NUMBER FOR ORDERING	TOOL NAME FOR ORDERING	OPERATION
P25-228 H-27A	Grease Gun . . . . . 3/8" Hexagon Key Wrench . . . . .	Lubrication. Removing and applying the Backhead Cap Screws (14) and 1 the Grip Handle Cap Screws (16).
D02-426	Oil Plug Wrench (1/8" Hexagon Key) . . . . .	Removing and applying the Oil Chamber Plug (7).

Be sure both Air Port Gaskets (3) are in good condition and are installed, large open end first, in the two air ports in the Motor Housing (1) before installing the motor in the Motor Housing

Align the dowel hole in each End Plate (23 and 26) with the dowel hole in the Cylinder (18) and insert a  $\frac{1}{4}$ " (6 mm) diameter rod about 12" (305 mm) long, allowing it to protrude about 6" (150 mm) from the Front End Plate (26). Enter the protruding end of the rod into the dowel hole at the bottom of the motor housing bore and slide the motor into the Motor Housing (1)

When installing a new Internal Gear (28) in the Motor Housing (1), engage the lugs on the Housing Cover (38) with the notches in the Gear. Align the bolt holes in the Housing Cover with those in the Motor Housing and start the Gear squarely into the Housing. Remove the cover and press in the Gear until it seats on the shoulder in the Housing.

Install each Planet Gear Shaft (33) with its locking tang toward the front of the Gear Frame (30) and adjacent to the outer tip of the gear head, so that the Gear Frame Front Spacer (36) will seat against the front face of the gear head. Refer to the sectional view.

Clean the grease from the Hammer unit before disassembly. Stand the Assembly, jaw end down, on the table of an arbor press so that the jaw faces are supported and the arbor is free to move downward. Press on the Ball Cam (45), telescoping it into the Hammer against the compression of the Hammer Spring, until the two Cam Balls (44)

drop out of the holes in the side of the Hammer (41)

Assemble the Hammer unit as follows:

1. Stand the Hammer (41), jaw end down, on the table of an arbor press
2. Stand the Hammer Spring (47) upright in the center of the Hammer bore.
3. Place the Hammer Spring Thrust Bearing Race (42), cupped side up, on the Hammer Spring and apply Impactool grease to the cupped surface of the Race.
4. Insert the Arbor (46) through the Race bore until there is only enough space between the Race and the arbor flange to insert the 17 Hammer Spring Thrust Bearing Balls into the cup in the Race.
5. Center the Friction Drive Washer (48) on the rear face of the Arbor.
6. Align the high points of the cam grooves in the Ball-Cam with the holes in the wall of the Hammer and start the Cam into the Hammer bore. Press on the Cam face, compressing the Hammer Spring until the Cam enters the Hammer far enough to permit a Cam Ball (44) to be inserted into the cam grooves through each hole in the Hammer wall.

When installing a new Regulator Bushing (96) in the Regulator Sleeve (95), stand the Sleeve, numbered end down, on an arbor press. Align the notch in the Bushing with the numeral "5" and press the Bushing, notched end first, into the Sleeve until it is flush with the bottom of the Sleeve counterbore.