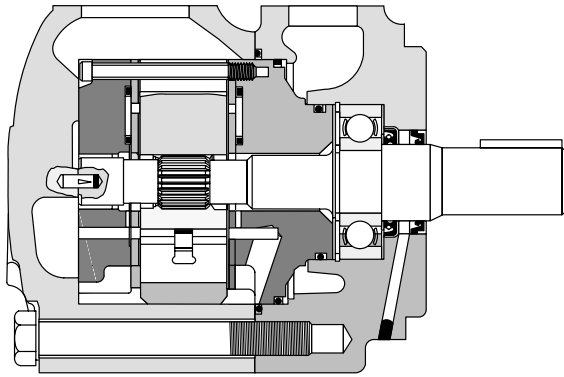


Vane Pumps



Vane Type Single Pump

25/26/30/31 VQ Series - 20 Design



⊖ TO REVERSE CATRIDGE KIT ROTATION, REMOVE THE TWO (2) 413834 SCREWS, AND REVERSE THE LOCATION OF THE INLET SUPPORT PLATE 430805 AND OUTLET SUPPORT PLATE 419079. REINSTALL THE TWO (2) SCREWS HAND TIGHT. USE PUMP COVER TO ALIGN ALL SECTIONS OF THE CARTRIDGE. REMOVE COVER CAREFULLY AND TIGHTEN SCREWS TO 50 LB. IN. TORQUE.

□ WIPE O.D. OF SEAL WITH OIL BEFORE PRESSING INTO BODY. APPLY GREASE TO SEAL I.D. BEFORE INSTALLATION OF SHAFT.

▲ INCLUDED IN SINGLE
SHAFT SEAL KIT 920021
F3 EQUIVALENT 920023

▲▲ INCLUDED IN DOUBLE
SHAFT SEAL KIT 920022
F3 EQUIVALENT 920024

*INCLUDED IN
CARTRIDGE KIT

MODEL DESIGNATION	SCREW (4 REQ'D) (TORQUE TO 65-75 LB. FT)	COVER
2*VQ*A/C-(*)***-20(*)	96168	224309
2*VQ*B/D-(*)***-20(*)		242215
3*VQ*A/C-(*)***-20(*)	119805	224526
3*VQ*B/D-(*)***-20(*)		242214

NOTE
BRONZE FACES MUST
BE INSTALLED TOWARD
THE ROTOR.

*▲ 154095 "O-RING"

CAPACITY (USGPM)	SCREW (2 REQ'D)	PIN (2 REQ'D)	INLET SUPPORT PLATE	▲SEAL PACK (4 REQ'D)	FLEX-SIDE PLATE KIT	ROTOR	VANE KIT (10 VANES & 10 INSERTS)	RING	OUTLET SUPPORT PLATE	CART. KIT	F3 CART. KIT
THESE PARTS ARE INCLUDED IN CARTRIDGE KIT											
2*VQ12A	41384	422207	430805 (INCLUDES BUSHING)	433764 S/A	923956	270597	922710	326984	419079	416439	421570
2*VQ14A								326985		416440	421571
2*VQ17A								326986		416441	421572
2*VQ19A								326987		421232	421573
2*VQ21A	41654					262152	922648	326988		416442	421574
3*VQ24A								234470		417052	421645
3*VQ28A								224525		416452	421646



**WARNING: USE THIS FOR PARTS INFORMATION ONLY.
SEE OVERHAUL MANUAL I-3144-S FOR MAINTENANCE INFORMATION.**

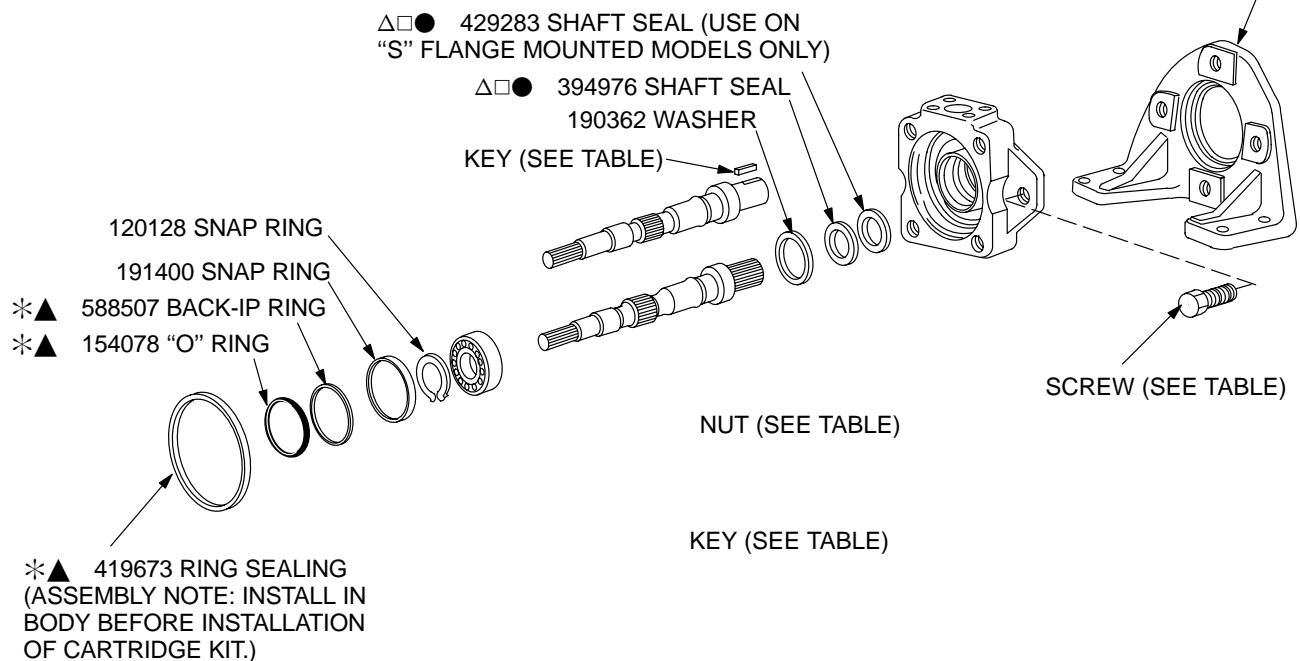
○ ASSEMBLE SEAL WITH SPRING LOADED SEALING MEMBER TOWARD BEARING.

● ASSEMBLE SEAL FLUSH WITH PILOT FACE WITH SPRING LOADED SEALING MEMBER FACING INWARD AS SHOWN.

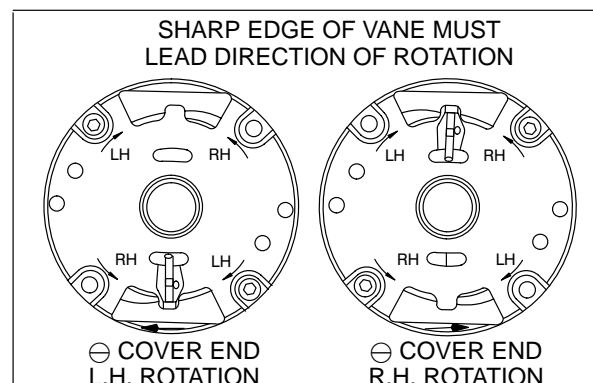
MODEL	TYPE DUTY	BEARING
25VQ	STANDARD	1705
26VQ	HEAVY DUTY	232750
30VQ	STANDARD	1705
31VQ	HEAVY DUTY	232750

BODY S/A	MODEL
942353	2*VQA/D-**-20
942378	2*VQB/C-**-20
942354	3*VQA/D-**-20
942378	3*VQB/C-**-20

MOUNTING ASSEMBLY **VQ***F-**-20(L)		
INCLUDED IN MOUNTING KIT FB-B-10	SCREW (2 REQ'D) 205533	MOUNTING BRACKET 199491

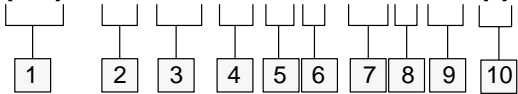


SHAFTS				KEY	NUT	TYPE
SINGLE SEAL MODELS		DOUBLE SEAL MODELS				
SHAFT NO.	PART NO.	SHAFT	PART NO.			
1	238755	——	——	9955	——	STRAIGHT, KEYED
3	242747	——	——	1617	18755	KEYED WITH NUT
6	242767	——	——	1617	——	KEYED SHAFT
11	238929	——	——	——	——	SPLINE
86	478826	——	——	3418	——	STRAIGHT, KEYED, HEAVY DUTY



Model Code

(F3) - ** VQ ** A * - *** 20 (*)



1 Viton Seals
(Omit if not required.)

2 Series
25, 26, 30, 31

3 Vane Type

4 SAE Rated Capacity
(Rating @ 1200 RPM - 100 psi)
See Capacity (USgpm)
See Table Inside

5 Port Connections

Code	Inlet Connection	Outlet Connection
A	SAE 4-Bolt	SAE 4-Bolt
B	SAE Str. Thd.	SAE Str. Thd.
C	SAE 4-Bolt	SAE Str. Thd.
D	SAE Str. Thd.	SAE 4-Bolt

7 Shafts
See Table Inside

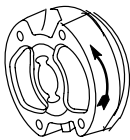
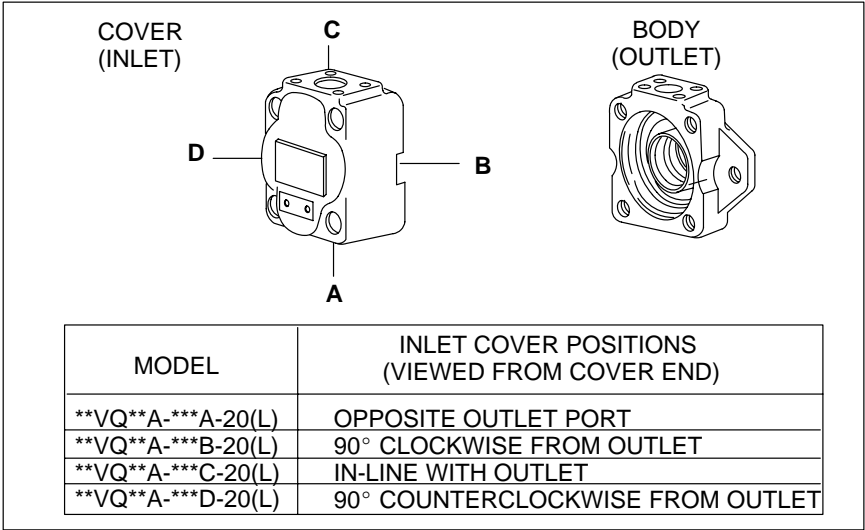
8 Port Positions
See Chart Below

6 Mounting & Shaft Seals Assembly

F - Foot (Single Shaft Seal Assy.)
S - Flange (Double Shaft Seal Assy.)
Omitted - Flange (Single Shaft Seal Assy.)

9 Design

10 Rotation
(Viewed from Shaft End)
L - Left Hand (CCW Rotation)
Omitted - Right Hand Rotation



PARTS ORDERING

PARTS ARE THE SAME FOR BOTH RIGHT AND LEFT HAND ROTATION, WHEN ORDERING SPARE CARTRIDGE PARTS, IT IS RECOMMENDED THEY BE OBTAINED IN CARTRIDGE KITS. KITS ARE ASSEMBLED AND TESTED FOR EITHER RIGHT OR LEFT HAND ROTATION. IF LEFT HAND ROTATION IS REQUIRED, IT SHOULD BE SPECIFIED ON PARTS ORDER BY ADDING SUFFIX "L" TO KIT NUMBER. FOR EXAMPLE, 416439-L.

For satisfactory service life of these components, use full flow filtration to provide fluid which meets ISO cleanliness code 18/16/13 or cleaner. Selections from pressure, return, and in-line filter series are recommended.

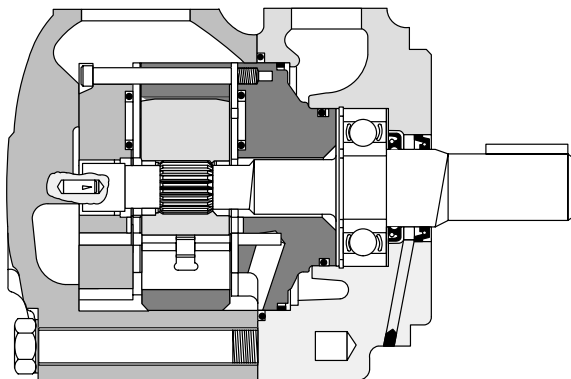
Vane Pumps



Vane Type Single Pump

35VQ**A-86* - 20(L)

36VQ**A-86 - 20(L)



⊖ TO REVERSE CATRIDGE KIT ROTATION, REMOVE THE TWO (2) 410609 SCREWS, AND REVERSE THE LOCATION OF THE INLET SUPPORT PLATE 430806 AND OUTLET SUPPORT PLATE 412003. REINSTALL THE TWO (2) SCREWS HAND TIGHT. USE PUMP COVER TO ALIGN ALL SECTIONS OF THE CARTRIDGE. REMOVE COVER CAREFULLY AND TIGHTEN SCREWS TO 100 LB. IN. TORQUE.

□ WIPE O.D. OF SEAL WITH OIL BEFORE PRESSING INTO BODY. APPLY GREASE TO SEAL I.D. BEFORE INSTALLATION OF SHAFT.

▲ INCLUDED IN SINGLE SHAFT SEAL KIT 920015

▲▲ INCLUDED IN DOUBLE SHAFT SEAL KIT 920016

*INCLUDED IN CARTRIDGE KIT

F3 EQUIVALENT SINGLE SHAFT SEAL KIT 900029

F3 EQUIVALENT DOUBLE SHAFT SEAL KIT 920030

NOTE
BRONZE FACES MUST BE INSTALLED TOWARD THE ROTOR.

11173 BOLT (4 REQ'D)
OIL & TORQUE 150 ± 10 LB. FT

234248 COVER (INLET)

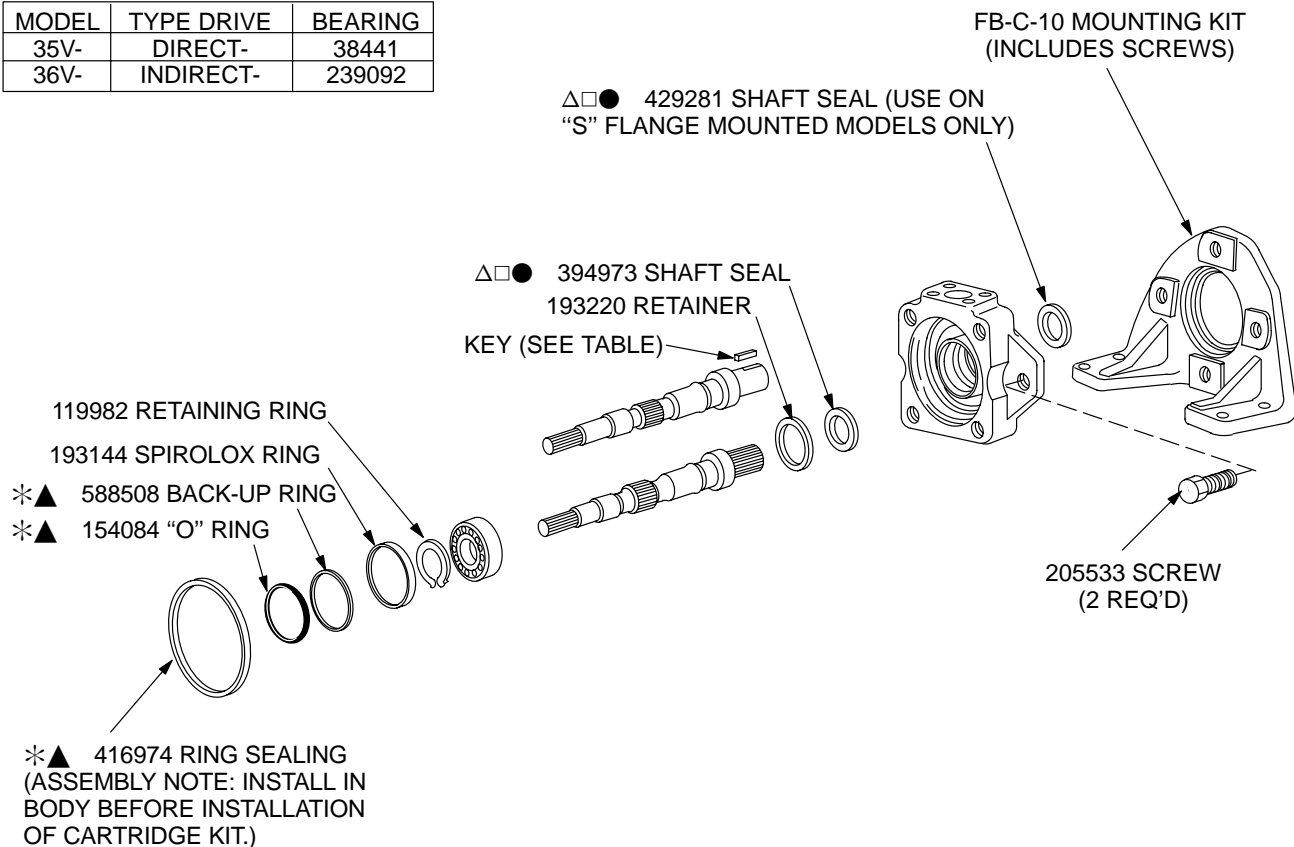
*▲ 154101 "O-RING"

CAPACITY (USGPM)	SCREW (2 REQ'D)	PIN (2 REQ'D)	INLET SUPPORT PLATE	▲ SEAL PACK (4 REQ'D)	◆ FLEX-SIDE PLATE KIT	ROTOR	VANE KIT	RING	OUTLET SUPPORT PLATE	CART. KIT	F3 CART. KIT
THESE PARTS ARE INCLUDED IN CARTRIDGE KIT										↓	↓
3*VQ21A	410609	418108	430806 (INCLUDES 327009 BUSHING)	433766 S/A	923953	262154	922700 (INCLUDES 10 VANES & 10 INSERTS)	394962	412003	413420	421582
3*VQ25A								319396		413421	421583
3*VQ30A								319397		413422	421584
3*VQ35A								319398		413418	421585
3*VQ38A								319399		413419	421586

○ ASSEMBLE SEAL WITH SPRING LOADED SEALING MEMBER TOWARD BEARING.

● ASSEMBLE SEAL FLUSH WITH PILOT FACE WITH SPRING LOADED SEALING MEMBER FACING INWARD AS SHOWN.

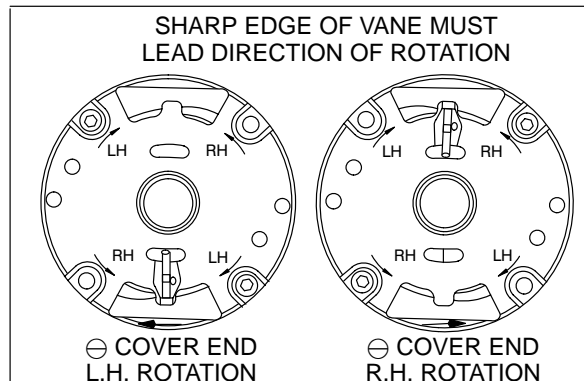
MODEL	TYPE DRIVE	BEARING
35V-	DIRECT-	38441
36V-	INDIRECT-	239092



SHAFTS				KEY	TYPE
SINGLE SEAL MODELS		DOUBLE SEAL MODELS			
SHAFT NO.	PART NO.	SHAFT	PART NO.		
1	233624	—	—	88678	STRAIGHT - STANDARD
4	247803	—	—	—	SPLINE - 14 TOOTH
11	242287	—	—	—	SPLINE - 14 TOOTH
86	392669	—	—	393536	STRAIGHT - HEAVY DUTY

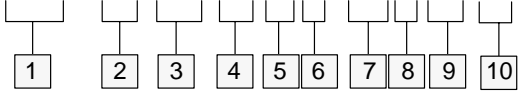
◆ **NOTE**

WHEN ORDERED INDIVIDUALLY, FLEX SIDE PLATE KIT INCLUDES (4) F3 SEAL PACK SUB ASSY'S.



Model Code

(F3) - 35 VQ ** A * - * * * 20 (*)



1 Viton Seals
(Omit if not required.)

2 Series

3 Vane Type

4 SAE Rated Capacity
(Rating @ 1200 RPM - 100 psi)
21 - 21 USgpm
25 - 25 USgpm
30 - 30 USgpm
35 - 35 USgpm
38 - 38 USgpm

5 Port Connections
A - SAE 4-Bolt Flange

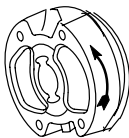
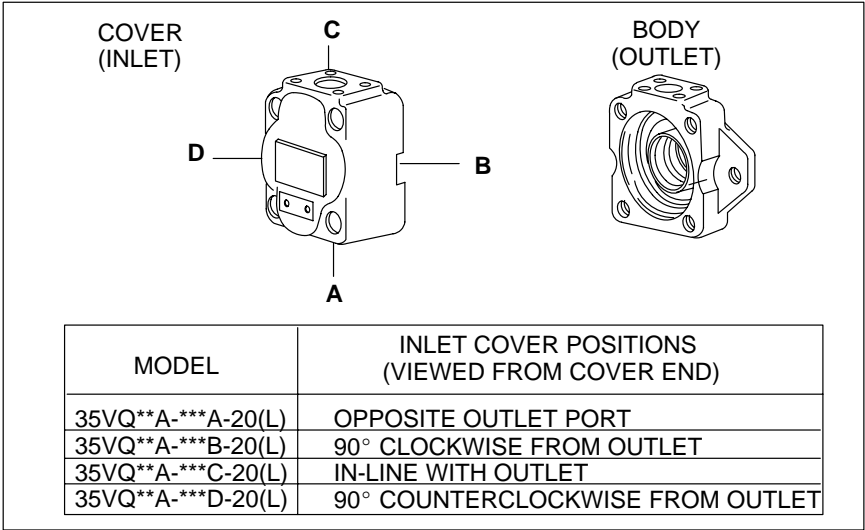
6 Mounting & Shaft Seals Assembly
F - Foot (Single Shaft Seal Assy.)
S - Flange (Double Shaft Seal Assy.)
Omitted- Flange (Single Shaft Seal Assy.)

7 Shafts
1 - Square Key
4 - Splined
11 - Splined
86 - Square Key

8 Port Positions
See Chart Below

9 Design

10 Rotation
(Viewed from Shaft End)
L - Left Hand (CCW Rotation)
Omitted - Right Hand Rotation



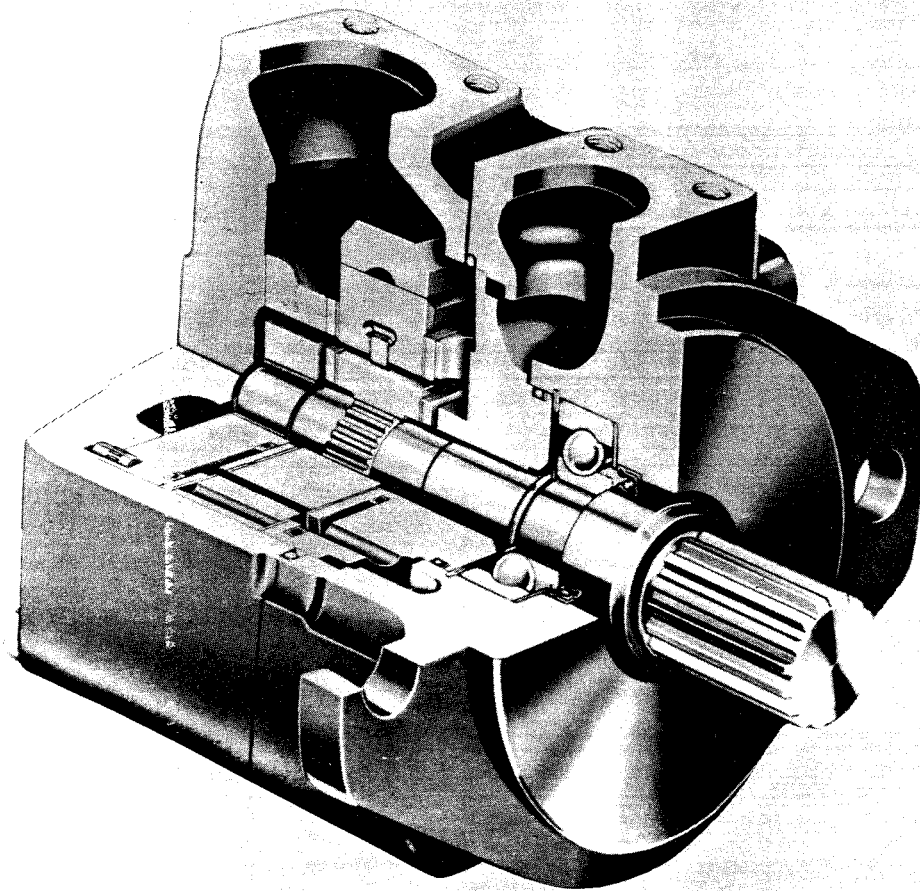
PARTS ORDERING

PARTS ARE THE SAME FOR BOTH RIGHT AND LEFT HAND ROTATION, WHEN ORDERING SPARE CARTRIDGE PARTS, IT IS RECOMMENDED THEY BE OBTAINED IN CARTRIDGE KITS. KITS ARE ASSEMBLED AND TESTED FOR EITHER RIGHT OR LEFT HAND ROTATION. IF LEFT HAND ROTATION IS REQUIRED, IT SHOULD BE SPECIFIED ON PARTS ORDER BY ADDING SUFFIX "L" TO KIT NUMBER. FOR EXAMPLE, 413420-L.

For satisfactory service life of these components, use full flow filtration to provide fluid which meets ISO cleanliness code 16/13 or cleaner. Selections from pressure, return, and in-line filter series are recommended.

Vane Type Single Pump

45VQ**A-86*-20(L)



Vickers Incorporated
A TRINOVA Company
5445 Corporate Drive
P. O. Box 302
Troy, Michigan 48007-0302
U.S.A.

□WIPE O. D. OF SEAL WITH OIL BEFORE PRESSING INTO BODY. APPLY GREASE TO SEAL I. D. BEFORE INSTALLATION OF SHAFT.

102949

1586:

*▲154087 "O"

▲▲ INCLUDED IN DOUBLE SHAFT SEAL KIT 920026
F3 EQUIVALENT 920028

*▲ 419675 RING SEALING
(ASSEMBLY NOTE: INSTALL
IN BODY BEFORE INSTALLATION OF CARTRIDGE KIT.)

*▲154107 "O" RING

61321 SCREW
(4 REQ'D)
(OIL & TORQUE
TO 265 ± 10 lb. ft.)

229633 COVER
(INLET)

TORQUE TO
105 ± 5 lb. in.

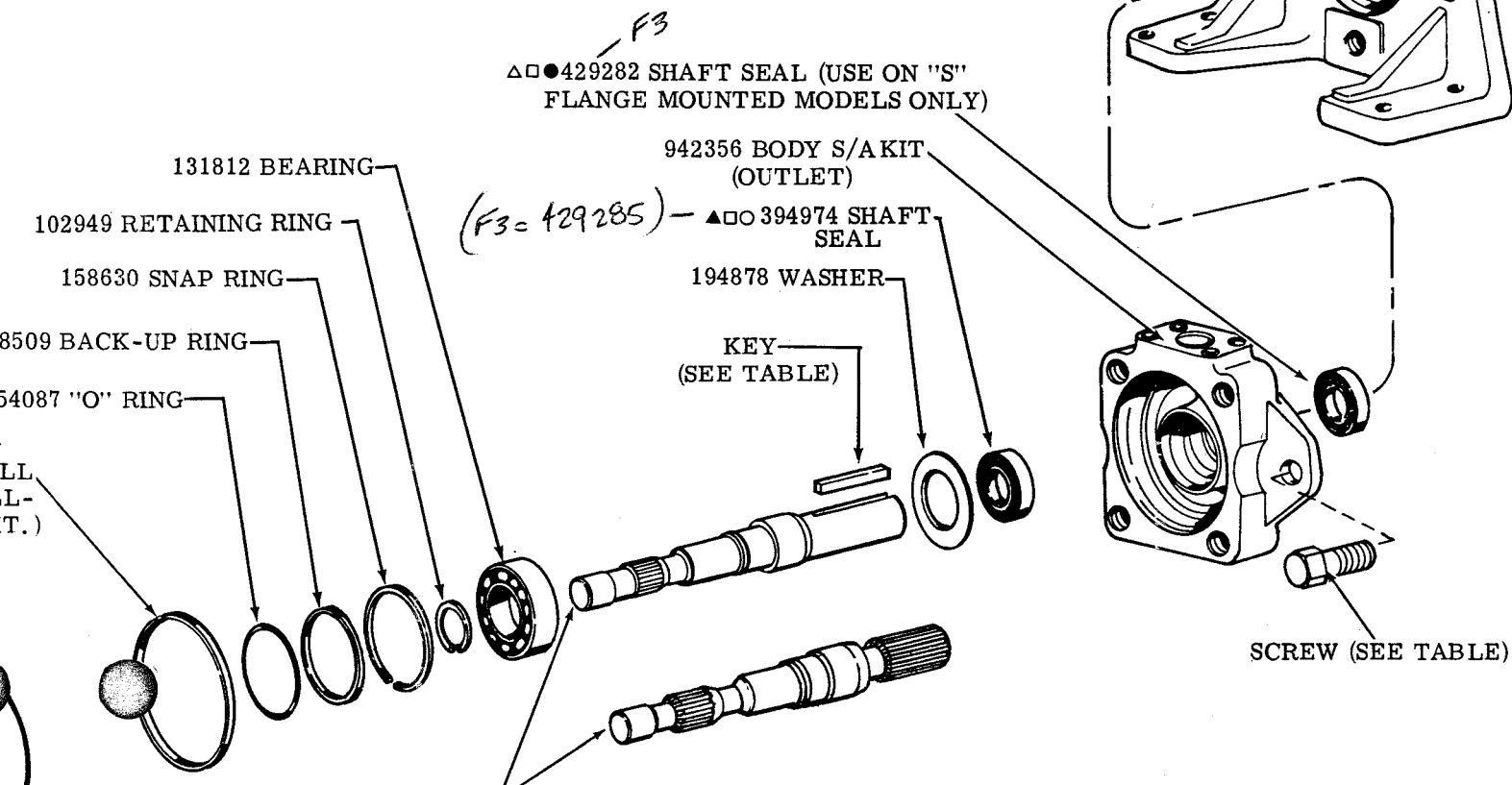
CAPACITY
(USGPM)

SCREW
(2 REQ'D)

CAPACITY (USGPM)	SCREW (2 REQ'D)	PIN (2 REQ'D)	INLET SUPPORT PLATE	SEAL PACK (4 REQ'D)	◆FLEX SIDE PLATE KIT	ROTOR	VANE KIT	RING
THESE PARTS ARE INCLUDED IN CARTRIDGE KIT								
45VQ42A-(*)***-20(*)	380109	422208	430807 (INCLUDES BUSHING)	433768 S/A	923954	283871	922701 (INCLUDES 10 VANES & 10 INSERTS	297510
45VQ47A-(*)***-20(*)								297718
45VQ50A-(*)***-20(*)								297502
45VQ57A-(*)***-20(*)								306772
45VQ60A-(*)***-20(*)								297503

NOTE
USE 45VQ PARTS TO
SERVICE 45V -10/12
DESIGN UNITS.

MOUNTING ASSEMBLY 45VQ***F***-20(L)		
INCLUDED IN FOOT BRACKET KIT	SCREW (2 REQ'D)	MOUNTING BRACKET
FB-C-10	205533	205077



SHAFTS					
SINGLE SEAL MODELS		DOUBLE SEAL MODELS		KEY	TYPE
SHAFT NO.	PART NO.	SHAFT NO.	PART NO.		
1	233369	—	—	217596	STR. KEYED
4	233370	—	—	—	SPLINE
11	242885	—	—	—	SPLINE
—	—	130	422541	—	SPLINE
86	361760	—	—	239751	STR. KEYED

085

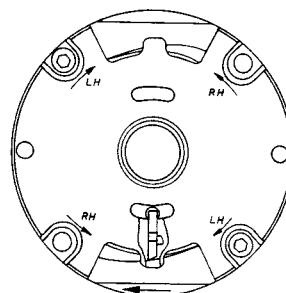
~~111~~ 413020 - SPLINE

↳ (REPLACES 130) 230 928771 - "

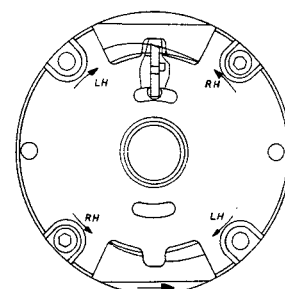
RING	OUTLET SUPPORT PLATE	CART. KIT	F3 CART. KIT
297510	415382	416435	419511
297718		421234	421954
297502		416436	419510
306772		421233	421955
297503		416437	419509

◆ NOTE
WHEN ORDERED INDIVID-
UALLY, FLEX SIDE PLATE
KIT INCLUDES (4) F3 SEAL
PACK SUBASSEMBLIES.

SHARP EDGE OF VANE MUST
LEAD DIRECTION OF ROTATION



COVER END
L.H. ROTATION



COVER END
R.H. ROTATION

MODEL CODE BREAKDOWN

(F3) – 45 VQ ** A * – * * * 20 (*)

1 2 3 4 5 6 7 8 9 10

1 VITON SEALS
(OMIT IF NOT REQUIRED)

2 SERIES

3 VANE TYPE

4 SAE RATED CAPACITY
(RATING AT 1200 RPM – 100 PSI)
(SEE INSIDE FOR CAPACITIES)

5 PORT CONNECTIONS
A – SAE 4-BOLT FLANGE

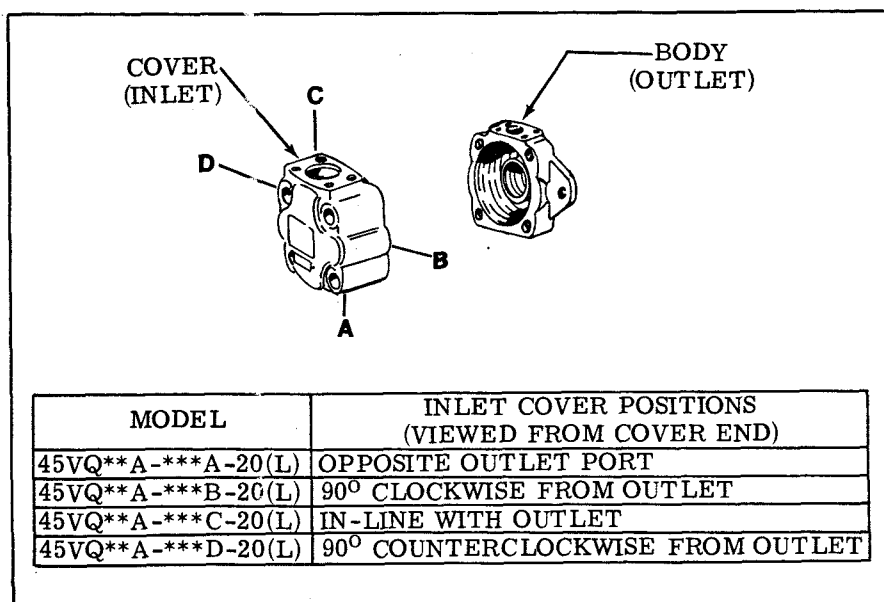
6 MOUNTING & SHAFT SEALS ASSY.
F – FOOT (SINGLE SHAFT SEAL ASSY.)
S – FLANGE (DOUBLE SHAFT SEAL ASSY.)
OMITTED – FLANGE (SINGLE SHAFT SEAL ASSY.)

7 SHAFTS
(SEE TABULATION, EXPLODED VIEW)

8 PORT POSITIONS
(SEE CHART BELOW)

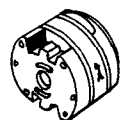
9 DESIGN

10 ROTATION
(VIEWED FROM SHAFT END)
L – LEFT HAND (CCW ROTATION)
OMITTED – RIGHT HAND ROTATION



PARTS ORDERING

PARTS ARE THE SAME FOR BOTH RIGHT AND LEFT HAND ROTATION. WHEN ORDERING SPARE CARTRIDGE PARTS, IT IS RECOMMENDED THEY BE OBTAINED IN CARTRIDGE KITS. KITS ARE ASSEMBLED AND TESTED FOR EITHER RIGHT OR LEFT HAND ROTATION. IF LEFT HAND ROTATION IS REQUIRED, IT SHOULD BE SPECIFIED ON PARTS ORDER BY ADDING SUFFIX "L" TO KIT NUMBER. FOR EXAMPLE, 416435-L.



For satisfactory service life of these components, use full flow filtration to provide fluid which meets ISO cleanliness code 16/13 or cleaner. Selections from pressure, return, and in-line filter series are recommended.

Litho in U. S. A.