

Brown & Sharpe

Attachment Replacement Parts Manual

**for the (PTC)
Programmed Turning Center**



ATTACHMENT REPLACEMENT PARTS FOR THE (PTC) — PROGRAMMED TURNING CENTER

Use only original Brown & Sharpe Replacement Parts. They are made to fit perfectly and to function exactly as the original parts did — they are all manufactured to the original precision and quality standards to give your machine Like-New performance.

Some parts are not interchangeable, they have to receive individual fitting operations, such as holes drilled when assembled with a mating part, shoulders squared for alignment or similar operation.

This manual shows the parts separated to show the construction of the machine clearly and to make positive identification of parts easy.

Whenever we consider it advisable, for a more satisfactory repair job, we ship one or more parts in

addition to the one actually ordered.

As Brown & Sharpe is continuously improving the design of their machines, it is impractical to reprint manuals for every change, and there may be some point in which this manual differs from your machine.

Original Brown & Sharpe Replacement Parts are available without delay from the Authorized Brown & Sharpe Replacement Parts Distributors, placed in key industrial areas. These distributors not only carry a large stock of replacement parts, they are also always ready to provide sound counsel based on years of experience in the metal-working industries. They are:

California, Burbank 91505

Frey Industrial Supply Co.
2809 West Burbank
Phone 213-846-2121

Connecticut, New Britain 06051

Ray H. Morris & Co., Inc.
30 Precision Court
Box 1048
Phone 800-243-7340

Illinois, Chicago 60646

Harry Lee & Sons
6045 North Keystone Avenue
Phone 312-588-1700

Illinois, Chicago 60607

Screw Machine Supply Co.
118 North Aberdeen Street
Phone 312-243-5000

Michigan, Detroit 48220

B-H Tool & Supply
570 West 8 Mile Road
Phone 313-399-2700

New York, Elmira 14901

Chapin-Owen Co., Inc.
Corner of Williams & Second
Phone 607-733-6625

New York, Rochester 14604

Chapin-Owen Co., Inc.
205 St. Paul Street
Phone 716-454-5100

New York, Rochester 14608

H & C Tool Supply Corporation
158 Monroe Avenue
Phone 716-232-5020

North Carolina, Charlotte

Brown & Sharpe Replacement Parts
655J Pressley Road
Phone 704-525-2914

Ohio, Cleveland 44125

Custom Cam & Tool Co.
5765 Canal Rd.
Phone 216-524-7370

Ohio, Dayton 45401

Dayton Supply & Tool Co.
520 East First Street
Phone 513-461-4550

We need this information for shipping the correct part to you:

- 1. Quantity, Part Number and Name**
- 2. Size and Name of Machine**
- 3. Serial Number of Machine and Attachment**

For further information contact:
Replacement Parts Services
Machine Tool Division
Brown & Sharpe Mfg. Co.
Precision Park
North Kingstown, RI 02852
Phone 401-886-2569



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Warranty

We warrant that within twelve (12) months from the date of shipment, if the product manufactured by us and sold by us is in the possession of the original buyer (or lessee) from us (or from an authorized distributor), we will replace or repair, at our option, free of charge, any part or parts which upon examination we find defective in workmanship or material, provided that, on our request, the product or parts thereof are returned to our plant, along with satisfactory documentation that the product has been installed, used, and maintained in accordance with instructions in the Service Manual and has not been subject to abuse.

In addition, there may be specified Occupational Safety and Health Standards Warranties which, if applicable to the product, are set out in the attached schedule and incorporated by reference and subject to the provision hereof.

We shall not be liable or responsible for any expense or liability for repairs, additions or modifications made upon the product without our written consent.

THIS WARRANTY IS IN LIEU OF ALL OTHER EXPRESS OR IMPLIED WARRANTIES (INCLUDING WITHOUT LIMITATION ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE). IN NO EVENT SHALL WE BE LIABLE FOR ANY SPECIAL, INDIRECT OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, LOST PROFITS OR OTHER DAMAGES FROM LOSS OF PRODUCTION) CAUSED BY DEFECTIVE MATERIAL, OR BY UNSATISFACTORY PERFORMANCE OF THE PRODUCT, OR BY ANY OTHER BREACH OF CONTRACT BY US.

MAINTENANCE SERVICE:

During the warranty period as defined above, remedial service assistance on machine and control will be furnished at no charge by us when this equipment is in operation in the U.S.A. or in Canada. Service beyond warranty period will be furnished by us, chargeable at published rates.

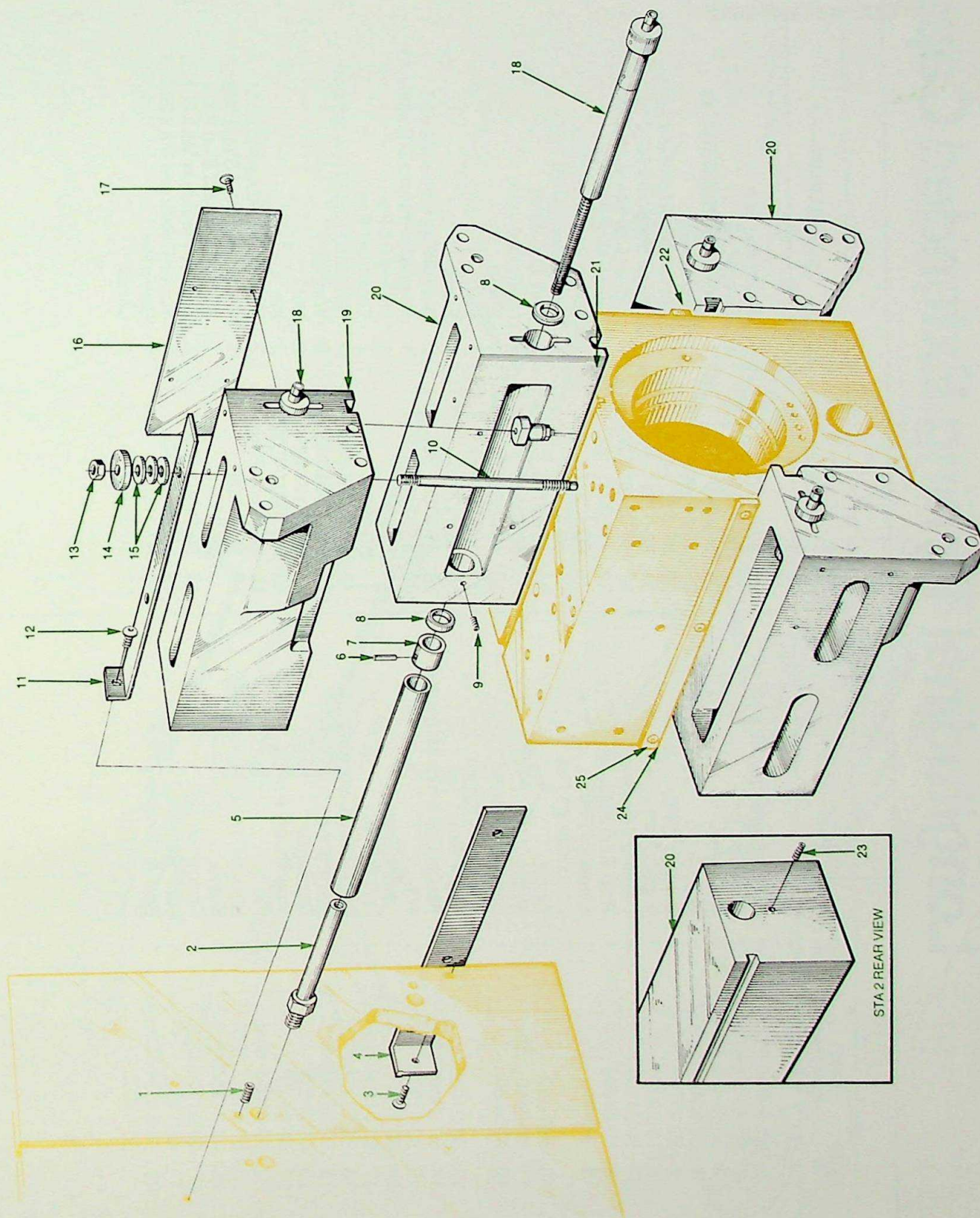
Customer must have a qualified person attend one Brown & Sharpe maintenance course for his machine within 90 days of scheduled machine shipment date or the Brown & Sharpe no-charge remedial service assistance will be reduced from one year to 6 months.





Standard Rams

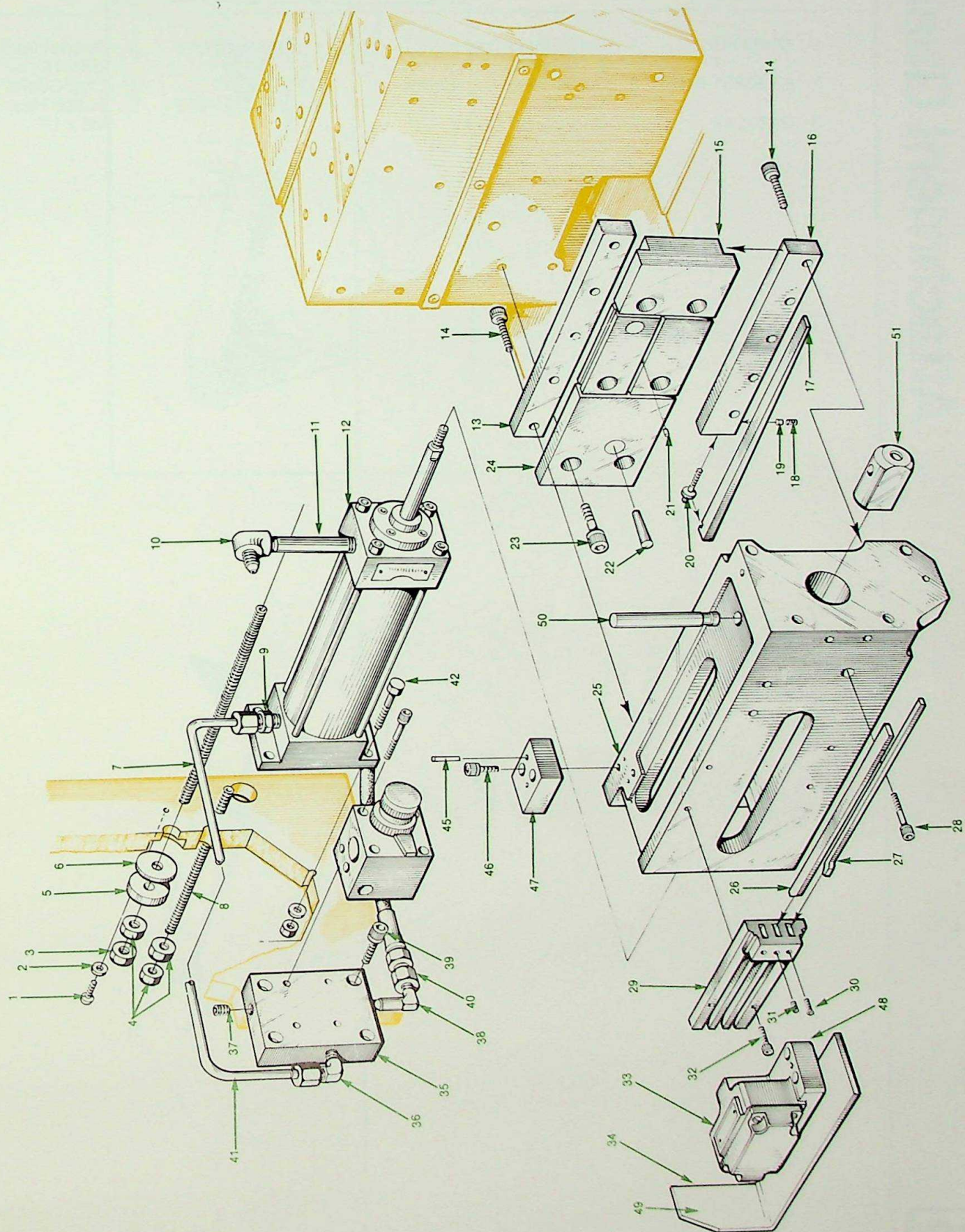
INDEX #	PART NUMBER	QUAN. REQ.	PART NAME	INDEX #	PART NUMBER	QUAN. REQ.	PART NAME
1	88-53901-816	1	Set Screw M8 x 16	14	50-21615	2	Spring Retainer
2	50-31612	1	Nut	15	479-428	6	Spring Washer
3	88-53851-812	1	Button Head Cap Screw M8 x 12	16	50-31618	1	Ram Cover #1 & #2 Pos.
4	50-32086	1	Strap (#2 & #3 Pos.)	17	88-53851-812	4	Button Head Cap Screw M8 x 12
5	50-32855	1	Screw Guard #3 & #4 Pos.	18	50-41613	1	Adj. Screw
6	88-90001-528	1	Pin	19	50-5105	1	Ram #1 & #4 Pos.
7	50-21622	1	Bushing	20	50-51006	1	Ram #2 & #3 Pos.
8	50-21626	2	Washer	21	479-802	2	Sine Key
9	88-53901-510	1	Socket Set Screw M5 x 10	22	50-31630	1	Ram Shield Rear
10	50-21614	2	Stud	23	88-53901-825	1	Socket Set Screw M8 x 25 #2 Pos.
11	50-32085	1	Strap (#1 & # Pos.)	24	50-31627	1	Ram Shield Front
12	88-53851-812	1	Button Head Cap Screw M8 x 12	25	88-53851-812	3	Button Head Cap Screw M8 x 12
13	88-60101-1210	2	Nut				





Longitudinal Turning Extended Capacity

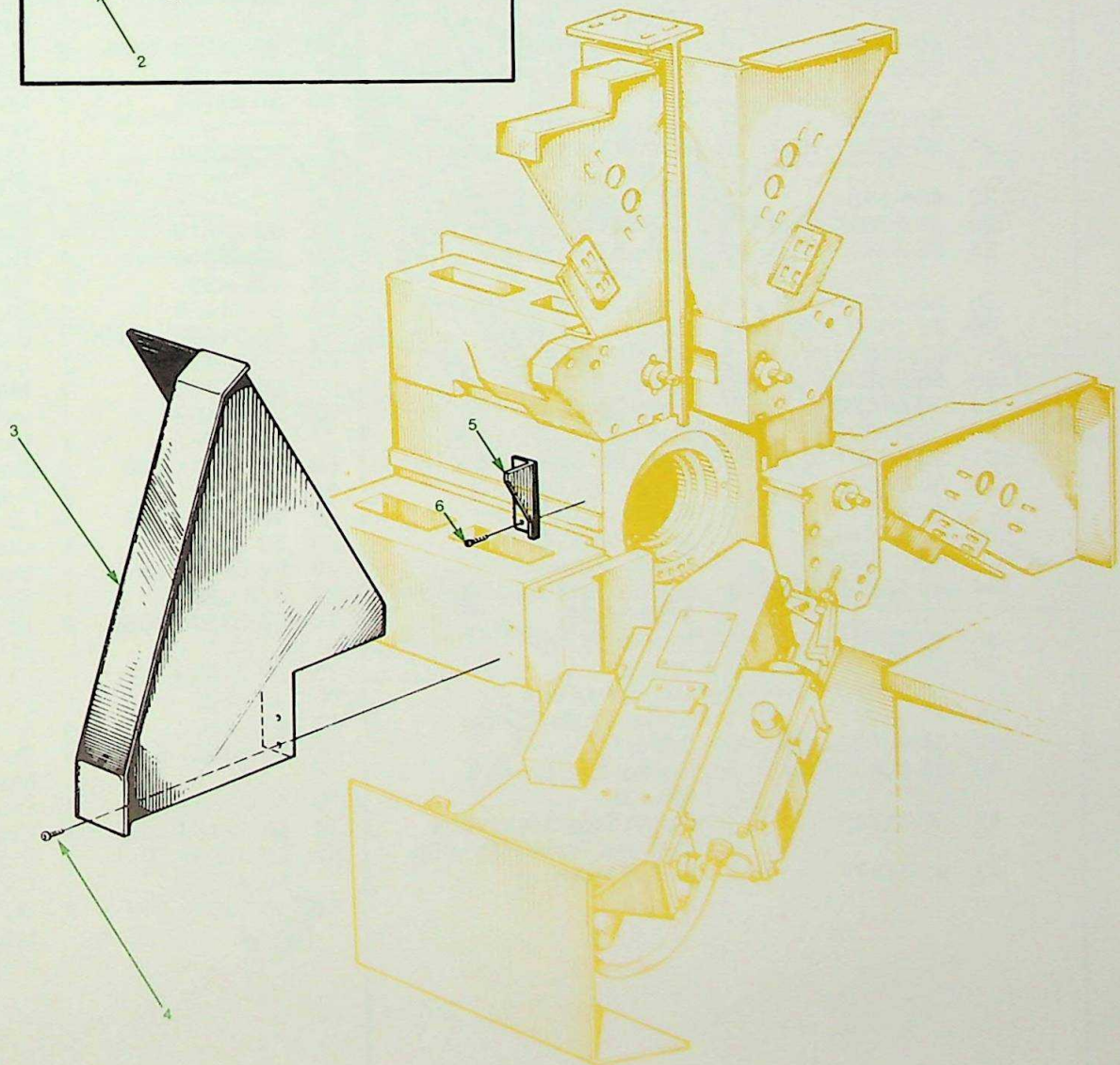
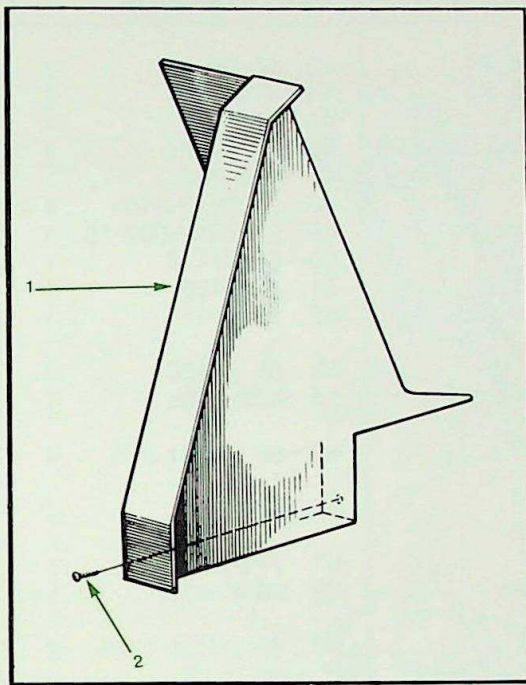
INDEX #	PART NUMBER	QUAN. REQ.	PART NAME	INDEX #	PART NUMBER	QUAN. REQ.	PART NAME
1	88-53851-812	2	Button Cap Screw M8 x 12	26	50-32512	1	Att. Switch Dog
2	88-20101-816	2	Washer	27	50-21910	1	Switch Dog
3	50-21474	1	Nut	28	88-53801-845	1	Socket Cap Screw M8 x 45
4	88-60101-1210	3	Nut	29	50-31509	1	Dog Carrier
5	50-21763	1	Backing Plate	30	88-53911-816	1	Socket Set Screw M8 x 16
6	50-23349	1	Impact Plate	31	88-53911-810	1	Socket Set Screw M8 x 10
7	50-21901	1	Forward Stop Stud	32	88-53801-520	2	Socket Cap Screw M5 x 20
8	50-21899	1	Rear Stop Stud	33	412-377	1	Switch Multi-Plunger
9	464-113	1	Elbow #4 Pos.	34	50-42511	1	Switch Bracket #1 Pos.
		1	Connector #1 Pos.		50-41904	1	Switch Bracket #4 Pos.
10	464-352	1	Elbow	35	50-33136	1	Eng. Dial Valve
11	92-2440-1276	1	Nipple		50-33137	1	Metric Dial Valve
12	479-880	1	Hydraulic Cylinder	36	464-655	1	Elbow
		1	Extended Capacity	37	463-696	1	Plug
13	50-31903	1	Upper Strap	38	464-175	1	Elbow
14	88-53801-1035	10	Socket Cap Screw M10 x 35	39	88-53801-835	2	Socket Cap Screw M8 x 35
15	50-51905	1	Wax	40	50-32492	1	Hose Assembly to C/S Manifold
16	50-31902	1	Lower Strap	41	50-23182	1	Tubing #4 Pos.
17	50-31437	1	Gib #1 Pos.		50-23091	1	Tubing #1 Pos.
18	88-53901-810	1	Socket Set Screw M8 x 10	42	88-50301-840	3	Hex Head Cap Screw M8 x 40
19	92-5930-806	1	Brass Shoe	43	88-20101-816	3	Washer
20	50-21608	1	Gib Screw	44	88-60101-85	3	Nut
21	91-90-77	1	Plug Shown #1 Pos.	45	88-90201-1032	2	Pin
22	88-89011-1045	2	Pin	46	88-53801-835	2	Socket Cap Screw M8 x 35
23	88-53801-1235	6	Socket Cap Screw M10 x 35	47	50-31906	1	#4 Pos. Forward Stop Plate
24	92-2440-440	1	Nipple		50-33011	1	#1 Pos. Forward Stop Plate
	463-750	1	Connector	48	88-53801-620	4	Socket Cap Screw M6 x 20 N/S
	461-191	1	Lube Meter	49	88-53801-825	3	Socket Cap Screw M8 x 25 N/S
25	50-51564	1	Ram #1 Pos.	50	50-21463	1	Clevis Pin
	50-51893	1	Ram #4 Pos.	51	50-31890	1	Clevis



Attachment Guards

INDEX #	PART NUMBER	QUAN. REQ.	PART NAME	INDEX #	PART NUMBER	QUAN. REQ.	PART NAME
1	50-53095	1	Chip Shield/Tracer & Theader	4	88-53851-816	3	Button Head Cap Screw M8 x 16
2	88-53851-816	3	Button Head Cap Screw M8 x 16	5	50-32248	1	Chip Guard
3	50-52249	1	Chip Shield Tracer	6	88-53851-812	2	Button Head Cap Screw M8 x 12

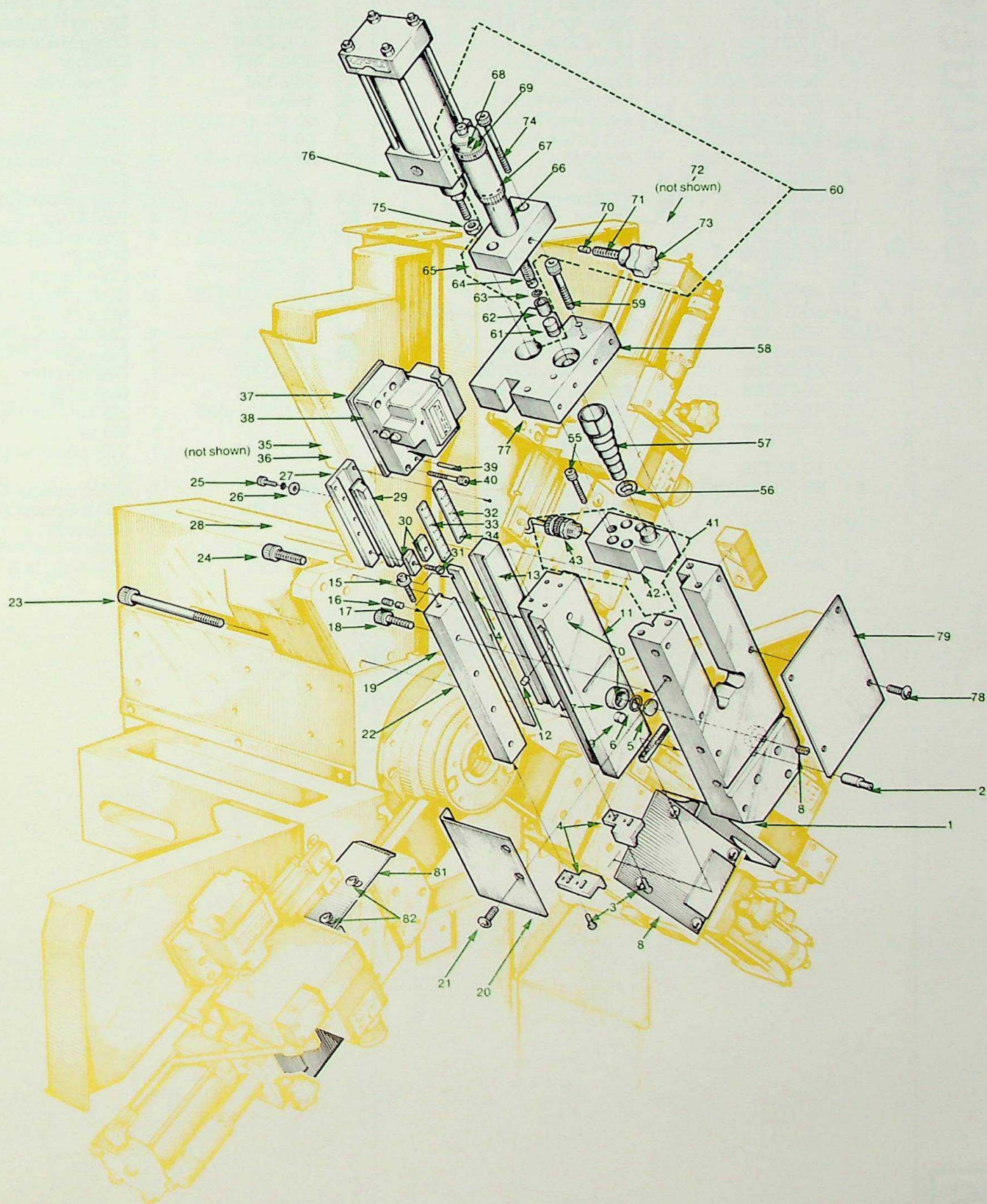




Cross Slide

INDEX #	PART NUMBER	QUAN. REQ.	PART NAME	INDEX #	PART NUMBER	QUAN. REQ.	PART NAME
1	50-51390	1	Cross Slide #1 & #4	43	50-32117	1	Switch Harness
	50-41389	1	Cross Slide #2 & #3	44	472-3579	1	Screw #4-40 x 1/4 N/S
2	50-21938	1	Pin	45	472-979	1	Washer N/S
3	88-53851-512	4	Button Socket Cap Screw M5 x 12	46	50-21486	1	Cover N/S
4	50-41395	1	Set of Wipers	47	466-261	1	"O" Ring N/S
5	50-21993	1	Anti-Vibration Disc	48	92-6015-810	1	Nut N/S
6	466-3621	1	"O" Ring	49	92-2010-802-16	1	Washer N/S
7	42-21634	1	Anti Vibration Shoe	50	50-21478	1	Insulator Washer N/S
8	88-53901-808	1	Socket Set Screw M8 x 8	51	466-428	1	"O" Ring N/S
9	92-880-1414	1	C.I. Plug	52	50-21475	1	Switch Contact Insulator N/S
10	50-23346	2	Dowel Pin N/S	53	50-21476	1	Switch Contact N/S
11	50-41389	1	Slide Way	54	472-1105	1	Nylon Shoulder Bushing N/S
12	91-90-717	1	Aluminum Plug	55	88-53801-835	4	Socket Cap Screw M8 x 35
13	50-41387	1	Retainer	56	479-861	1	Wave Washer-Slides #3 & #4 only
14	50-31609	1	Gib	57	479-874	1	Collapsible Cover
15	50-21608	1	Gib Screw	58	50-41401	1	Cylinder Mounting Bracket
16	88-53911-806	1	Set Screw M8 x 6	59	88-53801-1045	2	Socket Cap Screw M10 x 45
17	92-5930-806	1	Shoe	60	50-41781	1	Micrometer Stop Unit (inch)
18	88-53801-1030	8	Socket Cap Screw M10 x 30		50-42120	1	Micrometer Stop Unit (metric)
19	50-41388	1	Retainer				includes Parts #61-73
20	50-31394	1	Chip Shield for #4 Slide or	61	50-22613	1	Stop Contact Button
	50-31393	1	Chip Shield for #3 Slide	62	50-22612	1	Button Sleeve
21	88-53851-1016	2	Button Socket Cap Screw M10 x 16	63	466-438	1	"O" Ring
22	466-145	1	"O" Ring N/S	64	50-31468	1	Stop Screw
23	88-53801-1213-0	1	Socket Cap Screw	65	50-31386	1	Clamp Block
24	88-53801-1235	3	Socket Cap Screw M12 x 35	66	50-31470	1	Inch Barrel or
25	88-50501-516	4	Hex Cap Screw M5 x 16		50-31788	1	Metric Barrel
26	92-2010-702-16	4	Washer	67	50-31469	1	Inch Micro Thimble or
27	50-31605	1	Guild Plate		50-31787	1	Metric Micro Thimble
28	88-90201-614	1	Spirol Pin N/S	68	88-53911-304	2	Socket Set Screw M3 x 4
29	50-21603	1	Feed Dog	69	50-21471	2	Adjusting Shoe
30	50-21604	2	Dog Clamp	70	92-5930-1016	1	Shoe
31	88-50301-512	2	Hex Cap Screw M5 x 12	71	50-22255	1	Clamp Stud
32	50-21606	1	Inch Scale Upper or	72	92-5390-608	1	Socket Set Screw
	50-21607	1	Metric Scale Upper	73	479-926	1	Stud Knob
33	50-21636	1	Inch Scale Lower or	74	88-53801-1060	2	Socket Cap Screw M10 x 60
	50-21635	1	Metric Scale Lower	75	50-21633	1	Check Nut
34	88-53851-306	4	Button Socket Cap Screw M3 x 6 N/S	76	479-796	1	Hydraulic Cylinder
35	88-60101-65	4	Hex Nut	77	472-1102	4	Socket Cap Screw N/S
36	88-20111-613	4	Washer	78	88-53851-812	4	Button Head Cap Screw M8 x 12
37	50-32860	1	Mounting Plate	79	50-31629	1	Chip Shield
38	421-377	1	Switch Multi-Plunger	80	50-32166	1	Chip Shield #1 & #2 pos
39	88-90201-620	2	Spirol Pin	81	50-41391	1	C/S Chip Shield #1 pos
40	88-53801-630	4	Socket Cap Screw M6 x 30		50-41392	1	C/S Chip Shield #2 pos
41	50-41782	1	Depth Stop Switch Unit includes Parts #42 -#54	82	88-53851-812	2	Button Head Cap Screw M8 x 12
42	50-41477	1	Switch Housing				

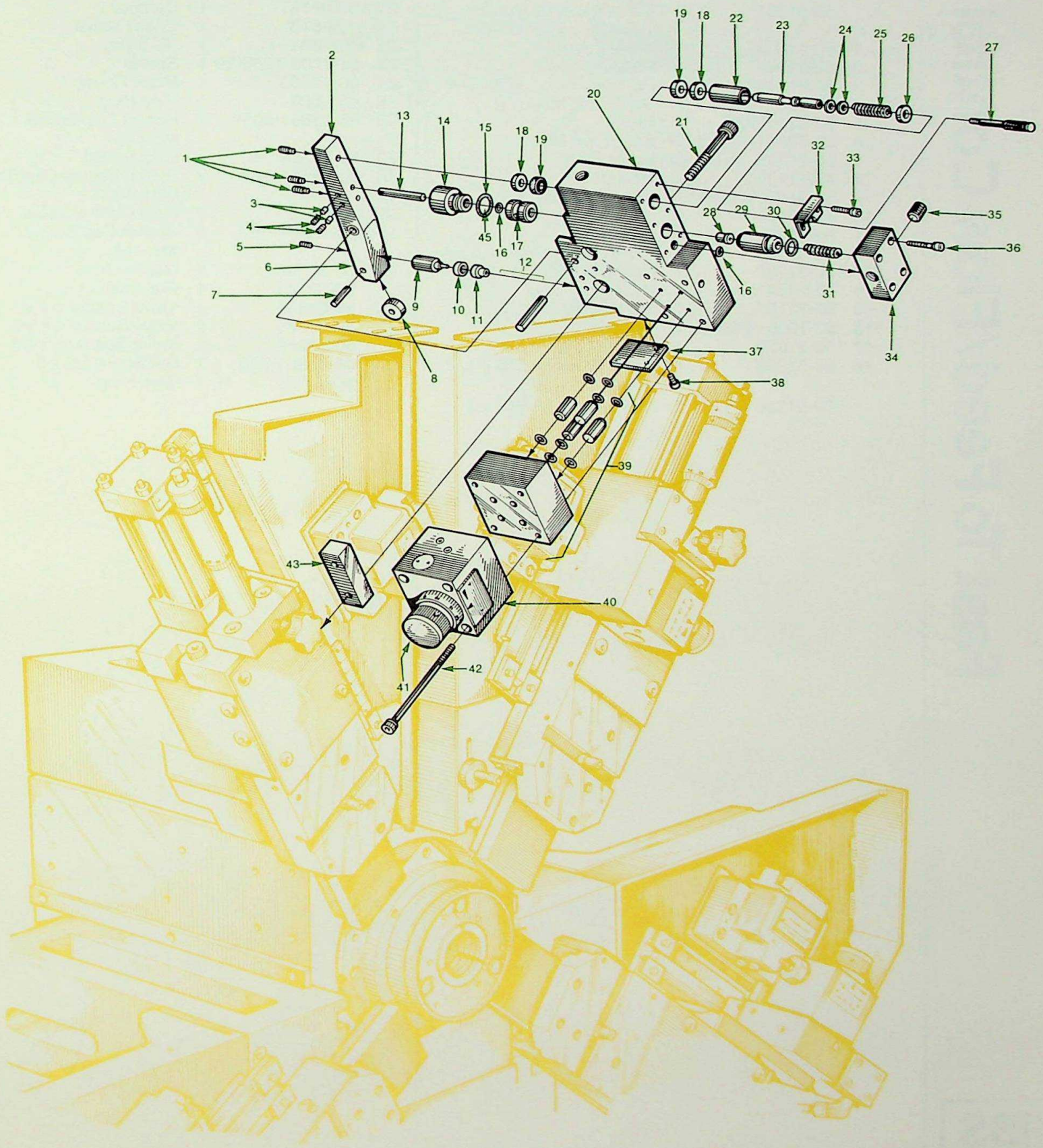




Feed-Out Valve

INDEX #	PART NUMBER	QUAN. REQ.	PART NAME	INDEX #	PART NUMBER	QUAN. REQ.	PART NAME
	50-51533	1	Valve for C/S #1, 2 & 4 or	25	479-921	1	Compression Spring
	50-51532	1	Valve for C/S #3	26	50-22825	1	Spring Retainer
1	50-21345	3	Lever Stop	27	50-32208	1	Plunger Extension
2	50-41332	1	Valve Lever	28	50-21347	1	Damper
3	92-5930-504	3	Shoe	29	463-818	1	Check Valve
4	88-53911-505	3	Set Screw M5 x 5	30	466-281	1	"O" Ring
5	88-53921-505	1	Set Screw M5 x 5	31	92-1000-1240-19	1	Spring
6	88-53911-304	1	Set Screw M3 x 4	32	50-32207	1	Locking Bracket
7	50-21340	1	Roller Pin	33	88-53801-510	2	Socket Cap Screw M5 x 10
8	50-21322	1	Roller	34	50-41333	1	Valve Block Cover
9	50-31302	1	Plunger	35	463-696	1	Pipe Plug
10	466-434	1	Oil Seal	36	88-53801-525	4	Socket Cap Screw M5 x 25
11	50-22167	1	Spring Retainer	37	50-21323	1	Chip Shield
12	479-1026	1	Spring & 92-1000-802- 16 washers as needed N/S	38	88-53851-510	2	Button Socket Cap Screw M5 x 10
13	472-1129	1	Dowel Pin	39	463-850	1	Check Valve Package
14	50-31331	1	Plunger Guide	40	463-808	1	Flow Control Valve
15	466-310	1	"O" Ring	41	50-32566	1	Dial (inch) or
16	466-619	2	"O" Ring		50-32743	1	Dial (metric)
17	50-32168	1	Check Valve Spacer	42	88-53801-660	4	Socket Cap Screw M6 x 60
18	50-22206	2	Oil Seal Retainer	43	50-21632	1	Valve Spacer C/S # 1 & 4 or
19	466-435	2	Oil Seal		50-31631	1	Valve Spacer C/S #3 or
20	50-51349	1	Valve Block for C/S #1, 2, 4 or		50-31252	1	Valve Spacer C/S #2 (not depicted)
	50-51335	1	Valve Block for C/S #3	44	50-21339	1	Lever Pivot Pin
21	88-53801-1060	2	Socket Cap Screw M10 x 60	45	466-423	1	Glyd Ring N/S
22	50-22205	1	Spring Guide				
23	50-31327	1	Plunger				
24	88-20101-510	2	Washer				

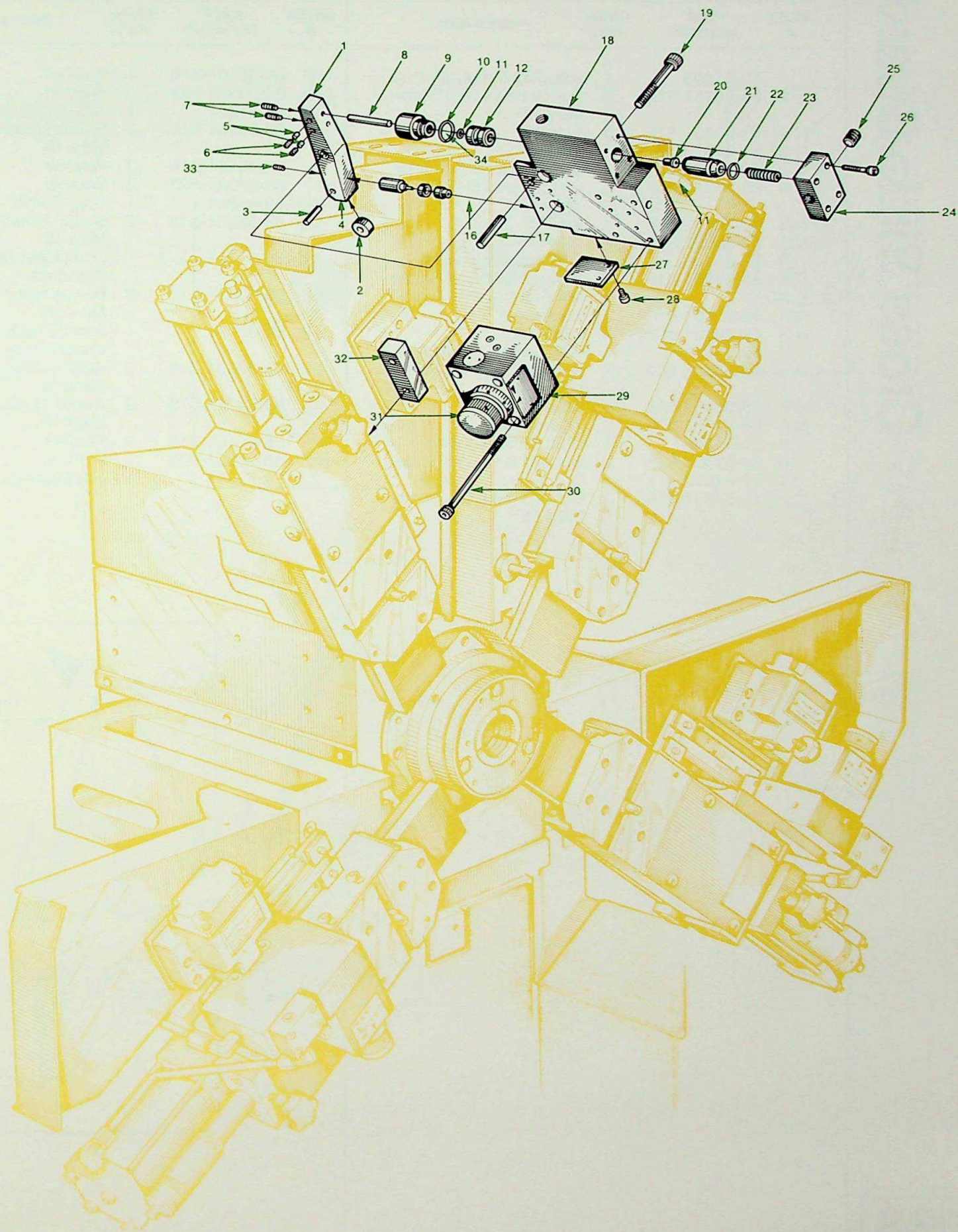




Fast To Feed/Flow Control Valve

INDEX #	PART NUMBER	QUAN. REQ.	PART NAME	INDEX #	PART NUMBER	QUAN. REQ.	PART NAME
	50-51530	1	Valve Assembly for C/S #1, 2, 4 or	19	88-53801-1060	2	Socket Cap Screw M10 x 60
	50-51531	1	Valve Assembly for C/S #3	20	50-21347	1	Damper
1	50-41304	1	Valve Lever	21	463-818	1	Check Valve
2	50-21322	1	Roller	22	466-281	1	"O" Ring
3	50-21340	1	Pin	23	92-1000-1240-19	1	Spring
4	88-53911-304	1	Set Screw M3 x 4	24	50-41333	1	Block Cover
5	92-5930-504	2	Shoe	25	463-696	1	Pipe Plug
6	88-53911-505	2	Set Screw M5 x 5	26	88-53801-525	4	Socket Cap Screw M5 x 25
7	50-21345	2	Lever Stop				Chip Shield
8	472-1129	1	Dowel Pin	27	50-21323		
9	50-31331	1	Plunger Guide	28	88-53851-510	2	Button Socket Cap Screw M5 x 10
10	466-310	1	"O" Ring	29	463-808	1	Flow Control Valve
11	466-619	2	"O" Ring	30	88-53801-660	4	Socket Cap Screw M6 x 60
12	50-32168	1	Check Valve Spacer	31	50-32566	1	Dial (inch) or
13	50-31302	1	Spring Plunger		50-32743	1	Dial (metric)
14	464-434	1	Oil Seal	32	50-21632	1	Valve Spacer c/s #1 & 4
15	50-22167	1	Spring Retainer		50-31631	1	Valve Spacer c/s #3
16	92-1000-1650-15	1	Spring		50-31252	1	Valve Spacer c/s #2
17	50-21339	1	Pin	33	88-53921-505	1	Set Screw M5 x 5
18	50-51338	1	Valve Block for C/S #1, 2 & 4 or	34	466-423	1	Glyd Ring
	50-51336	1	Valve Block for C/S #3				



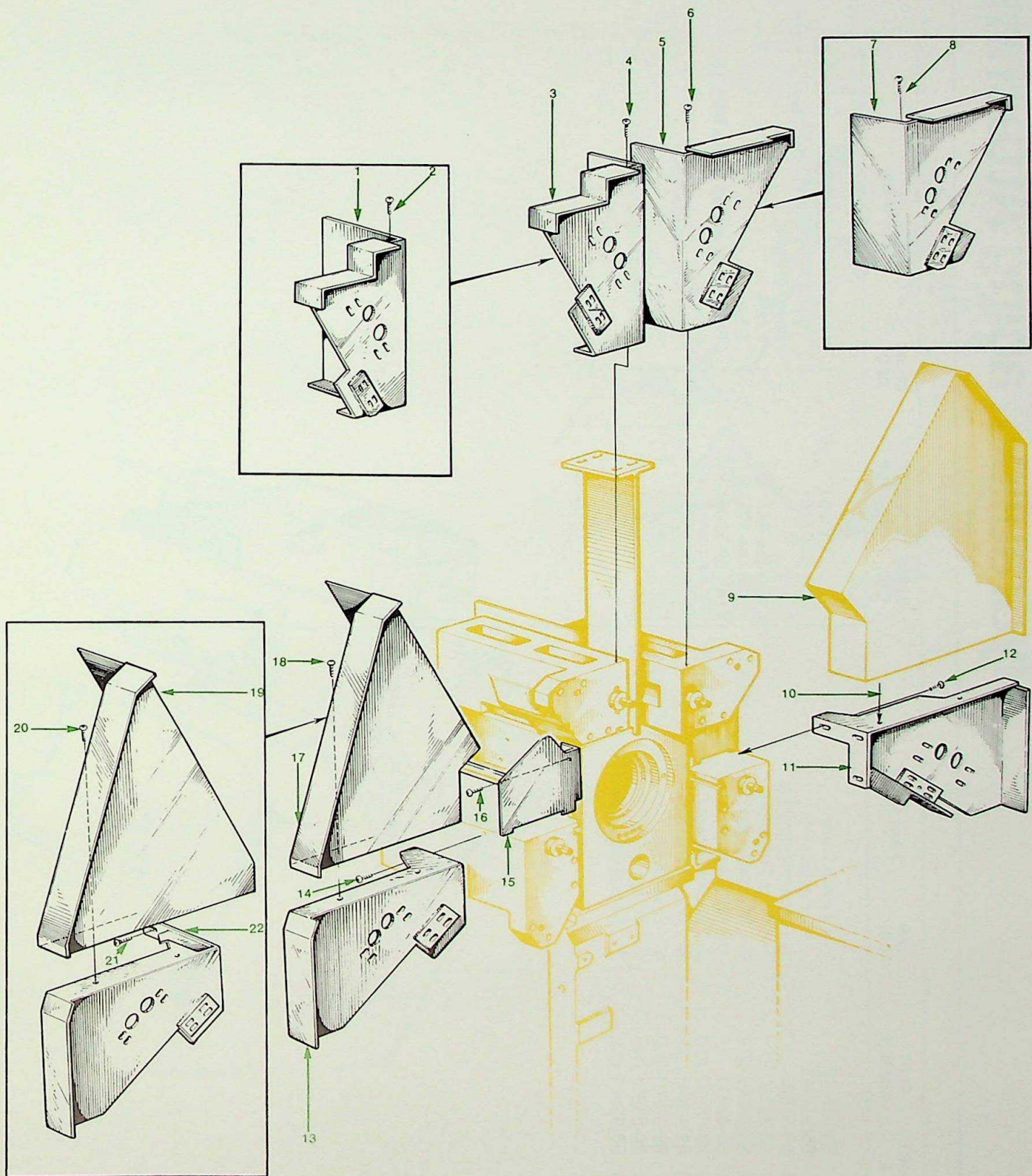


Cross Slide Guards

INDEX #	PART NUMBER	QUAN. REQ.	PART NAME
1	50-51403	1	C/S Guard Standard
2	88-53851-816	3	Button Head Cap Screw M8 x 16
N/S	88-20101-816	3	Washer
N/S	88-20321-808	3	Washer
3	50-52496	1	C/S Guard Longitudinal
4	88-53851-820	4	Button Head Cap Screw M8 x 20
N/S	88-20101-816	4	Washer
N/S	88-20321-808	4	Washer
5	50-51402	1	C/S Guard Standard
6	88-53851-816	3	Button Head Cap Screw M8 x 16
N/S	88-20101-816	3	Washer
N/S	88-20321-808	3	Washer
7	50-51919	1	C/S Guard Longitudinal
8	88-53851-820	4	Button Head Cap Screw M8 x 20
N/S	88-20101-816	4	Washer
N/S	88-20321-808	4	Washer
9	50-51249	1	Chip Shield #2 pos
10	88-53851-816	2	Button Head Cap Screw
11	50-21250	1	C/S Guard Standard
12	88-53851-816	3	Button Head Cap Screw M8 x 16

INDEX #	PART NUMBER	QUAN. REQ.	PART NAME
N/S	88-20101-816	3	Washer
N/S	88-20321-808	3	Washer
13	50-51254	1	C/S Guard Standard
14	88-53851-816	3	Button Head Cap Screw M8 x 16
	88-20101-816	3	Washer
	88-20321-808	3	Washer
15	50-41251	1	Chip Shield
16	88-53851-812	2	Button Head Cap Screw M8 x 12
17	50-51253	1	Front Chip Shield Standard
18	88-53851-816	2	Button Head Cap Screw M8 x 16
19	50-52497	1	Front Chip Shield Longitudinal
20	88-53851-816	2	Button Head Cap Screw M8 x 16
21	88-53851-816	3	Button Head Cap Screw M8 x 16
N/S	88-20101-816	3	Washer
N/S	88-20321-808	3	Washer
22	50-52495	1	C/S Guard Longitudinal

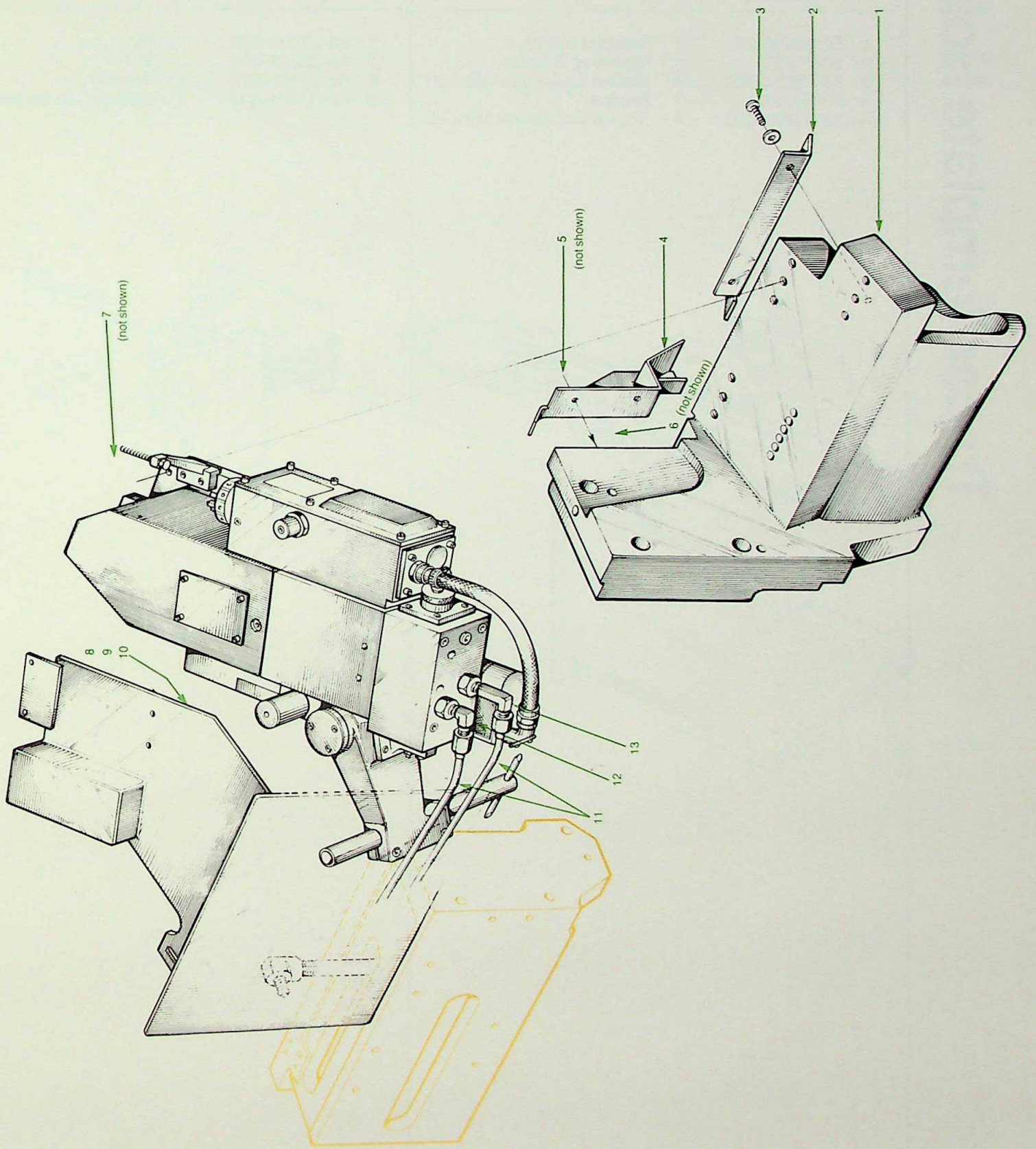






Hydraulic Tracing Attachment

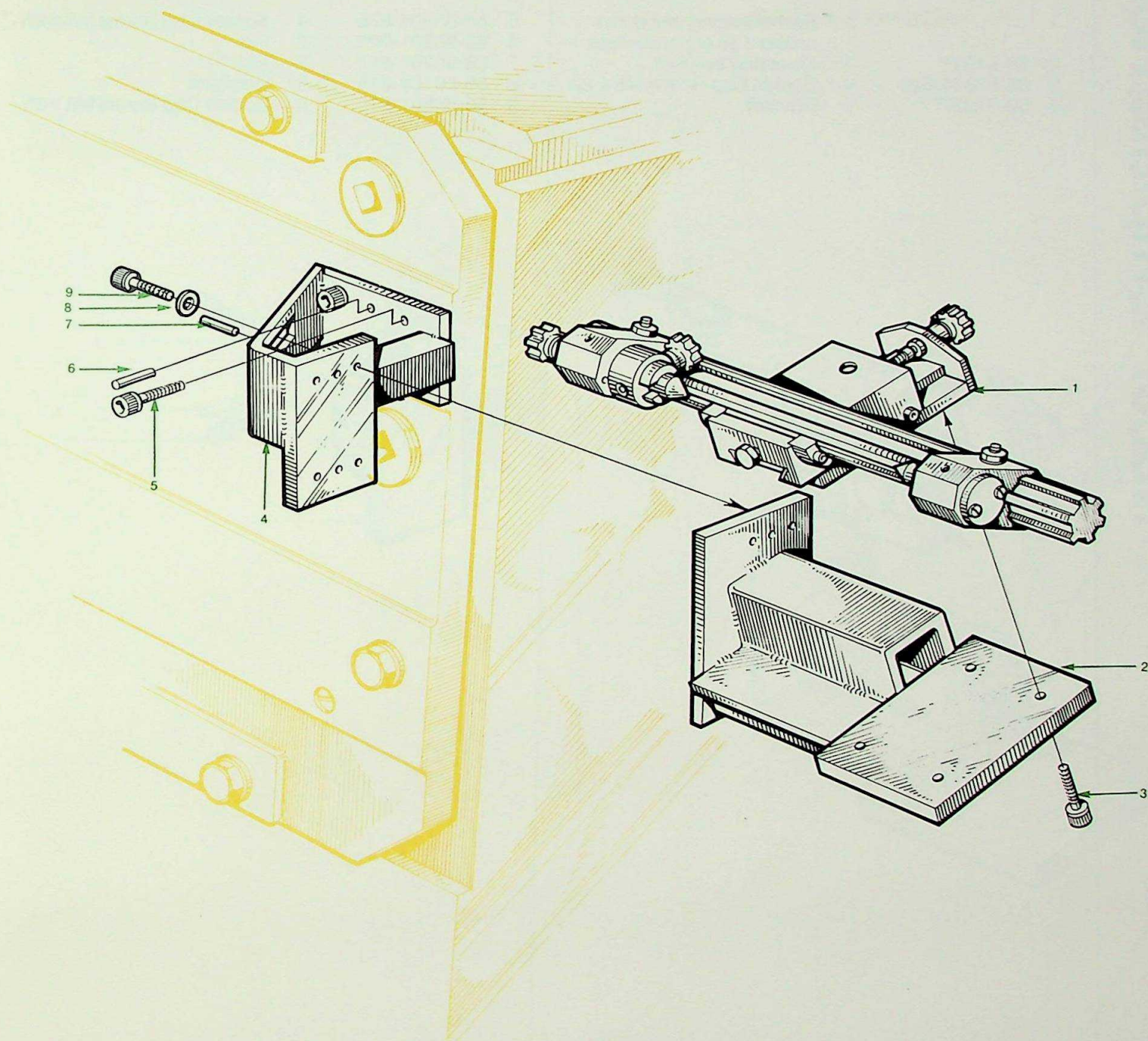
INDEX #	PART NUMBER	QUAN. REQ.	PART NAME	INDEX #	PART NUMBER	QUAN. REQ.	PART NAME
	650-16-42		9 Pass Tracer	10	50-52263	1	Stylus Cover use 8 & 9
	650-18-42		2 Pass Tracer	11	50-23161	2	Tubing Assembly (spec.)
1	50-51908	1	Mounting Bracket	12	464-655	1	upper or lower
2	50-33160	1	Parts Protector	13	464-175	1	Elbow
3	88-53851-812	2	Button Socket Cap Screw M8 x 12	14	88-53851-816	1	Elbow
4	50-42817	1	Chip Guard	15	88-60101-54	1	Button Socket Cap Screw M8 x 16
5	88-53851-810	2	Button Socket Cap Screw M8 x 10	16	50-32544	1	Hex Nut
6	88-53801-1250	8	Socket Cap Screw M12 x 50	17	50-22872	1	Tube Support Bracket
7	88-50501-1024	4	Low Socket Cap Screw M10 x 24	18	88-50301-520	1	Tubing Clip
8	88-53851-310	2	Button Socket Cap Screw M3 x 10				Hex Head Cap Screw M5 x 20
9	88-53801-612	2	Socket Cap Screw M6 x 12				



Tracer Template Holder

INDEX #	PART NUMBER	QUAN. REQ.	PART NAME	INDEX #	PART NUMBER	QUAN. REQ.	PART NAME
1	50-99990-23	1	Templet Holder	6	88-90201-620	2	Pin
2	50-51937	1	Mounting Bracket	7	88-90201-614	2	Pin
3	88-53801-620	4	Socket Cap Screw M6 x 20	8	88-20101-816	8	Washer
4	50-51927	1	Bracket	9	88-53801-825	4	Socket Cap Screw M8 x 25
5	88-53801-825	4	Socket Cap Screw M8 x 25				

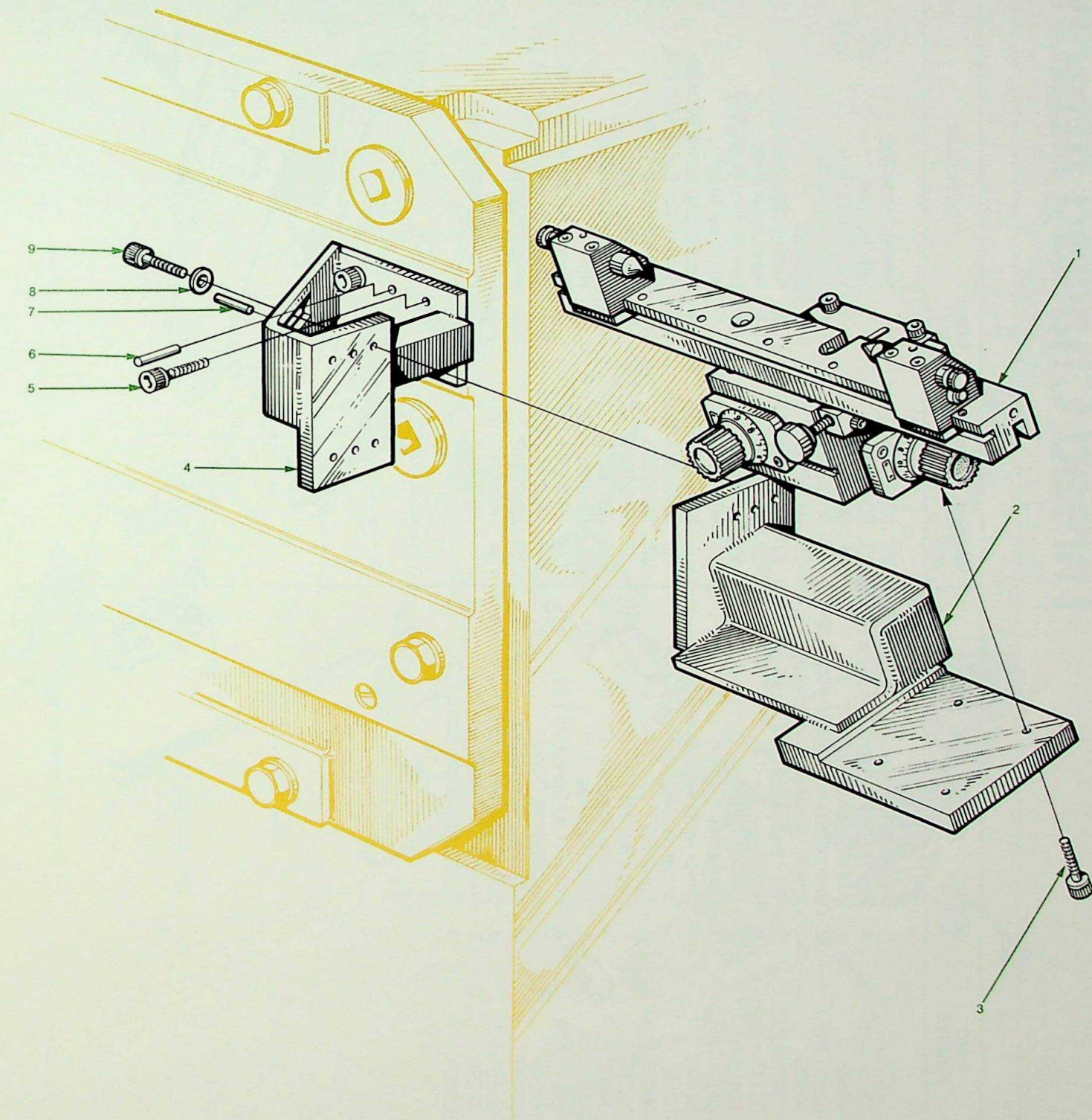




Tracer Template Holder

INDEX #	PART NUMBER	QUAN. REQ.	PART NAME	INDEX #	PART NUMBER	QUAN. REQ.	PART NAME
1		1	Part of tracing unit is not ordered as separate item	5	88-53801-825	4	Socket Cap Screw M8 x 25
2	50-51937	1	Mounting Bracket	6	88-90201-620	2	Pin
3	88-53801-620	4	Socket Cap Screw M6 x 20	7	88-90201-614	2	Pin
4	50-51927	1	Bracket	8	88-20101-816	8	Washers
				9	88-53801-825	4	Socket Cap Screw M8 x 25

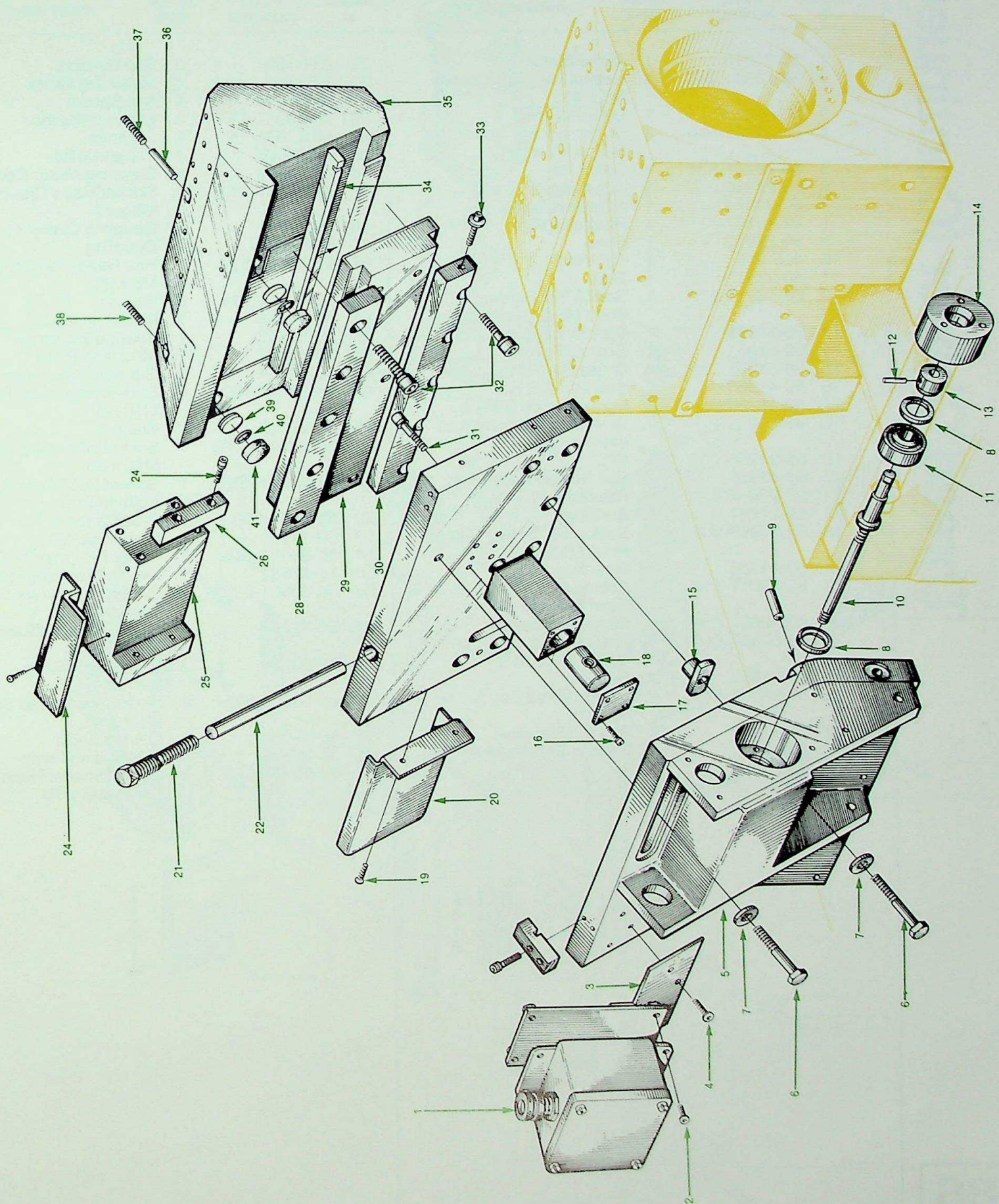






Thread Chasing Attachment

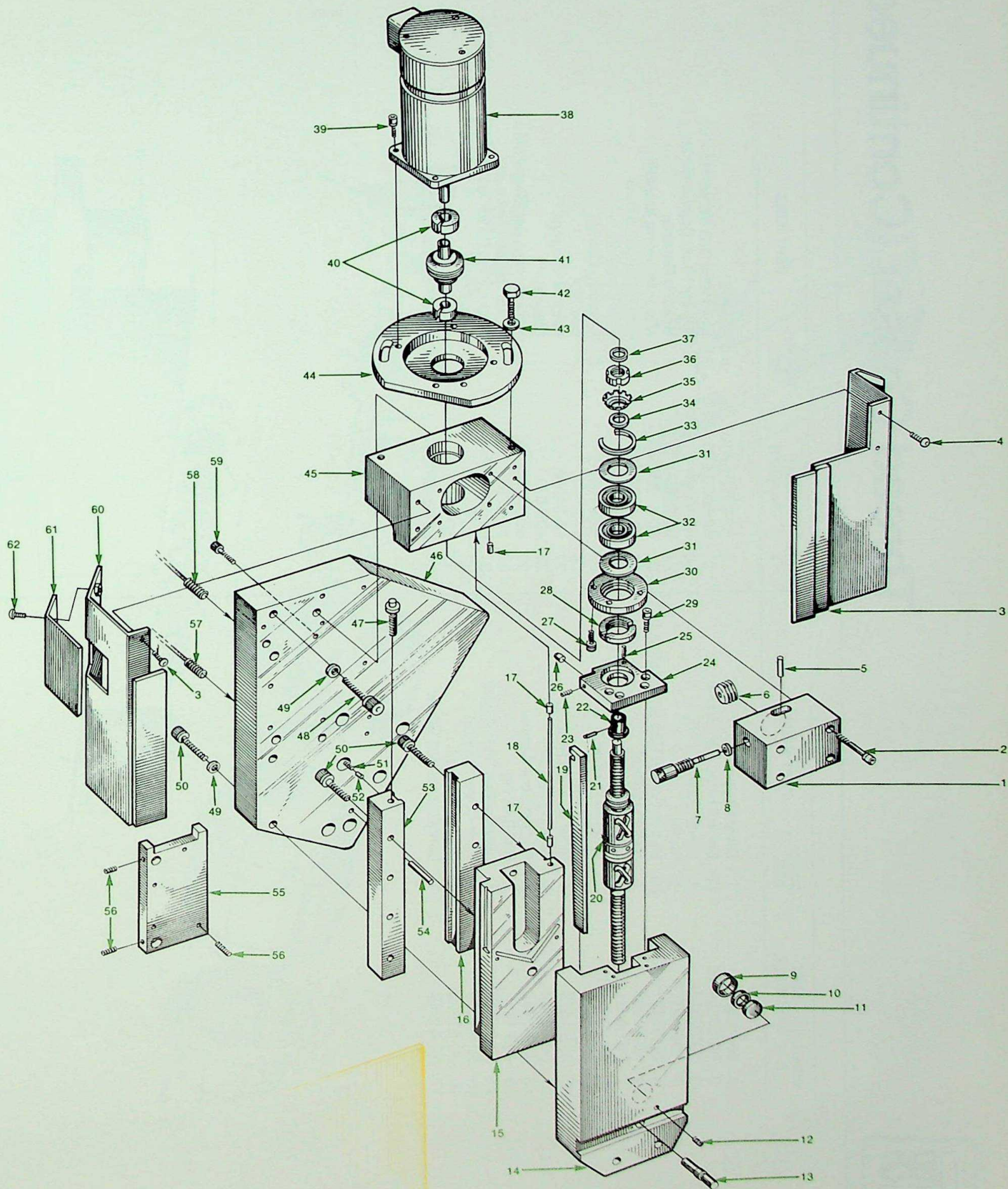
INDEX #	PART NUMBER	QUAN. REQ.	PART NAME	INDEX #	PART NUMBER	QUAN. REQ.	PART NAME
1	50-42694	1	Distribution Box	22	50-22599		Swivel Screw Rod
2	88-53851-616	4	Button Socket Cap Screw M6 x 16	23	50-51958	1	Way Support
3	50-42661	1	Box Mounting Bracket	24	50-32959	1	Way Guard Rear
4	88-53851-812	3	Button Socket Cap Screw M8 x 12	25	50-32965	1	Zero Degree Set
5	50-52596	1	Attachment Mounting Bracket	26	50-32845	1	Bumper
6	88-50301-1250	6	Hex Head Cap Screw M12 x 50	27	88-53801-516	2	Socket Cap Screw M5 x 16
7	88-20111-1225	6	Washer	28	50-42952	1	Way Upper Strap
8	50-22008	2	Thrust Washer	29	50-52960	1	Longitudinal Slide Way
9	88-90101-1028	2	Dowel Pin	30	50-42953	1	Way Low Strap
10	50-31996	1	Longitudinal Adjustment Screw	31	88-53801-835	4	Socket Cap Screw M8 x 35
11	429-276	1	Spherical Bearing	32	88-53801-1035	10	Socket Cap Screw M10 x 35
12	88-90201-524	1	Spirol Pin	33	50-21608	1	Gib Adjusting Screw
13	50-32597	1	Graduated Collar	34	50-32951	1	Slide Way Gib
14	50-32006	1	Bearing Retainer	35	50-51957	1	Longitudinal Slide
15	50-21971	1	Slide Pivot Key	36	88-90001-840	1	Pin
16	88-53801-510	4	Socket Cap Screw M5 x 10	37	88-53911-840	2	Socket Set Screw M8 x 40
17	50-22605	1	Nut Retainer Cover	38	88-53911-830	1	Socket Set Screw M8 x 30
18	50-22604	1	Adjustable Screw Nut	39	50-22913	2	Adjusting Shoe
19	88-53851-510	4	Button Socket Cap Screw M5 x 10	40	466-445	2	"O" Ring
20	50-42958	1	Rear Bumper Guard	41	50-22912	2	Anti Vibration Screw
21	50-32600	1	Graduated Swivel Screw				



Thread Chaser (Continued)

INDEX #	PART NUMBER	QUAN. REQ.	PART NAME	INDEX #	PART NUMBER	QUAN. REQ.	PART NAME
1	50-31970	1	Motor Block	32	431-105	2	Ball Bearing
2	88-53801-545	4	Socket Head Cap Screw M5 x 45	33	429-277	1	Retaining Rings
3	50-42582	1	Upper Guard	34	50-22010	1	Nut Spacer
4	88-53851-510	3	Button Socket Head Cap Screw M5 x 10	35	88-20311-15	1	Locknut Washer
5	88-90201-824	1	Spirol Pin	36	88-60431-15	1	Locknut
6	50-21980	1	Adjusting Pin Cam	37	50-23003	1	Thrust Collar
7	50-31974	1	Adjusting Screw	38	405-1008	1	Stepping Motor Control
8	429-273	1	Retaining Ring	39	88-53801-512	4	Socket Head Cap Screw M5 x 12
9	50-22912	1	Shoe	40	473-279	2	Coupling Clamp 3/8"
10	466-445	1	"O" Ring	41	473-262	1	Coupling
11	50-22913	1	Disk	42	88-50301-820	2	Hex Head Cap Screw M8 x 20
12	88-53911-812	1	Socket Set Screw-Flat Point M8 x 12	43	88-20111-816	2	Washer
13	50-21938	1	Eccentric Pin	44	50-41998	1	Mounting Plate
14	50-51951	1	Cross Slide	45	50-51962	1	Bearing Housing
15	50-51952	1	Cross Slide Way	46	50-52002	1	Mounting Plate
16	50-41953	1	Way Strap R.H.	47	50-21608	1	Gib Adjusting Screw
17	42-16200	3	Compression Sleeve	48	88-53801-1035	6	Socket Head Cap Screw M10 x 35
18	464-123		1/8" Aluminum Tubing as much as needed	49	50-22916	6	Washer
19	50-31955	1	Gib	50	88-53801-1025	4	Socket Head Cap Screw M10 x 25
20	50-41950	1	Ball Screw Cross Feed	51	88-53911-806	1	Socket Set Screw - Flat Point M8 x 6
21	92-900-418	1	Retaining Pin	52	92-5930-806	1	Brass Shoe
22	50-21967	1	Bushing	53	50-41954	1	Way Strap LN.
23	88-53901-506	1	Socket Set Screw Cup Point M5 x 6	54	88-89011-645	2	Taper Pin-Internal Thread
24	50-41956	1	Mounting Plate	55	50-42581	1	Switch Mounting Plate
25	88-53911-512	1	Socket Set Screw-Flat Point M5 x 12	56	88-53901-505	3	Socket Set Screw-Cup Point M5 x 5
26	405-860	1	Magnetic Actuator	57	50-32735	1	Cross Slide Forward Harness
27	88-50501-510	4	Low Head Socket Cap Screw M5 x 10	58	50-32734	1	Cross Slide Back Harness
28	50-21959	1	Retainer	59	88-53801-525	4	Socket Head Cap Screw M5 x 25
29	88-53801-516	4	Socket Head Cap Screw M5 x 16	60	50-42583	1	Lower Guard
30	50-31964	1	Bearing Retainer	61	50-32966	1	Gib Screw Cover
31	429-278	2	Friction Seal Washer	62	88-53851-610	2	Button Socket Head Cap Screw M6 x 10

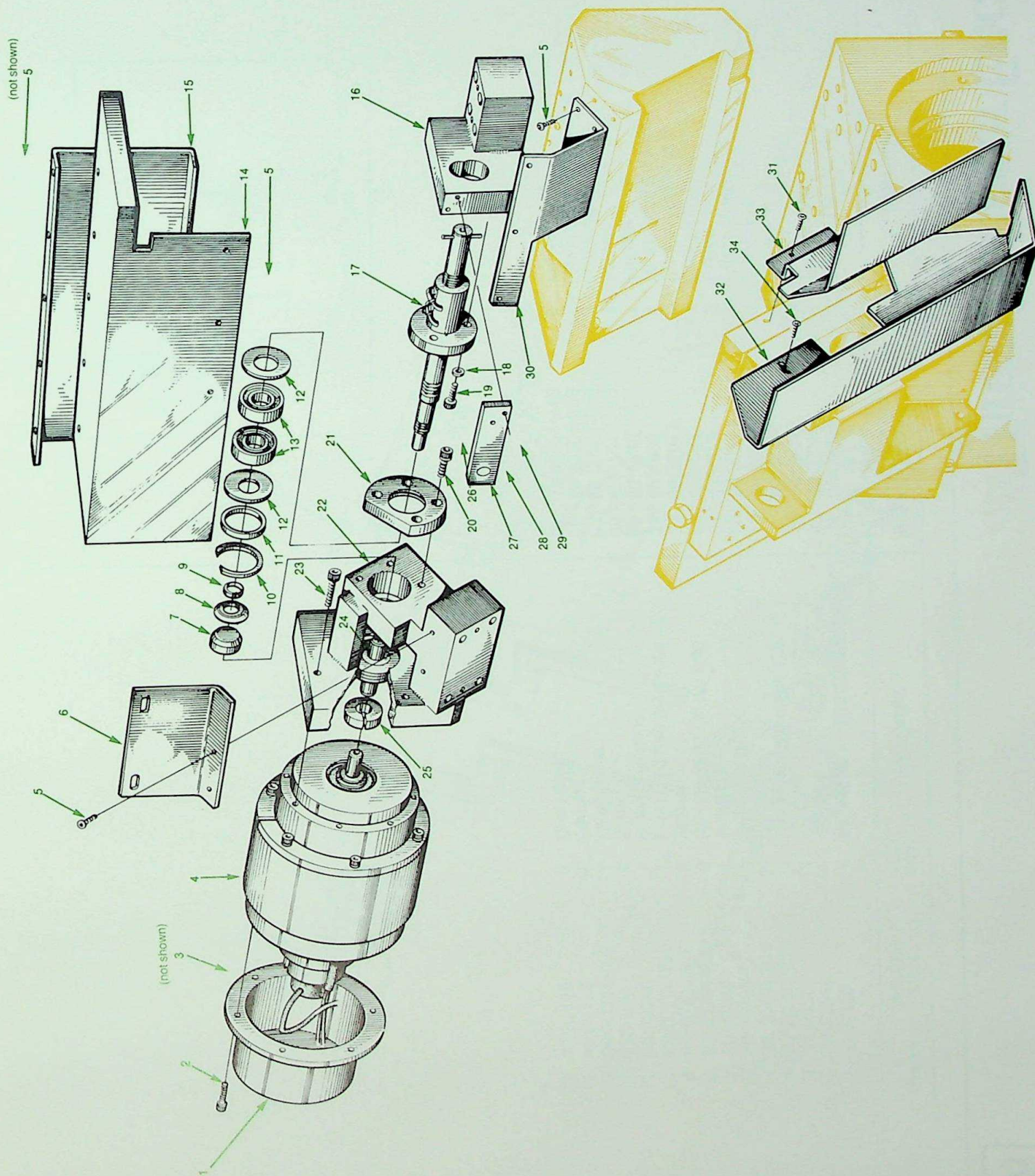






Thread Chaser (Continued)

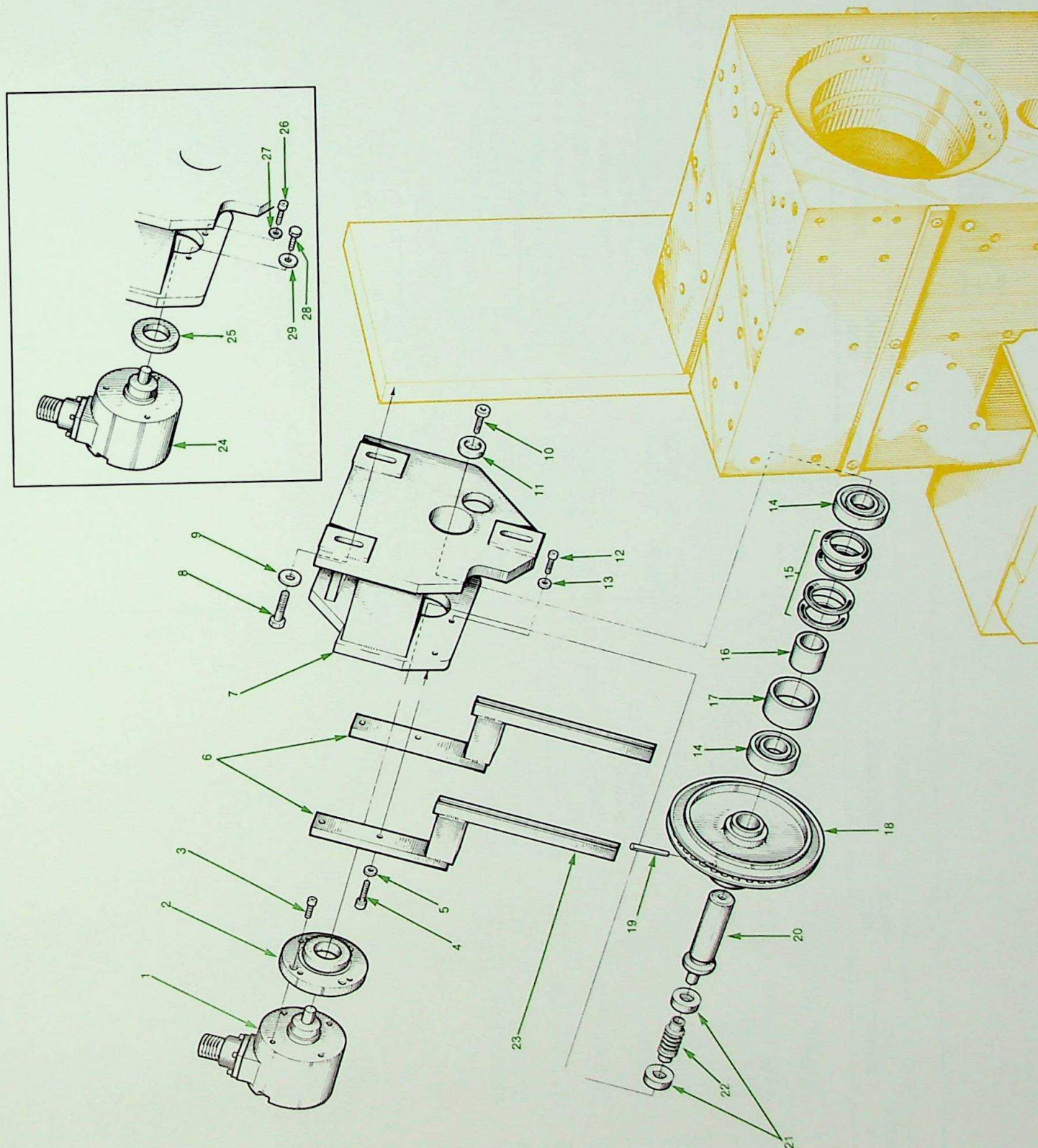
INDEX #	PART NUMBER	QUAN. REQ.	PART NAME	INDEX #	PART NUMBER	QUAN. REQ.	PART NAME
1	50-42826	1	Drive Cover	18	88-20101-510	3	Washer
2	92-5380-616	12	Socket Head Cap Screw	19	88-5030-520	3	Hex Head Cap Screw M5 x 20
3	50-32827	1	Cover Gasket	20	88-53801-616	4	Socket Head Cap Screw M6 x 16
4	405-991	1	Motor	21	50-32830	1	Bearing Retainer
5	88-53851-510	23	Button Socket Cap Screw M5 x 10	22	50-51963	1	Motor Mounting Bracket
6	50-41969	1	Switch Bracket	23	92-5380-636	4	Hex Head Cap Screw
7	88-60431-15	1	Locknut	24	473-263	1	Flex Coupling
8	88-20311-15	1	Locknut Washer	25	473-268	2	Coupling Clamp
9	50-22831	1	Nut Spacer	26	472-577	1	Hex Nut
10	429-1479	1	Inner Bearing Retainer	27	50-31968	1	Magnet Retainer
11	50-22832	1	Bearing Spacer	28	405-679	1	Magnet
12	429-134	2	Friction Seal Washer	29	88-53801-516	2	Socket Head Cap Screw M5 x 16
13	436-17	2	Ball Bearing	30	50-52967	1	Cover Support Front
14	50-51945	1	Longitudinal Slide Guard	31	88-53801-520	2	Socket Cap Screw M5 x 16
15	50-52968	1	Rear Cover Support	32	50-53095	1	Chip Guard
16	50-51960	1	Ballnut Bracket	33	50-42969	1	Front Bumper Guard
17	50-41949	1	Longitudinal Ball Screw	34	88-53851-612	4	Button Socket Cap Screw M6 x 12





Thread Chaser Encoder

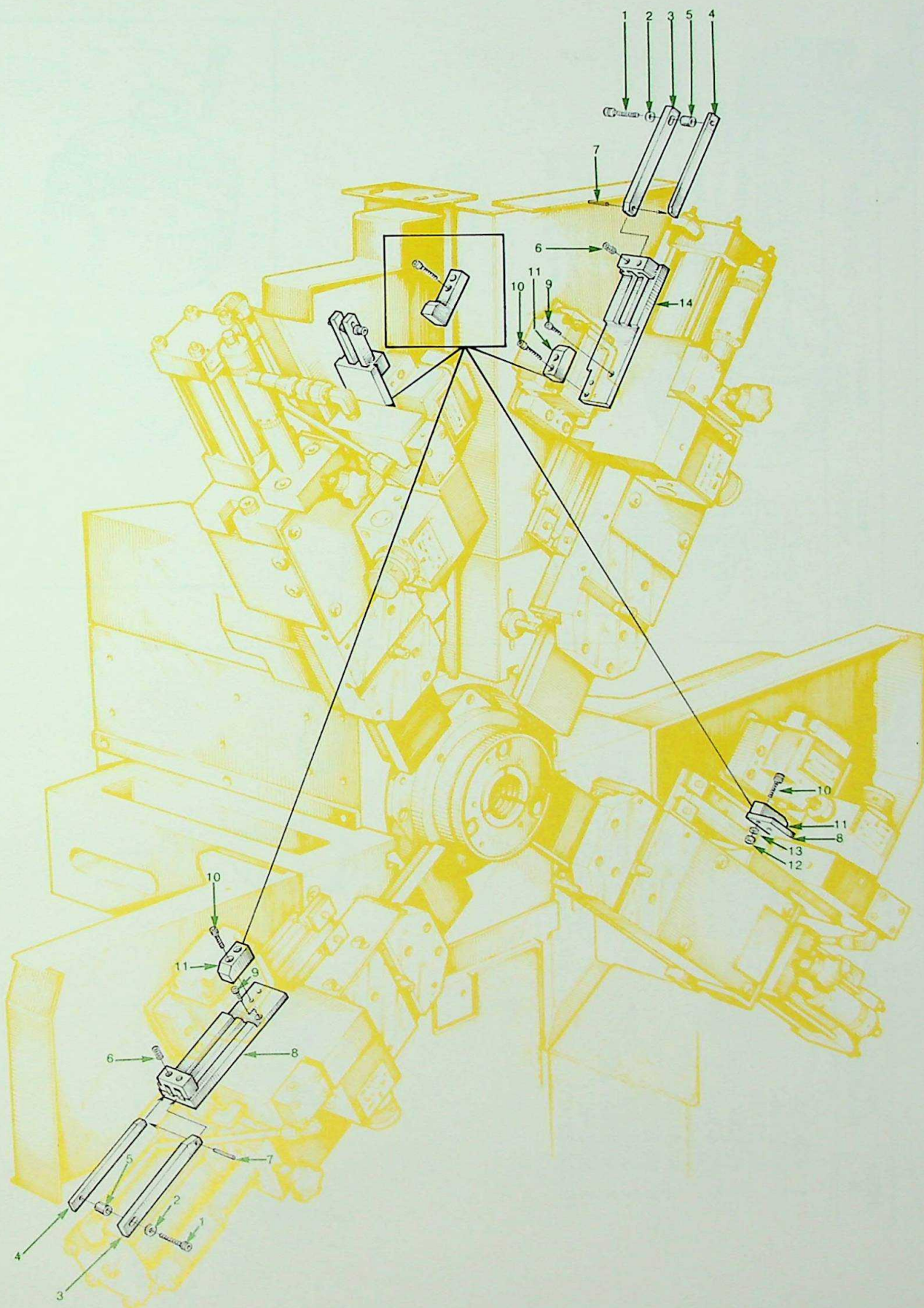
INDEX #	PART NUMBER	QUAN. REQ.	PART NAME	INDEX #	PART NUMBER	QUAN. REQ.	PART NAME
1	405-990	1	Model: 39-11-B14-1000 Encoder	16	50-33264	1	Spacer I.D.
2	50-23288	1	Adapter	17	50-33245	1	Spacer O.D.
3	472-222	4	Screw	18	50-32015	1	60mm
4	88-50301-820	4	Hex Head Screw M8 x 20	19	50-32178	1	42mm
5	88-20101-816	4	Washer	20	88-89001-540	1	Dowel Pin
6	50-42833	2	Drive Belt Guide	21	50-33244	1	Pulley Shaft
7	50-42012	1	Bracket	22	473-279	2	Clamp
8	88-50301-830	3	Hex Head Screw M8 x 30	23	473-287	1	Coupling
9	88-20101-816	3	Washer	24	50-32013	1	Encoder Pulley N S
10	88-50501-820	1	Low Head Cap Screw M8 x 20	25	405-990	1	Model 8625 Encoder
11	50-33246	1	Bearing Retainer	26	50-23287	1	Adapter
12	472-724	4	Screw	27	472-724	4	Screw
13	88-20321-506	4	Lockwasher	28	88-20301-506	4	Lockwasher
14	434-1173	2	Bearing	29	88-50301-508	2	Hex Head Screw M5 x 8
15	479-1115	4	Disc Spring		88-20121-515	2	Washer





Dual Stop Dogs

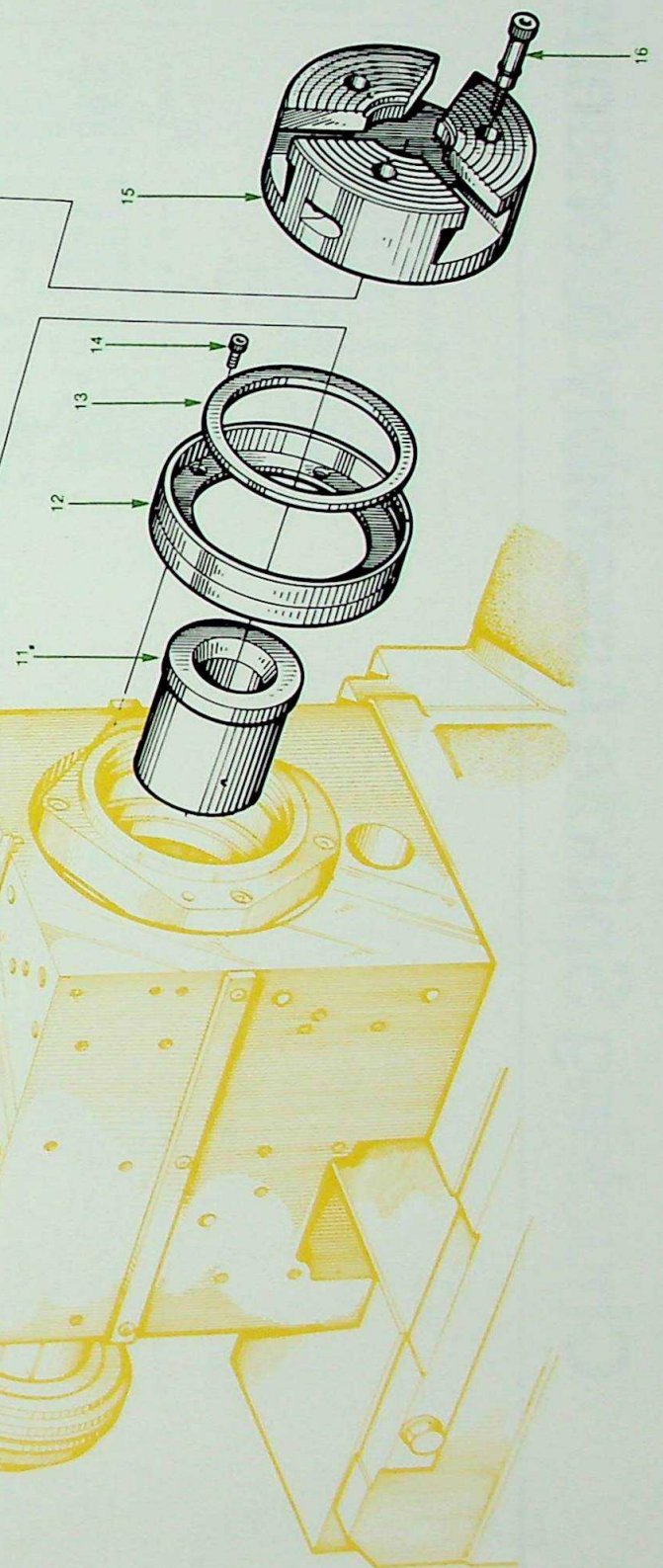
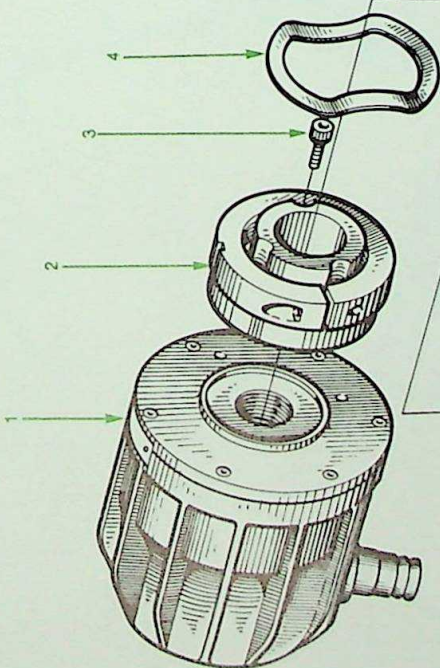
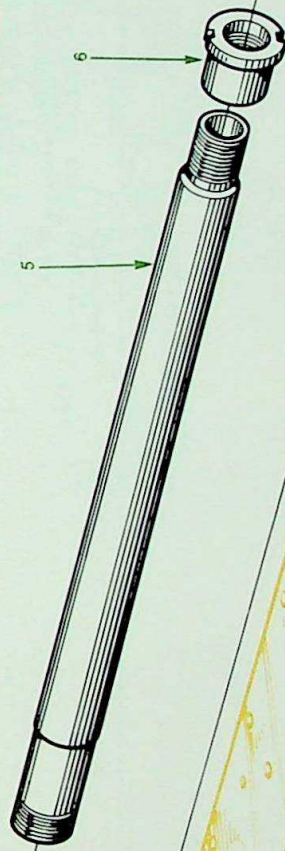
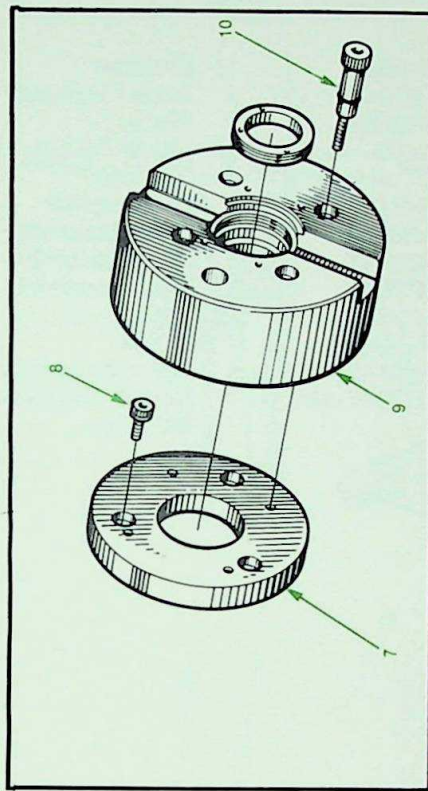
INDEX #	PART NUMBER	QUAN. REQ.	PART NAME	INDEX #	PART NUMBER	QUAN. REQ.	PART NAME
1	88-53801-525	1	Socket Cap Screw M5 x 25	13	88-20101-510	2	Washer
2	88-20101-510	1	Washer	14	50-31600	1	Dual Stop Dog for #2 & #3 pos
3	50-21596	1	Switch Dog	15	50-21250	1	Switch Dog
4	50-21707	1	Switch Dog	N/S	50-23228	1	Tubing Assembly #1, #3 & #4 pos
5	50-21256	1	Spacer	N/S	50-22453	1	Tee
6	88-53911-810	2	Set Screw M8 x 10	N/S	50-22663	1	Tubing Assembly #1, #3 & #4 pos
7	88-90201-320	1	Pin	N/S	463-819	1	Check Valve
8	50-31601	1	Dual Stop Dog for #1 & #4 pos	N/S	50-33077	1	Hose Assembly #1 pos
9	88-50501-508	1	Low Socket Cap Screw M5 x 8	N/S	50-32509	1	Hose Assembly #4 pos
10	88-53801-520	2	Socket Cap Screw M5 x 20	N/S	50-32296	1	Hose Assembly #3 pos
11	50-21648	1	Switch Dog	N/S	50-23229	1	Tubing Assembly #2 pos
12	88-60101-54	2	Hex Nut	N/S	50-22664	1	Tubing Assembly #2 pos
				16	88-53801-516	2	Socket Cap Screw M5 x 16





Chucking Spindle Assembly

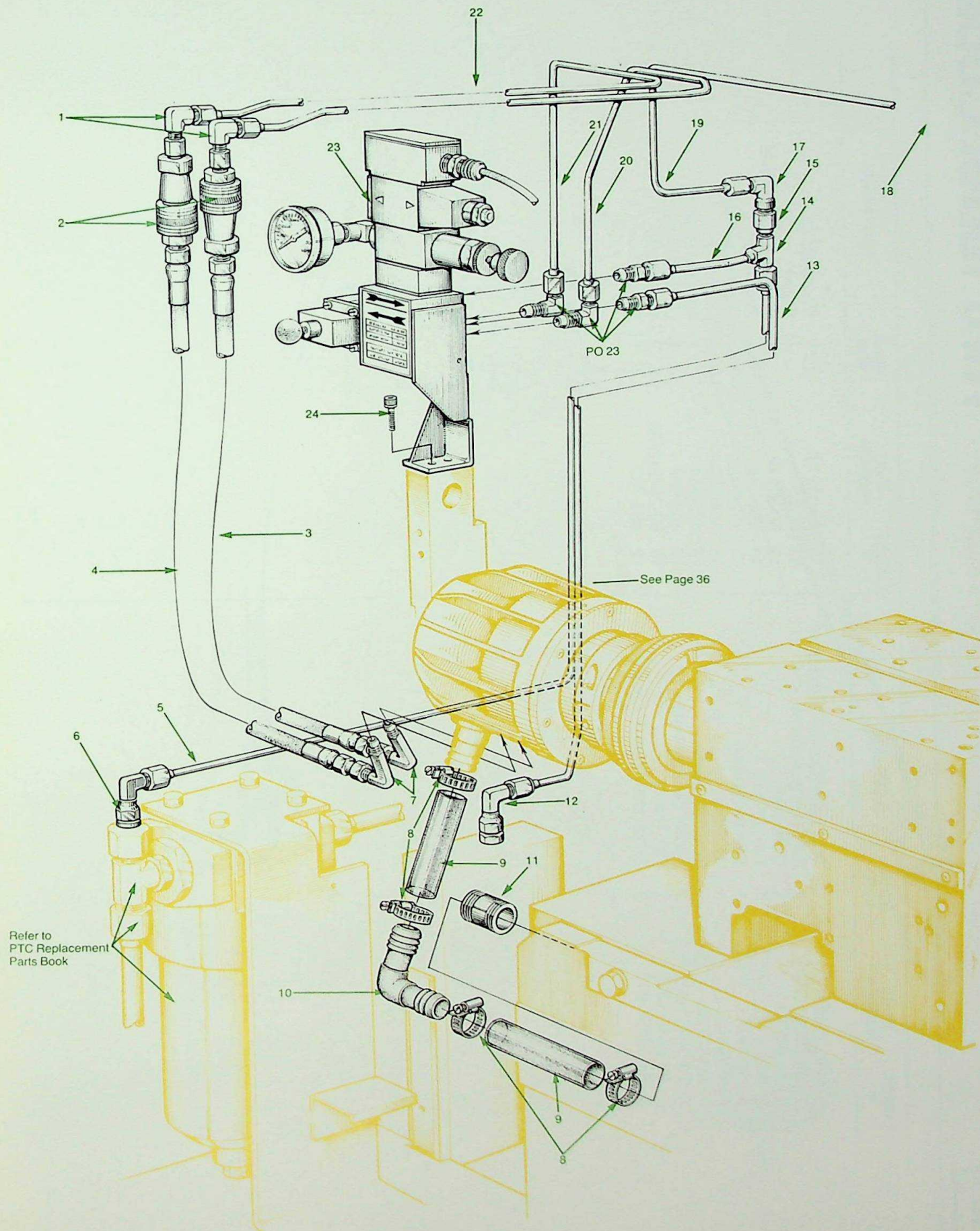
INDEX #	PART NUMBER	QUAN. REQ.	PART NAME	INDEX #	PART NUMBER	QUAN. REQ.	PART NAME
1	473-255	1	Hydraulic Actuator	11	50-32138	1	Spindle Tube Guide (60mm)
2	50-31562	1	Actuator Adapter Outer (60mm)		50-32142	1	Spindle Tube Guide (42mm)
	50-31559	1	Actuator Adapter Outer (42mm)	12	50-41535	1	Spindle Chuck Guard (60mm)
3	88-53801-820	3	Socket Cap Screw M8 x 20		50-41597	1	Spindle Chuck Guard (42mm)
4	50-33004	1	Wave Spring (60mm)	13	50-31534	1	Chuck Adapter 60mm
	479-913	1	Wave Spring (42mm)	14	88-53801-512	4	Socket Cap Screw M5 x 12 (60mm)
5	50-31563	1	Chuckling Spindle Tube		88-53801-516	4	Socket Cap Screw M5 x 16 (42mm)
6	50-22139	1	Adjusting Nut	15	50-22091	1	3 Jaw Chuck (50-31534 adapter N/S)
7	50-33006	1	Chuck Adapter (2 Jaw)				
8	88-53801-816	3	Socket Cap Screw M8 x 16	16	50-22140	3	Chuck Mounting Screw
9	50-22407	1	Optional 2 Jaw Chuck		473-256	1	Power Chuck 3 Jaw N/S
10	50-22140	3	Chuck Mounting Screw		473-266	1	Power Chuck 2 Jaw N/S



Chuckling Spindle Assembly (Continued)

INDEX #	PART NUMBER	QUAN. REQ.	PART NAME	INDEX #	PART NUMBER	QUAN. REQ.	PART NAME
1	464-113	2	Elbow	15	463-869	1	Snubber
2	463-611	2	Sets of Quick Disconnects	16	50-22942	1	Tube Assembly
3	50-32559	1	Hose Assembly	17	464-3664	1	Elbow
4	50-32558	1	Hose Assembly	18	464-10	1	Elbow To Electric Cabinet
5	50-22946	1	Tube Assembly		413-2117	1	Locknut N/S
6	50-23365	1	Orifice Connector	19	50-22948	1	Tube Assembly
7	464-655	2	Elbow	20	50-22944	1	Tube Assembly
8	463-368	4	Clamps	21	50-22945	1	Tube Assembly
9	464-272	—	Plastic Hose	22	50-22872	1	Clamp
10	464-368	1	Plastic Elbow		472-1207	1	Screw
11	92-2440-2448	1	Nipple	23	50-51742	1	Valve Assembly
12	464-351	1	Elbow	24	88-53801-830	1	Socket Cap Screw M8 x 30
13	50-22947	1	Tube Assembly				
14	464-92	1	Tee				

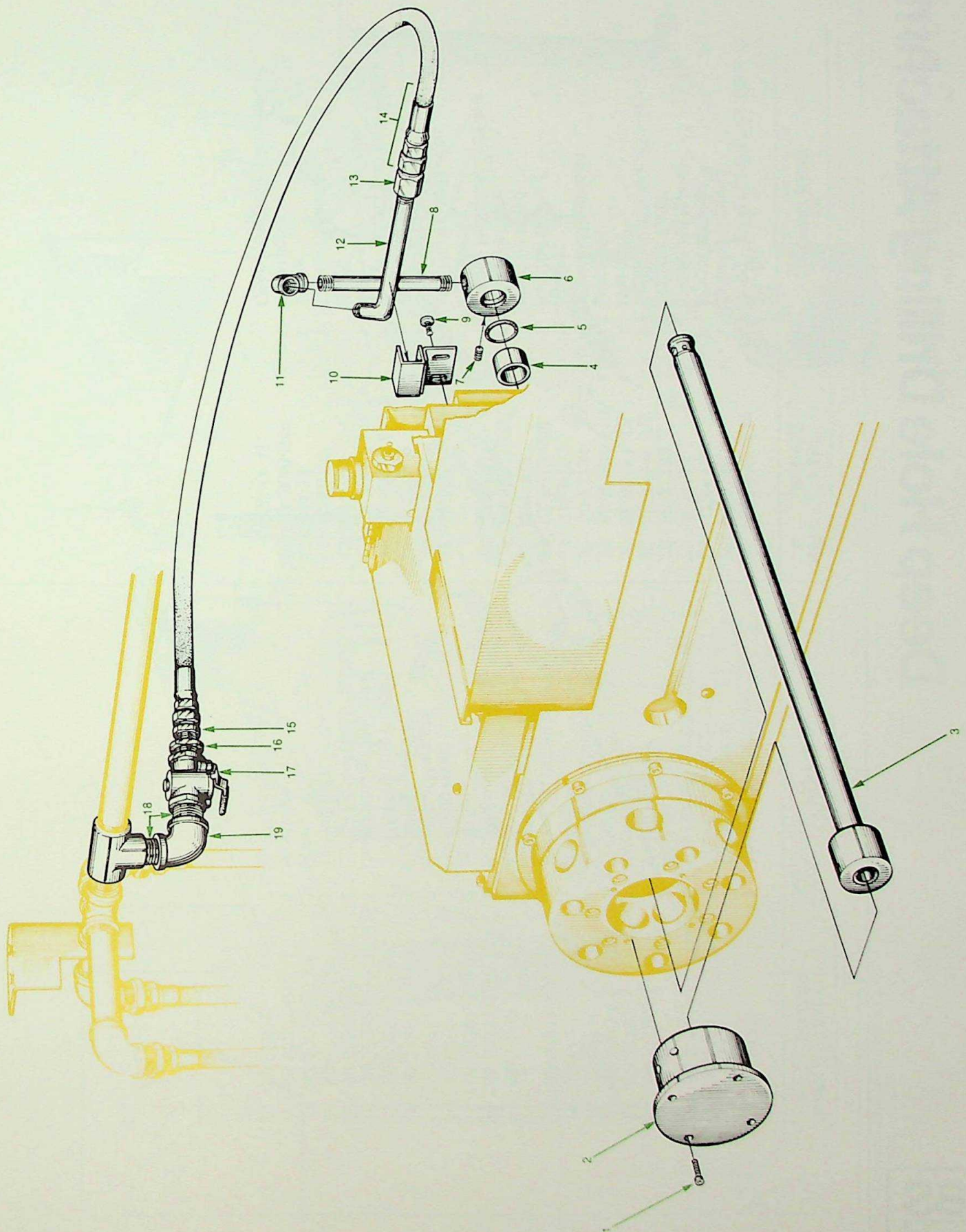






Thru Turret Coolant

INDEX #	PART NUMBER	QUAN. REQ.	PART NAME	INDEX #	PART NUMBER	QUAN. REQ.	PART NAME
1	88-53801-510	4	Thru Turret Coolant Attachment	10	50-32719	1	Pipe Bracket
2	50-42723	1	Socket Cap Screw M5 x 10	11	464-2	1	Elbow
3	50-32721	1	Oil Bushing	12	50-32722	1	Coolant Supply Nipple
4	50-22717	1	Turret Pipe	13	464-156	1	Connector
5	466-442	1	Spindle Bushing	14	17-32762	1	Hose Assembly
6	50-32720	1	"O" Ring	15	464-650	1	Connector
7	88-53911-812	1	Pipe Connector	16	463-914	1	Reducer Bushing
8	92-2440-1260	1	Socket Set Screw M8 x 12	17	463-927	1	Shut-off Valve
9	88-53851-812	2	Pipe Nipple	18	92-2440-2438	2	Pipe Nipple
			Button Head Cap Screw M8 x 12	19	463-753	1	Elbow

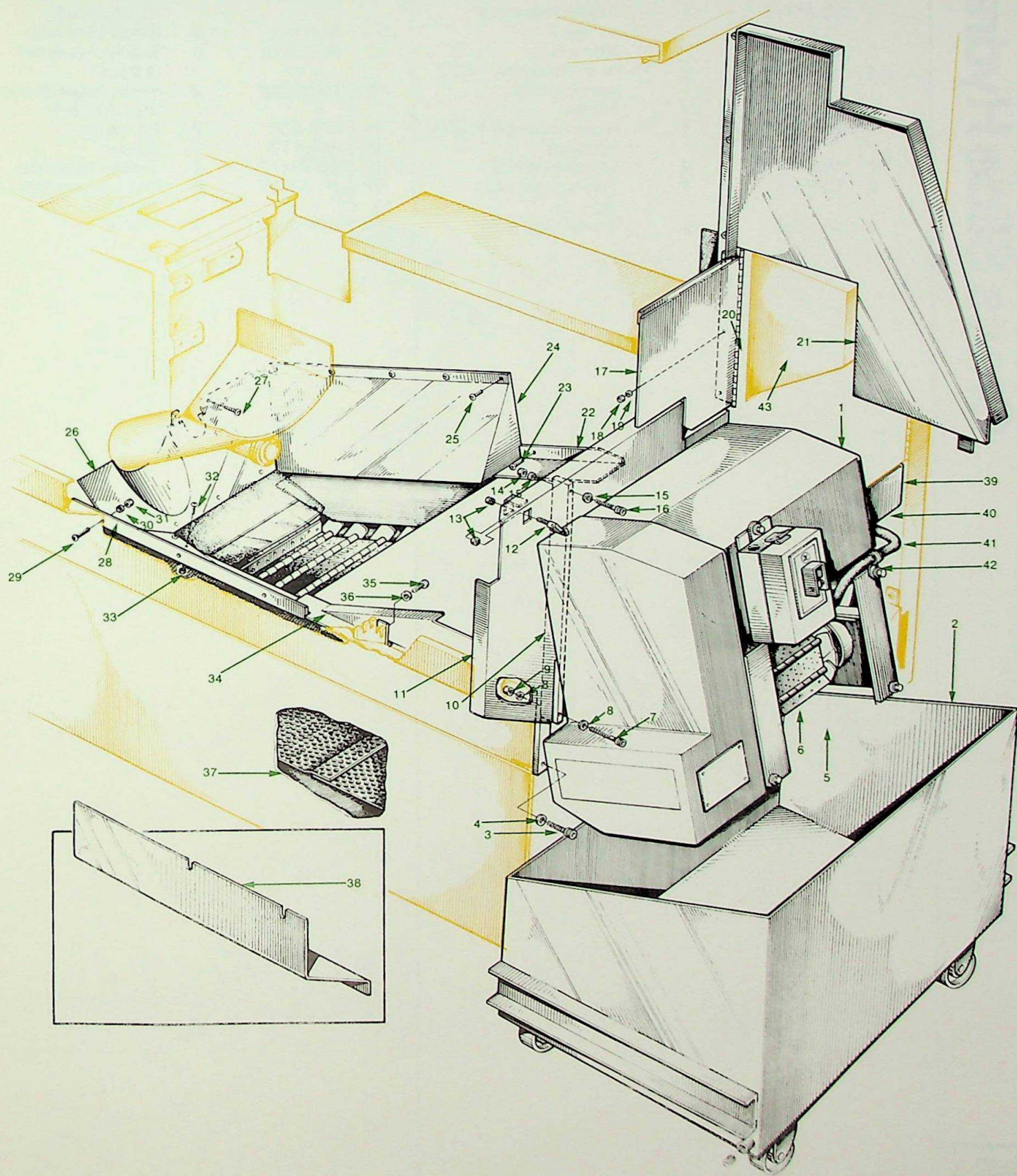


Chip Conveyor

INDEX #	PART NUMBER	QUAN. REQ.	PART NAME	INDEX #	PART NUMBER	QUAN. REQ.	PART NAME
1	150-42-4	1	Chip Conveyor	26	50-52682	1	Chip Deflector/ Polyurethan Protector
2	50-52793	1	Chip Truck	27	88-53851-812	2	Button Cap Screw M8 x 12
3	88-53801-840	2	Socket Cap Screw M8 x 40	28	50-52683	1	Chip Deflector Front Left
4	88-20121-825	2	Washer	29	88-53851-816	3	Button Cap Screw M8 x 16
5	88-53851-825	2	Button Cap Screw M8 x 25 N/S	30	88-20101-816	3	Washer
6	88-20121-825	2	Washer	31	88-60101-86	3	Hex Nut
7	88-53801-850	2	Socket Cap Screw M8 x 50	32	88-53851-612	5	Button Cap Screw M6 x 12
8	88-20101-816	4	Washer	33	88-60101-	5	Hex Nut
9	88-60101-86	2	Hex Nut	34	50-42684	1	Chip Deflector Front Right
10	50-32686	1	Guard Support	35	88-53851-816	2	Button Cap Screw M8 x 16
11	50-52687	1	Guard	36	88-20101-816	2	Washer
12	6-139	1	Latch	37	50-42689	1	Chip Pan Extension
13	92-6015-1214	1	Hex Nut	38	50-42691	1	Chip Guard
14	88-60101-86	2	Hex Nut	39	50-33014	1	Cover
15	88-20101-816	4	Washer	N/S	88-53851-820	2	Button Cap Screw M8 x 20
16	88-53801-850	2	Socket Cap Screw M8 x 50	N/S	88-20101-816	2	Washer
17	50-42690	1	Access Guard	N/S	88-60151-85	2	Hex Nut
18	88-60101-54	3	Hex Nut	40	415-2408	1	Junction Box N/S
19	88-20101-510	6	Washer	41	88-53801-620	2	Socket Cap Screw M6 x 20 N/S
20	88-53851-510	3	Button Cap Screw M5 x 10 N/S	42	50-33088	1	Chip Conveyor Cable N/S
21	50-52685	1	Right End Access Door	43	50-41941	1	Turret Drum Guard
22	50-42680	1	Chip Deflector Rear	N/S	88-20101-510	8	Washers
23	88-53851-816	2	Button Cap Screw M8 x 16	N/S	88-60101-54	8	Hex Nuts
24	50-52681	1	Chip Deflector Rear Left				
25	88-53851-816	5	Button Cap Screw M8 x 16				

*N/S = Not Shown

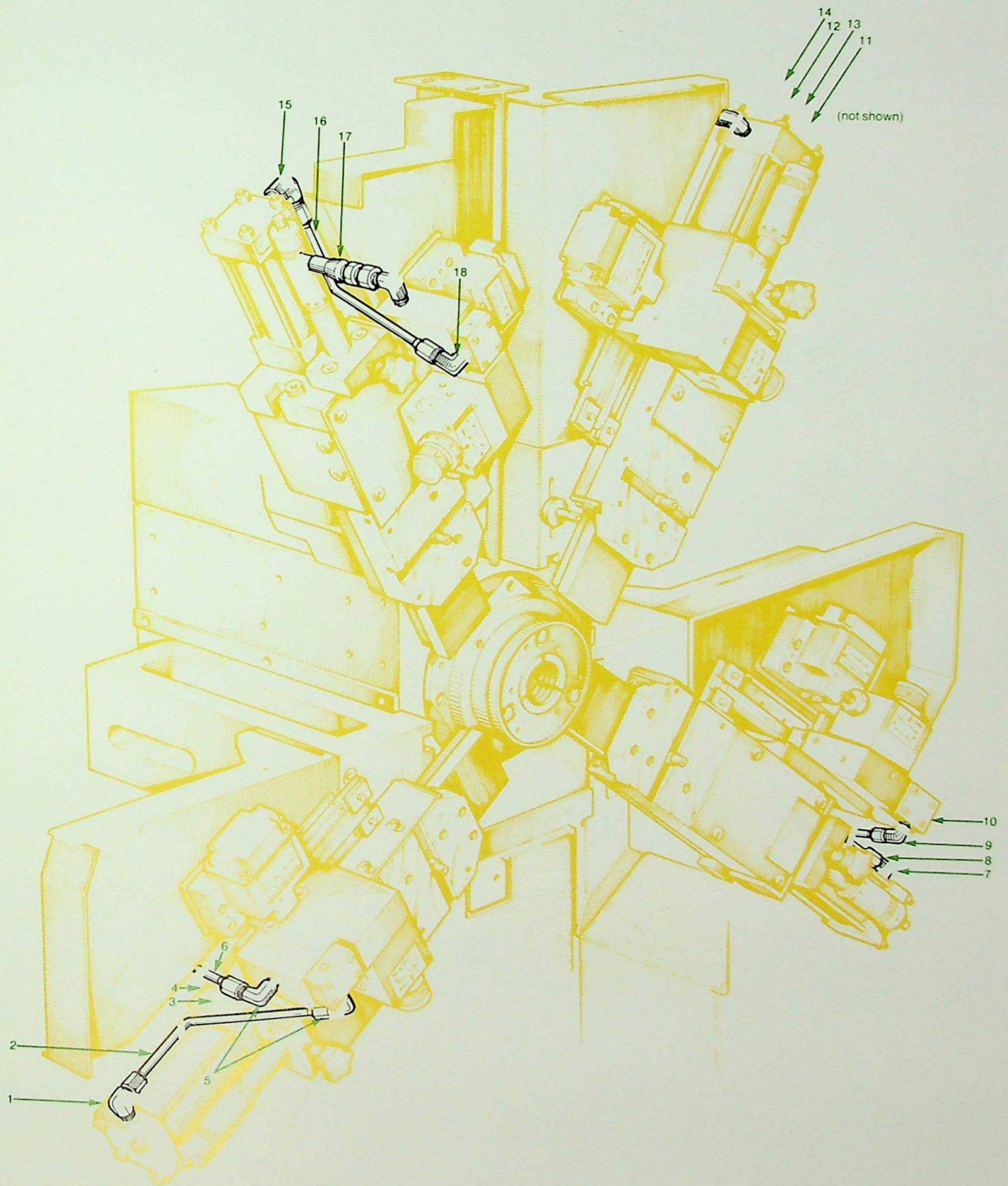




Cross Slide Hydraulics

INDEX #	PART NUMBER	QUAN. REQ.	PART NAME	INDEX #	PART NUMBER	QUAN. REQ.	PART NAME
1	464-113	1	Elbow	10	50-32296	2	Hose Assembly to C/S manifold N/S
2	50-23172	1	Tubing Assembly #1 pos	11	464-113	2	Elbow (one N/S)
3	464-113	1	Elbow N/S	12	50-23172	1	Tubing Assembly #3 pos
4	50-33075	1	Hose Assembly to C/S manifold N/S	13	50-32296	2	Hose Assembly to C/S manifold N/S
5	464-655	2	Elbow	14	464-655	2	Elbow N/S
6	50-33075	1	Hose Assembly to C/S manifold	15	464-113	2	Elbow
7	464-113	2	Elbow (one N/S)	16	50-23172	1	Tubing Assembly
8	50-23181	1	Tubing Assembly #2 pos	17	50-32297	2	Hose Assembly to C/S manifold
9	464-655	2	Elbow (one N/S)	18	464-655	2	Elbow





NOTES
